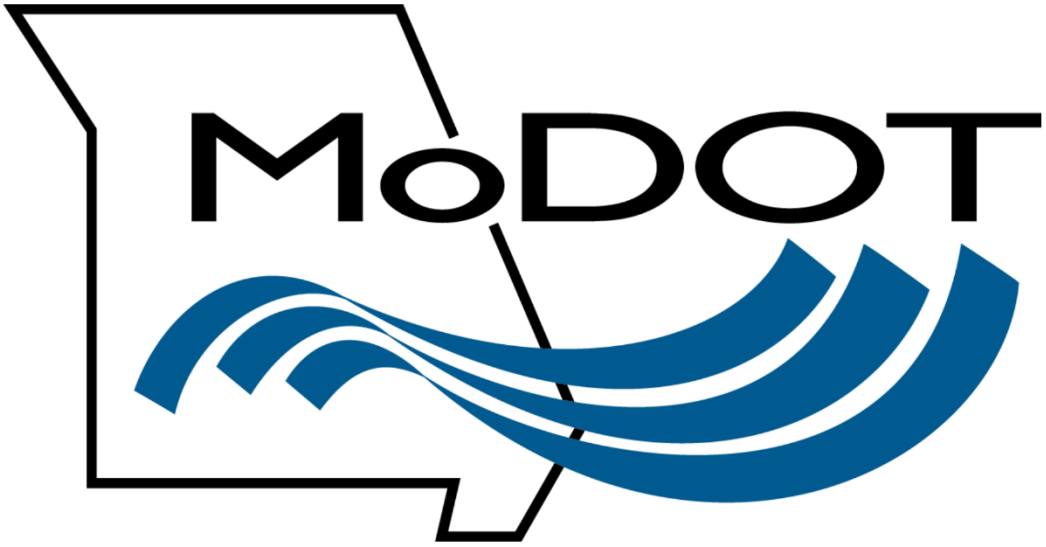


MoDOT Manual on Uniform Traffic Control Devices

for Streets and Highways

December 2025

The MoDOT MUTCD is displayed in track change mode, indicating differences between MoDOT content and the 11th Edition National MUTCD, denoting the content MoDOT did not adopt, changes to the manual, and notes indicating the justifications for these variations. A legend is shown below:

- ~~Red font with strikethrough indicates a deletion from the 11th Edition National MUTCD text that is not included in the MoDOT MUTCD.~~
- Blue font with underline indicates new content added to the MoDOT MUTCD.
- White font with green highlight indicates an explanatory comment describing a modification.

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PART 1 [EPG 911]
GENERAL
CHAPTER 1A. GENERAL

Introduction

History:

M01 The American Association of State Highway Officials (AASHO), now known as the American Association of State Highway and Transportation Officials (AASHTO), published a manual for rural highways in 1927, and the National Conference on Street and Highway Safety (NCSHS) published a manual for urban streets in 1930. To unify both standards, a joint committee of AASHO and NCSHS developed and published the original edition of the Manual on Uniform Traffic Control Devices (MUTCD) in 1935. That committee, now called the National Committee on Uniform Traffic Control Devices (NCUTCD), has been in continuous existence and contributes to the revisions of the MUTCD. The Federal Highway Administration (FHWA) has administered the MUTCD since the 1971 edition and is the sole authority over its content.

M02 The U.S. Secretary of Transportation, under authority granted by the Highway Safety Act of 1966, decreed that traffic control devices on all streets and highways open to public travel in accordance with 23 U.S.C. 109(d) and 402(a) in each state shall be in substantial conformance with the Standards issued or endorsed by the FHWA. In 23 CFR 655.603, the MUTCD is adopted as the national standard for any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a).

Support:

M03 Sections 226.010 and 227.220 of the Revised Statutes of Missouri authorize MoDOT to prescribe uniform traffic control devices on the state's highways.

Standard:

M04 The traffic control articles of the Engineering Policy Guide (EPG) serve as MoDOT's Manual on Uniform Traffic Control Devices. The EPG shall be used when applying traffic control devices to state-maintained routes. Any variations from the EPG for traffic control devices shall be approved by the State Highway Safety and Traffic Engineer.

Support:

M05 For the 11th Edition of the MUTCD, MoDOT established a MoDOT MUTCD document. Unlike other states, this document is only intended to be a historical reference document and not a policy manual. The EPG remains the policy document for practitioners to use when applying traffic control devices to state-maintained routes. The MoDOT MUTCD is displayed in track change mode, indicating differences between MoDOT content and the 11th Edition National MUTCD, denoting the content MoDOT did not adopt, changes to the manual, and notes indicating the justifications for these variations.

M06 The EPG contains the relevant content from, and is in substantial conformance with, the National MUTCD. However, MoDOT only adopts those portions of the National MUTCD that are relevant to state-maintained highways, and in many cases adopts provisions that exceed those in the National MUTCD. For this reason, the National MUTCD cannot be used as a standalone guide when applying traffic control devices to Missouri state-maintained routes. Practitioners should reference the National MUTCD for standards, guidance, and support related to traffic control devices that are not included in the EPG.

Guidance:

07 Like the National MUTCD, the EPG is a permissive manual, meaning the articles of the EPG outline what is permissible regarding the application of traffic control devices to state-maintained roadways. When specific criteria for traffic control devices are not found in the EPG to address a specific concern or application, the Highway Safety and Traffic Division should be contacted for assistance. The

Highway Safety and Traffic Division has access to additional resources, such as other MoDOT districts, FHWA, research facilities, and other states, from which MUTCD-compliant solutions can be sourced. If these solutions have the possibility of being applicable to more than one site, consideration will be made to include the solution in the EPG.

08 The articles of the EPG are not a substitute for engineering judgment. It is the intent that the provisions of the EPG be criteria for traffic control devices installed, but not a legal requirement for their installation.

Section 1A.01 Purpose of the MUTCD

Support:

M00A MoDOT bases all traffic control device policies on the National MUTCD as it is the national standard. The information in EPG 911 is directly from the National MUTCD with minimal modifications.

M00B Contact the Highway Safety and Traffic Division for all official interpretations, experiments, changes to the National MUTCD, or interim approvals.

01 The purpose of the MUTCD is to establish uniform national criteria for the use of traffic control devices that meet the needs and expectancy of road users on all streets, highways, pedestrian and bicycle facilities, and site roadways open to public travel.

02 This purpose is achieved through the following objectives:

A. Promote safety, inclusion, and mobility for all users of the road network;
B. Promote efficiency through creating national uniformity in the meaning and appearance of traffic control devices;
C. Promote national consistency in the use, installation, and operation of traffic control devices; and
D. Provide basic principles for traffic engineers to use in making decisions regarding the use, installation, operation, maintenance, and removal of traffic control devices.

03 Uniformity of the meaning of traffic control devices is vital to their effectiveness. Uniformity means treating similar situations in a similar way. Uniformity of devices simplifies the task of the road user because it aids in recognition and understanding, thereby reducing perception/reaction time. Uniformity assists road users, law enforcement officers, and traffic courts by giving everyone the same interpretation. Uniformity assists public highway officials through efficiency in manufacture, installation, maintenance, and administration.

04 The use of uniform traffic control devices also requires uniform and appropriate application.

05 The applicability of the MUTCD to facilities open to public travel is independent of the type of ownership or jurisdiction (public or private) and the source of funding (Federal, State, local, or private).

06 This Manual presumes the user of the MUTCD has sufficient working knowledge, professional training and experience, and education in the principles of traffic engineering. Other resources can be consulted to understand the basis for decisions that are made in which engineering study or judgment will be applied.

Section 1A.02 Traffic Control Devices – General Description

Support:

01 As defined in Section 1C.02 of this Manual, traffic control devices include all 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.

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.03 Target Road Users

Support:

01 Traffic control devices can be targeted at operators of motor vehicles, including driving automation systems, and at vulnerable road users.

02 Targeted operators of motor vehicles include motorists, public transportation operators, truck drivers, and motorcyclists. Targeted users also include vulnerable road users, who have little to no protection from crash forces. These users are defined in Title 23, U.S.C. 148(a). They include bicyclists and pedestrians, including persons with disabilities. Pedestrians with disabilities might be blind or vision-impaired, have mobility limitations, or other impairments. Protection of vulnerable users is a priority in this Manual as directed in Section 11135 of the Infrastructure Investment and Jobs Act.

03 Operators of motor vehicles and vulnerable road users are both likely to be present on roadways where adjacent land use suggests that trips could be served by varied modes. Application of traffic control devices on these roadways requires careful consideration of measures to set and design for appropriate speeds; separation of various users in time and space; improvement of connectivity and access for pedestrians, bicyclists, and transit riders, including for people with disabilities; and implementation of safety countermeasures.

Section 1A.04 Use of the MUTCD

Support**:**

01 Traffic control device principles in the MUTCD are developed for and used by individuals who are duly authorized and qualified to conduct traffic control device activities.

Standard:

02 Where the content of this Manual requires a decision for implementation, such decisions shall be made by an engineer, or an individual under the supervision of an engineer, who has the appropriate levels of experience and expertise to make the traffic control device decision. Those decisions shall be made using engineering judgment or engineering study, as required by the MUTCD provision.

Support:

03 Section 1C.02 contains definitions of "engineering study" and "engineering judgment."

Guidance:

04 In making traffic control device decisions, individuals should consider the impacts of the decision on the following: safety and operational efficiency (mobility) of all road users at that location, the effective use of agency resources, cost-effectiveness, and enforcement and education aspects of traffic control devices.

Support:

05 Throughout this Manual the headings Standard, Guidance, Option, and Support, the meanings of which are defined in Section 1C.01, are used to classify the nature of the text that follows. Figures and tables, including the notes contained therein, supplement the text and might constitute a Standard, Guidance, Option, or Support. The user needs to refer to the appropriate text to classify the nature of the figure, table, or note contained therein.

Guidance:

06 Except when a specific numeral is required or recommended by the text of a Section of this Manual, numerals displayed on the images of devices in the figures that specify quantities such as times, distances, speed limits, and weights should be regarded as examples only. When installing any of these devices, the numerals should be appropriately altered to fit the specific situation.

07 Similarly, destination names, route numbers, and State route shields that are displayed on the images of devices in the figures should be regarded as examples only. When installing any of these devices, the destination names, route numbers, and State route shields should be appropriately altered to fit the specific situation.

Support:

08 The information contained in Paragraphs 9 and 10 of this Section will be useful when reference is being made to a specific portion of text in this Manual.

09 There are nine Parts in this Manual and each Part includes one or more Chapters. Each Chapter includes one or more Sections. Parts are identified by a single-digit numerical identification, such as "Part 2 – Signs." Chapters are identified by the Part number and a letter, such as "Chapter 2B – Regulatory Signs." Sections are identified by the Chapter number and letter followed by a decimal point and a 2-digit number, such as "Section 2B.03 – Size of Regulatory Signs." In some Chapters, the Sections are grouped together by subject into unnumbered sub-chapters with a heading, such as "Signing for Right-of-Way at Intersections" (for Sections 2B.06 through 2B.20).

10 Each Section includes one or more paragraphs. The paragraphs are indented and are identified by a number. Paragraphs are counted from the beginning of each Section without regard to the intervening text headings (Standard, Guidance, Option, or Support) or any intervening text in embedded Figures or Tables. Some paragraphs have lettered or numbered items. As an example of how to cite this Manual, the phrase "[n]ot less than 40 feet beyond the stop line" that appears in Section 4D.08 of this Manual would be referenced in writing as "Section 4D.08, Par.1, A.1," and would be verbally referenced as "Item A.1 of Paragraph 1 of Section 4D.08."

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).

Support:

02 The "Standard Highway Signs" publication includes standard alphabets and symbols and arrows for signs and pavement markings.

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.

Section 1A.06 Uniform Vehicle Code – Rules of the Road

Support:

01 The "Uniform Vehicle Code" (UVC) is one of the publications referenced in the MUTCD. The UVC contains a model set of motor vehicle codes and traffic laws for use throughout the United States, the intent of which is to promote national uniformity in these laws. The Rules of the Road contained in the UVC are intended to be recommendations for States to adopt in their State statutes and are not independently legally enforceable.

Guidance:

02 The actions required of road users to obey regulatory devices should be specified by State statute, or in cases not covered by State statute, in local ordinances or resolutions. Such statutes, ordinances, and resolutions should be consistent with the "Uniform Vehicle Code."

CHAPTER 1B. LEGAL REQUIREMENTS FOR TRAFFIC CONTROL DEVICES

Section 1B.01 National Standard

Standard:

01 The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for all traffic control devices installed on any street, highway, bikeway, or site roadway open to public travel (see definition in Section 1C.02) in accordance with 23 U.S.C. 109(d) and 402(a).

02 In accordance with 23 CFR 655.603(a), the MUTCD shall apply to all of the following types of facilities:

- **A. Any street, roadway, or bikeway open to public travel, either publicly or privately-owned;**
- **B. Streets and roadways on sites that are off the public right-of-way that are open to public travel without full-time access restrictions. Examples include roadways within shopping centers, office parks, airports, sports arenas, other similar business and/or recreation facilities, governmental office complexes, schools, universities, recreational parks, and other similar publicly-owned complexes and/or recreation facilities. The above-described examples of streets and roadways are referred to in this Manual as site roadways open to public travel;**
- **C. Publicly-owned toll roads, including those under the jurisdiction of a public agency, public authority, or public-private partnership;**
- **D. Privately-owned toll roads where the public is allowed to travel without access restriction. This includes gated toll roads or roadways where the general public is able to pay to access the facility; and**
- **E. Grade crossings of publicly-owned roadways with railroads or light rail transit.**

03 The MUTCD shall not apply to the following types of facilities:

- **A. Roadways within private gated properties where access to the general public is restricted at all times;**
- **B. Grade crossings of privately-owned roadways with railroads; and**
- **C. Parking areas, including the driving aisles within those parking areas, that are either publicly or privately-owned.**

Support:

04 The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices are as described in 23 CFR 655, Subpart F.

05 Section 15-116 of the UVC (see Section 1A.06) states, "No person shall install or maintain in any area of private property used by the public any sign, signal, marking, or other device intended to regulate, warn, or guide traffic unless it conforms with the State manual and specifications adopted under Section 15-104." Adoption by agencies of such a provision through statute or ordinance can help maintain the integrity of official traffic control devices and provide continuity of uniformity at locations that are not subject to the provisions of this Manual.

Section 1B.02 State Adoption and Conformance

Support:

01 All States have officially adopted the National MUTCD either in its entirety, with supplemental provisions, or as a separate published document. The National MUTCD has also been adopted by the National Park Service, the U.S. Forest Service, the U.S. Military Command, the Bureau of Indian Affairs, the Bureau of Land Management, and the U.S. Fish and Wildlife Service.

Standard:

02 States or other Federal agencies that have their own MUTCDs or Supplements shall revise these MUTCDs or Supplements to be in substantial conformance with changes to the National MUTCD within 2 years of the effective date of the Final Rule for the changes [23 CFR 655.603(b)(3)]. Substantial conformance of such State or other Federal agency MUTCDs or Supplements shall be as defined in 23 CFR 655.603(b)(1).

03 For the purposes of Paragraph 2 of this Section, policies, directives, specifications, standard drawings, or similar documents that are issued by an agency and that change or modify Standard, Guidance, or Option provisions in this Manual shall be considered as supplements to the MUTCD and shall also be revised to be in substantial conformance with the National MUTCD.

Section 1B.03 Compliance of Devices

Standard:

01 The U.S. Secretary of Transportation, under authority granted by the Highway Safety Act of 1966, decreed that traffic control devices on all streets and highways open to public travel in accordance with 23 U.S.C. 109(d) and 402(a) in each State shall be in substantial conformance with the Standards issued or endorsed by the FHWA.

Support:

02 23 CFR 655.603 also requires traffic control devices on all streets, highways, bikeways, and site roadways open to public travel in each State be in substantial conformance with standards issued or endorsed by the Federal Highway Administrator.

Standard:

03 After the effective date of a new edition of the MUTCD or a revision thereto, or after the adoption thereof by the State, whichever occurs later, new or reconstructed devices installed shall comply with the new edition or revision, as required by 23 CFR 655.603.

04 In cases involving Federal-aid projects for new construction, reconstruction, resurfacing, restoration, or rehabilitation of a facility to which this Manual applies, the traffic control devices installed (temporary or permanent) shall comply with the most recent edition of the National MUTCD before that highway is opened or re-opened to the public for unrestricted travel [23 CFR 655.603(d)(2) and (d)(3)].

05 Unless a particular device is no longer serviceable (see definition in Section 1C.02), non-compliant devices on existing highways and bikeways shall be brought into compliance with the current edition of the National MUTCD as part of the systematic upgrading of substandard traffic control devices (and installation of new required traffic control devices) required pursuant to the Highway Safety Program, 23 U.S.C. §402(a).

Support:

06 The FHWA has the authority to establish other target compliance dates for implementation of particular changes to the MUTCD [23 CFR 655.603(d)(1)].

Standard:

07 The target compliance dates established by the FHWA shall be as shown in Table 1B-1.

08 Design, application, and placement of traffic control devices other than those adopted in this Manual shall be prohibited unless the provisions of Sections 1B.04 through 1B.08 are followed regarding official interpretations, experiments, changes to the MUTCD, and interim approvals granted by the FHWA.

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

Support:

09 Many of the provisions in this Manual that are explicitly prohibitive have been included to address practices that have been shown to be ineffective, unsafe, or inconsistent with uniformity. A provision of mandatory or recommended practice represents the accepted and established practice that promotes uniformity and consistency. The absence of a provision in this Manual that explicitly prohibits a particular practice, use, design, application, operation, or other aspect of a traffic control device does not, in itself, constitute acceptability or permission to use the device in a manner not provided for in this Manual.

Guidance:

10 Agencies should contact the FHWA when considering employing a practice or application that is not explicitly addressed in this Manual to ensure continued compliance with the provisions in this Manual.

Support:

11 The FHWA reviews and interprets the provisions in this Manual for agencies on an as-needed basis, which can lead to the issuance of official interpretations (see Section 1B.04), or interim approvals (see Section 1B.07).

Standard:

12 A non-compliant traffic control device that is being replaced or refurbished because it is damaged, missing, or no longer serviceable (see definition in Section 1C.02) for any reason shall be replaced with a compliant device, except as provided for in Paragraph 13 of this Section.

Option:

13 A non-compliant traffic control device may be replaced in kind when engineering judgment indicates it is more appropriate because:

A. One compliant device in the midst of a series of adjacent non-compliant devices would be confusing to road users, and/or
B. The schedule for replacement of the whole series of non-compliant devices will result in achieving timely compliance with the MUTCD.

Section 1B.04 Interpretations

Support:

01 The FHWA issues authoritative interpretations of this Manual when necessary to provide clarity in response to unique situations for device application or general requests for clarification of a provision.

02 An interpretation includes a consideration of the application and operation of standard traffic control devices, the official meanings of standard traffic control devices, or the variations from standard device designs and design requirements.

Guidance:

03 Requests for an interpretation of this Manual should contain the following information:

A. A concise statement of the interpretation being sought;

B. A description of the condition that provoked the need for an interpretation;

C. Any illustration that would be helpful to understand the request; and

D. Any supporting research data that is pertinent to the item to be interpreted.

Support:

04 Section 1B.08 contains information on submitting a request for interpretation.

Section 1B.05 Experimentation

Support:

01 Requests for experimentation (see Section 1B.08) include consideration of field deployment for the purpose of testing or evaluating a new traffic control device, its application or manner of use, or a provision not specifically described in this Manual.

Standard:

02 A traffic control device or application that does not comply with the provisions of this Manual shall not be used on any street, highway, bikeway, or site roadway open to public travel (see definition in Section 1C.02) without first receiving official approval to experiment from the FHWA's Office of Transportation Operations.

Support:

03 A request for permission to experiment (see Section 1B.08) will be considered only when submitted by the public agency or toll facility authority responsible for the operation of the road or street on which the experiment is to take place. For a site roadway open to public travel, the request will be considered only if it is submitted by the private owner or official having jurisdiction.

04 A request for experimentation with a novel device or application across multiple jurisdictions as a single experiment with a common hypothesis, evaluation plan, and evaluation team will be considered when submitted jointly by all the authorities responsible for operation of the roads or streets on which the experiment is to take place. Similarly, a request to add experimental sites to an experimentation approved for another jurisdiction will be considered when submitted jointly by the all the authorities for operation of the roads or streets on which the experiment is then to take place.

05 Manufacturers or inventors of novel devices are encouraged to engage the services of a qualified traffic engineer or other professional who is versed in traffic control devices. Early engagement during the concept and development processes will help ensure the efficacy of the device with regard to human factors, operational, safety, and other considerations prior to an agency requesting experimentation.

06 In some cases, an off-roadway closed-course or laboratory study might be required before a request for experimentation can be considered. The purpose of such a study is to determine whether testing the experimental device or application in an open-road setting could result in an undue safety risk.

Guidance:

07 Before requesting permission to experiment with a new device or application, an owner of a site roadway open to public travel should first check for any laws, regulations, and/or directives covering the application of the MUTCD that might apply.

Option:

08 An agency may request a preliminary assessment of the viability of a potential request for experimentation by submitting an abstract that briefly describes the experimental concept.

Support:

09 A diagram indicating the process for requesting and conducting experimentations with traffic control devices is shown in Figure 1B-1.

Standard:

10 The request for permission to experiment shall contain the following:

A. A statement indicating the nature of the problem and a hypothesis establishing the premise of the experiment.

B. A description of the proposed change to the traffic control device or application of the traffic control device, including the manner in which it deviates from the provisions of this Manual, and how it is expected to be an improvement over existing provisions.

C. Illustrations that would help to explain the traffic control device or use of the traffic control device.

D. Any supporting data explaining how the traffic control device was developed, including if it has been tested, in what ways it was found to be adequate or inadequate, and how this choice of device or application was derived.

E. Comparison of the proposed device to other compliant devices or treatments, either individually or in combination, that address the same condition, if applicable.

F. A legally-binding statement that the experimental device or application is in the public domain, in accordance with Paragraph 16 of this Section.

G. The time period and location(s) of the experiment.

H. Control sites for comparison purposes or justification for not using control sites.

I. A detailed research and evaluation plan that provides for close monitoring of the experimentation, throughout all stages of its field implementation. The evaluation plan shall include an appropriate evaluation methodology, such as before and after analysis, or other appropriate methodology as well as quantitative data describing the performance of the experimental device.

J. An agreement to provide semi-annual progress reports for the duration of the experimentation, in accordance with the schedule provided in Paragraph 12 of this Section, and an agreement to provide a report of the final results of the experimentation to the FHWA's Office of Transportation Operations within 3 months following completion of the experimentation (see Paragraph 14 of this Section). The FHWA's Office of Transportation Operations shall have the right to terminate approval of an agency's experiment if reports are not received in accordance with this schedule.

K. An agreement to restore the site of the experiment to a condition that complies with the provisions of this Manual within 3 months following the end of the time period of the experiment. This agreement shall also provide that the agency sponsoring the experimentation will terminate the experimentation at any time that it determines that safety concerns are directly or indirectly attributable to the experimentation and the agency shall provide timely notification to the FHWA's Office of Transportation Operations. The FHWA's Office of Transportation Operations shall have the right to terminate approval of

the experimentation at any time if there is an indication of safety or operational concerns, or if the terms of the approval are not being adhered to. If, as a result of the experimentation, a request is made that this Manual be changed to include the device or application being experimented with, the FHWA's Office of Transportation Operations will determine whether the device or application can be permitted to remain in place until an official rulemaking action has occurred.

11 Where an item in Paragraph 10 of this Section is determined to not be applicable to the type of experiment, device, or application, the request shall provide sufficient explanation.

12 The required semi-annual progress reports shall be submitted throughout the course of an approved experiment in accordance with the following schedule:

A. No later than August 1st for the preceding period of January through June; and

B. No later than February 1st for the preceding period of July through December.

13 The experimenting agency shall submit a semi-annual progress report for any approved experiment even if no work was performed during the previous reporting period. Failure to submit two consecutive progress reports shall result in termination of the experiment and shall constitute rescission of the FHWA's approval to the experimenting agency, requiring restoration of the site(s) to a condition that complies with the provisions of this Manual within 3 months.

14 The experimenting agency shall submit a final report within 3 months of the conclusion of an approved experiment. If a final report is not received by the FHWA's Office of Transportation Operations, and the experimenting agency fails to notify the FHWA of any mitigating circumstances within 6 months of the end of the approved experimentation period, then the experiment shall be considered terminated and shall constitute rescission of the FHWA's approval to the experimenting agency, requiring restoration of the site(s) to a condition that complies with the provisions of this Manual within 3 months.

Support:

15 Under certain circumstances the FHWA Office of Transportation Operations might allow an experimental device or device application that has been shown to be effective and without safety concerns to remain in use after the experiment has ended. This typically would occur if the device or application is actively being considered for interim approval under the provisions of Section 1B.07.

Standard

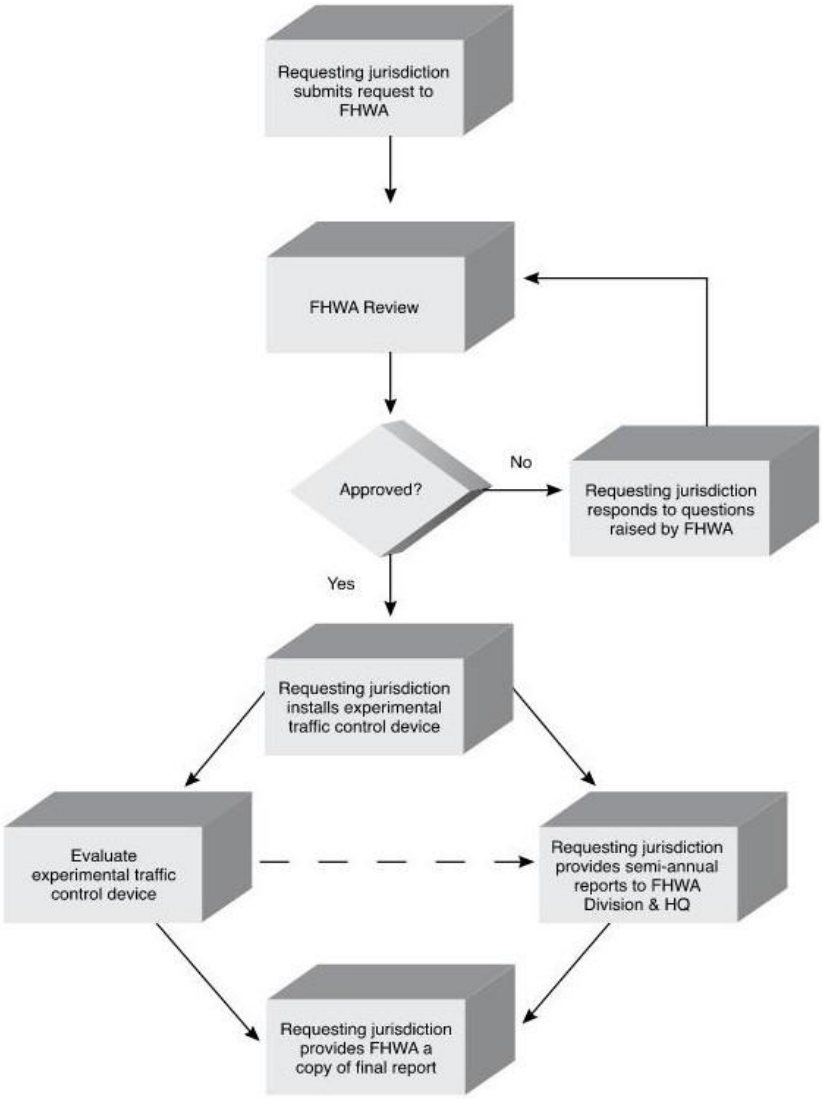
16 A request for experimentation that involves a new traffic control device or a new application of an existing traffic control device shall include from the agency conducting the experiment, the manufacturer and/or developer of the device, and the supplier of the device, a legally-binding statement certifying that the traffic control device is not protected by a patent, trademark, or copyright in accordance with Section 1D.06, and that the traffic control device is in the public domain and can be used freely in traffic control device design and application without infringement or claim of trade secret misappropriation. The legally-binding statement shall also state that the agency conducting the experiment, the manufacturer and/or developer of the device, and the supplier of the device are aware that if patent, trademark, or copyright protection is established in the future for the device or application, such action will result in its removal from the MUTCD, cancellation of its interim approval, or cancellation of the authorization for experimentation.

Support:

17 For the purpose of the Standard in Paragraph 16 of this Section, traffic control device refers to those aspects of a sign, signal, marking or other device which regulates, warns, or guides traffic. The limitation on patent, trademark, or copyright protection does not include the legal protection of individual elements of such devices. For example, manufacturing methods, assembly methods, or individual components of such devices can be protected, whereas the traffic control device cannot be subject to

protection so long as it remains in this Manual. As a further example, an internal circuit board for an electronic traffic control device can be legally protected, but the electronic traffic control device itself or its operational function cannot be legally protected by any of the above forms of intellectual property rights.

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



Section 1B.06 Changes to the MUTCD

Support:

01 Continuing advances in technology and approaches to traffic safety will produce changes in the highway, vehicle, and road-user proficiency; therefore, portions of the system of traffic control devices in this Manual will require updating. It is important to have a procedure for recognizing these developments and for introducing new ideas and modifications into the system.

02 A change includes consideration of a new device to replace a present standard device, an additional device to be added to the list of standard devices, or a revision to a traffic control device application or placement criteria.

Guidance:

03 Requests for a change to this Manual (see Section 1B.08) should contain the following information:

A. A statement indicating what change is proposed;

B. Any illustration that would be helpful to understand the request; and

C. Any supporting research data that is pertinent to the item to be reviewed.

Support:

04 Requests for a change to this Manual will be evaluated to consider the potential safety and operational benefits of the requested change and be considered for inclusion in the future ~~for consideration in the next~~ rulemaking to issue a new edition or revision of the Manual. A diagram indicating the process for incorporating new traffic control devices into this Manual is shown in Figure 1B-2.

Section 1B.07 Interim Approvals

Support:

01 Interim approval allows for provisional use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in this Manual.

02 The FHWA issues an interim approval by official memorandum signed by the Associate Administrator for Operations and posts this memorandum on the MUTCD Web site.

03 Interim approval allows for the optional use of a traffic control device or application and does not create a new mandate or recommendation for its use. Interim approval includes conditions that jurisdictions, toll facility operators, or owners of site roadways open to public travel agree to comply with in order to use the traffic control device or application until an official rulemaking action has occurred.

04 The issuance by FHWA of an interim approval might result in the traffic control device or application being proposed for adoption in the next scheduled rulemaking process to issue a new edition or revision of this Manual. If the device or application under interim approval is not proposed in the next rulemaking for a new edition or revision, then a statement of the status of the interim approval, whether it is to be rescinded or remain in effect, will be included in the Federal Register notice for the rulemaking.

05 Interim approval is considered based on the results of experimentation, and/or results of analytical or laboratory studies with a traffic control device or application that analytically demonstrates a device effectively communicates its intended meaning. Interim approval considerations include an assessment of relative risks, benefits, costs, impacts, and other factors.

06 Section 1B.08 contains information on submitting a request for interim approval.

07 Interim approval is ordinarily considered only after published authoritative research and experimentation sufficiently demonstrate that the device or application provides a significant safety or operational improvement. Individual experiments by various jurisdictions, without a research report on the overall findings of the experimental device or application, will not ordinarily qualify for issuance of an interim approval.

08 Interim approval ordinarily is not considered based solely on non-U.S. experience with a new traffic control device or application. Differences in regulations, enforcement and penalties, and driver licensing requirements, among other factors, can result in dissimilar road-user behavior. Additionally, due to variations in conventions for traffic control device design, a non-U.S. traffic control device concept

might need to be adapted to U.S. criteria to ensure consistency with the provisions and principles of this Manual. However, documented non-U.S. experience can be considered in the development of requests for experimentation (see Section 1B.05) and within the evaluation plan for traffic control device research.

Standard:

09 A jurisdiction, toll facility operator, or owner of a site roadway open to public travel that desires to use a traffic control device or application for which FHWA has issued an interim approval shall request and receive permission from FHWA in writing prior to applying the device or application.

10 The request to place a traffic control device or application under an existing interim approval shall be made by Highway Safety and Traffic Division and shall contain the following:

- **A. A description of where the device or application will be used, such as a list of specific locations or highway segments or types of situations, or a statement of the intent to use the device or application jurisdiction-wide;**
- **B. An agreement to abide by the specific conditions for use of the device or application as contained in the FHWA's interim approval memorandum;**
- **C. An agreement to maintain and continually update a list of locations where the device or application has been installed; and**
- **D. An agreement to:**
  1. **Restore the site(s) of the interim approval to a condition that complies with the provisions in this Manual within 3 months following the issuance of a Final Rule on this traffic control device or application; and**
  2. **Terminate use of the device or application installed under the interim approval at any time that it determines that safety concerns are directly or indirectly attributable to the device or application. The FHWA's Office of Transportation Operations shall have the right to terminate the interim approval at any time if there is an indication of safety, operational, or other concerns.**

Option:

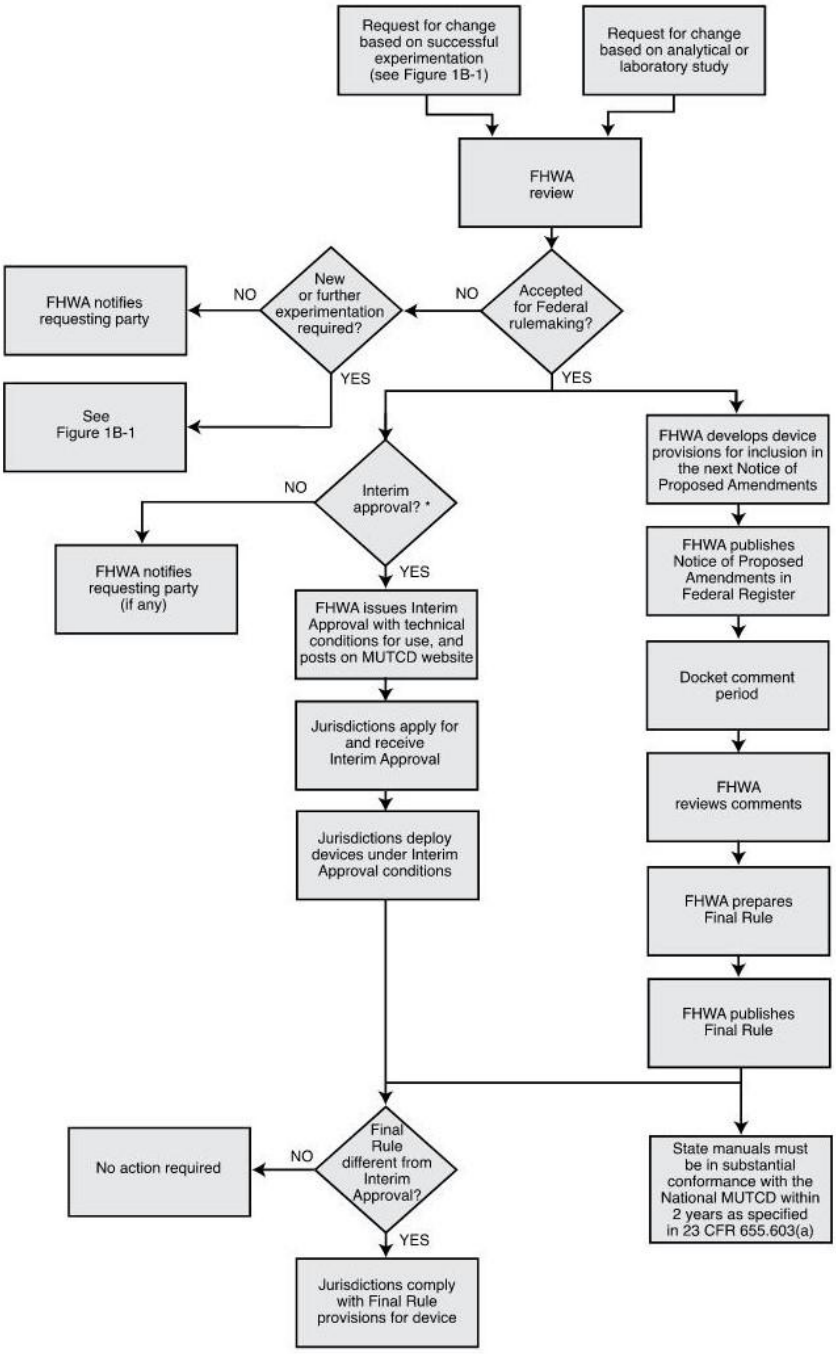
11 A State may submit a request for permission to use a device or application under an existing interim approval for all jurisdictions in that State, as long as the request contains the information required in Paragraph ~~9~~ 10 of this Section.

Standard:

12 A jurisdiction, toll facility operator, or owner of a site roadway open to public travel that elects to use a device or application under a statewide interim approval shall inform the State of its use of the device or application.

13 Under statewide interim approval, the respective jurisdictions, toll facility operators, and owners of site roadways open to public travel shall maintain and continually update a record of all locations on their roads where the device or application is implemented (see Item C of Paragraph ~~9~~ 10 of this Section) and shall furnish this information to the State.

Figure 1B-2. Process for Incorporating New Traffic Control Devices into the MUTCD



*A change request to allow the use of a new traffic control device is considered for Interim Approval when FHWA determines that the change will have a substantial national safety or operational benefit and that it would not be in the public interest to wait the intervening time period before the device could otherwise be officially incorporated into the MUTCD through rulemaking.

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.

M02A All requests shall be submitted to FHWA by the Highway Safety and Traffic Division.

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.01 Definitions of Headings Used in this Manual

Standard:

01 When used in this Manual, the text headings of Standard, Guidance, Option, and Support shall be defined as follows:

A. Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. In limited, location-specific cases, the results of a documented engineering study (see Section 1D.03) might indicate a deviation from one or more requirements of a Standard provision to be appropriate. All Standard statements are labeled, and the text appears in bold type. The verb "shall" is typically used. The verbs "should" and "may" are not used in Standard statements. Standard statements are sometimes modified by Option statements.

B. Guidance—a statement of recommended practice in typical situations, with deviations allowed if engineering judgment or engineering study (see Section 1D.03) indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold italic type. The verb "should" is typically used. The verbs "shall" and "may" are not used in Guidance statements. Guidance statements are sometimes modified by Option statements.

C. Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Option statements sometimes contain allowable modifications to a Standard or Guidance statement. All Option statements are labeled, and the text appears in unbold type. The verb "may" is typically used. The verbs "shall" and "should" are not used in Option statements.

D. Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs "shall," "should," and "may" are not used in Support statements.

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 areas and not intended for the purpose of through vehicular traffic.**
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 highway primarily used by through traffic, usually on a continuous route or a highway designated as part of an arterial system.**
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.

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.**
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~~ 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.**
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)~~.**

    Figure 8C-3 is not adopted by MoDOT. Revised Dec. 2025
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 highway with partial control of access.**
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 highway with full control of access.**
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~~ 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.**
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~~ 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, on other devices determined by local law to be equivalent, which might include skates or a skateboard.**
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.**

179a. 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.

179b. **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.**

179c. **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.**

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~~ 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.**
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.**
211. **School Zone—a designated roadway segment approaching, adjacent to, and beyond school buildings or grounds, or along which school related activities occur.**
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.**
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 line, or the lateral line of a roadway, and the adjacent property line or on easements of private property that is paved or improved and intended for use by pedestrians.**
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—~~S~~ 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—~~R~~ 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.

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.

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, and other conveyances either singularly or together while using for purposes of travel any highway or site roadway open to public travel.

273. Traffic Control Device—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.

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.

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.

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**
43. **ODD—Operational Design Domain**
44. **OPM—U.S. Office of Personnel Management**
45. **ORT—open-road tolling**
46. **PCMS—portable changeable message sign**
47. **PRT—perception-response time**
48. **RRFB—rectangular rapid-flashing beacon**
49. **RV—recreational vehicle**
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**
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.01 Purpose and Principles of Traffic Control Devices

Support:

01 The purpose of traffic control devices, as well as the principles for their use, is to promote highway safety, inclusion and mobility of all road users, and efficiency by providing for the orderly movement of road users on streets, highways, bikeways, and site roadways open to public travel throughout the Nation. Section 1A.03 contains additional information on target road users.

02 This Manual contains the basic principles that govern the design and use of traffic control devices for all streets, highways, bikeways, and site roadways open to public travel (see definition in Section 1C.02) regardless of type or class or the public agency, official, or owner having jurisdiction. The text of this Manual specifies the restriction on the use of a device if it is intended for limited application or for a specific system. It is important that these principles be given primary consideration in the selection and application of each device.

Guidance:

03 To be effective, a traffic control device should:

A. Fulfill a need;

B. Command attention;

C. Convey a clear, simple meaning;

D. Command respect from road users; and

E. Give adequate time for proper response.

04 Design, placement, operation, maintenance, and uniformity are aspects that should be carefully considered in order to maximize the ability of a traffic control device to be consistent with the five principles listed in Paragraph 3 of this Section. Vehicle speed and road-user types should be carefully considered as an element that governs the design, operation, placement, and location of various traffic control devices.

05 The proper use of traffic control devices should provide the road user with the information necessary to safely, efficiently, and lawfully use the streets, highways, pedestrian facilities, and bikeways.

Standard:

06 Traffic control devices used on site roadways open to public travel shall have the same shape, color, and meaning as those required by the MUTCD for use on public highways, except as provided otherwise elsewhere in this Manual. Sign size exceptions are noted in each Part as applicable.

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.

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. **For additional information see EPG 236.16 Outdoor Advertising.**

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:

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.

Section 1D.04 Design of Traffic Control Devices

Guidance:

01 Devices should be designed so that features such as size, shape, color, composition, lighting or retroreflection, and contrast are combined to draw attention to the devices; so that size, shape, color, and simplicity of message combine to produce a clear meaning; so that legibility and size combine with placement to provide adequate time for response; and so that uniformity, size, legibility, and reasonableness of the message combine to command respect.

Option:

02 Except for symbols and colors, minor modifications in the specific design elements of a device may be made based on an engineering study or engineering judgment, in accordance with Paragraph 3 of this Section, provided the essential appearance characteristics are preserved.

Guidance:

03 Aspects of the standard design of a traffic control device should not be modified unless there is a demonstrated need in unusual circumstances, based on an engineering study or engineering judgment.

Support:

04 An example of acceptably modifying the design of a device would be to modify the Combination Horizontal Alignment/Intersection (W1-10) sign to show intersecting side roads on both sides rather than on just one side of the major road within the curve.

Section 1D.05 Color Code

Support:

01 The following color code establishes general meanings for 11 colors of a total of 13 colors that have been identified as being appropriate for use in conveying traffic control information.

Standard:

02 The general meaning of the 13 colors shall be as follows:

- **A. Black—regulation**
- **B. Blue—road-user services guidance, tourist information, and evacuation route**
- **C. Brown—recreational and cultural interest area guidance**
- **D. Coral—reserved for future designation (see Paragraph 4 of this Section)**
- **E. Fluorescent Pink—incident management**
- **F. Fluorescent Yellow-Green—~~pedestrian warning, bicycle warning, playground warning,~~ school bus warning~~,~~ and school warning**
- **G. Green—indicated movements or actions permitted and direction guidance**
- **H. Light Blue—reserved for future designation (see Paragraph 4 of this Section)**
- **I. Orange—temporary traffic control**
- **J. Purple—restricted to use only by vehicles with registered electronic toll collection (ETC) accounts**
- **K. Red—stop or prohibition**
- **L. White—regulation**
- **M. Yellow—warning**

03 These colors shall be used only as prescribed for the specific devices or applications throughout this Manual.

Support:

04 The two colors for which general meanings have not yet been assigned are being reserved for future applications that will be determined only by the FHWA after consultation with the States, the engineering community, and the general public. The meanings described in this Section are of a general nature. More specific assignments of colors are given in the individual Parts of this Manual relating to each class of devices.

05 Tolerance limits for each color are contained in 23 CFR Part 655, Appendix to Subpart F and are available at the Federal Highway Administration's MUTCD Web site at http://mutcd.fhwa.dot.gov.

Section 1D.06 Public Domain, Copyrights, and Patents

Standard:

01 Traffic control device design or application provisions contained in this Manual shall be in the public domain. Traffic control devices contained in this Manual shall not be protected by a patent, trademark, or copyright, except for the Interstate Shield, 511 Travel Information pictograph, National Scenic Byway graphic, and any items under the stewardship of or owned by FHWA.

02 A traffic control device design or application shall not be eligible for official experimentation (see Section 1B.05) or interim approval (see Section 1B.07) unless it is in the public

domain. Express abandonment of any and all forms of proprietary protection, such as patents, trademarks, or copyrights, related to the design and application of the traffic control device shall satisfy the requirement for the traffic control device to be in the public domain.

03 The requirement for the traffic control device to be in the public domain shall not apply to individual components used in the assembly or manufacture of the traffic control device.

Support:

04 The limitation on patented, trademarked, or copyrighted traffic control devices applies to the message that the device conveys to the road user. If a patent or other protection covers the device's communication to the road user by virtue of its appearance, audible message, or other aspects of the message conveyed (such as the order in which traffic control signal indications change from green to yellow and red), then the device is considered to be protected and not in the public domain. Such a device is precluded from inclusion in this Manual. The purpose of this limitation is to ensure uniformity of the messaging of individually approved traffic control devices. This limitation does not apply to other aspects of a device (such as internal controls, circuitry, electronics, mechanics, or housing) so long as the appearance, audible message, or other aspects of the message conveyed, including the manner of conveyance, remain freely reproducible by all without infringing on any proprietary rights or interests. This Manual does not prohibit such other aspects of a traffic control device that meet the legal requirements from being protected through patent, trademark, or copyright; and does not restrict components, parts, manufacturing processes, or similar aspects of traffic control devices from being patented or otherwise protected. Examples of acceptable protected traffic control device components or parts might include: sign sheeting or retroreflectivity technology, internal electronic components of traffic signal controllers, and breakaway sign support mechanisms.

05 Pictographs, as defined in Section 1C.02, are embedded in traffic control devices, but the pictographs themselves are not considered traffic control devices for the purposes of Paragraph 4 of this Section.

06 Business identification logos, as defined in Section 1C.02, are embedded in traffic control devices, but the logos themselves are not considered traffic control devices for the purposes of Paragraph 4 of this Section.

Section 1D.07 Advertising

Standard:

01 Traffic control devices or their supports shall not bear any advertising message or any other message that is not related to traffic control.

Support:

02 Acknowledgment signs (see Section 2H.13), Specific Service signs (see Chapter 2J), and Tourist-Oriented Directional signs (see Chapter 2K) are not considered advertising.

Section 1D.08 Abbreviations Used on Traffic Control Devices

Standard:

01 When the word messages shown in Table 1D-1 need to be abbreviated in connection with traffic control devices, the abbreviations shown in Table 1D-1 shall be used.

02 When the word messages shown in Table 1D-2 need to be abbreviated on a portable changeable message sign, the abbreviations shown in Table 1D-2 shall be used. Unless indicated by an asterisk, these abbreviations shall only be used on portable changeable message signs.

Guidance:

03 The abbreviations for the words listed in Table 1D-2 that also show a prompt word should not be used on a portable changeable message sign (or on a static sign if indicated in Table 1D-2 by an asterisk) unless the prompt word shown in Table 1D-2 either precedes or follows the abbreviation, as applicable.

Standard:

04 The abbreviations shown in Table 1D-3 shall not be used in connection with traffic control devices because of their potential to be misinterpreted by road users.

Guidance:

05 If Table 1D-1 or 1D-2 indicates that more than one abbreviation is allowed for a given word or phrase, the same abbreviation should be used throughout a single jurisdiction.

06 Except as otherwise provided in Table 1D-1 or 1D-2 or unless necessary to avoid confusion, periods, commas, apostrophes, question marks, ampersands, and other punctuation marks or characters that are not letters or numerals should not be used in any abbreviation.

Table 1D-1. Acceptable Abbreviations

Word Message	Standard Abbreviation
Afternoon / Evening	PM
Alternate	ALT
AM Radio	AM
Avenue	Ave, Av*
Bicycle(s)	BIKE, BIKES
Boulevard	Blvd*
Bridge	(See Table 1D-2)
CB Radio	CB
Center	Ctr**
Circle	Cir*
Civil Defense	CD
Compressed Natural Gas	CNG
Court	Ct*
Crossing (other than highway-rail)	X-ING
Drive	Dr*
East	E
Electric Vehicle	EV
Expressway	Expwy*
Feet	FT
FM Radio	FM
Freeway	Fwy*
Hazardous Material(s)	HAZMAT, HAZMATS
High Occupancy Vehicle(s)	HOV
Highway	Hwy*
Hospital	HOSP
Hour(s)	HR, HRS
Information	INFO
Inherently Low Emission Vehicle	ILEV
International	Intl
Interstate	(See Table 1D-2)
Junction / Intersection	JCT
Lane	(See Table 1D-2)
Liquified Petroleum Gas	LP-GAS
Maximum	MAX

Word Message	Standard Abbreviation
Mile(s)	MI
Miles per Hour	MPH
Minimum	MIN
Minute(s)	MIN, MINS
Morning / Late Night	AM
Mount	Mt**
Mountain	Mtn**
National	Natl**
North	N
Northeast	NE
Northwest	NW
Parkway	Pkwy*
Pedestrian(s)	PED, PEDS
Place	Pl*
Pounds	LBS
Road	Rd*
Saint	St**
South	S
Southeast	SE
Southwest	SW
State, county, or other non-US or non-Interstate numbered route	(See Table 1D-2)
Street	St*
Telephone	PHONE
Temporary	TEMP
Terrace	Ter*
Thruway	Thwy*
Ton(s)	T
Trail	Tr*
Turnpike	Tpk*
Two-Way Intersection, Two-Way Traffic	2-WAY
US Numbered Route	(See Table 1D-2)
West	W

Days of the Week

Day	Standard Abbreviation
Sunday	SUN
Monday	MON
Tuesday	TUES***
Wednesday	WED

Day	Standard Abbreviation
Thursday	THURS***
Friday	FRI
Saturday	SAT

* Abbreviation shall not be used for any application other than the name of a roadway. See Table 2D-3 for complete list of street name descriptors. Examples include: Bayshore Fwy, Cross County Hwy, Mid-County Pkwy

** Abbreviation shall not be used for any application other than as a descriptor or title within a proper name. Examples include: Vestal Ctr, Mt Hope, Pocono Mtn, Eldorado Natl Forest, St Louis

*** Tuesday and Thursday may be abbreviated on a Changeable Message Sign (CMS) to TUE and THU, respectively, when the number of Characters in a message to be displayed cannot be practically reduced through rewording to fit the number of characters supported by the CMS, such as might occur at times on a portable CMS.

Note: Abbreviations shown in upper- and lower-case lettering may be in all upper-case lettering when displayed on a changeable message sign with lower resolution that will not accommodate lower-case letter forms. See Chapter 2L of this Manual.

Table 1D-2. Abbreviations that Shall be Used Only for Temporary messages on Portable changeable Message Signs (Sheet 1 of 2)

Word Message	Standard Abbreviation	Prompt Word Preceding the Abbreviation	Prompt Word Following the Abbreviation	Example
Access	ACCS	—	Road	ACCS ROAD
Ahead	AHD	Fog	—	FOG AHD
Blocked	BLKD	Lane	—	2 LANES BLKD
Bridge	BR*	[Name]	—	BAY BR
Cannot	CANT	—	—	—
Center	CNTR	—	Lane	CNTR LANE, CNTR LN
Chemical	CHEM	—	Spill	CHEM SPILL
Condition	COND	Traffic	—	TRAFFIC COND
Congested	CONG	Traffic	—	TRAFFIC CONG AHD
Construction	CONST	—	Ahead	CONST AHEAD
Crossing	XING	—	—	PED XING
Do Not	DONT	—	—	—
Downtown	DWNTN	—	Traffic	DWNTN TRAFFIC
Eastbound	EAST	Route Number, Road Name	—	I-4 EAST
	E-BND	—	Lane, Traffic	E-BND LANE
Emergency	EMER	—	—	EMER VEHICLES
Entrance, Enter	ENT	—	—	ENT TO I-90
Exit	EX	Next	—	NEXT EX
Express	EXP	—	Lane	EXP LANE OPEN
Frontage	FRNTG	—	Road	FRNTG RD
Hazardous	HAZ	—	Driving	HAZ DRIVING
Highway-Rail Grade Crossing	RR XING	—	—	RR XING
Interstate	I-*	—	[Number]	I-80
It Is	ITS	—	—	—
Lane(s) (travel lanes of a highway)	LN, LNS	Right, Left, Center	—	LEFT LN ONLY 2 RIGHT LNS
Left	LFT	Keep, Next	—	NEXT LFT
	LFT	—	Lane	LFT LANE
Local	LOC	—	Traffic	LOC TRAFFIC ONLY
Lower	LWR	—	Level	LWR LEVEL
Maintenance	MAINT	—	—	ROAD MAINT
Major	MAJ	—	Crash	MAJ CRASH
Minor	MNR	—	Crash	MNR CRASH
Normal	NORM	—	—	—
Northbound	NORTH	Route Number, Road Name	—	US 1 NORTH
	N-BND	—	Lane, Traffic	N-BND TRAFFIC
Oversized	OVRSZ	—	Load	OVRSZ LOAD
Parking	PKING	—	—	—
Pavement	PVMT	Icy	—	ICY PVMT
Prepare	PREP	—	To Stop	PREP TO STOP
Quality	QLTY	Air	—	AIR QLTY
Right	RT	Keep, Next	—	KEEP RT
	RT	—	Lane	RT LANE
Road Work	RD WK	—	Ahead, [Distance]	RD WK 1 MILE
Route	RTE	Best	—	BEST RTE
Service	SERV	—	—	SERV AREA OPEN
Shoulder	SHLDR	—	—	SHLDR CLOSED

Table 1D-2. Abbreviations that Shall be Used Only for Temporary messages on Portable changeable Message Signs (Sheet 2 of 2)

Word Message	Standard Abbreviation	Prompt Word Preceding the Abbreviation	Prompt Word Following the Abbreviation	Example
Slippery	SLIP	–	–	–
Southbound	SOUTH	Route Number, Road Name	–	CA 1 SOUTH
	S-BND	–	Lane, Traffic	S-BND TRAFFIC
Speed	SPD	–	–	SPD LIMIT
State, County, or other non-U.S. or non-Interstate numbered route	[Route Abbreviation determined by highway agency]*	–	[Number]**	NY 7, CR 43
Tires With Lugs	LUGS	–	–	–
Traffic	TRAF	–	–	–
Travelers	TRVLRS	–	–	–
Two-Wheeled Vehicles	CYCLES	–	–	–
Upper	UPR	–	Level	UPR LEVEL
U.S. Numbered Route	US*	–	[Number]**	US 202
Vehicle(s)	VEH, VEHS	–	–	–
Warning	WARN	–	–	–
Westbound	WEST	Route Number, Road Name	–	IL 53 WEST
	W-BND	–	Lane, Traffic	W-BND LANES
Will Not	WONT	–	–	–

* Abbreviation, when accompanied by the prompt word, may be used on traffic control devices other than portable message signs. See Table 1D-1 for uses and format.

** A space and no hyphen shall be placed between the abbreviation and the number of the route.

Note: See Chapter 2L of this Manual for additional information on changeable message signs.

Table 1D-3. Unacceptable Abbreviations

Abbreviation	Intended Word	Common Misinterpretation
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (Merge)
LT	Light (Traffic)	Left
PARK	Parking	Park
POLL	Pollution (Index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
WRNG	Warning	Wrong

Section 1D.09 Placement and Operation of Traffic Control Devices

Standard:

01 Before any highway, site roadway open to public travel (see definition in Section 1C.02), detour, or temporary route is opened to public travel, all traffic control devices necessary for safe operation shall be in place.

Option:

02 Temporary traffic control devices, as provided for in Part 6 of this Manual, may be used in place of permanent devices that have yet to be installed for safe operation.

Guidance:

03 Placement of a traffic control device should be within the road user's view so that adequate visibility is provided. To aid in conveying the proper meaning, the traffic control device should be appropriately positioned with respect to the location, object, or situation to which it applies. The location and legibility of the traffic control device should be such that a road user has adequate time to make the proper response in both day and night conditions.

04 Traffic control devices should be placed and operated in a uniform and consistent manner as part of maintaining uniformity in traffic control.

Support:

05 Inconsistent placement or use of a device can result in disrespect for the device at locations where the device is needed and appropriate.

Guidance:

06 Unnecessary traffic control devices should be removed. The fact that a device is in good physical condition should not be a basis for deferring needed removal or change.

Support:

07 Section 2A.02 contains information on excessive use of signs and other considerations that can reduce their effectiveness and the effectiveness of other traffic control devices.

Section 1D.10 Maintenance of Traffic Control Devices

Guidance:

01 Functional maintenance of traffic control devices should be used to determine if certain devices need to be changed to meet current traffic conditions.

02 Physical maintenance of traffic control devices should be performed to retain the legibility and visibility of the device, and to retain the proper functioning of the device.

Support:

03 Clean, legible, properly-mounted devices in good working condition command the respect of road users.

Section 1D.11 Crashworthiness of Traffic Control Devices and Other Roadside Appurtenances

Standard:

01 In accordance with various Sections of this Manual, certain traffic control devices and their supports, and/or related appurtenances shall be crashworthy (see definition in Section 1C.02). Crashworthiness provisions in this Manual shall apply to all streets, highways, and site roadways open to public travel.

Support:

02 Roadside appurtenances include permanent and portable sign supports, other permanent or temporary traffic control devices, and other roadside fixtures that are not traffic control devices, such as longitudinal barriers, bridge railings, and crash cushions, within the clear zone. Crashworthiness of a device or appurtenance is determined by nationally established standards such as the "Manual for Assessing Safety Hardware" (MASH), 2016, AASHTO. Information on the FHWA's policy on crashworthiness of devices on the National Highway System and other roadways is available at the FHWA Office of Safety Web site at https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/policy_memo_guidance.cfm.

PART 2 [EPG 903]
SIGNS
CHAPTER 2A. GENERAL [EPG 903.1]

Section 2A.01 Function and Purpose of Signs

Support:

01 ~~This Manual~~ The EPG contains Standards, Guidance, and Options for the signing of all types of highways, and site roadways open to public travel within the right-of-way maintained by MoDOT. The functions of signs are to provide regulations, warnings, and guidance information for road users. Words, symbols, and arrows are used to convey the messages. Signs are not typically used to confirm rules of the road ~~(see Paragraph 4 of this Section)~~.

02 Detailed sign requirements are located in the following Chapters of Part 2:

Chapter 2B—Regulatory Signs, Barricades, and Gates
Chapter 2C—Warning Signs and Object Markers
Chapter 2D—Guide Signs for Conventional Roads
Chapter 2E—Guide Signs for Freeways and Expressways
Chapter 2F—Toll Road Signs – Not used for MoDOT facilities
Chapter 2G—Preferential and Managed Lane Signs – Not used for MoDOT facilities
Chapter 2H—General Information Signs
Chapter 2I—General Service Signs
Chapter 2J—Specific Service Signs
Chapter 2K—Tourist-Oriented Directional Signs
Chapter 2L—Changeable Message Signs
Chapter 2M—Recreational and Cultural Interest Area Signs
Chapter 2N—Emergency Management Signs – Not used for MoDOT facilities

03 Definitions and acronyms that are applicable to signs are provided in Chapter 1C.

~~*Guidance:*~~

~~*04 Permanent signs should not be used on a frequent basis to confirm rules of the road or statutes. Instead, when determined necessary to advise of new regulations as part of an educational campaign, temporary signs or messages should be used instead of permanent signs. These temporary signs or messages should be used sparingly and only at strategic locations, and should be considered only as a supporting element of a larger educational campaign rather than as the primary source of notification. If engineering judgment determines a need for a permanent sign to distinguish between differing requirements of similar statutes in different jurisdictions, then a sign should be located in the vicinity of the jurisdictional boundary, and should be located away from warning, directional, and higher-priority regulatory signs, so as not to contribute to sign clutter (see Section 2A.20).*~~

Support:

M04 MoDOT typically will not use signing to confirm rules of the road or state laws. The application of such signing will typically be used when a new law is passed for educational purposes, with the signs remaining in place until the end of their service life and then removed. Some signs may be left in place at strategic locations such as major entry points into the state.

Standard:

M05 The decision to install and maintain signs to confirm rules of the road or state laws shall be made by the MoDOT Highway Safety and Traffic Division along with the MoDOT Executive Leadership Team.

MUTCD Paragraph 04 was not adopted. It was replaced with the above paragraphs to more accurately reflect MoDOT's limited application of state law signs and the level of the decision to deploy such signs are made. Revised Dec. 2025

Section 2A.02 Standardization of Application

Support:

01 It is recognized that urban traffic conditions differ from those in rural environments, and in many instances signs are applied and located differently. Where pertinent and practical, ~~this Manual~~ the EPG sets forth separate recommendations for urban and rural conditions. This generally applies to sign mounting heights.

~~02 Low-volume rural roads typically include access to rural residences, agricultural, recreational, resource management and development (such as mining, logging, and grazing), and local roads in rural areas. On low-volume rural roads, the use of traffic control devices is limited to essential information regarding regulation, warning, and guidance. On low-volume rural roads, it is important to consider the needs of unfamiliar road users for occasional, recreational, and commercial transportation purposes.~~

This language was not adopted, while MoDOT owns and operates roadways at or below 400 AADT, we still classify them as minor routes and do not treat them any differently than routes with higher AADTs. Revised Dec. 2025

Guidance:

03 Signs should be used only where justified by engineering judgment or studies, as provided in Section 1D.03.

04 Results from traffic engineering studies of physical and traffic safety or operational factors should indicate the locations where signs are deemed necessary or desirable.

05 Roadway geometric design and sign application should be coordinated so that signing can be effectively placed to give the road user any necessary regulatory, warning, guidance, and other information.

Standard:

06 Each standard sign (see ~~Paragraph 1~~ first paragraph of ~~Section~~ EPG 2A.04) shall be displayed only for the specific purpose as prescribed in ~~this Manual~~ the EPG. Before any new highway, ~~site roadway open to public travel (see definition in Section 1C.02)~~, detour, or temporary route is opened to public travel, all necessary signs shall be in place. Signs required by road conditions or restrictions shall be removed when those conditions cease to exist or the restrictions are withdrawn.

Section 2A.03 Classification of Signs

Standard:

01 Signs shall be defined by their function as follows:

- **A. Regulatory signs give notice of traffic laws or regulations.**
- **B. Warning signs give notice of a situation that might not be readily apparent.**
- **C. Guide signs show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information.**

Support:

02 Barricades are described in Sections 2B.75 and 6K.07.

~~03 Gates are described in Section 2B.76.~~

04 Object markers are described in Section 2C.70.

MUTCD P3 was not adopted as gates are not installed or maintained by MoDOT. Revised Dec. 2025

Section 2A.04 Design of Signs

Support:

01 ~~This Manual~~ The EPG shows many standard signs and object markers approved for use on streets, highways, bikeways, and pedestrian crossings. Standard signs and object markers have a standardized design, shape, background, and legend as shown in ~~this Manual~~ the EPG.

02 In the provisions for individual standard signs and object markers, the general appearance of the legend, color, and size are shown in the accompanying tables and illustrations, and are not always detailed in the text.

03 The MoDOT Highway Safety and Traffic Division maintains design files ~~Detailed drawings~~ of standard signs, object markers, alphabets, symbols, and arrows that meet or exceed MUTCD standards and are used to detail, order and fabricate signs used on MoDOT routes ~~(see Figure 2D-3) are contained in the "Standard Highway Signs" publication. Section 1A.05 contains information regarding this publication~~.

04 The basic requirements of a sign are that it be legible to those for whom it is intended and that it be understandable in time to allow for a proper response. Desirable attributes include:

A. High visibility by day and night; and

B. High legibility (adequately-sized letters, symbols, or arrows, and a short legend for quick comprehension by a road user approaching a sign).

05 Standardized colors and shapes are specified so that the several classes of traffic signs can be promptly recognized. Simplicity and uniformity in design, position, and application are essential for a sign to be effective.

Standard:

06 The term legend shall include all word messages and symbol and arrow designs that are intended to convey specific meanings.

07 Uniformity in design shall include shape, color, dimensions, legends, letter style, borders, and illumination or retroreflectivity.

08 Standardization of these designs does not preclude further improvement by minor modifications to the orientation of symbols (see Section 2A.09), width of borders, or layout of word messages, but all shapes and colors shall be as indicated.

09 All symbols (see Section 2A.09) shall be unmistakably similar to, or mirror images of, the adopted symbol signs, all of which are shown in the FHWA's "Standard Highway Signs" publication (see Section 1A.05). Symbols and colors shall not be modified unless otherwise provided in ~~this Manual~~ the EPG. All symbols, colors, or other design features for signs not shown in the FHWA's "Standard Highway Signs" publication (see Section 1A.05) shall be approved by the MoDOT Highway Safety and Traffic Division and shall follow the MUTCD procedures for experimentation and change described in Chapter 1B.

10 Where a standard word message is applicable, the wording shall be as provided in ~~this Manual~~ the EPG.

11 In situations where word messages are necessary other than those provided in ~~this Manual~~ the EPG (see ~~Paragraph 15 of this Section~~ first Option paragraph below), the signs shall be of the same shape and color as standard signs of the same functional type.

12 Where the legend of a standard sign is a symbol or a combination of a symbol and words, an alternative word legend shall not be allowed in place of the symbol, except as otherwise provided in ~~this Manual~~ the EPG.

13 Where a standard sign provided in ~~this Manual~~ the EPG or the FHWA "Standard Highway Signs" publication (see Section 1A.05) is applicable, an alternative legend sign or alternative sign

design shall not be allowed in place of the standardized legend or design except as provided in ~~this Manual~~ the EPG.

14 Where a standard sign provided in ~~this Manual~~ the EPG or the FHWA "Standard Highway Signs" publication (see Section 1A.05) is applicable, but the legend is variable, such as for destination names, an alternative sign design or dimensions shall not be allowed in place of the standardized design for the non-variable elements except as provided in ~~this Manual~~ the EPG.

Option:

15 ~~State and local highway agencies and owners of site roadways open to public travel~~ The MoDOT Highway Safety and Traffic Division may develop special word legend signs in situations where engineering judgment determines roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information, such as when road users need to be notified of special regulations or warned about a situation that might not be readily apparent. Unlike colors that have not been assigned or symbols that have not been approved for signs, new word legend signs may be used without the need for experimentation.

Support:

16 The message conveyed by some special word legend signs might be unclear to the road user. Although experimentation is not required for such word legends, they might still warrant an evaluation to determine comprehension or possible misinterpretation of the intended message by the road user.

17 Scanning graphics are graphics designed for scanning by machine, and include bar codes, quick-response (QR) codes or other matrix bar-code formats, or similar graphics.

Standard:

18 Unless otherwise provided in ~~this Manual~~ the EPG for a specific sign or as provided in ~~Paragraph 19 of this Section~~ the Option paragraph below, telephone numbers, Internet addresses, e-mail addresses, domain names, uniform resource locators (URL), metadata tags ("hash-tags"), and scanning graphics (see ~~Paragraph 17 of this Section~~ Support paragraph above) for the purpose of obtaining information (other than those for maintenance or inventory purposes per the provisions of ~~Paragraphs 21 through 23 of this Section~~ the second Standard paragraph below) shall not be displayed on any sign, plaque, sign panel, or changeable message sign.

Option:

19 Internet addresses, e-mail addresses, telephone numbers, scanning graphics, or other graphics for the purpose of conveying information may be displayed on the face of signs, plaques, sign panels, and changeable message signs that are oriented away from or otherwise not readily visible to operators of motor vehicles but rather are intended for viewing only by pedestrians, occupants of parked vehicles, and driving automation systems~~.~~ if approved by the MoDOT Highway Safety and Traffic Division.

Standard:

20 Pictographs (see definition in Section 1C.02) shall not be displayed on signs except as specifically provided in ~~this Manual~~ the EPG for a particular type of sign. Pictographs shall be simple, dignified, and devoid of any advertising and shall not contain any scanning graphics (see ~~Paragraph 17 of this Section~~ first Support paragraph above) for the purpose of conveying information. When used to represent a political jurisdiction (a State, county, or municipal corporation) the pictograph shall be the official designation adopted by the jurisdiction, except as provided otherwise in ~~this Manual~~ the EPG. When used to represent any other type of jurisdiction, the pictograph shall be the official designation adopted by the jurisdiction. When used to represent a college or university, the pictograph shall be the official seal adopted by the institution. College or university pictographs shall not include pictorial representations of university or college programs, or athletic mascots.

21 No items other than official traffic control signs, inventory stickers or decals, sign installation dates, manufacturer name, sign sizes, sign designations, anti-vandalism stickers,

inventory or maintenance codes, and maintenance-related scanning graphics shall be mounted on the back of a sign.

~~Option:~~

~~22 The date of fabrication, sign designation, sign size, and/or manufacturer name may be displayed on the front of a sign face in accordance with the provisions of Paragraph 23 of this Section.~~

~~**Standard:**~~

~~**23 If displayed on the sign face, the date of fabrication, sign designation, sign size, manufacturer name, or similar maintenance and inventory information shall be completely within the border or inset along the bottom edge of the sign. The letter height or scanning graphic shall not exceed ¾ of the width of the border or inset or, if no border is used, shall not exceed 1.75 inches and shall be within 2 inches of the edge of the sign. The color of the lettering within the border shall be the same as the color of the sign background. The color of the lettering or scanning graphic within the inset shall be the same as the color of the sign border. For changeable message signs or blank-out signs, such information, if displayed, shall be embossed in a non-contrasting color in the housing of the sign.**~~

M23A Only the MoDOT ID logo shall be displayed on the face of a sign to identify the sign as MoDOT property and define the penalties for tampering with the sign. The MoDOT ID logo shall match the detail and installation location as displayed in Section 903 of the Missouri Standard Plans for Highway Construction.

MUTCD Paragraph 23 is not adopted. The MoDOT ID is not placed within the interior of the sign border which does not meet MUTCD standards. Revised Dec. 2025

Section 2A.05 Shapes

Standard:

01 Particular shapes, as shown in Table 2A-1, shall be used exclusively for specific signs or a series of signs, unless otherwise provided in ~~this Manual~~ the EPG for a particular sign or class of signs.

02 The Crossbuck is a shape exclusive to the Grade Crossing (R15-1) sign and shall not be obscured by mounting a different shape sign on the back of the Crossbuck (see Section 8B.03).

Table 2A-1. Use of Sign Shapes

Shape	Signs
Octagon*	Stop (R1-1)**
Equilateral Triangle (downward-pointing)*	Yield (R1-2)**
Circle*	Grade Crossing Advance Warning (W10-1)**
~~Pennant (Isosceles Triangle with longer axis horizontal, pointed right)*~~	~~No Passing Zone (W14-3)**~~
Pentagon (upward-pointing)*	School (S1-1) (squared bottom corners)** ~~County Route (M1-6) (tapered lower sides)**~~
Crossbuck (two rectangles in a perpendicular "X" configuration)*	Grade Crossing (R15-1)**
Diamond	Warning Series
Rectangle (including square)	Regulatory Series Guide Series*** Warning Series
~~Trapezoid*~~	~~Recreational and Cultural Interest Area Guide Series (isosceles or right-angled)~~ ~~National Forest Route Sign (M1-1) (isosceles)**~~

* This shape shall be limited exclusively to the sign(s) indicated.

** This sign shall be exclusively the shape shown.

*** Guide series includes general service, specific service, tourist-oriented directional, general information, recreational and cultural interest area, and emergency management signs.

Note: Signs with standardized designs shall not be modified to accommodate a different shape except as provided in ~~this Manual~~. the EPG

Guidance:

03 Shapes that are exclusive to a particular sign (~~such as an octagon for~~ STOP, YIELD, ~~a pennant for NO PASSING ZONE, or a circle for~~ Railroad Advance, School, Warning, and Crossbuck signs) should not be obscured by another sign mounted on the back of the same assembly protruding or extending beyond the edge of the sign with the exclusive shape. The following methods should be considered in lieu of mounting a sign on the back of another sign that would obscure the exclusive shape of the sign:

A. Install the signs on separate mountings to maintain the exclusive shape.

B. Increase the size of the sign with the exclusive shape and/or decrease the size of the sign mounted behind the sign with the exclusive shape so the sign installed on the back does not obscure its shape.

~~C. Increase the mounting height of the sign with the exclusive shape to allow the installation of a back-mounted sign below the bottom edge while still ensuring the minimum required mounting height for the lower sign.~~

Item C of MUTCD Paragraph 3 is not adopted. MoDOT only uses the methods described in items A and B. Revised Dec. 2025

04 Where the lateral space available in which to install a standard sign is constrained, such as mounting on a narrow median barrier or adjacent to a retaining wall, the following methods should be considered to maintain the shape of the sign:

A. Angle the sign up to 45 degrees toward the roadway while still maintaining adequate legibility.

B. Install the sign at a different location that still provides adequate advance warning, supplementing the sign with a Distance plaque (see Section 2C.61), if appropriate.

C. Reduce the size of the sign, but supplement it with a duplicate sign on the opposite side of the roadway (see Section 2A.11).

D. In addition to either angling or reducing the size of the sign, supplement it with a duplicate warning sign and Distance plaque at an upstream location.

E. Mount the sign asymmetrically on the sign support, such as when the support is mounted on a bridge parapet or railing, such that the edge of the sign does not overhang the roadway, shoulder, or other areas used by bicyclists or pedestrians.

Option:

05 Where the shape of the sign cannot be maintained due to lateral constraints, the following methods may be considered:

A. For warning signs or other types of signs displayed in a horizontally-oriented rectangle, the legend may be displayed in a vertically-oriented rectangle.

B. When mounted overhead, the word legend for a standard warning sign may be displayed in a horizontally-oriented rectangle.

Support:

06 Provisions for mounting height of signs that overhang any portion of the traveled way are contained in Section 2A.15.

07 Provisions for lateral offset are contained in Section 2A.16.

Standard:

08 Modifications to sign shapes, such as cutting off the left and right points of a diamond, shall not be allowed. This applies to both permanent and temporary traffic control signs.

Clarification of the intent of the statement. Revised Dec. 2025

Option:

09 Where the methods described in ~~Paragraph 3 of this Section~~ the first Guidance paragraph of this article are impracticable, the legend of the warning sign may be displayed in a vertically-oriented rectangle.

Section 2A.06 Colors

Standard:

01 The colors to be used on signs and their specific uses on signs shall be as provided in the applicable Sections of ~~this Manual~~ the EPG. The color coordinates and values shall be as described in 23 CFR, Part 655, Subpart F, Appendix.

02 **Colors (see Section 1D.05) shall be consistent across the face of a sign or a sign panel. Color gradients (smooth or defined gradual transitions either within a color or transition to another color) shall not be allowed~~, except as specifically provided in Section 2J.03 for business identification sign panels~~.**

MoDOT does not adopt Section 2J.03.

Support:

03 Common uses of sign colors are shown in Table 2A-2. Color schemes on specific signs are shown in the illustrations located in each applicable ~~Chapter~~ article.

04 Whenever white is specified in ~~this Manual~~ the EPG or in the FHWA "Standard Highway Signs" publication (see Section 1A.05) as a color, it is understood to include silver-colored retroreflective coatings or elements that reflect white light.

05 The colors coral and light blue are being reserved for uses that will be determined in the future by the Federal Highway Administration.

06 Information regarding color coding of destinations on guide signs, including community wayfinding signs, is contained in Chapter 2D.

~~Option:~~

~~07 The approved fluorescent version of the standard red, yellow, green, or orange color may be used as an alternative to the corresponding standard color.~~

Option is not adopted because Table 2A-2 designates the signs that are to use fluorescent colors. Revised Dec. 2025

Section 2A.07 Dimensions

Support:

01 ~~The "Standard Highway Signs" publication (see Section 1A.05) prescribes design details for different sizes of each sign or plaque depending on the type of traffic facility, including bikeways.~~ To standardize signing throughout the state highway system, MoDOT has predetermined the sizes for all highway signs; refer to the appropriate EPG article. ~~Smaller sizes are designed to be used on bikeways and some other off-road applications.~~ Larger sizes are designed for use on freeways and expressways, and can also be used in oversized applications to enhance road user safety and convenience on other facilities, especially on multi-lane divided highways and on undivided highways having five or more lanes of traffic and/or high speeds. The intermediate sizes are designed to be used on other highway types. MoDOT does not adopt small sized signs for bikeways or other off-road applications as MoDOT typically does not maintain these types of facilities. ~~Minimum sizes of signs and plaques for specific applications are prescribed in the various sign size tables in each Chapter of this Manual.~~ MoDOT's minimum sign sizes generally exceed the MUTCD minimum sign sizes. The MUTCD minimum sizes in these cases are intended more for low-speed, local jurisdictional roadways and not for state highways. The sign size tables at the beginning of each EPG signing article lists the correct sign sizes for MoDOT applications.

MUTCD minimum sizes of signs and plaques are not typically adopted by MoDOT. MoDOT has chosen to use signs that exceed the MUTCD minimum sign sizes in many applications. MoDOT does not maintain signs for bikeways or other off-road applications Revised Dec. 2025

Standard:

02 The sign dimensions prescribed in the sign size tables in the various ~~Parts and Chapters~~ EPG articles ~~in this Manual and in the "Standard Highway Signs" publication (see Section 1A.05)~~ shall be used unless engineering judgment determines that other sizes are appropriate. ~~in accordance with the following.~~ All sign sizes smaller than the prescribed dimensions shall be approved by the MoDOT Highway Safety and Traffic Division. ~~Except as provided in Paragraph 3 of this Section, where engineering judgment determines that sizes smaller than the prescribed dimensions are appropriate for use, the sign dimensions shall not be less than the minimum dimensions specified in this Manual. The sizes shown in the Minimum columns that are smaller than the sizes shown in the Conventional Road columns in the various sign size tables in this Manual shall only be used on low-speed roadways, alleys, site roadways open to public travel, and on low-volume rural roads with operating speeds of 30 mph or less; and only where the reduced legend size would be adequate for the regulation or warning or where physical conditions preclude the use of larger sizes.~~

MUTCD minimum sizes of signs and plaques are not adopted by MoDOT. MoDOT does not classify any of its routes to be "low volume" rural roads by definition even though many routes do have AADTs below 400, these routes are treated like any other minor route with higher AADT with respect to sign applications. Revised Dec. 2025

Table 2A-2. Common Uses of Sign Colors

Type of Sign	Legend								Background										
	Black	Green	Red	White	Yellow	Orange	Fluorescent Yellow-Green [1]	Fluorescent Pink	Black	Blue	Brown	Green	~~Orange~~ Fluorescent Orange [1]	~~Red~~	White	~~Yellow~~ Fluorescent Yellow [1]	Purple [5]	Fluorescent Yellow-Green [1]	Fluorescent Pink
Regulatory	X		X	X					X					X	X				
Prohibitive			X	X[2]										X[2]	X				
Permissive		X													X				
Warning	X															X			
Pedestrian	X															X		~~X~~	
Bicycle	X															X		~~X~~	
Guide				X								X							
Interstate Route				X						X				X					
State Route	X														X				
U.S. Route	X														X				
~~County Route~~					~~X~~					~~X~~									
~~Forest Route~~				~~X~~							~~X~~								
Street Name				X								X							
Destination				X								X							
Reference Location				X								X							
Information				X						X		X							
~~Evacuation Route~~				~~X~~						~~X~~									
Road User Service				X						X									
Recreational				X							X	X							
Temporary Traffic Control	X												X						
Incident Management	X												X						X
School	X																	X	
~~ETC-Account Only~~	~~X~~																~~X[5]~~		
Changeable Message Signs																			
Regulatory			~~X~~[4]	X					X										
Warning, Pedestrian, Bicycle					X				X										
Temporary Traffic Control					X	X			X										
Guide				X					X			X[3]							
Motorist Services				X					X	X[3]									
Incident Management					X			X	X										
School, ~~Pedestrian, Bicycle~~					~~X~~		X		X										

MoDOT has conducted research on the use of Fluorescent Yellow-Green for Pedestrian and Bicycle signs. Research did not indicate any safety benefit, therefore the color is reserved for School signs only.

[1] ~~Fluorescent versions of these background colors may also be used.~~ the EPG

[2] Legend and background color combination for use only as identified for specific signs in ~~this Manual~~ or Standard Highway Signs.

[3] These alternative background colors would be provided by blue or green lighted pixels such that the entire CMS would be lighted, not just the legend.

[4] Red is used only for the circle and diagonal or other red elements of a similar static regulatory sign.

[5] ~~The use of purple on signs is restricted per the provisions of Chapter 2F.~~

Notes:

1. The purpose of the information in this table is to provide a general overview of common color combinations. The color combinations and orientations for signs with standardized designs shall not be modified. For signs with unique legends, the shape and color shall be the same as standard signs of the same functional type.
2. The colors shown for changeable message signs are for those with electronic displays.

~~Option:~~

~~03 For alleys with restrictive physical conditions and vehicle use that limits installation of the minimum size sign (or the Conventional Road size sign if no Minimum size is shown), both the sign height and the sign width may be decreased by up to 6 inches.~~

MoDOT does not maintain facilities that meet this condition. Revised Dec. 2025

Guidance:

~~04 The sizes shown in the Freeway and Expressway columns in the various sign size tables in this Manual should also be used for other higher-speed applications on conventional roads, based upon engineering judgment, to provide larger signs for increased visibility and recognition.~~

05 The sizes shown in the Oversized columns in the various sign size tables in ~~this Manual~~ the EPG should be used for those special applications where speed, volume, or other factors result in conditions where increased emphasis, improved recognition, or increased legibility is needed, as determined by engineering judgment or study.

06 Except as provided in ~~Paragraph 7 of this Section~~ the Standard paragraph below, and where specifically prohibited in ~~this Manual~~ the EPG, increases above the minimum prescribed sizes should be used where greater legibility or emphasis is needed. If signs larger than the prescribed sizes are used, the overall sign dimensions will typically ~~should~~ be increased in ~~6~~12-inch increments.

Standard:

07 Where a maximum allowable sign size is prescribed, increases in sign size above the maximum size shall not be allowed.

08 Where engineering judgment determines that sizes that are different from the minimum prescribed dimensions are appropriate for use, standard shapes and colors shall be used. Standard proportions shall be retained as much as practicable. Any application of size which is different from those given in the EPG shall first be approved by the MoDOT Highway Safety and Traffic Division.

~~*Guidance:*~~

~~*09 Except where specifically prohibited in this Manual, when supplemental plaques are installed with larger-sized signs, a corresponding increase in the size of the plaque and its legend should also be made. The resulting plaque size should be approximately in the same relative proportion to the larger-sized sign as the conventional-sized plaque is to the conventional-sized sign.*~~

MoDOT typically uses the larger sized supplemental plaque for multiple sizes of primary signs. The sign size table and the sign management catalog is used for available plaque sizes. Revised Dec. 2025

Section 2A.08 Word Messages

Standard:

01 Except as otherwise provided in ~~this Manual~~ the EPG, all word messages shall be aligned horizontally across a sign, reading left to right.

02 Except as provided in Section 2A.04, all word messages shall use standard wording as shown in ~~this Manual~~ the EPG and in the FHWA "Standard Highway Signs" publication (see Section 1A.05).

03 All sign lettering, numerals, and other characters shall be of the Standard Alphabets as provided in the FHWA "Standard Highway Signs" publication (see Section 1A.05), unless otherwise provided in ~~this Manual~~ the EPG.

04 The sign lettering for names of places, streets, and highways shall be composed of a combination of lower-case letters with initial upper-case letters. The sign lettering for other legends shall be composed of upper-case letters, unless otherwise provided in ~~this Manual~~ the EPG for a particular sign or type of message.

05 Except as provided in Chapter 2E of ~~this Manual~~ the EPG, when a mixed-case legend is used, the nominal loop height of the lower-case letters shall be ¾ of the height of the initial upper-case letter.

06 The unique letter forms for each of the Standard Alphabet series shall not be stretched, compressed, warped, or otherwise manipulated.

M06A Any non-standard or variable sign shall be detailed by the MoDOT Highway Safety and Traffic Division for signs installed by MoDOT forces as well as those installed by contractors on MoDOT projects.

MoDOT specific standard language from EPG. Revised Dec. 2025

Support:

07 Section 2D.03 contains information regarding the acceptable methods of modifying the length of a word for a given letter height and series.

Guidance:

08 Word messages should be as brief as practical to convey a clear, simple meaning, and the lettering should be large enough to provide the necessary legibility distance. A minimum specific ratio of 1 inch of letter height per 30 feet of legibility distance should be used.

09 Abbreviations (see Section 1D.08) should be kept to a minimum, except as otherwise prescribed in ~~this Manual~~ the EPG.

10 Word messages should not contain periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens unless necessary to avoid confusion.

Support:

11 Diacritical marks on words or names that are adapted to English are not normally needed on signs for comprehension or navigational purposes.

Option:

12 A legend in a secondary language, in addition to English, may be displayed on the face of signs, plaques, sign panels, and changeable message signs that are oriented away from or otherwise not readily visible to operators of motor vehicles, but rather are intended for viewing only by pedestrians and occupants of parked vehicles.

Guidance:

13 The solidus (slanted line or forward slash) is intended to be used for fractions only and should not be used to separate words on the same line of legend. Instead, a hyphen should be used for this purpose, such as "TRUCKS - BUSES."

Standard:

14 Fractions shall be displayed with the numerator and denominator diagonally arranged about the solidus. The overall height of the fraction is measured from the top of the numerator to the bottom of the denominator, each of which is vertically aligned with the upper and lower ends of the solidus. The overall height of the fraction shall be determined by the height of the numerals within the fraction, and shall be 1.5 times the height of an individual numeral within the fraction.

15 Except as otherwise provided in ~~this Manual~~ the EPG, distances shall be displayed on signs using fractions of a mile rather than decimals.

Support:

16 The FHWA "Standard Highway Signs" publication (see Section 1A.05) contains details regarding the layouts of fractions on signs.

Guidance:

17 When initials are used to represent an abbreviation for separate words (such as "U S" for a United States route), the initials should be separated by a space of between ½ and ¾ of the letter height of the initials.

18 When an Interstate route is displayed in text form instead of using the route shield, a hyphen should be used for clarity, such as "I-50."

Support:

19 Letter height is expressed in terms of the height of an upper-case letter. For mixed-case legends (those composed of an initial upper-case letter followed by lower-case letters), the height of the lower-case letters is derived from the specified height of the initial upper-case letter based on a prescribed ratio. Letter heights for mixed-case legends might be expressed in terms of both the upper- and lower-case letters, or in terms of the initial upper-case letter alone. When the height of a lower-case letter is specified

or determined from the prescribed ratio, the reference is to the nominal loop height of the letter. The term loop height refers to the portion of a lower-case letter that excludes any ascending or descending stems or tails of the letter, such as with the letters "d" or "q." The nominal loop height is equal to the actual height of a non-rounded lower-case letter whose form does not include ascending or descending stems or tails, such as the letter "x." The rounded portions of a lower-case letter extend slightly above and below the baselines projected from the top and bottom of such a non-rounded letter so that the appearance of a uniform letter height within a word is achieved. The actual loop height of a rounded lower-case letter is slightly greater than the nominal loop height and this additional height is excluded from the expression of the lower-case letter height.

Section 2A.09 Symbols

Standard:

01 Symbol designs shall in all cases be unmistakably similar to those shown in ~~this Manual~~ the EPG and in the FHWA "Standard Highway Signs" publication (see Section 1A.05).

Option:

02 Although most standard symbols are oriented facing left, mirror images of these symbols may be used where the reverse orientation might better convey to road users a direction of movement.

Support:

03 New symbol designs are adopted by the Federal Highway Administration based on research evaluations to determine road user comprehension, sign conspicuity, and sign legibility.

~~Option:~~

~~04 State and/or local highway agencies may conduct research studies to determine road user comprehension, sign conspicuity, and sign legibility in compliance with the provisions for official experimentation (see Section 1B.05) when a new symbol design is under consideration.~~

MoDOT does not adopt this Option statement. There is concern that including this statement would encourage the creation of new symbols without following the experimentation process described in Part 1 of the MUTCD. Revised Dec. 2025

~~Support:~~

05 Sometimes a change from word messages to symbols requires significant time for public education and transition. Therefore, ~~this Manual~~ the EPG sometimes includes the practice of using educational plaques to accompany new symbol signs.

Guidance:

06 New standard warning or regulatory symbol signs should be accompanied by an educational plaque where engineering judgment determines that the plaque will improve road user comprehension during the transition from word message to symbol signs.

Option:

07 Educational plaques may be left in place as long as they are in serviceable condition.

Standard:

08 A symbol used for a given category of signs (regulatory, warning, or guide) shall not be used for a different category of signs, except as specifically authorized in ~~this Manual~~ the EPG.

09 A recreational and cultural interest area symbol (see Chapter 2M) shall not be used on streets or highways outside of recreational and cultural interest areas.

10 A recreational and cultural interest area symbol (see Chapter 2M) shall not be used on any regulatory or warning sign on any street, road, or highway.

~~Support:~~

~~11 Section 2M.07 contains provisions for the use of recreational and cultural interest area symbols to indicate prohibited activities or items in non-road applications.~~

Section 2A.10 Sign Borders

Standard:

01 Unless otherwise provided, signs shall have a border of the same color as the legend in order to outline their distinctive shape and thereby give them easy recognition and a finished appearance.

02 The corners of all sign borders shall be rounded, except for STOP signs.

Guidance:

03 A dark border on a light background should be set in from the edge, while a light border on a dark background should extend to the edge of the sign. A border for 30-inch signs with a light background should be from ½ to ¾ inch in width, ½ inch from the edge. For similar signs with a light border, a width of 1 inch should be used. For other sizes, the border width should be of similar proportions, but should not exceed the stroke-width of the major lettering of the sign. On signs exceeding 72 x 120 inches in size, the border should be 2 inches wide. On unusually large signs with oversized letter heights, route shields, or other legend elements, the border should be 2.5 inches wide and should not exceed 3 inches in width. Except for STOP signs and as otherwise provided in Section 2E.14, the corners of the sign should be rounded to a radius that is concentric with that of the border.

Support:

04 Section 2A.12 contains information regarding the use of light-emitting diode (LED) units within the border of a sign.

Section 2A.11 Enhanced Conspicuity for Standard Signs

Option:

01 Based upon engineering judgment, where the improvement of the conspicuity of a standard regulatory, warning, or guide sign is desired, any of the following methods may be used, as appropriate, to enhance the sign's conspicuity (see Figure 2A-1):

A. Increasing the size of a standard regulatory, warning, or guide sign.

B. Dual signing of a standard regulatory, warning, or guide sign by adding a second identical sign on the left-hand side of the roadway at the same location.

C. Adding a ~~solid yellow or~~ fluorescent yellow rectangular header panel above a standard regulatory sign, with the width of the panel corresponding to the width of the standard regulatory sign. A legend of "NOTICE," "STATE LAW," or other appropriate text may be added in black letters within the header panel for a period of time determined by engineering judgment.

~~D. Adding a NEW plaque (see Section 2C.60) above a new standard regulatory or warning sign, for a period of time in accordance with Paragraph 3 of this Section, to call attention to the new sign.~~

~~E. Adding one or more red or orange flags (cloth or retroreflective sheeting) above a standard regulatory or warning sign, with the flags oriented at 45 degrees to the vertical.~~

~~F. Adding a solid yellow, a solid fluorescent yellow, or a diagonally-striped black and yellow (or black and fluorescent yellow) strip of retroreflective sheeting at least 3 inches wide around the perimeter of a standard warning sign. This may be accomplished by affixing the standard warning sign on a background that is 6 inches larger than the size of the standard warning sign.~~

G. Adding a Warning Beacon (see Section 4S.03) to a standard regulatory (other than a STOP, DO NOT ENTER, WRONG WAY, or a Speed Limit sign), warning, or guide sign.

H. Adding a Speed Limit Sign Beacon (see Section 4S.04) to a standard Speed Limit sign.

I. Adding a Stop Beacon (see Section 4S.05) to a STOP, DO NOT ENTER, or WRONG WAY sign.

J. Adding a rectangular rapid-flashing beacon (see Chapter 4L) to a Pedestrian, School, or Trail warning sign at an uncontrolled marked crosswalk.

K. Adding light-emitting diode (LED) units within the symbol, legend, or border of a standard regulatory, warning, or guide sign, as provided in Section 2A.12.

L. Adding a strip of retroreflective material to the sign support in accordance with the provisions of ~~Paragraph 5 of this Section~~ the second Standard paragraph below.

M. Using other methods that are specifically allowed for certain signs as described elsewhere in ~~this Manual~~ the EPG. The MoDOT Highway Safety and Traffic Division will evaluate any new methods to improve sign conspicuity.

Support:

02 Sign conspicuity improvements can also be achieved by removing non-essential and illegal signs from the right-of-way (see Section 1D.02), and by relocating signs to provide better spacing. Section 2A.20 contains information on excessive use of signs.

~~*Guidance:*~~

~~*03 If a NEW plaque is used, it should remain in place for a period of time determined by engineering judgment, but not more than 12 months.*~~

MoDOT does not use the NEW plaque. Revised Dec. 2025

Standard:

04 Strobe lights shall not be used to enhance the conspicuity of highway signs.

05 If a strip of retroreflective material is used on the sign support, it shall be at least ~~2~~ 4 inches in width, it shall be placed for the full length of the support from the bottom of the sign ~~to within~~ and extending down the length of the post, with the bottom of the retroreflective strip not being taller than 2 feet above the ~~near~~ edge of the roadway (see Figure 2A-1), and its color shall match the background color of the primary sign, except that the color of the strip for the YIELD and DO NOT ENTER signs shall be red. The retroreflective strip shall not display any legend or other information. MoDOT's standard for this application uses a 4" x 72" aluminum panel with the retroreflective material applied to it where the panel can then be attached to the signpost using the same types of fasteners used to attach signs. These panels are available from MoDOT's third party sign fabricator. Retroreflective strips shall not be placed on the sign supports below green, blue, or brown guide signs and shall only be placed below regulatory, warning, and school signs, and route marker assemblies.

MoDOT uses a 4-inch-wide strip of retroreflective sheeting on aluminum sheeting. MoDOT does not allow the use of retroreflective strips on guide signs. Revised Dec. 2025

06 For a post-mounted sign installation, placing a duplicate sign in the same assembly facing the same direction of traffic shall not be permitted as a method of enhancing conspicuity.

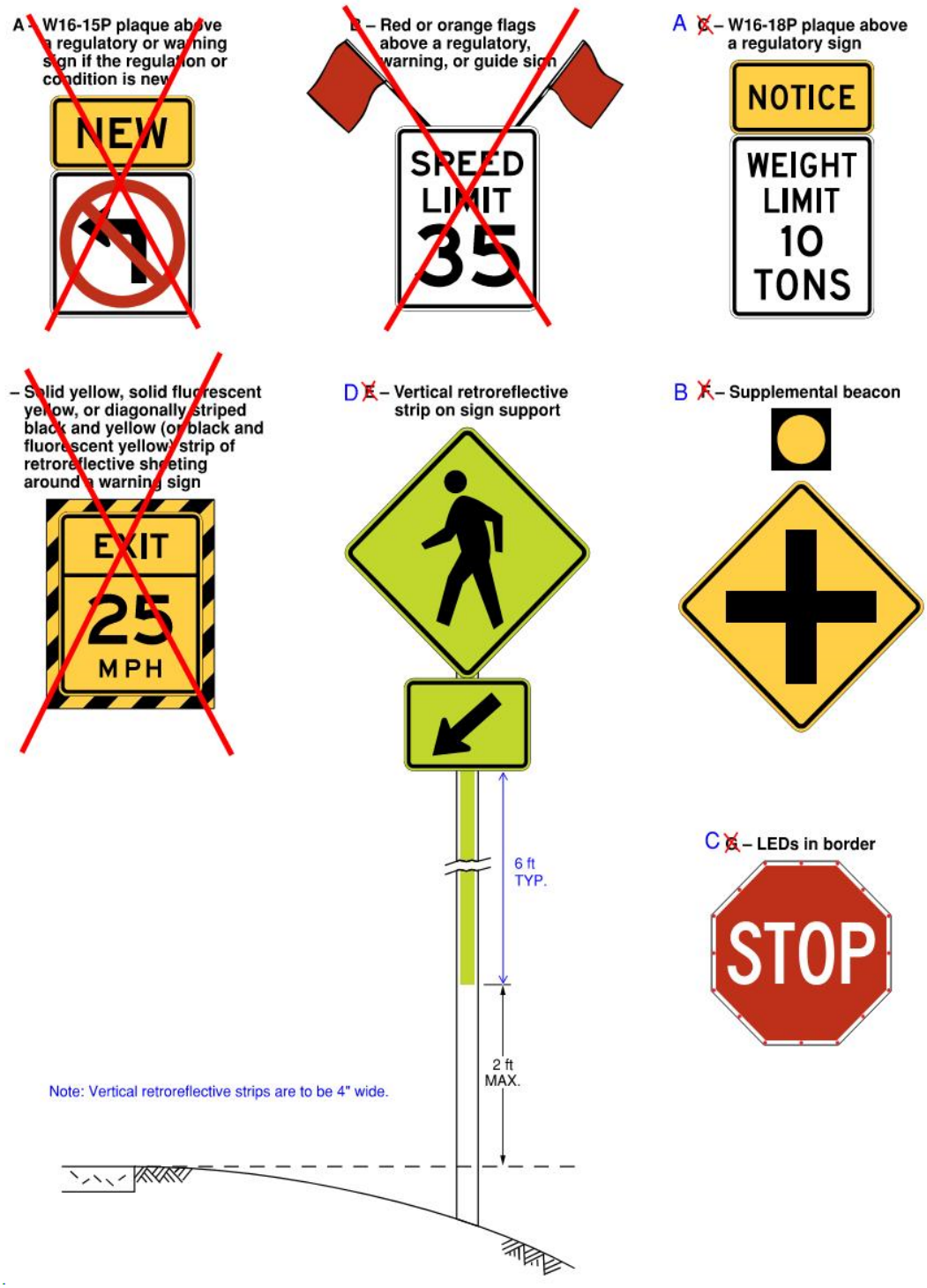
M07 If plaques are used, they shall be installed below the main sign, up to two plaques.

MoDOT specific standard language from the EPG. Revised Dec. 2025

Option:

M08 Retroreflective strips may be used to help identify and delineate the location of rural and unlit intersections and expressway crossovers, giving drivers visual cues where these intersections are located in dark nighttime conditions, see Section 3G.03 for information regarding this application.

Figure 2A-1. Examples of Enhanced Conspicuity for Signs



Section 2A.12 LEDs Used for Conspicuity Enhancement on Standard Signs

Support:

01 This ~~Section~~ article regarding light-emitting diode (LED) units applies to the use of illuminated elements that supplement a sign legend to enhance the conspicuity of the sign.

02 LED units that are used to illuminate the full sign display, background, or legend are changeable message signs (CMS), which are covered in Chapters 2B, 2C, and 2L, and Part 7.

03 The application of LED units in compliance with ~~Paragraph 8 of this Section~~ the third Standard paragraph below does not create a changeable message sign because the legend of the sign is always displayed when the LED units are not illuminated. Changeable message or blank-out signs whose legends change or extinguish by means of illuminated elements are addressed elsewhere in ~~this Manual~~ the EPG.

M03A Approved LED sign manufacturers that are MUTCD compliant and whose products have been evaluated by MoDOT are listed in the MoDOT's Traffic Approved Products List (APL) found on MoDOT's public web site (https://www.modot.org/traffic).

Standard:

M03B If LED enhanced signs are used, only those products listed on the Traffic APL shall be permitted.

Option:

M03C New products may be considered for the APL, however, before being used they must first be vetted by the MoDOT Highway Safety and Traffic Division and its APL review process. The LED Sign Compliance Checklist can be used to verify if a manufacturer's LED sign is in compliance with the MUTCD and can be considered for the APL.

Option:

04 Light-emitting diode (LED) units may be used individually within the symbol, legend, or border of a sign to enhance the sign conspicuity and legibility (see Section 2A.11).

05 Except as provided in ~~Paragraph 11 of this Section~~ the sixth Standard paragraph below, LED units may either operate continuously or be actuated.

Standard:

06 Where LED units are used to enhance the conspicuity of a sign, the sign shall otherwise comply with the requirements for retroreflection and illumination for nighttime viewing (see Section 2A.21).

07 Except as provided in ~~Paragraphs 16 and 17 of this Section~~ the Option and Support paragraphs below, and for changeable message signs, neither individual LEDs nor groups of LEDs shall be placed within the background area of a sign.

08 The application of LEDs to display sign legends or symbols shall use a maximum pitch of 20 millimeters to cover the stroke width of the letter or symbol.

09 The LEDs shall not protrude outside the sign border or legend when used in such applications, shall have a maximum diameter of ¼ inch, and shall be the following colors based on the type of sign:

- **A. White or red, with STOP, YIELD, DO NOT ENTER, or WRONG WAY signs.**
- **B. White, with other regulatory signs.**
- **C. White or yellow, with warning signs.**
- **D. White or green, with guide signs.**
- **E. White, yellow, or orange, with temporary traffic control signs.**
- **F. White~~,~~ or yellow~~, or fluorescent yellow-green,~~ with ~~school area or~~ pedestrian or bicycle warning signs.**

G. White or fluorescent yellow-green, with school area signs.

10 If flashed, all LED units shall flash simultaneously at a steady rate between 50 and 60 times per minute. All the LED units in a sign legend or border shall be illuminated simultaneously with no sequential (chasing) or variable flash rates (dancing), except as otherwise allowed in ~~this Manual~~ the EPG. A cluster of LEDs shall not be used within the border of a sign.

11 Where used in STOP or YIELD signs, flashing LED units shall operate continuously. Actuation of the LED units shall not be allowed.

12 Flashing LED units shall not be used within the legend or border of a Speed Limit sign to indicate that the displayed speed limit is in effect.

13 LED units shall not be used within the legend or border of a sign in conjunction with the phrase WHEN FLASHING in its legend ~~or on a supplemental WHEN FLASHING plaque~~ (see Item E in ~~Paragraph 1~~ the first paragraph of Section 4S.03 for the use of Warning Beacons to indicate when a regulatory or warning message is in effect).

MoDOT does not use the WHEN FLASHING text on supplemental plaques. Revised Dec 2015

14 Where LED units are used along the edge of a sign, at least one LED unit shall be placed along each edge of the sign, in addition to one LED unit at each corner of the sign, so that the distinct outline of the sign shape is recognized under nighttime viewing conditions. The LED units along each side of the sign shall be spaced approximately equidistantly. For a circular sign shape, the number of LED units shall clearly form the appearance of a circle and not be perceived as some other shape.

15 The uniformity of the sign design shall be maintained without any decrease in visibility, legibility, or driver comprehension during either daytime or nighttime conditions. The LED units shall have the capability to be dimmed automatically by a timing mechanism or a device sensitive to ambient light (photoelectric cell) such that the LEDs do not reduce the visibility of the sign legend.

Option:

16 For STOP, YIELD, DO NOT ENTER, and WRONG WAY signs, LEDs may be placed within the border or within one border width within the background of the sign.

Support:

17 Section 6D.02 contains information about STOP/SLOW paddles used by flaggers. Section 7D.02 contains information about STOP paddles used by adult crossing guards.

18 Other methods of enhancing the conspicuity of standard signs are described in Section 2A.11.

Section 2A.13 Standardization of Location

Support:

01 Standardization of position cannot always be attained in practice. Examples of heights and lateral locations of signs for typical installations are illustrated in Figure 2A-2, and examples of locations for some typical signs at intersections are illustrated in Figure 2A-3 ~~and all four sheets in Figure 2A-4~~.

02 ~~Examples of advance signing on intersection approaches are illustrated in all four sheets in Figure 2A-4.~~ Chapters 2B, 2C, and 2D contain provisions regarding the application of regulatory, warning, and conventional guide signs, respectively.

Standard:

03 Signs requiring separate decisions by the road user shall be spaced sufficiently far apart for the appropriate decisions to be made.

Guidance:

04 One of the factors considered when determining the appropriate spacing of signs should be the posted or 85th-percentile speed.

M04A Mainline signs on freeways and expressways should be visible a minimum of 800 feet and signs on conventional roads should be visible a minimum of 200 feet (minimum sign spacing in Chapters 2D and 2E). These distances should be considered when determining spacing between signs and when evaluating sign legibility during sign inspections. When these minimum sign spacing distances are not achievable, engineering judgement should be used to determine if the sign can be relocated to improve visibility, provide advance signing or determine if a reduced sign spacing distance is appropriate.

MoDOT specific guidance language from EPG. Revised Dec. 2025

05 Except as provided in ~~Paragraph 8 of this Section~~ the third Guidance paragraph below, signs should be located on the right-hand side of the roadway where they are easily recognized and understood by road users. Signs in other locations should be considered only as supplementary to signs in the normal locations, except as otherwise provided in ~~this Manual~~ the EPG.

06 Signs should be individually installed on separate posts or mountings except where:

- *A. One sign supplements another;*
- *B. Route or directional signs are grouped to clarify information to motorists;*
- *C. Regulatory signs that do not conflict with each other are grouped, such as Turn Prohibition signs posted with ONE WAY signs or a parking regulation sign posted with a Speed Limit sign; or*
- *D. Street Name signs are posted with a STOP or YIELD sign.*

07 Signs should be located so that they:

- *A. ~~Are outside the clear zone unless placed on a crashworthy (see definition in Section 1C.02) support~~ When post mounted, are installed on a breakaway assembly, regardless of where they are located on right-of-way,*
- *B. Optimize nighttime visibility,*
- *C. Minimize the effects of mud splatter and debris,*
- *D. Do not obscure each other,*
- *E. Do not obscure the sight distance to approaching vehicles on the major street for drivers who are stopped on minor-street approaches, and*
- *F. Are not hidden from view.*

08 Except for STOP, YIELD, DO NOT ENTER, and WRONG WAY signs, or as otherwise provided in ~~this Manual~~ the EPG, where a sign on a one-way roadway indicates an action intended exclusively or primarily for a road user in the left-hand lane or at the left-hand side of that roadway, such as LEFT LANE MUST TURN LEFT (R3-7) or LEFT LANE ENDS (W9-1), the sign should be located on the left-hand side of the roadway. In the case of a divided road, the sign should be located in the median.

Option:

09 Signs located on the left-hand side of a one-way roadway or in the median of a divided road, in accordance with ~~Paragraph 8 of this Section~~ the Guidance paragraph above, may be supplemented by an identical sign located on the right-hand side of the roadway.

Support:

10 The clear zone (see definition in Section 1C.02) is the total roadside border area, starting at the edge of the traveled way, available for an errant driver to stop or regain control of a vehicle. The width of the clear zone is dependent upon traffic volumes, speeds, and roadside geometry. Additional information can be found in the "Roadside Design Guide," 4th Edition, 2011, AASHTO. Based on the Roadside Design Guide, the clear zone only accounts for 80% of vehicles leaving the roadway, leaving 20% traveling outside the clear zone, this is the reason all MoDOT signs are required to be on breakaway sign supports.

Guidance:

11 With the increase in traffic volumes and the need to provide road users regulatory, warning, and guidance information, an order of priority for sign installation should be established.

Support:

12 An order of priority is especially critical where space is limited for sign installation and there is a demand for several different types of signs. Overloading road users with too much information is not desirable. Priority according to type of sign will depend on the specific situation and conditions of the site at which the signs are to be installed. For example, in the vicinity of an exit ramp, guide signs and warning signs for the exit ramp might take precedence over supplemental guide signs ~~regulatory signs that confirm rules of the road, such as a STATE LAW NO HANDHELD PHONE USE BY DRIVER sign~~, or a mainline Speed Limit sign where there is no change in the speed zone.

Guidance:

13 Because regulatory and warning information is typically more critical to the road user than guidance information, regulatory and warning signing whose locations are critical should be displayed rather than guide signing in cases where conflicts occur. In such cases, the guide sign should be relocated to another appropriate location where it will still be effective. In other cases, such as at a decision point, the guide sign should take precedence over other signs whose locations are not as critical to an immediate decision or action necessary by the road user. In all cases, careful attention should be given to minimizing sign clutter (see Section 2A.20). Community wayfinding and acknowledgment guide signs should have a lower priority as to placement than other guide signs. Signs conveying information of a less-critical nature should be moved to less-critical locations or omitted.

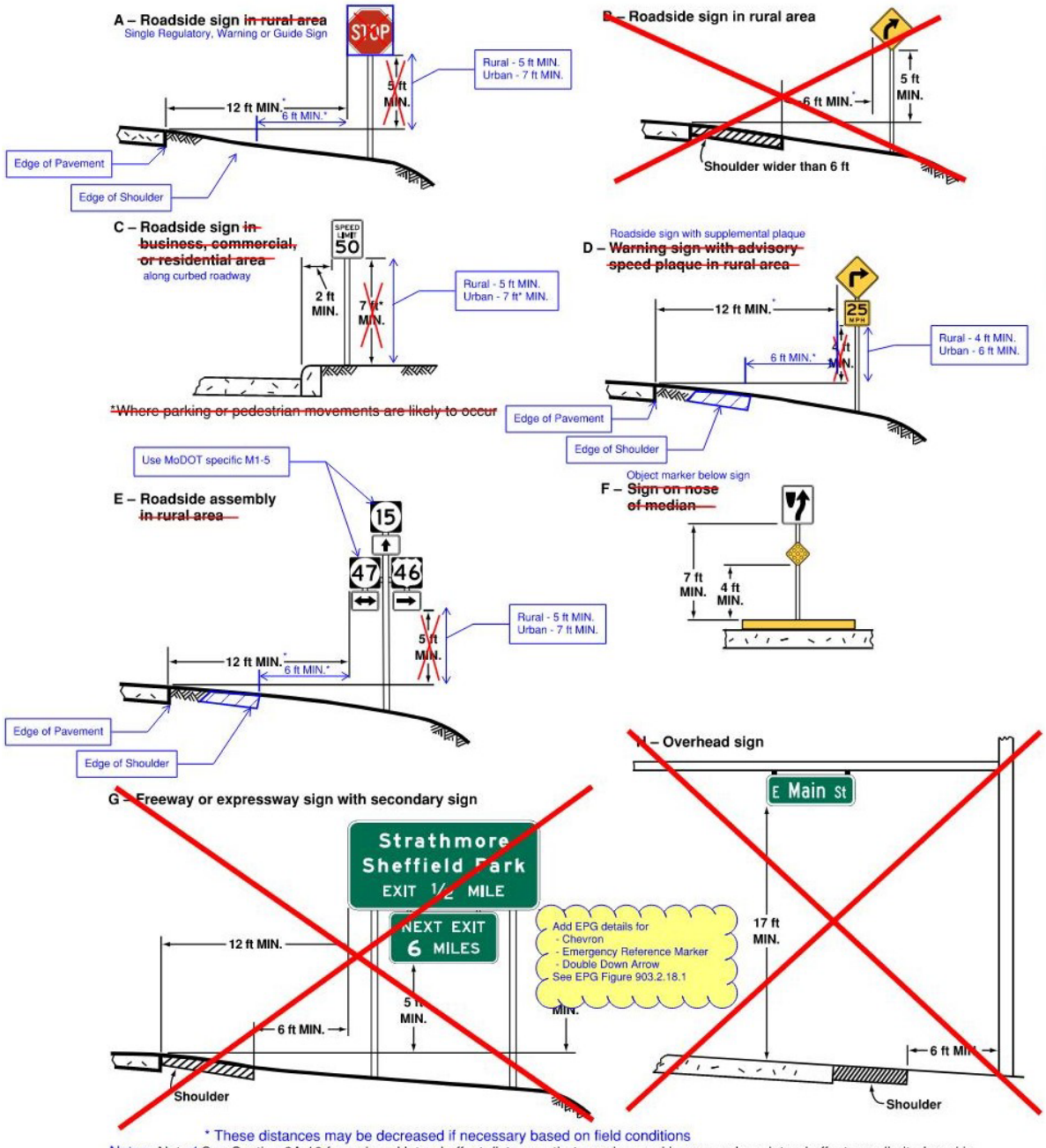
Option:

14 Under some circumstances, such as on curves to the right, signs may be placed on median islands or on the left-hand side of the road. A supplementary sign located on the left-hand side of the roadway may be used on a multi-lane road where traffic in a lane to the right might obstruct the view to the right.

Guidance:

15 In urban areas where crosswalks exist, signs should not be placed within 4 feet in advance of the crosswalk (see Drawing D in Figure 2A-3).

Figure 2A-2. Examples of Heights and Lateral Location of Sign Installations



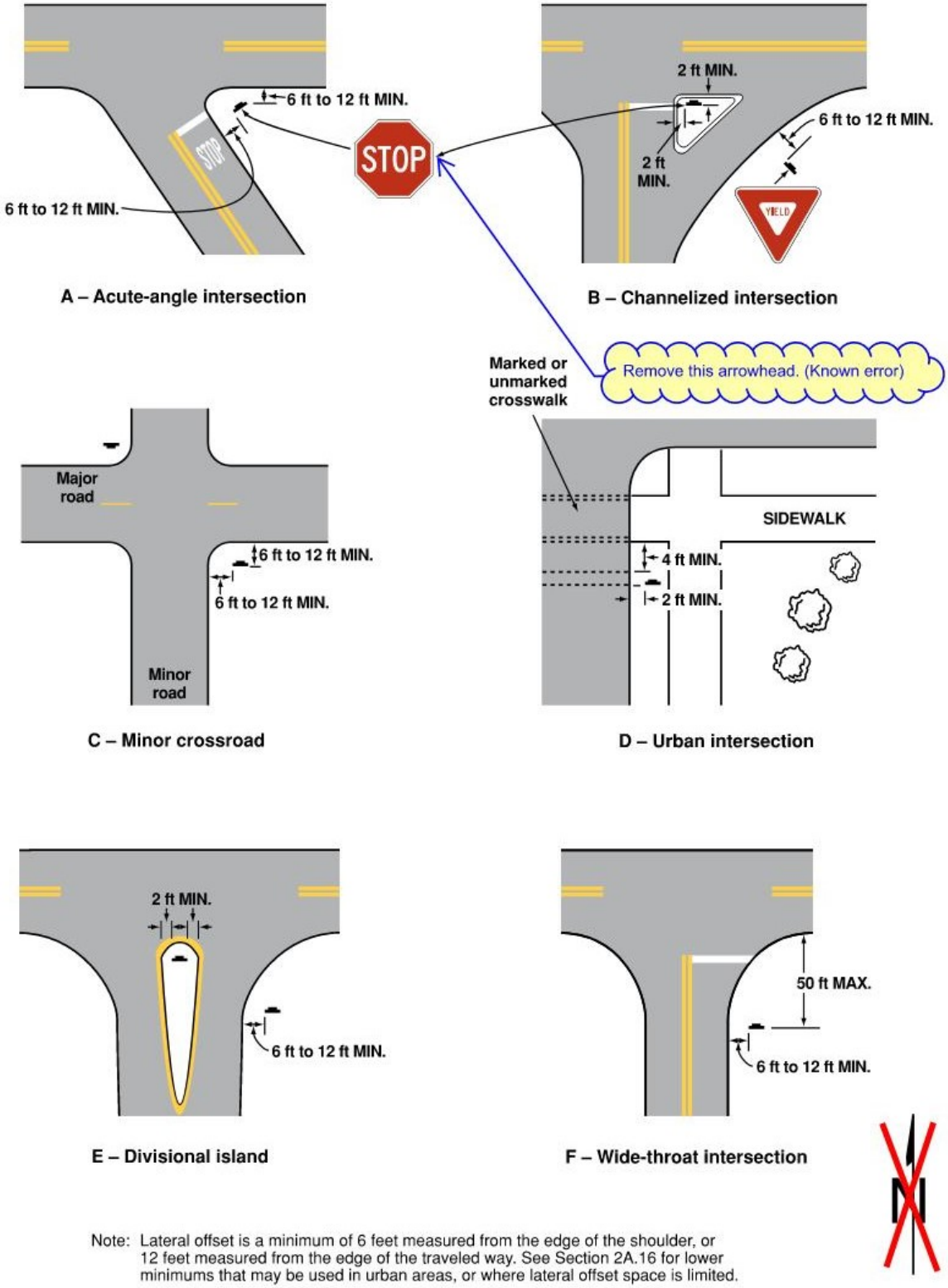
* These distances may be decreased if necessary based on field conditions

Notes: ~~Note:~~1 See Section 2A.16 for reduced lateral offset distances that may be used in areas where lateral offsets are limited, and in business, commercial, or residential areas where sidewalk width is limited or where existing poles are close to the curb.

2. Urban conditions are defined as business, commercial, or residential areas where parking, bicyclist, or pedestrian movements are likely to occur.

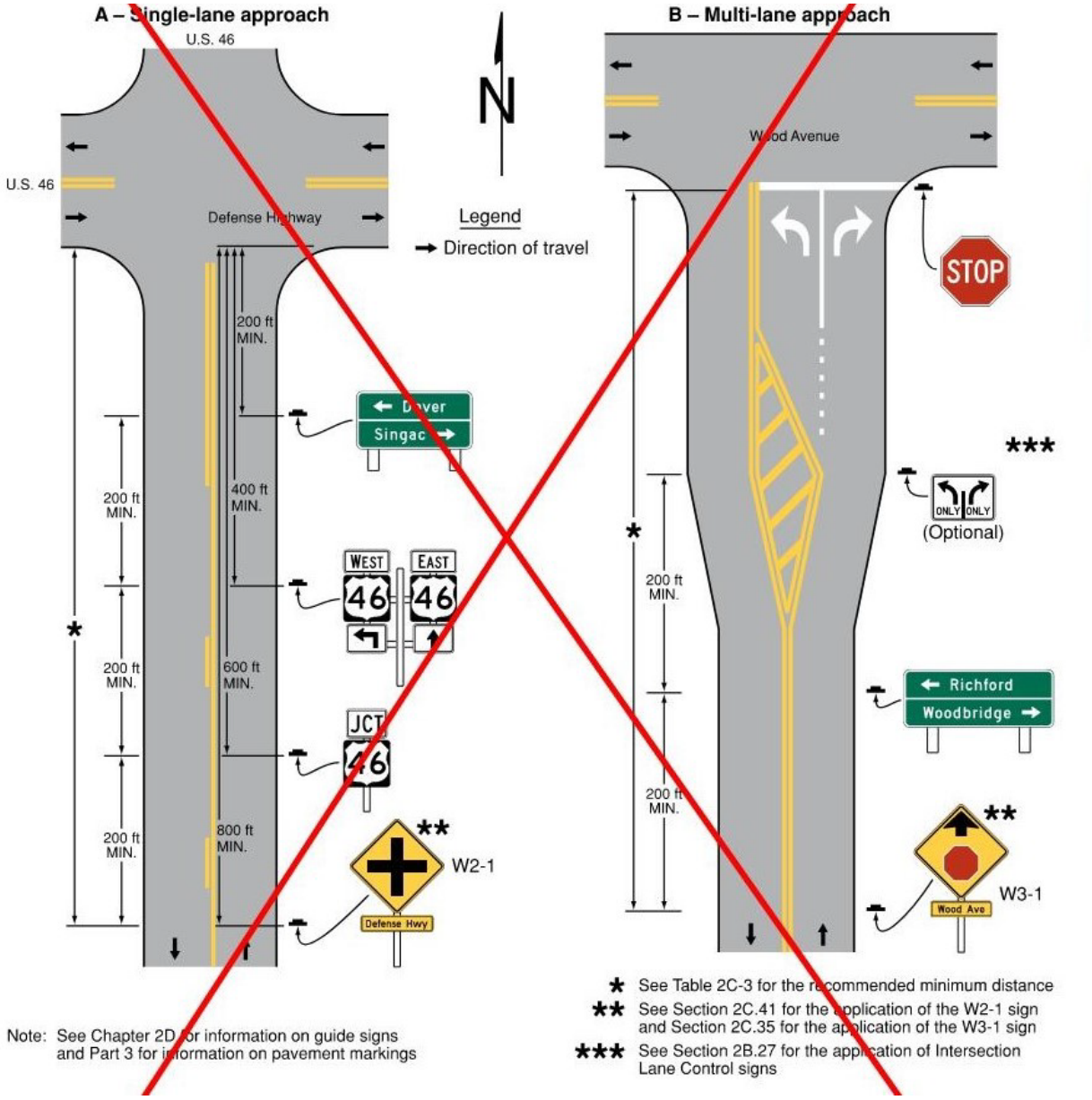
3. See MoDOT Standard Plans for Guide signs and Overhead signs

Figure 2A-3. Examples of Locations for Some Typical Signs at Intersections



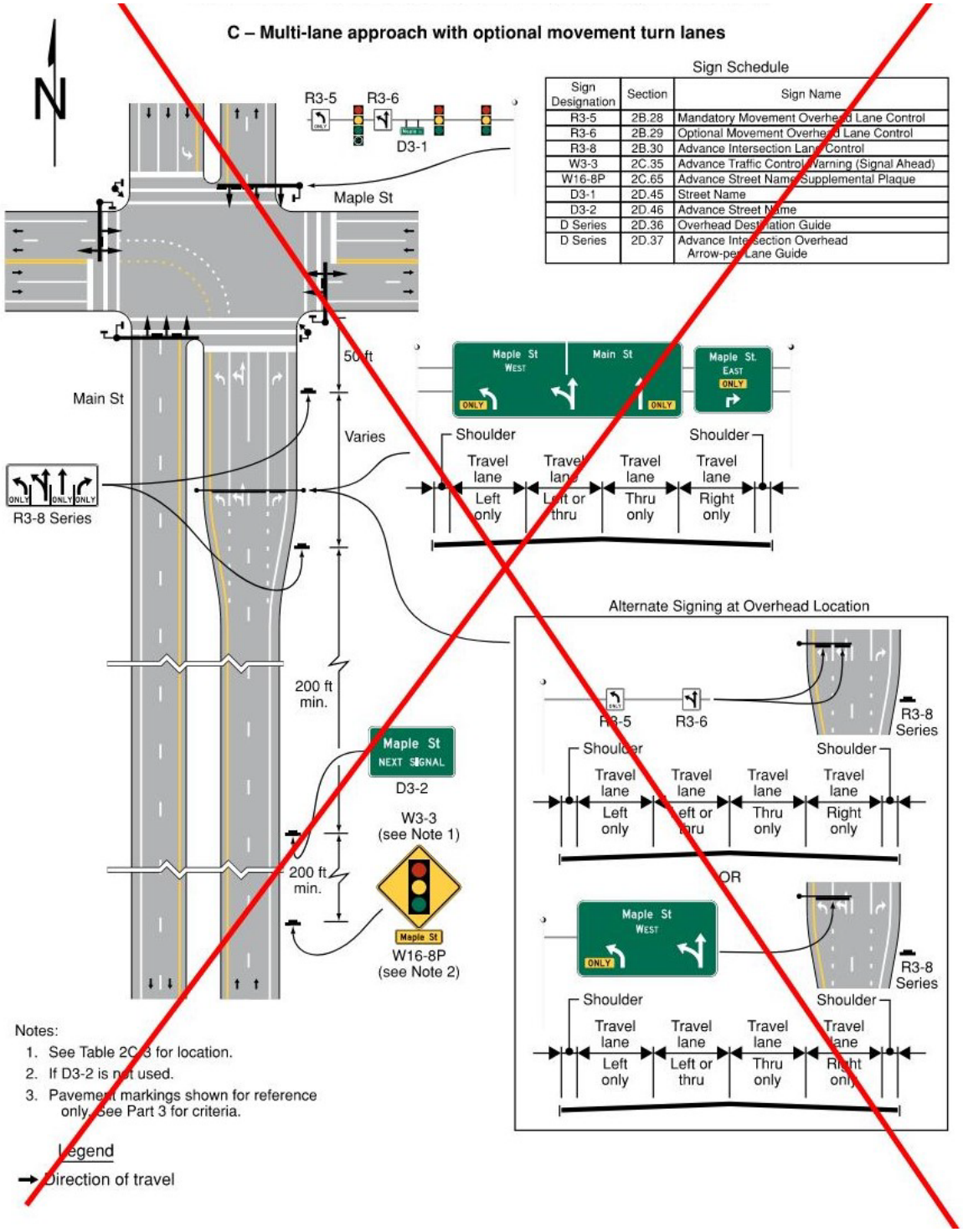
Note: Lateral offset is a minimum of 6 feet measured from the edge of the shoulder, or 12 feet measured from the edge of the traveled way. See Section 2A.16 for lower minimums that may be used in urban areas, or where lateral offset space is limited.

Figure 2A-4. Relative Locations of Regulatory, Warning, and Guide Signs on an Intersection Approach (Sheet 1 of 4)



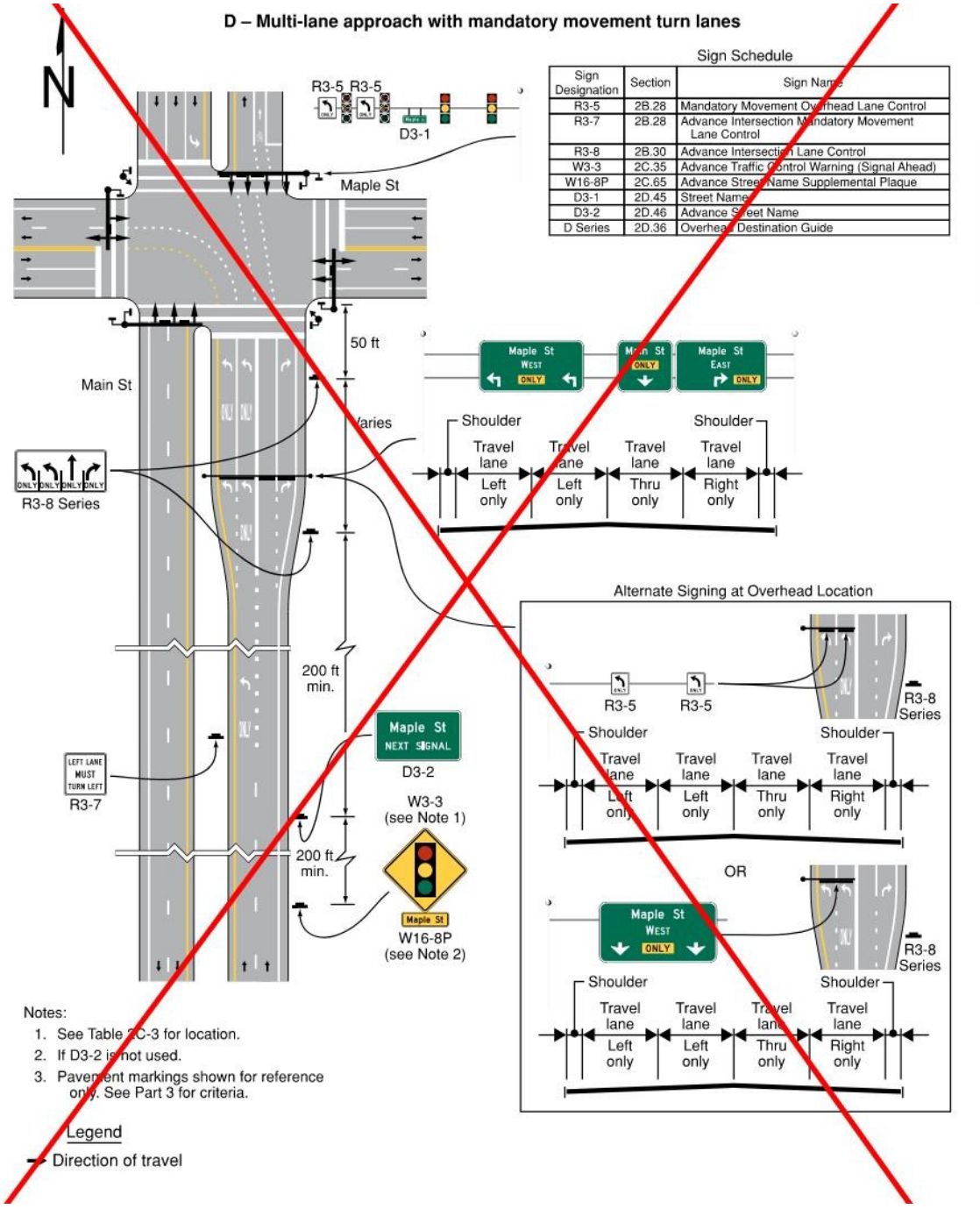
This figure is not adopted by MoDOT. See EPG's Typical Signing Applications. Revised Dec. 2025

Figure 2A-4. Relative Locations of Regulatory, Warning, and Guide Signs on an Intersection Approach (Sheet 2 of 4)



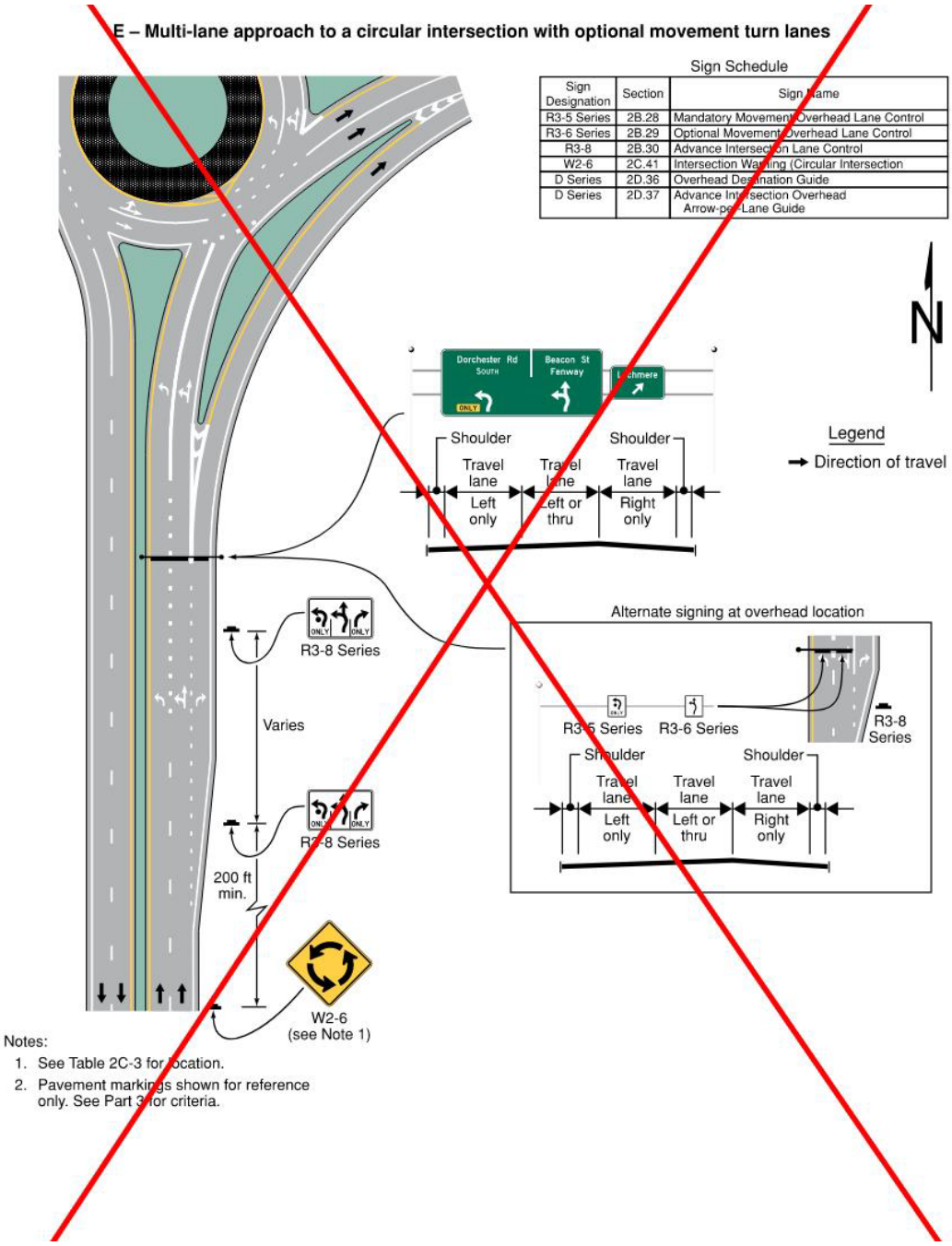
This figure is not adopted by MoDOT. See EPG's Typical Signing Applications. Revised Dec. 2025

Figure 2A-4. Relative Locations of Regulatory, Warning, and Guide Signs on an Intersection Approach (Sheet 3 of 4)



This figure is not adopted by MoDOT. See EPG's Typical Signing Applications. Revised Dec. 2025

Figure 2A-4. Relative Locations of Regulatory, Warning, and Guide Signs on an Intersection Approach (Sheet 4 of 4)



This figure is not adopted by MoDOT. See EPG's Typical Signing Applications. Revised Dec. 2025

Section 2A.14 Overhead Sign Installations

Standard:

M00 Overhead sign installations shall be limited to MoDOT regulatory, warning, and guide sign installations, unless otherwise specified in the EPG. Supplemental signs or aesthetic messages shall not be displayed on overhead structures, which also apply to structures constructed and installed by another jurisdiction over a state route. Supplemental signs or aesthetic messages include, but are not limited to Welcome To signs, Welcome To monuments, and Community Wayfinding signs.

MoDOT specific standard language from EPG. Revised Dec. 2025

Guidance:

01 Overhead signs should be used on freeways and expressways, at locations where some degree of lane-use control is desirable, and at locations where space is not available at the roadside. It is recommended that justification be provided when mounting signs overhead.

Support:

02 The operational requirements of the present highway system are such that overhead signs have value at many locations. The factors to be considered for the installation of overhead sign displays are not definable in specific numerical terms. In some cases, overhead mounting of a sign might be required by other provisions of ~~this Manual~~ the EPG.

~~Option:~~

~~03 The following conditions (not in priority order) may be considered in an engineering study to determine if overhead signs would be beneficial:~~

- ~~A. Traffic volume at or near capacity,~~
- ~~B. Complex interchange design,~~
- ~~C. Three or more lanes in each direction,~~
- ~~D. Restricted sight distance,~~
- ~~E. Closely spaced interchanges,~~
- ~~F. Multi-lane exits,~~
- ~~G. Large percentage of trucks,~~
- ~~H. Street lighting background~~
- ~~I. High speed traffic,~~
- ~~J. Consistency of sign message location through a series of interchanges,~~
- ~~K. Insufficient space for post-mounted signs,~~
- ~~L. Junction of two freeways, and~~
- ~~M. Left-side exit ramps.~~

MoDOT has established more specific criteria for the use of overhead signs in the paragraphs below. Revised Dec. 2025

M03A MoDOT has established the following general criteria for the use of overhead signs on the state highway system:

Standard:

M03B Overhead signs shall be used in the following applications:

- **A. EXIT ONLY lane drops**
- **B. Complex interchange design, including, but not limited to:**
  - **1. Directional ramps, and**
  - **2. Ramp splits**
- **C. Three or more lanes in each direction in urban areas**

D. Closely-spaced interchanges
E. Multi-lane exits
F. Consistency of sign message location through a series of interchanges
G. Junction of two freeways, and
H. Complex intersection guide signs, including, but not limited to:
1. Multi-lane roundabouts,
2. Diverging Diamond Interchanges, and
3. Single Point Urban Interchanges.

Guidance:

M03C Overhead signs should be used in the following applications:

A. Reduction of basic lanes in a LANE ENDS application and
B. Left-side exit ramps.

Option:

M03D Overhead signs may be used in the following applications:

A. Insufficient space for post-mounted signs
B. Restricted sight distance
C. Traffic volume at or near capacity,
D. Large percentage of trucks,
E. In urban areas with ambient light issues which obscure the visibility of the ground mounted sign,
F. Locations where there is a history of crashes with a ground-mounted sign, and
G. High-speed traffic.

04 Over-crossing structures may be used to support overhead signs.

Support:

05 Under some circumstances, the use of over-crossing structures as sign supports might be the only practical solution that will provide adequate viewing distance. The use of such structures as sign supports might eliminate the need for the foundations and sign supports along the roadside.

Section 2A.15 Mounting Height

Standard:

01 The provisions of this Section shall apply unless specifically stated otherwise for a particular sign or object marker elsewhere in ~~this Manual~~ the EPG.

Support:

M01A Mounting heights in the EPG and in Section 903 of the Missouri Standard Plans for Highway Construction are nominal dimensions, meaning these dimensions represent the minimum mounting height, as well as the maximum mounting heights unless otherwise stated. The mounting height, measured from the roadway surface to the bottom of the sign, is only increased in order to meet the minimum distance requirements from the bottom of the sign to the ground directly below the sign. Minimum mounting heights ensure the installations meet breakaway standards as well as placing the signs at the appropriate level for visibility. Installing signs taller than these nominal dimensions will move the signs outside the driver's normal line of sight negatively affecting the signs legibility and visibility.

~~02 It might be necessary to use larger minimum mounting heights than those prescribed in this Manual to ensure appropriate crash performance of sign installations that are required to be crashworthy, and Section 1D.11).~~

03 In addition to the provisions of this Section, information affecting the minimum mounting height of signs as a function of crash performance can be found in the "Roadside Design Guide," 4th Edition, 2011, AASHTO.

Standard:

04 In rural areas, the minimum height, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement, of signs installed at the side of the road shall be 5 feet (see Figure 2A-2).

05 In business, commercial, or residential areas where parking, bicyclist, or pedestrian movements are likely to occur, or where the view of the sign might be obstructed, the minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of signs installed at the side of the road shall be 7 feet (see Figure 2A-2).

Option:

06 The height to the bottom of a secondary sign mounted below another sign may be 1 foot less than the height specified in ~~Paragraphs 4 and 5 of this Section~~ the Standard paragraphs above.

Standard:

07 The minimum height of signs, measured vertically from the bottom of the sign to the sidewalk shall be 7 feet.

08 If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway (see Section 6C.02), the secondary sign shall not project more than 4 inches into the pedestrian facility.

Support:

09 Section 9A.02 contains provisions for the minimum mounting height of signs on shared-use paths.

Option:

~~10 Signs that are placed 30 feet or more from the edge of the traveled way may be installed with a minimum height of 5 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement.~~

Standard:

~~**11 Directional signs on freeways and expressways shall be installed with a minimum height of 7 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. All route signs, warning signs, and regulatory signs on freeways and expressways shall be installed with a minimum height of 7 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. If a secondary sign is mounted below another sign on a freeway or expressway, the major sign shall be installed with a minimum height of 8 feet and the secondary sign shall be installed with a minimum height of 5 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement.**~~

~~**12 Where large signs having an area exceeding 50 square feet are installed on multiple breakaway posts, the clearance from the ground to the bottom of the sign shall be at least 7 feet.**~~

M12A All sign installations shall meet the installation, mounting height and lateral offset of MoDOT specifications for the type of signs support being used, see Section 903 of the Missouri Standard Plans for Highway Construction.
https://www.modot.org/sites/default/files/documents/90303_10.pdf

Option:

13 A route sign assembly (see Section 2D.29) consisting of a route sign and auxiliary signs may be treated as a single sign for the purposes of this Section.

14 The mounting height may be adjusted when supports are located near the edge of the right-of-way on a steep backslope in order to avoid the sometimes less desirable alternative of placing the sign closer to the roadway.

Standard:

15 Signs that are post-mounted on a median barrier ~~that~~ shall not overhang any portion of the traveled way ~~shall be mounted with a vertical clearance that complies with that of overhead signs~~.

16 New ~~O~~ overhead sign~~s~~ installations shall provide a vertical clearance of not less than ~~17~~ 18 feet from the highest point of pavement or shoulder (including mountable curbs located within the shoulder limits) to the lowest point of the sign, light fixture, or sign ~~bridge~~ truss over the entire width of the pavement and shoulders, except where the structure on which the overhead signs are to be mounted or other structures along the roadway near the sign structure have a lesser vertical clearance. No overhead sign installations shall have a mounting height that is lower than 17 feet.

MoDOT uses a minimum mounting height of 18 feet and uses the highest point of the pavement when measuring vertical clearance. Revised Dec. 2025

Option:

17 If the vertical clearance of other structures along the roadway near the sign structure is less than 16 feet, the vertical clearance to an overhead sign structure or support may be as low as 1 foot higher than the vertical clearance of the other structures in order to improve the visibility of the overhead signs.

18 In special cases the clearance to overhead signs may be reduced if necessary because of substandard dimensions in tunnels and other major structures such as double-deck bridges.

M18A Signs may be raised above the standard vertical clearance to improve visibility and avoid other obstructions such as signal equipment.

Guidance:

19 While a maximum mounting height for signs is generally not prescribed in ~~this Manual~~ the EPG, the nominal mounting heights should be adhered to, ensuring ~~agencies should ensure that~~ signs are not mounted at such a height as to be out of the road user's normal field of vision (see Paragraph M01A of this section and Paragraph 3 of Section 1D.09), especially in urban settings where signs are mounted on traffic signal or light poles.

Support:

20 Figure 2A-2 illustrates some examples of the mounting height requirements contained in this Section.

M21 See EPG 903.17.4 for information regarding vertical clearances for overhead signs.

Section 2A.16 Lateral Offset

Standard:

01 For overhead sign supports, the minimum lateral offset from the edge of the shoulder (or if no shoulder exists, from the edge of the pavement) to the near edge of overhead sign supports (cantilever or sign bridges) shall be 6 feet. Overhead sign supports shall have a barrier or crash cushion to shield them if they are within the ~~clear zone~~ right-of-way.

M01A See EPG 903.17.3 for information regarding lateral offset of overhead sign supports.

02 Post-mounted sign and object marker supports shall be crashworthy (see Section 1D.11) if within the ~~clear zone~~ right-of-way.

MoDOT policy requires all post-mounted signs within right-of-way to be installed on a breakaway assembly. Revised Dec. 2025

Guidance:

03 For post-mounted signs, the minimum lateral offset should be 12 feet from the edge of the traveled way. If a shoulder wider than 6 feet exists, the minimum lateral offset for post-mounted signs should be 6 feet from the edge of the shoulder.

04 Supports for signs mounted laterally behind a longitudinal barrier should be placed so that the near edge of the support is located beyond the deflection distance of the longitudinal barrier and the edge of the sign does not extend beyond the face of the barrier towards traffic.

Support:

05 The minimum lateral offset requirements for object markers are provided in Chapter 2C.

06 The minimum lateral offset is intended to keep trucks and cars that use the shoulders from striking the signs or supports. The minimum lateral offset requirements do not supersede the requirement for crashworthiness (see ~~Paragraph 2 of this Section~~ the second Standard paragraph of this article) if the sign is located within the ~~clear zone~~ right-of-way.

Guidance:

07 All supports should be located as far as practical from the edge of the shoulder. Advantage should be taken to place signs behind existing roadside barriers, on over-crossing structures, or other locations that minimize the exposure of the traffic to sign supports.

Option:

08 Lesser lateral offsets may be used on connecting roadways or ramps at interchanges, but not less than 6 feet from the edge of the traveled way.

09 On conventional~~, low-volume rural, and special-purpose~~ roads in areas where it is impractical to locate a sign with the lateral offset prescribed by this Section because of roadside features such as terrain or vegetation, a lateral offset of at least 2 feet may be used.

10 A lateral offset of at least 1 foot from the face of the curb may be used in business, commercial, or residential areas where sidewalk width is limited or where existing poles are close to the curb.

Guidance:

11 Overhead sign supports and post-mounted sign and object marker supports should not ~~intrude into the usable width of a sidewalk or other pedestrian facility.~~ obstruct the sidewalk or the pedestrian access route such that less than 4 feet of clear space is available.

Support:

12 Guidance for maintaining sign shape in laterally-constrained conditions is described in Section 2A.05.

13 Figures 2A-2 and 2A-3 illustrate some examples of the lateral offset requirements contained in this Section.

Section 2A.17 Orientation

Guidance:

01 Unless otherwise provided in ~~this Manual~~ the EPG, signs should be vertically mounted at right angles to the direction of, and facing, the traffic that they are intended to serve.

02 Where mirror reflection from the sign face is encountered to such a degree as to reduce legibility, the sign should be turned slightly away from the road. ~~Signs that are placed 30 feet or more from the pavement edge should be turned toward the road.~~ On curved alignments, the angle of placement should be determined by the direction of approaching traffic rather than by the roadway edge at the point where the sign is located.

~~Option:~~

~~03 On grades, sign faces may be tilted forward or back from the vertical position to improve the viewing angle.~~

Section 2A.18 Posts and Mountings

Standard:

01 Sign posts, foundations, and mountings shall be so constructed as to hold signs in a proper and permanent position, and to resist swaying in the wind or displacement by vandalism.

Support:

02 See Section 903 of the Missouri Standard Plans for Highway Construction for additional information regarding posts and mounting. The Standard Plans are compliant with ~~T~~the latest edition of AASHTO's "Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals." ~~contains additional information regarding posts and mounting.~~

Option:

03 Where permitted, signs may be placed on existing supports used for other purposes, such as highway traffic signal supports or overhead sign supports~~, highway lighting supports, and utility poles~~. This does not include utility poles or light poles.

MUTCD Paragraph 3 has been modified as MoDOT does not allow signs on light poles or utility poles. Revised Dec. 2025

Support:

04 Section 2A.11 contains criteria for enhanced conspicuity of standard signs.

05 Sections 2A.15 and 2A.16 contain lateral and height placement criteria for signs placed on existing supports.

Standard:

06 If mounted to the sign support, equipment for powering electronic components of a sign, including solar panels, the sign support shall be ~~mounted~~ a traffic signal pedestal pole with a breakaway base so as not to compromise the crashworthy performance of the sign installation (see Section 1D.11). Such equipment shall be mounted so as not to obscure the shape of the sign. Any wiring installed in the breakaway base shall include appropriate breakaway fuse connectors.

MUTCD Paragraph 6 has been modified to reflect MoDOT's preferences for breakaway installations. Revised Dec. 2025

Section 2A.19 Maintenance

Guidance:

01 Maintenance activities should consider proper position, cleanliness, legibility, and daytime and nighttime visibility (see Sections 2A.21 and 2A.22). Damaged or deteriorated signs~~, gates,~~ or object markers should be replaced.

02 To assure adequate maintenance, a schedule for inspecting (~~both day and~~ at night), ~~cleaning, and~~ trimming vegetation, and replacing signs~~, gates,~~ and object markers should be established. Employees of highway, law enforcement, and other public agencies whose duties require that they travel on the roadways should be encouraged to report any damaged, deteriorated, or obscured signs~~, gates,~~ or object markers at the first opportunity. While MoDOT's sign maintenance program relies on nighttime inspections, random daytime inspections are encouraged to identify needs between scheduled nighttime inspections.

03 Steps should be taken to see that weeds, trees, shrubbery, and construction, maintenance, and utility materials and equipment do not obscure the face of any sign or object marker.

04 A regular schedule of replacement of lighting elements for illuminated signs should be maintained.

Section 2A.20 Excessive Use of Signs

Guidance:

01 Signs should be used and located judiciously, minimizing their proliferation in order to maintain their effectiveness. Regulatory and warning signs should be used conservatively because these signs, if used to excess, tend to lose their effectiveness. Route signs and directional guide signs for primary routes and destinations should be used frequently at strategic locations because their use promotes efficient operations by keeping road users informed of their location. In all cases, however, sign clutter (see ~~Paragraph 2 of this Section~~ the Support paragraph below) should be avoided and minimized as much as practicable.

Support:

02 Sign clutter is the proliferation of sign installations or assemblies along the roadway or roadside, either separately or grouped, to such an extent that adequate spacing between installations necessary for orderly processing of the sign messages by the driver cannot be achieved. Sign clutter can reduce the effectiveness of one or more signs in a sequence of signs.

03 The basic role of traffic control devices is to provide only as much information to the road user as necessary to promote the safe and efficient operation of streets and highways. Sign clutter can result from the overuse of MUTCD-compliant signs and or signs that display information unrelated to traffic operation, navigation, or transportation information. Examples of such signs would include, but are not limited to, those displaying the birthplace or home of a noted person, local sports team accomplishments, population information, and self-described qualities of a community such as "friendly" or "open for business."

Guidance:

04 Signs and other traffic control devices should be installed and maintained from a systematic standpoint rather than individually. When a new sign is installed, the existing signs in the vicinity should be considered for replacement, relocation, or removal as a result of the new sign that is installed. Existing systems of signs should be reviewed periodically for evidence of sign clutter and adjustments should be made accordingly.

Support:

05 Section 2A.13 contains information regarding an order of priority for signs where available spacing along the roadway is limited.

Section 2A.21 Retroreflection and Illumination

Support:

01 There are many materials currently available for retroreflection and various methods currently available for the illumination of signs and object markers. New materials and methods continue to emerge. New materials and methods can be used as long as the signs and object markers meet the standard requirements for color, both by day and by night.

02 This Section applies to visibility of signs at night or in low-light or adverse weather conditions, whose legends are otherwise visible under typical daytime viewing conditions.

Standard:

03 ~~Regulatory, warning, and guide signs (see Section 2A.03), and object markers,~~ All traffic control signs on MoDOT right-of-way shall be retroreflective ~~or illuminated~~ to show the same shape and similar color by both day and night, unless otherwise provided in ~~this Manual~~ the EPG for a particular sign or group of signs.

04 Where the color black is specified for the legend or background of a sign, an opaque and non-retroreflective material shall be used.

05 The requirements for sign illumination shall not be considered to be satisfied by street or highway lighting.

~~Option:~~

06 In special conditions when illuminated signs are permitted to be used per the EPG, sign symbols, word messages, and backgrounds ~~Sign elements may~~ shall be illuminated by a light behind the sign face through a translucent material ~~the means shown in Table 2A-3~~.

07 Retroreflection of sign elements ~~may~~ shall be accomplished by the means shown in Table 2A-4.

Guidance:

M07A Overhead sign installations should not be illuminated unless an engineering study shows a need for illumination, e.g. fog prone areas.

Support:

08 Information regarding the use of retroreflective material on the sign support is contained in Section 2A.11.

Table 2A-3. Illumination of Sign Elements

Means of Illumination	Sign Element to be Illuminated
Light behind the sign face	• Symbol or word message • Background • Symbol, word message, and background (through a translucent material)
Attached or independently-mounted light source designed to direct essentially uniform illumination onto the sign face	• Entire sign face
Light-emitting diodes (LEDs)	• Symbol or word message • Entire sign border
Other devices or treatments that highlight the sign shape, color, or message: Luminous tubing Fiber optics Incandescent light bulbs Luminescent panels	• Symbol or word message • Entire sign face

This table is not adopted by MoDOT. Revised Dec. 2025

Table 2A-4. Retroreflection of Sign Elements

Means of Retroreflection	Sign Element
~~Prismatic reflector "buttons" or similar units~~	~~Symbol~~ ~~Word message~~ ~~Border~~
A material that has a smooth, sealed outer surface over a microstructure that reflects light	Symbol Word message Border Background

Note: Illuminated signs are not used on MoDOT facilities. Cities and counties may use illuminated street name signs if a maintenance agreement is in place.

Section 2A.22 Maintaining Minimum Retroreflectivity

Support:

01 Retroreflectivity is one of several factors associated with maintaining nighttime sign visibility (see Section 2A.21).

Standard:

02 ~~Public agencies or officials having jurisdiction~~ MoDOT shall use an assessment or management method that is designed to maintain sign retroreflectivity at or above the minimum levels in Table 2A-5. Local jurisdictions who maintain sections of state routes and the signs on those sections under maintenance agreements shall maintain those signs in accordance with one of the MUTCD assessment methods.

Support:

03 Compliance with the Standard in ~~Paragraph 2 of this Section~~ the paragraph above is achieved by having a method in place and using the method to maintain the minimum levels established in Table 2A-5. Provided that an assessment or management method is being used, ~~an agency or official having jurisdiction~~ MoDOT would be in compliance with the Standard in ~~Paragraph 2 of this Section~~ the paragraph above even if there are some individual signs that do not meet the minimum retroreflectivity levels at a particular point in time.

M03A MoDOT has a sign inspection process to maintain sign retroreflectivity at or above the minimum levels. See EPG 903.21 for additional information related to sign inspection.

~~*Guidance:*~~

~~*04 Except for those signs specifically identified in Paragraph 5 of this Section, one or more of the methods described in "Maintaining Traffic Sign Retroreflectivity," (FHWA-SA-07-020, Revised 2013), FHWA, or a method developed based on an engineering study, should be used to maintain sign retroreflectivity at or above the minimum levels in Table 2A-5. Signs that are identified through the agency's method as being below the minimum levels should be replaced.*~~

~~Option:~~

~~05 Highway agencies may exclude the following signs from the retroreflectivity maintenance guidelines described in this Section:~~

~~A. Parking, Standing, and Stopping (R7 and R8 series) signs;~~

~~B. Walking/Hitchhiking/Crossing (R9 series, R10-1 through R10-4b) signs;~~

~~C. Acknowledgment signs; and~~

~~D. Bikeway signs that are intended for exclusive use by bicyclists or pedestrians.~~

MoDOT has a sign inspection process to maintain sign retroreflectivity at or above the minimum levels. Revised Dec. 2025

Table 2A-5. Minimum Maintained Retroreflectivity Levels

Sign Color	Beaded Sheeting Type (ASTM D4956) I	II	III	Prismatic Sheeting	Additional Criteria
White on Green	W*; G ≥ 7	W*; G ≥ 15	W*; G ≥ 25	W ≥ 250; G ≥ 25	Overhead
	W*; G ≥ 7	W ≥ 120; G ≥ 15			Post-mounted
White on Blue	W*; B ≥ 3	W*; B ≥ 5	W*; B ≥ 12	W ≥ 250; B ≥ 12	Overhead
	W*; B ≥ 3	W ≥ 120; B ≥ 7			Post-mounted
White on Brown	W*; Br ≥ 1	W*; Br ≥ 5	W*; Br ≥ 10	W ≥ 350; Br ≥ 10	Overhead
	W*; Br ≥ 1	W ≥ 150; Br ≥ 5			Post-mounted
Black on Yellow or Black on Orange	Y*; O*	Y ≥ 50; O ≥ 50			[2]
	Y*; O*	Y ≥ 75; O ≥ 75			[3]
White on Red	W ≥ 35; R ≥ 7				[4]
Black on White	W ≥ 50				–

[1] The minimum maintained retroreflectivity levels shown in this table are in units of cd/lx/m² measured at an observation angle of 0.2° and an entrance angle of -4.0°.
[2] For word legend and fine symbol signs measuring at least 48 inches and for all sizes of bold symbol signs
[3] For word legend and fine symbol signs measuring less than 48 inches
[4] Minimum sign contrast ratio ≥ 3:1 (white retroreflectivity ÷ red retroreflectivity)
* This sheeting type shall not be used for this color for this application

Bold Symbol Signs

- W1-1,2 – Turn and Curve
- W1-3,4 – Reverse Turn and Curve
- W1-5 – Winding Road
- W1-6,7 – Large Arrow
- W1-8 – Chevron
- W1-10 – Intersection in Curve
- W1-11 – Hairpin Curve
- W1-15 – 270 Degree Loop
- W2-1 – Cross Road
- W2-2,3 – Side Road
- W2-4,5 – T and Y Intersection
- W2-6 – Circular Intersection
- W2-7,8 – Double Side Roads
- W3-1 – Stop Ahead
- W3-2 – Yield Ahead
- W3-3 – Signal Ahead
- W4-1 – Merge
- W4-2 – Lane Ends
- W4-3 – Added Lane
- W4-5 – Entering Roadway Merge
- W4-6 – Entering Roadway Added Lane
- W6-1,2 – Divided Highway Begins and Ends
- W6-3 – Two-Way Traffic
- W10-1,2,3,4,11,12 – Grade Crossing Advance Warning
- W11-2 – Pedestrian Crossing
- ~~W11-3,4,16-22 – Large Animals~~
- W11-5 – Farm Equipment
- ~~W11-6 – Snowmobile Crossing~~
- W11-7 – Equestrian Crossing
- ~~W11-8 – Fire Station~~ Emergency Vehicle
- W11-10 – Truck Crossing
- W12-1 – Double Arrow
- W16-5P,6P,7P – Pointing Arrow Plaques
- W20-7 – Flagger
- W21-1 – Worker

Known error

Fine Symbol Signs (symbol signs not listed as bold symbol signs)

Special Cases

- W3-1 – Stop Ahead: Red retroreflectivity ≥ 7
- W3-2 – Yield Ahead: Red retroreflectivity ≥ 7; White retroreflectivity ≥ 35
- W3-3 – Signal Ahead: Red retroreflectivity ≥ 7; Green retroreflectivity ≥ 7
- W3-5 – Speed Reduction: White retroreflectivity ≥ 50
- For non-diamond shaped signs, such as W14-3 (No Passing Zone), W4-4P (Cross Traffic Does Not Stop), or W13-1P,2,3,6,7 (Speed Advisory Signs), use the largest sign dimension to determine the proper minimum retroreflectivity level.

Note: All MoDOT signs shall be fabricated as retroreflective for durability and longevity.

Section 2A.23 Median Opening Treatments for Divided Highways

Guidance:

01 A divided highway crossing should be signed and marked as separate intersections when both of the following conditions are present:

A. The paths of opposing left turns from the divided highway cross each other (see Figure 2A-5), and

B. There is adequate storage in the interior approaches for the design vehicles expected to cross the divided highway.

02 If either one or both of the conditions in ~~Paragraph 1 of this Section~~ the Guidance paragraph above do not exist, the divided highway crossing should be signed and marked as a single intersection.

03 At the crossing of two divided highways, engineering judgment should be used to determine the number of separate intersections.

Support:

04 Divided highway crossings with median widths 150 feet or greater ~~between 30 feet and 85 feet~~ might function as ~~either one or~~ two intersections depending upon the interaction of the opposing left-turn vehicle paths and the available interior storage in the median for a crossing vehicle. Other factors that could determine whether a divided highway crossing is operating as one or two intersections include:

A. The geometric design of the divided highway crossing,

B. The use of positive offset mainline left-turn lanes,

C. The length of the median opening (as measured parallel to the center line of the divided highway),

D. The geometric design of the median noses,

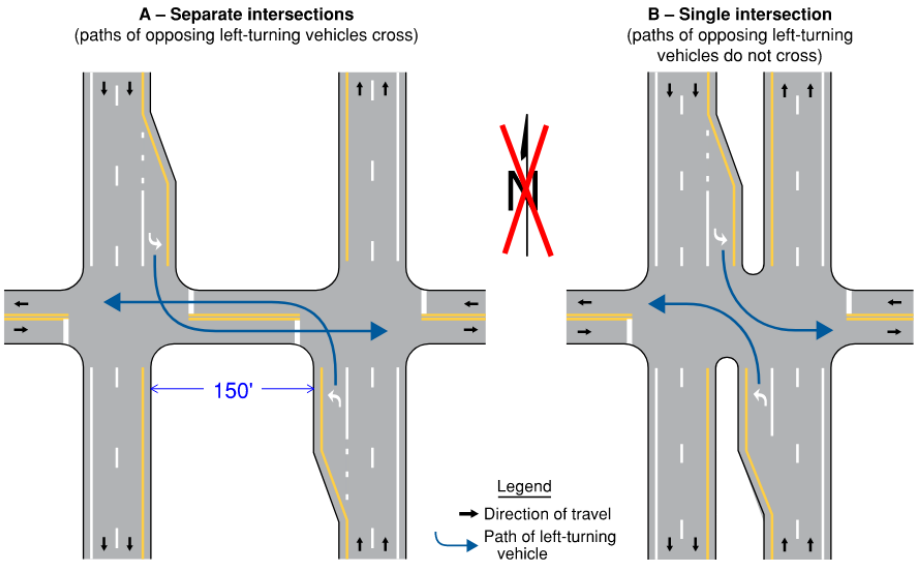
E. Other roadway geometric considerations such as a skewed side street approach or a variable median width,

F. Intersection sight distance,

G. The physical characteristics of the design vehicle, and

H. The observed prevailing driver behavior with regard to opposing left-turn path interaction.

Figure 2A-5. Intersection Configuration at a Divided Highway Crossing



CHAPTER 2B. [EPG 903.2]
REGULATORY SIGNS AND, BARRICADES, AND GATES

GENERAL

Section 2B.01 Application of Regulatory Signs

Standard:

01 Regulatory signs shall be used to inform road users of selected traffic laws or regulations and to indicate the applicability of the legal requirements.

02 Regulatory signs shall be installed at or near where the regulations apply. The signs shall clearly indicate the requirements imposed by the regulations and shall be designed and installed to provide adequate visibility and legibility in order to obtain compliance.

03 Regulatory signs shall be retroreflective or illuminated (see Section 2A.21).

Section 2B.02 Design of Regulatory Signs

Standard:

01 Regulatory signs shall be rectangular unless specifically designated otherwise in ~~this Manual~~ the EPG. Regulatory signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the FHWA "Standard Highway Signs" publication (see Section 1A.05).

Support:

02 The use of educational plaques to supplement symbol signs is described in Section 2A.09.

03 The use of LEDs in the border or legend of regulatory signs is described in Section 2A.12.

Standard:

04 LED signs displaying a part-time prohibitory message incorporating a red circle and diagonal of a static sign shall display a red symbol that approximates the same red circle and diagonal as closely as possible. The symbol of the action to be prohibited shall be displayed in white LEDs on a black background.

05 A regulatory sign displayed entirely with LEDs and incorporated within the border of a larger full-matrix changeable message sign shall display the regulatory sign legend in the size, shape, color, and legend of the standard regulatory sign.

Section 2B.03 Size of Regulatory Signs

Standard:

01 Except as provided in Section 2A.07, the minimum sizes for regulatory signs shall be as shown in Table 2B-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2B-1.

~~**Standard:**~~

~~**03 Except as provided in Paragraphs 5 and 6 of this Section, the minimum sizes for regulatory signs facing traffic on multi-lane conventional roads shall be as shown in the Multi-Lane column of Table 2B-1.**~~

~~**04 The minimum size of regulatory signs applied on low-volume rural roads with operating speeds of 30 mph or less shall be as shown in the Minimum column of Table 2B-1.**~~

MoDOT does not consider any of its facilities to be low volume rural roads. Revised Dec. 2025

~~Option:~~

~~05 Where the posted speed limit is 35 mph or less on a multi-lane highway or street, other than for a STOP sign, the minimum size shown in the Single Lane column in Table 2B-1 may be used.~~

~~06 Where a regulatory sign, other than a STOP sign, is placed on the left-hand side of a multi-lane roadway in addition to the installation of the same regulatory sign on the right-hand side or the roadway, the minimum size shown in the Single Lane column in Table 2B-1 may be used for both the sign on the right-hand side and the sign on the left-hand side of the roadway.~~

MoDOT only uses two sizes for speed limit signs, one for conventional roads and one for freeways and expressways. Revised Dec. 2025

Guidance:

07 The minimum sizes for regulatory signs facing traffic on exit and entrance ramps at ~~major~~ interchanges ~~connecting an Expressway or Freeway with an Expressway or Freeway (see Section 2E.11)~~ should be as shown in the column of Table 2B-1 that corresponds to the mainline roadway classification (Expressway ~~or~~ /Freeway). ~~If a minimum size is not provided in the Freeway column, the minimum size in the Expressway column should be used. If a minimum size is not provided in the Freeway or Expressway Column, the size in the Oversized column should be used.~~

Standard:

M07A The minimum size for WRONG WAY and DO NOT ENTER signs on ramps facing the opposite direction of travel where a road user could wrongly enter the ramp from a conventional road shall be the size listed in the Conventional Road - Standard column of Table 2B-1. See Sections 2B.46 and 2B.47 for additional information.

Option:

M07B The minimum size for WRONG WAY and DO NOT ENTER signs on ramps facing the opposite direction of travel where a road user could wrongly enter the ramp from a conventional road may be increased to the size in the Conventional Road – Oversized column of Table 2B-1 when the need for greater emphasis has been determined based on engineering judgement.

~~08 The minimum sizes for all regulatory signs facing traffic on exit and entrance ramps at all other classifications of interchanges (see Section 2E.11) should be the sizes shown in Table 2B-1 in the Conventional Road Single Lane column for single-lane ramps and in the Multi-Lane column for multi-lane ramps.~~

MoDOT does not differentiate between classification of interchanges. All signing on ramps is per the Freeway/Expressway column in Table 2B-1, except for the WRONG WAY and DO NOT ENTER signs. Revised Dec. 2025

Table 2B-1. Regulatory Sign and Plaque Sizes

Sign or Plaque	Sign Number	Proposed EPG Article	Conventional Road (in. x in.)			Freeway /Expressway (in. x in.)
			Standard	Oversized	Special	Mainline and Ramps
STOP	R1-1	903.2.4	36 X 36	48 X 48		48 X 48
YIELD	R1-2	903.2.5	48 X 48 X 48	60 X 60 X 60		60 X 60 X 60
TO ONCOMING TRAFFIC (plaque)	R1-2aP	903.2.5	36 X 30	-		-
ALL-WAY (plaque)	R1-3P	903.2.4	30 X 12	-		-
YIELD HERE TO PEDS	R1-5	903.2.19	36 X 36	-		-
Yield Here to Trail Crossing	R1-5d	903.2.18	36 X 42	-		-
In-Street Pedestrian Crossing - Yield	R1-6	903.2.19	12 X 36	-		-
In-Street Trail Crossing - Yield	R1-6d	903.2.19	12 X 36	-		-
SPEED LIMIT	R2-1	903.2.21	36 X 48	48 X 60		48 X 60
COMBINED SPEED LIMIT	R2-4a	903.2.24	-	-		48 X 96
SPEED LIMIT _ EXCEPT WHERE POSTED	R2-5d	903.2.78	36 X 48	-		36 X 48
FINES DOUBLED ENDS	R2-20	903.2.95	36 X 30	-		36 X 30
No Right Turn	R3-1	903.2.26	36 X 36	48 X 48	24x24 - 30x30	48 X 48
No Left Turn	R3-2	903.2.26	36 X 36	48 X 48	24x24 - 30x30	48 X 48
NO TURNS	R3-3	903.2.26	36 X 36	48 X 48	24x24 - 30x30	36 X 36
No U Turn	R3-4	903.2.26	36 X 36	48 X 48	24x24 - 30x30	-
Right (Left/Ahead) Only	R3-5, 5a	903.2.28	30 X 36	-		-
Straight and Right (Left)	R3-6	903.2.29	30 X 36	-		-
Optional Movement U and Left Turn	R3-6a	903.2.29	30 X 36			
Optional Movement Left Turns	R3-6b	903.2.29	30 X 36			
RIGHT (LEFT) LANE MUST TURN RIGHT (LEFT)	R3-7	903.2.28	36 X 36	-		-
Advance Intersection Lane Control	R3-8,8a,8b,8xa, 8xb,8xc	903.2.27	Varies X 30			
Two-Way Left Turn Only (overhead)	R3-9a	903.2.32	30 X 36	-		-
Center Lane Two-Way Left Turn Only (post-mounted)	R3-9b	903.2.32	24 X 36	36 X 48		-
No U Turn/No Left Turn	R3-18	903.2.26	36 X 36	48 X 48	24x24 - 30x30	-
No Straight Through	R3-27	903.2.24	36 X 36	48 X 48	24x24 - 30x30	48 X 48
DO NOT PASS	R4-1	903.2.36	36 X 48	-		-
PASS WITH CARE	R4-2	903.2.37	36 X 48	-		-
SLOWER TRAFFIC KEEP RIGHT	R4-3	903.2.38	36 X 48	48 X 60		48 X 60
Keep Right	R4-7	903.2.39	24 X 30	36 X 48		48 X 60
KEEP RIGHT (horizontal arrow)	R4-7a	903.2.39	36 X 48	48 X 60		48 X 60
KEEP RIGHT (45° arrow)	R4-7b	903.2.39	36 X 48	48 X 60		84 X 96
Narrow Keep Right	R4-7c	903.2.39	18 X 30			
Keep Left	R4-8	903.2.39	24 X 30	36 X 48		48 X 60
Keep Left (horizontal arrow)	R4-8a	903.2.39	36 X 48	48 X 60		48 X 60
Keep Left (45° arrow)	R4-8b	903.2.39	36 X 48	48 X 60		84 X 96
Narrow Keep Left	R4-8c	903.2.39	18 X 30			
Keep Right Except to Pass	R4-16	903.2.33	36 X 48	-		-
DO NOT DRIVE ON SHOULDER	R4-17	903.2.43	36 X 48	-		-
NEXT PASSING LANE _ MILES	R4-28	903.2.92	-	-		-

Table 2B-1 Continued. Regulatory Sign and Plaque Sizes

END PASSING LANES	R4-29	903.2.92	-	-		-
DO NOT ENTER	R5-1	903.2.46	36 X 36	48 X 48		48 X 48
WRONG WAY	R5-1a	903.2.47	42 X 30			42 X 30
No Trucks	R5-2		36 X 36			
Except Local Deliveries (plaque)	R5-2aP		36 X 18			
ENGINE BRAKE MUFFLER REQUIRED	R5-23		30 x 30			30 x 30
NO FISHING FROM BRIDGE	R5-25	903.2.45	18 X 24	-		18 X 24
NO DUMPING	R5-28	903.2.89	-	-		48 X 24
AUTHORIZED AND EMERGENCY VEHICLES ONLY	R5-29	903.2.84	-	-		24 X 30
DO NOT STOP ON TRACKS	R5-31	903.2.45	24 X 30	-		-
ONE WAY	R6-1	903.2.49	36 x 12	48 x 18		48 x 18
One Way	R6-2	903.2.49	24 X 30	30 X 36		
DIVIDED HIGHWAY (4-legged)	R6-3	903.2.50	30 X 24	-		36 X 30
DIVIDED HIGHWAY (T-intersection)	R6-3a	903.2.50	30 X 24	-		36 X 30
No Parking Signs	R7 series	903.2.52	18 x 24	-		-
RESERVED PARKING	R7-8	903.2.81	18 X 24	-		-
VAN ACCESSIBLE (plaque)	R7-8aP	903.2.81	18 X 9	-		-
NO PARKING ON BRIDGE	R7-35	903.2.45	18 X 24	-		18 X 24
NO PARKING TRUCKS AND TRAILERS OVER 6 TONS	R7-36	903.2.80	18 X 24	36 x 48		-
TOW AWAY ZONE (plaque)	R7-201P, 201aP	903.2.52	18 X 9	-		-
This Side of Sign (plaque)	R7-202P	903.2.52	18 X 9			
EMERGENCY STOPPING ONLY	R8-7	903.2.55	48 X 36	-		48 X 36
No Pedestrian Crossing (symbol)	R9-3		18 X 24			
No Pedestrian Crossing	R9-3a		18 X 24			
Pedestrian Signal Series	R10-3 & R10-4 series	903.2.59	9 X 15	-		-
Left on Green Arrow Only	R10-5	903.2.59	24 X 30	30 X 36		30 X 36
STOP HERE ON RED	R10-6	903.2.59	24 X 36	-		-
DO NOT BLOCK INTERSECTION	R10-7	903.2.59	24 X 30	-		-
DO NOT BLOCK ENTRANCE	R10-7a	903.2.59	24 X 30	-		-
RIGHT TURN SIGNAL	R10-10R	903.2.59	30 X 36	-		-
NO TURN ON RED	R10-11	903.2.59	30 X 36	-		-
LEFT TURN ON GREEN (BALL)	₹R10-12		24 X 30	30 X 36		30 X 36
Left Turn Yield on Flashing Yellow Arrow	R10-12a		24 X 30	30 X 36		30 X 36
EMERGENCY SIGNAL	R10-13	903.2.59	36 X 24	-		-
EMERGENCY SIGNAL STOP ON FLASHING RED	R10-14		36 X 42			
Emergency Signal - Stop on Flashing Red (overhead)	R10-14a	903.2.48	60 X 24	-		-
STOP HERE ON RED	R10-14b		24 X 36			
Turning Vehicles Yield to Pedestrians	R10-15	903.2.59	30 X 30	-		-
Traffic Signal Photo Enforced	R10-18a	903.2.56	30 X 42	36 X 54		-
Photo Enforced (symbol plaque)	R10-19P	903.2.56	24 X 12	48 X 24		-
Crosswalk - Stop on Red	R10-23	903.2.48	24 X 30	-		-
Stop on Red - Yield on Flashing Red After Stop	R10-23a	903.2.48	24 X 30	-		-
Push Button For Warning Lights - Wait for Gap in Traffic	R10-25	903.2.59	9 X 12			
XX Vehicles per Green	R10-28	903.2.50	24 X 30	-		-
XX Vehicles per Green Each Lane	R10-29	903.2.50	36 X 24	-		-
Right Turn on Red Must Yield to U-Turn	R10-30	903.2.49	30 X 36	-		-
RIGHT TURN MUST YIELD TO U-TURN	R10-30a	903.2.59	36 X 24	-		-
KEEP OFF MEDIAN	R11-1	903.2.62	48 X 60	48 X 60		-
ROAD CLOSED	R11-2	903.2.63	48 X 30	-		-
ROAD CLOSED _ MILES AHEAD LOCAL TRAFFIC ONLY	R11-3	903.2.63	60 X 30	-		-
ROAD CLOSED TO THRU TRAFFIC	R11-4	903.2.63	60 X 30	-		-
WEIGHT LIMIT XX TONS	R12-1		36 x 48			36 x 48
Weigh Station Signs	R13 series	903.2.65	Varies	-		Varies
Truck Route	R14-1		24 X 18			
No Hand-Held Phone Use by Driver Signs	R16-15a	903.2.58	30 X 42	-		-
STATE LAW MOVE OVER OR SLOW DOWN FOR STOPPED EMERGENCY VEHICLES	R16-25	903.2.86	120 X 60	-		120 X 60
PRIMARY SEATBELT CITY/COUNTY	R16-27B		30 X 36	-		-
STATE LAW BUCKLE UP / PHONE DOWN	R16-30		48 X 30			
STATE LAW BUCKLE UP / PHONE DOWN	R16-30a					72 X 48
Roadside Park Signs	R20-1	903.2.85	30 X 30	-		-
Rest Area Regulations	R20-2		30 x 36			
Commuter Parking Regulations	R20-3		42 x 48			
Rest Area Signs	R20 series	903.2.94	-	-		Varies

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.~~

MoDOT does not adopt the R1-10P sign. Revised Dec. 2025

Support:

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

Section 2B.05 YIELD Sign (R1-2)

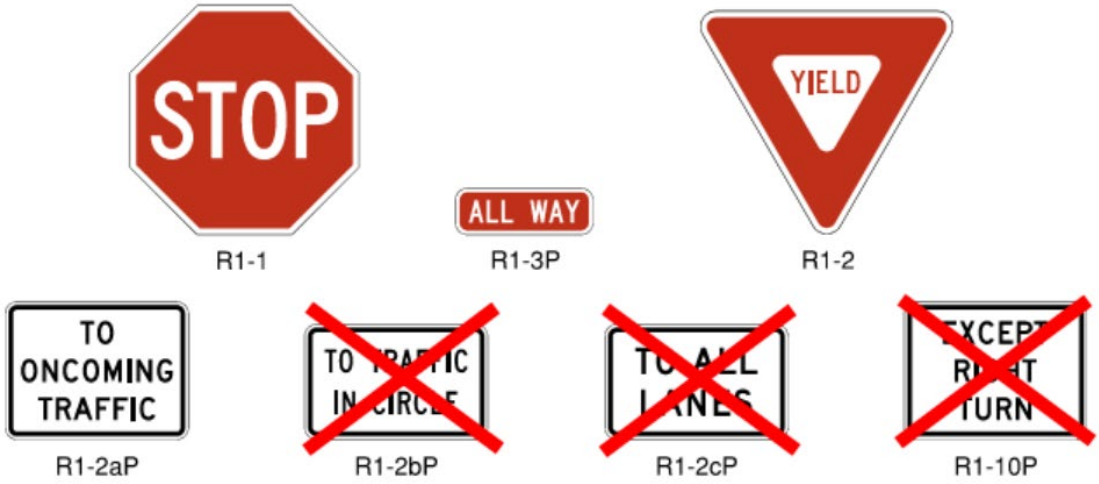
Support:

01 The YIELD sign requires road users to yield the right-of-way to other traffic on certain approaches to an intersection or on a two-way approach to a one-way section of roadway, such as a narrow bridge or underpass. Vehicles controlled by a YIELD sign need to slow down to a speed that is reasonable for the existing conditions or stop when necessary to avoid interfering with conflicting traffic.

Standard:

02 The YIELD (R1-2) sign (see Figure 2B-1) shall not be displayed using a changeable message sign.

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



SIGNING FOR RIGHT-OF-WAY AT INTERSECTIONS

Section 2B.06 General Considerations

Support:

01 Unsignalized intersections represent the most common form of intersection right-of-way control. Selection of control type might be impacted by specific requirements of State law or local ordinances.

02 Roundabouts and traffic circles are circular intersection designs and are not traffic control devices. The decision to convert an intersection from a conventional intersection to a circular intersection is an engineering design decision and not a traffic control device decision. As such, criteria for conversion from a conventional intersection to a circular intersection are not included in ~~the MUTCD~~ EPG 903.

Guidance:

03 The type of traffic control used at an unsignalized intersection should be the least restrictive that provides appropriate levels of safety and efficiency for all road users.

Support:

04 Some types of right-of-way control that can exist at an unsignalized intersection in order from the least restrictive to the most restrictive are the following:

~~A. No intersection control (see Section 2B.09): There are no right-of-way traffic control devices on any of the approaches to the intersection.~~

B. Yield control (see Section 2B.10): YIELD signs are placed on all approaches (for a circular intersection)~~, on opposing approaches for a four-leg intersection, on a single approach for a three-leg intersection,~~ or in the median of a divided highway. The YIELD signs are placed on the minor road.

C. Minor road stop control (see Section 2B.11): STOP signs are typically placed on opposing approaches (for a four-leg intersection) or on a single approach (for a three-leg intersection). The STOP signs are normally placed on the minor road. Section 2B.07 contains guidance on selecting the minor road.

D. All-way stop control (see Section 2B.12): STOP signs are placed on all approaches to the intersection.

MoDOT does not have uncontrolled or yield controlled intersections along the state highway system. Revised Dec. 2025

Guidance:

05 When selecting a form of intersection control, the following factors should be considered:

*A. Motor vehicle, bicycle, and pedestrian traffic volumes on all approaches**;** where the term units/day or units/hour is indicated, it should be the total of motor vehicle, bicycle, and pedestrian volume;*

B. Driver yielding behavior with regard to all modes of conflicting traffic, including bicyclists and pedestrians;

C. Number and angle of approaches;

E. Approach speeds;

E. Sight distance available on each approach;

F. Reported crash experience; and

G. The presence of a grade crossing near the intersection.

Standard:

06 YIELD or STOP signs shall not be used for speed control.

M06A_ Access to the state highway system from city streets, county roads or other significant private road approaches shall be controlled by installation of MoDOT STOP signs. Significant private roads are those that service 3 or more private residences.

Option:

M06B Stop signs, based on engineering judgment and a traffic study justifying the need, may be installed for a private road approach servicing fewer than 3 private residences, or a commercial entrance.

MoDOT specific language from the EPG. Revised Dec. 2025

~~Support:~~

~~07 Appropriate traffic calming or other speed control measures are available to control vehicle speeds, such as those that do not have the potential to diminish the effectiveness of traffic control devices when used for their specified purpose.~~

Standard:

08 Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:

- **A. If the signal indication for an approach is a flashing red at all times;**
- **B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or**
- **C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.**

09 STOP signs and YIELD signs shall not be installed on different approaches to the same unsignalized intersection if those approaches conflict with or oppose each other, except as provided for in Items A and B in ~~Paragraph 3~~ the first paragraph of Section 2B.10.

10 Portable or part-time STOP or YIELD signs shall not be used except for emergency and temporary traffic control zone purposes.

11 A portable or part-time (folding) STOP sign that is manually placed into view and manually removed from view shall not be used during a power outage to control a signalized approach unless the maintaining agency establishes that the signal indication that will first be displayed to that approach upon restoration of power is a flashing red signal indication and that the portable STOP sign will be manually removed from view prior to resuming stop-and-go operation of the traffic control signal.

Option:

~~12 A portable or part-time (folding) STOP sign that is electrically or mechanically operated such that it only displays the stop message during a power outage and ceases to display the stop message upon restoration of power may be used during a power outage to control a signalized approach.~~

M12A When a STOP sign or YIELD sign is knocked down and it is not possible to repair the assembly immediately, a temporary sign of the same likeness (STOP sign for STOP and YIELD sign for YIELD) may be installed on a portable sign support at the location until the permanent assembly can be repaired. See EPG 948 for additional information regarding Incident Response Planning.

MoDOT procedure for responding to knocked down stop signs. Revised Dec. 2025

Support:

13 The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

14 Section 9B.01 contains provisions regarding the assignment of priority where a shared-use path crosses a roadway.

Section 2B.07 Determining the Minor Road for Unsignalized Intersections

Guidance:

01 The selection of the minor road to be controlled by ~~YIELD or~~ STOP signs should be based on one or more of the following criteria:

A. A roadway intersecting a ~~designated through or numbered~~ highway,

B. A roadway with the lower functional classification,

C. A roadway with the lower traffic volume,

D. A roadway with the lower speed limit, and/or

E. A roadway that intersects with a roadway that has a higher priority for one or more modes of travel.

02 When two roadways that have relatively equal volumes, speeds, and/or other characteristics intersect, the following factors should be considered in selecting the minor road for installation of ~~YIELD or~~ STOP signs:

A. Controlling the direction that conflicts the most with established pedestrian crossing activity or school walking routes;

B. Controlling the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds; ~~and~~

C. Controlling the direction that has the best sight distance from a controlled position to observe conflicting traffic; and

D. Stopping the direction that has the longest distance of uninterrupted flow approaching the intersection.

MoDOT criteria from EPG. Revised Dec. 2025

Section 2B.08 Right-of-Way Intersection Control Considerations

Guidance:

01 Before converting to a more restrictive form of right-of-way control at an unsignalized intersection, the following alternative treatments to address safety, operational, or other concerns should be among those to be considered:

A. Where ~~yield or~~ stop controlled, installing ~~Yield Ahead or~~ Stop Ahead signs on the appropriate approaches to the intersection;

B. Removing parking on one or more approaches;

C. Removing sight distance obstructions;

D. Installing signs along the major street to warn road users approaching the intersection;

E. Relocating the stop line(s) and making other changes to improve the sight distance at the intersection;

F. Installing measures designed to reduce speeds on the approaches;

G. Installing an Intersection Control Beacon (see Section 4S.02) or Stop Beacon (see Section 4S.05) at the intersection to supplement STOP sign control;

H. Installing a Warning Beacon (see Section 4S.03) on warning signs in advance of a stop-controlled intersection on major-street and/or minor-street approaches;

I. Adding one or more lanes on a minor-street approach to reduce the number of vehicles per lane on the approach;

J. Revising the geometrics at the intersection to channelize vehicular movements and reduce the time required for a vehicle to complete a movement, which could also assist pedestrians;

K. Revising the geometrics at the intersection to add pedestrian median refuge islands and/or curb extensions;

L. Installing roadway lighting if a disproportionate number of crashes occur at night;

M. *Restricting one or more turning movements on a full-time or part-time basis if alternate routes are available;*
N. *Installing on the major street a pedestrian-actuated device: Warning Beacon (see Section 4S.03), rectangular rapid-flashing beacon (see Section 4L.01), or In-Roadway Warning Lights (see Chapter 4U), if pedestrian safety is the major concern;*
O. *If the warrant is satisfied, installing all-way stop control;*
P. *Installing a pedestrian hybrid beacon (see Chapter 4J) on the major street to address pedestrian safety;*
Q. *Installing a circular intersection; and*
R. *Employing other alternatives, depending on conditions at the intersection.*

~~Section 2B.09 No Intersection Control~~

~~*Guidance:*~~

~~*01 The decision not to use intersection control should be based on engineering judgment.*~~

~~Option:~~

~~02 The following factors may be considered:~~

~~A. Intersection sight distance is adequate on all approaches.~~
~~B. All approaches to the intersection are a single lane and there are no separate turn lanes.~~
~~C. The combined motor vehicle, bicycle, and pedestrian volume (existing or projected) entering the intersection from all approaches averages less than 1,000 units per day or 80 units in the peak hour.~~
~~D. There are no marked crosswalks or bicycle lanes on any approach.~~
~~E. None of the approaches to the intersection are for a through highway, main road, or higher functional classification.~~
~~F. The angle of intersection is between 90 and 75 degrees.~~
~~G. The functional classification of the intersecting streets is either the intersection of two local streets or the intersection of a local street with a collector street.~~

MUTCD Section 2B.09 is not adopted because MoDOT's policy is to control all intersections. Revised Dec. 2025

Section 2B.10 Yield Control

~~*Guidance:*~~

~~*01 At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs.*~~

~~*02 Yield control should be considered when engineering judgment indicates that all of the following conditions exist:*~~

~~*A. Intersection sight distance is adequate on the approaches to be controlled by YIELD signs.*~~
~~*B. All approaches to the intersection are a single lane and there are no separate turn lanes.*~~
~~*C. One of the following crash-related criteria applies:*~~
~~*1. For changing from no intersection control to yield control, there have been two or more reported crashes in the previous 12 months that are susceptible to correction by the installation of a YIELD sign.*~~
~~*2. For changing from minor road stop control to yield control, there have been two or fewer reported crashes in the previous 12 months.*~~
~~*D. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection averages less than 1,800 units per day or 140 units in the peak hour.*~~
~~*E. The angle of intersection is between 90 and 75 degrees.*~~
~~*F. The functional classification of the intersecting streets is either the intersection of two local streets or the intersection of a local street with a collector street.*~~

MoDOT policy is to use stop control at most intersections, therefore yield control is not a consideration as described in paragraphs 1 and 2. Revised Dec. 2025

~~Option:~~

Guidance:

03 YIELD signs ~~may~~ should be installed at an intersection when any of the following conditions apply:

A. At the second intersection of a divided highway crossing or median break functioning as two separate intersections (see Figure 2B-19). In this case, a YIELD sign should ~~may~~ be installed at the entrance to the second intersection.

B. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.

C. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.

~~*D. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.*~~

~~*E. On low-volume rural roads if engineering judgment indicates that a YIELD sign would provide adequate control.*~~

F. On an approach to an intersection where the only permissible movement is a right-turn movement with an intersection geometry similar to a channelized right-turn lane or an approach to a roundabout.

MoDOT policies do not classify any state-maintained routes as low-volume rural roads. Further direction on the use of YIELD signs at entrance ramps is provided below in paragraphs 3A- 3C. Revised Dec. 2025

Support:

M03A YIELD signs are generally not to be installed at entrance ramps on MoDOT freeways or expressways where an acceleration lane is provided. The intention is for drivers to accelerate to improve merging traffic operation. YIELD signs may cause drivers to decelerate, thus negatively impacting merging traffic operation. For cloverleaf interchanges, the loop entrance ramps can result in low speeds on ramps and short weave sections. Therefore, YIELD signs are installed at cloverleaf interchanges.

Standard:

M03B YIELD signs shall be used at a cloverleaf interchange where the in-loop traffic merges with the acceleration and deceleration traffic movement.

Option:

M03C YIELD signs may be installed facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation. The design criteria contained in Section 10.9.6.5 of the "AASHTO Green Book – A Policy on Geometric Design Of Highways and Streets," 7th Edition, 2018, AASHTO should be used to evaluate acceleration lane geometry. (See EPG 903.16.23 Location of Yield and Lane Ends Sign for Acceleration Ramps for additional information.)

~~*Guidance:*~~

~~*04 The YIELD signs should be installed on opposing minor-street approaches (for a four-leg intersection) or on the minor-street approach (for a three-leg intersection). When two intersecting roadways have relatively equal volumes, speeds, and other characteristics, yield control should be installed on the approach that conflicts the most with established pedestrian crossing activity, school walking routes, or bicycle crossing activity.*~~

MoDOT policy is to use stop control at most intersections, therefore yield control is not to be installed on opposing minor street approaches. Revised Dec. 2025

Standard:

05 A YIELD sign shall be used to require road users to yield the right-of-way to other traffic at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.

06 YIELD signs shall not be placed on all of the approaches to an intersection, except at roundabouts.

Section 2B.11 Minor Road Stop Control

Standard:

M00A All city street and county road access to the state highway system shall be controlled by a stop sign except as described in Section 2B.10 and Part 4.

~~*Guidance:*~~

~~*01 Stop control on the minor-road approach or approaches to an intersection should be considered when engineering judgment indicates that one or more of the following conditions exist:*~~

- ~~*A. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway.*~~
- ~~*B. Crash records indicate that:*~~
  - ~~*1. For a four-leg intersection, there are three or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*~~
  - ~~*2. For a three-leg intersection, there are three or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*~~
- ~~*C. The intersection is of a lower functional classification road with a higher functional classification road.*~~
- ~~*D. Conditions that previously supported the installation of all-way stop control no longer exist.*~~

~~*02 On low-volume rural roads, a STOP sign should be considered at an intersection where engineering judgment indicates that Item C in Paragraph 1 of this Section is applicable or where the intersection has inadequate sight distance for the operating vehicle speeds.*~~

MoDOT policies do not classify any state-maintained routes as low-volume rural roads. Revised Dec. 2025

Section 2B.12 All-Way Stop Control

Support:

01 The provisions in the following sections describe warrants for the recommended engineering study to determine all-way stop control. 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 to install or not install all-way stop control. Because each intersection will have unique characteristics that affect its operational performance or safety, it is the engineering study for a given intersection that is ultimately the basis for a decision to install or not install all-way stop control.

02 All-way stop controls at intersections with substantially differing approach volumes can reduce the effectiveness of these devices for all roadway users.

Guidance:

03 The decision to establish all-way stop control at an unsignalized intersection should be based on an engineering study. The engineering study for all-way stop control should include an analysis of factors

related to the existing operation and safety at the intersection, the potential to improve these conditions, and the applicable factors contained in the following all-way stop control warrants:

A. *All-Way Stop Control Warrant A: Crash Experience (see Section 2B.13)*
B. *All-Way Stop Control Warrant B: Sight Distance (see Section 2B.14)*
C. *All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection (see Section 2B.15)*
D. *All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles) (see Section 2B.16)*
E. *All-Way Stop Control Warrant E: Other Factors (see Section 2B.17)*

~~Option:~~

~~04 The decision to install all-way stop control on site roadways open to public travel may be based on engineering judgment.~~

MoDOT does not have jurisdiction over private site roads. Revised Dec. 2025

Standard:

05 The satisfaction of an all-way stop control warrant or warrants shall not in itself require the installation of all-way stop control at an unsignalized intersection.

Support:

M06 See Section 2B.06 for additional information.

Section 2B.13 All-Way Stop Control Warrant A: Crash Experience

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that:

A. For a four-leg intersection, there are five or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.
B. For a three-leg intersection, there are four or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.

Section 2B.14 All-Way Stop Control Warrant B: Sight Distance

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that sight distance on the minor-road approaches controlled by a STOP sign is not adequate for a vehicle to turn onto or cross the major (uncontrolled) road.

Support:

02 At such a location, a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop.

Section 2B.15 All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection

Option:

01 All-way stop control may be installed at locations where all-way stop control is an interim measure that can be installed to control traffic while arrangements are being made for the installation of a traffic control signal (see Chapter 4C) at the intersection or for the installation of yield control at a circular intersection.

Section 2B.16 All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles)

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates:

A. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day; and

B. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours.

02 If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants may be reduced to 70 percent of the values given in Items A and B in ~~Paragraph 1 of this Section~~ the preceding paragraph.

Section 2B.17 All-Way Stop Control Warrant E: Other Factors

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that all-way stop control is needed due to other factors not addressed in the other all-way stop control warrants. Such other factors may include, but are not limited to, the following:

A. The need to control left-turn conflicts,

B. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection, or

C. Where pedestrian and/or bicyclist movements support the installation of all-way stop control.

Section 2B.18 STOP Sign or YIELD Sign Placement

Standard:

01 The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.35) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.35) shall be installed in advance of the YIELD sign.

02 The STOP or YIELD sign shall be located as close as practicable to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.

03 STOP signs and YIELD signs shall not be mounted on the same post.

Support:

04 Section 2A.05 contains information about mounting signs back-to-back with a STOP or YIELD sign.

Guidance:

05 STOP or YIELD signs should not be placed farther than 50 feet from the edge of the pavement of the intersected roadway (see Drawing F in Figure 2A-3).

06 Supplemental plaques used in conjunction with a STOP or YIELD sign should be limited to those specified for such use in ~~this Manual~~ the EPG.

~~Option:~~

Standard:

07 Where drivers proceeding straight ahead must yield to traffic approaching from the opposite direction, such as at a one-lane bridge, a TO ONCOMING TRAFFIC (R1-2aP) plaque (see Figure 2B-1) ~~may~~ shall be mounted below the YIELD sign. See Figure 903.2.53.2 and Figure 903.2.53.3 in EPG 903.2.53.

MoDOT specific language in the EPG. Revised Dec. 2025

~~08 Where drivers must yield to traffic in a multi-lane roundabout, a TO TRAFFIC IN CIRCLE (R1-2bP) or TO ALL LANES (R1-2cP) plaque (see Figure 2B-1) may be mounted below the YIELD sign.~~

MoDOT does not use R1-2bP or R1-2cP plaques. Revised Dec. 2025

Support:

09 Figure 2A-3 shows examples of some typical placements of STOP signs and YIELD signs.

10 Section 2A.13 contains additional information about separate and combined mounting of other signs with STOP or YIELD signs.

Guidance:

11 Stop lines that are used to supplement a STOP sign should be located as described in Section 3B.19. Yield lines that are used to supplement a YIELD sign should be located as described in Section 3B.19.

12 Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the edge of the crosswalk that is nearest to the approaching traffic.

13 Except at roundabouts and channelized right-turn lanes, where there is a marked crosswalk at the intersection, the YIELD sign should be installed in advance of the edge of the crosswalk that is nearest to the approaching traffic.

14 Where two roads intersect at an acute angle, the STOP or YIELD sign should be positioned at an angle, or shielded, so that the legend is out of view of traffic to which it does not apply.

M14A At a roundabout intersection, to prevent circulating vehicles from yielding unnecessarily, the face of the YIELD sign should not be visible from the circulatory roadway.

MoDOT specific language from the EPG. Revised Dec. 2025

15 If a raised splitter island is available on the left-hand side of a multi-lane roundabout approach, an additional YIELD sign should be placed on the left-hand side of the approach.

Option:

16 If a raised splitter island is available on the left-hand side of a single-lane roundabout approach, an additional YIELD sign may be placed on the left-hand side of the approach.

17 At wide-throat intersections or where two or more approach lanes of traffic exist on the signed approach, an additional STOP or YIELD sign may be installed on the left-hand side of the road and/or a stop or yield line may be used to improve observance of the right-of-way control. At channelized intersections or at divided roadways separated by a median or divisional island (painted or physical), the additional STOP or YIELD sign may be placed on a channelizing island, or in the median or on the divisional island. ~~An additional STOP or YIELD sign may also be placed overhead facing the approach at the intersection to improve observance of the right-of-way control.~~

Signs may be installed in painted or physical channelizing islands. MoDOT does not mount stop or yield signs overhead. Revised Dec. 2025

Standard:

18 More than one STOP sign or more than one YIELD sign shall not be placed on the same support facing in the same direction.

~~Option:~~

~~19 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5aP) supplemental plaque (see Section 2C.45) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.~~

MoDOT does not use the W4-5P plaque. Revised Dec. 2025

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

Missouri State Law requires motorists to yield to pedestrians, not to stop for pedestrians. Revised Dec. 2025

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.~~ The legend STATE LAW shall not be displayed on the R1-5 series signs.

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~~ the second paragraph of this article.

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~~ the second paragraph of this article.

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.~~

MoDOT uses yield lines in conjunction with R1-5 signs. Revised Dec. 2025

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)

MoDOT does not adopt the Overhead Pedestrian and Trail Crossing signs. Revised Dec. 2025

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~~ MoDOT 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.**~~

Missouri State Law requires motorists to yield to pedestrians, not stop for pedestrians. Revised Dec. 2025

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~~ raised island~~, on a lane line, or on an edge line~~.

MoDOT only intends for these signs to be installed on raised islands because of maintenance concerns related to knock-downs and snowplow operations. Revised Dec. 2025

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.**~~

MoDOT does not adopt the Overhead Pedestrian and Trail Crossing signs. Revised Dec. 2025

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.*~~

Standard P4 was edited to require In-Street Pedestrian or Trail Crossing signs to be installed on raised islands, so guidance P11 is not necessary. Revised Dec. 2025

Option:

12 In-Street Pedestrian or Trail Crossing signs may be mounted back-to-back on a raised island 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 or 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:

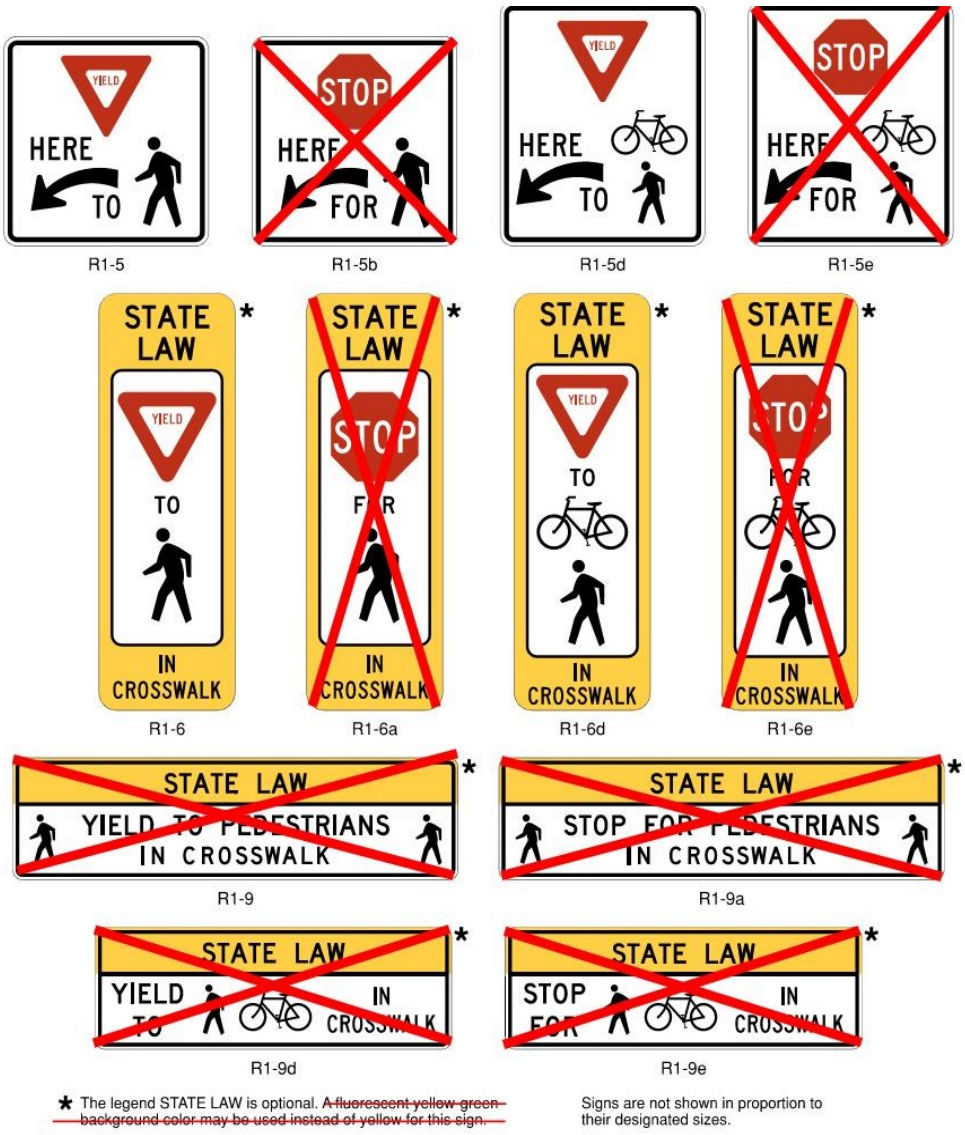
17 ~~The top of an In-Street Pedestrian or Trail Crossing sign shall be a maximum of 4 feet above the pavement surface.~~ The top of an In-Street Pedestrian or Trail Crossing sign placed in an island shall be a maximum of 4 feet above the island surface.

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



SPEED LIMIT SIGNS AND PLAQUES

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. Maximum speed limits in Missouri are governed by the Missouri Revised Statutes, Section 304.010.

03 ~~Agencies with designated authorities to set speed limits, which include States, and sometimes local jurisdictions,~~ MoDOT 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~~ MoDOT 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~~ practitioners 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. See EPG 905.2.14 for more information regarding speed limit guidelines.

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-percentile 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~~ the first Guidance paragraph of this ~~Section~~ article.

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~~ the first Guidance paragraph of this ~~Section~~ article have been considered and determined to be non-mitigating, and*

B. *The measures described in ~~Paragraph 8 of this Section~~ the second Guidance paragraph of this article have been considered to the extent practicable.*

M10A See EPG 905.2.14 for additional information regarding setting speed limits.

Reference to EPG speed limit guidelines. Revised Dec. 2025

11 ~~State and local agencies~~ MoDOT 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.

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~~ Missouri and at city limits, 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.

M17A Speed Limit signs should not be located at curves or other locations where the legal speed limit is greater than the safe operating speed. If Speed Limit signs are installed on the same sign supports and above a City Limit sign, the sign supports should be sized to properly support both signs.

M17B The following are recommended locations for posting a Speed Limit sign:

A. *Downstream from all acceleration ramps on the freeway/expressway system, posted after the route confirmation marker, if space allows;*
B. *Downstream from major intersections such as state system junctions, signalized intersections, and major county road junctions;*
C. *Where it is necessary to remind road users of the speed limit that is applicable;*
D. *In each direction of travel for road users leaving the Interstate system onto a state route. The sign should be located, if practical, approximately 400 ft. beyond the route confirmation assembly. If the crossroad is not located on the state system, the proper jurisdiction should be notified; or*
E. *When the speed limit is reduced on the freeway/expressway, an additional sign should be posted in the median.*

MoDOT Guidance from the EPG. Revised Dec. 2025

Support:

18 The "Traffic Control Devices Handbook – 2nd Edition, 2013, ITE." 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).~~

MoDOT does not use the R2-5 series plaques. Revised Dec. 2025

~~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.**~~

MoDOT does not use truck speed limits. Revised Dec. 2025

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.*~~

MoDOT does not use separate truck speed limits or nighttime speed limits. Revised Dec. 2025

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~~ the third and fourth Guidance paragraphs of this article.

Standard:

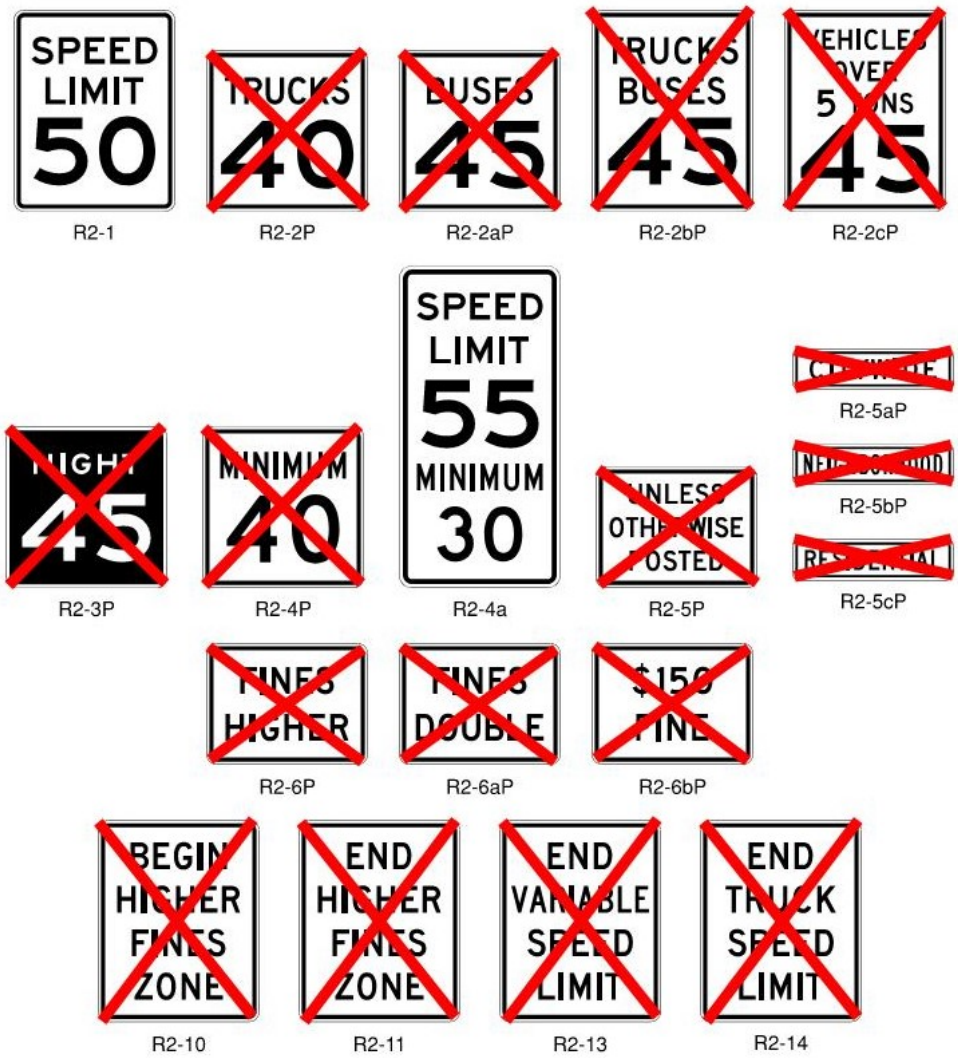
28 The variable speed limit sign legend "SPEED LIMIT" shall be a black legend on a white retroreflective background. The variable speed limit legend shall be displayed in white LEDs on an opaque black background.

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.

Figure 2B-3. Speed Limit Signs and Plaques Shapes



~~**Section 2B.22 Vehicle Speed Limit Plaques (R2-2P Series)**~~

~~**Standard:**~~

~~**01 Where a special speed limit applies to certain classes of vehicles, the Truck Speed Limit (R2-2P) plaque, Bus Speed Limit (R2-2aP) plaque, Truck-Bus Speed Limit (R2-2bP) plaque, or Vehicles over X Tons Speed Limit (R2-2cP) plaque (see Figure 2B-3) shall be displayed below the Speed Limit (R2-1) sign, except as provided in Paragraph 2 of this Section.**~~

~~Option:~~

~~02 The legend of a Vehicle Speed Limit (R2-2P series) plaque may be combined in a single sign and displayed below the SPEED LIMIT XX legend, similar to the Combined Maximum and Minimum Speed Limits (R2-4a) sign (see Section 2B.24).~~

~~03 A different vehicle class legend may be substituted on the R2-2P series plaque for other classes of vehicles not included in Paragraph 1 of this Section.~~

MoDOT does not use Vehicle Speed Limit Plaques. Revised Dec. 2025

~~**Section 2B.23 Night Speed Limit Plaque (R2-3P)**~~

~~**Standard:**~~

~~**01 Where different speed limits are prescribed for day and night, both limits shall be posted.**~~

~~Guidance:~~

~~02 A Night Speed Limit (R2-3P) plaque (see Figure 2B-3) should be reversed using a white retroreflective legend and border on a black background.~~

~~Option:~~

~~03 A Night Speed Limit plaque may be combined with or installed below the standard Speed Limit (R2-1) sign.~~

MoDOT does not use the Night Speed Limit Plaque. Revised Dec. 2025

Section 2B.24 ~~Minimum Speed Limit Plaque (R2-4P) and~~ Combined Maximum and Minimum Speed Limits Sign (R2-4a)

Standard:

01 ~~A Minimum Speed Limit (R2-4P) plaque (see Figure 2B-3) shall be displayed only in combination with a Speed Limit sign. Where used, the R2-4P plaque shall be mounted below a Speed Limit (R2-1) sign.~~ Combined Maximum and Minimum Speed Limits (R2-4a) signs shall be installed only on interstate routes in lieu of Speed Limit (R2-1) signs to designate the maximum and minimum speed limits that apply.

Guidance:

M01A The Combined Maximum and Minimum Speed Limits sign should be located in the same manner as Speed Limit signs (See Section 2B.21). Additionally, the R2-4a sign should be installed on interstate routes at entrances to Missouri and where interstate routes cross county lines.

~~Option:~~

~~02 Where engineering judgment determines that slow speeds on a highway might impede the normal and reasonable movement of traffic, the Minimum Speed Limit (R2-4P) plaque may be installed below a Speed Limit (R2-1) sign to indicate the minimum legal speed. In lieu of a sign assembly with the R2-1 sign and R2-4P plaque, the Combined Maximum and Minimum Speed Limits (R2-4a) sign may be used.~~

MoDOT only uses the Combined Maximum and Minimum Speed Limits sign on interstate routes. Separate speed limit plaques are not used. Revised Dec. 2025

Section 2B.24A Speed Limit XX Except Where Posted Sign (R2-5d)

Standard:

M01 The SPEED LIMIT XX EXCEPT WHERE POSTED (R2-5d) sign shall be installed only at locations where it has been requested and is required by an enabling ordinance.

Guidance:

M02 The SPEED LIMIT XX EXCEPT WHERE POSTED sign should be placed immediately to the right of the City Limit sign on its own post.

Option:

M03 The SPEED LIMIT XX EXCEPT WHERE POSTED sign may be used on all state highways and outer roads except the Interstate system.

Special regulatory sign use by MoDOT. Revised Dec. 2025

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

Support:

M00 See EPG 907.3 for information on Travel Safe Zones.

~~**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.~~

~~*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).~~

MoDOT does not use the Higher Fines Signs or Plaque. Revised Dec. 2025

MOVEMENT AND LANE CONTROL SIGNS AND PLAQUES

Section 2B.26 Movement Prohibition Signs (R3-1 through R3-4, R3-18, and R3-27)

Standard:

01 Movement Prohibition signs (see Figure 2B-4) shall be installed where specific movements are prohibited at an intersection approach except as provided in ~~Paragraphs 13 and 17 of this Section~~ the second Option and fourth Standard paragraphs of this article.

Support:

M01A Missouri Statute 304.341, which governs U-turn Movements at signalized intersections, states:

> It shall be unlawful for the driver of any vehicle to turn such vehicle so as to proceed in the opposite direction at any intersection controlled by a traffic signal or police officer; nor shall such turn be made at any place unless the movement can be made in safety and without interfering with other traffic.

M01B Missouri Statute 304.120 allows municipalities, by ordinance, to make additional rules of the road or traffic regulations to meet their needs and traffic conditions, which would allow U-turn Movements to be permitted at certain unsignalized intersections.

Missouri has specific regulations regarding U-turn movements. Revised Dec. 2025

Guidance:

02 Movement Prohibition signs should only be used to prohibit a turn or through movement from an entire approach and should not be used to designate movements that are required or permitted from a specific lane or lanes on a multi-lane approach.

03 Movement Prohibition signs should be placed where they will be most easily seen by road users who might be intending to make the movement.

04 If a No Right Turn (R3-1) sign (see Figure 2B-4) is used, at least one should be placed either over the roadway or at a right-hand corner of the intersection.

05 If a No Left Turn (R3-2) sign (see Figure 2B-4) is used, at least one should be placed over the roadway, at the far left corner of the intersection, on a median, or in conjunction with the STOP sign or YIELD sign located on the near right corner.

06 Except as provided in Item C ~~in Paragraph 11 of this Section~~ of the third Standard paragraph of this article for signalized locations, if a NO TURNS (R3-3) sign (see Figure 2B-4) is used, two signs should be used, one at a location specified for a No Right Turn sign and one at a location specified for a No Left Turn sign.

07 If a No U-Turn (R3-4) sign (see Figure 2B-4) or a combination No U or Left Turn (R3-18) sign (see Figure 2B-4) is used, at least one should be used at a location specified for a No Left Turn sign.

M07A The No U-Turn sign (R3-4) should be used sparingly and only where a specific problem has been documented and not as standard practice for median breaks. If used, these signs should be placed at or between intersections to indicate where U-turns are prohibited.

08 If both left turns and U-turns are prohibited, the combination No U or Left Turn (R3-18) sign should be used instead of separate R3-2 and R3-4 signs.

Standard:

M08A The No U-Turn sign shall be installed above the AUTHORIZED AND EMERGENCY VEHICLES ONLY (R5-29) sign (See section 2B.45).

MoDOT specific information related to No U-Turn signs. Revised Dec. 2025

Support:

09 Sections 2B.27 through 2B.30 contain information regarding lane control signs that indicate the required or permitted movements from individual lanes.

Guidance:

10 If a No Straight Through (R3-27) sign (see Figure 2B-4) is used, at least one should be placed either over the roadway or at a location where it can be seen by road users who might be intending to travel straight through the intersection.

11 If turn prohibition signs are installed in conjunction with traffic control signals:

A. The No Right Turn sign should be installed adjacent to a signal face viewed by road users in the right-hand lane.

B. The No Left Turn (or No U-Turn or combination No U or Left Turn) sign should be installed adjacent to a signal face viewed by road users in the left-hand lane.

C. A NO TURNS sign should be placed adjacent to a signal face viewed by all road users on that approach, or two signs should be used.

Option:

12 If turn prohibition signs are installed in conjunction with traffic control signals, an additional turn prohibition sign may be post-mounted to supplement the sign mounted overhead.

13 Where ONE WAY signs are used (see Section 2B.49), No Left Turn and No Right Turn signs may be omitted.

14 Where the movement restriction applies to certain vehicle classes, signs incorporating a supplementary legend, modified as appropriate, may be used to indicate the specific vehicle class restriction ~~(R3-1b through R3-1d)~~ or exception ~~(R3-1e and R3-1f) (see Figure 2B-4)~~. When the movement restriction applies during certain time periods only, the following Movement Prohibition signing alternatives may be used and are listed in order of preference:

A. A blank-out or changeable message sign (see Chapter 2L) that displays the prohibited movement only during the time that the movement prohibition is applicable, especially at signalized intersections.

B. Permanently-mounted signs incorporating a supplementary legend showing the hours and days during which the prohibition is applicable ~~(R3-1g and R3-1h) (see Figure 2B-4)~~. Contact the Highway Safety and Traffic Division for the design of supplementary legends and plaques.

C. Portable signs, installed by proper authority, located off the roadway at each corner of the intersection. The portable signs are only to be used during the time that the movement prohibition is applicable.

Movement restriction signs with supplementary legends or plaques are not MoDOT standard signs. Revised Dec. 2025

Standard:

15 The blank-out part-time electronic-display Movement Prohibition sign shall consist of a red circle and diagonal with a white prohibited movement on an opaque black background.

Option:

16 Movement Prohibition signs may be omitted at a ramp entrance to an expressway or a channelized intersection where the design is such as to indicate clearly the one-way traffic movement on the ramp or turning lane.

Standard:

17 The No Left Turn (R3-2) sign, the No U-Turn (R3-4) sign, and the combination No U or Left Turn (R3-18) sign shall not be used at approaches to roundabouts to prohibit drivers from turning left onto the circulatory roadway of a roundabout.

Support:

18 At roundabouts, the use of R3-2, R3-4, or R3-18 signs to prohibit left turns onto the circulatory roadway might confuse drivers about the possible legal turning movements around the roundabout.

~~Roundabout Circulation (R6-5P) plaques (see Section 2B.51) and/or~~ ONE WAY (R6-1 or R6-2) signs are appropriate to indicate the travel direction within a roundabout.

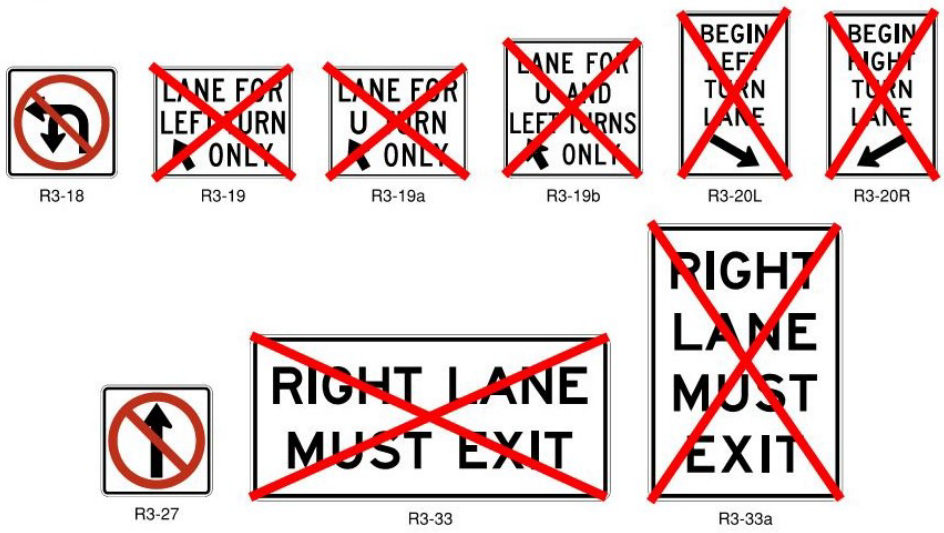
The Roundabout Circulation plaque is not used by MoDOT. Revised Dec. 2025

Figure 2B-4. Movement Prohibition and Lane Control Signs and Plaques (Sheet 1 of 2)



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

Figure 2B-4. Movement Prohibition and Lane Control Signs and Plaques (Sheet 2 of 2)



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.

M01A Intersection Lane Control signs shall not be used in lieu of turn prohibition signs, such as No Right-Turn (R3-1).

MoDOT standard language from the EPG. Revised Dec. 2025

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, ramps with two or more lanes 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~~ approximately 250 ft. in advance of the stop bar over the appropriate lanes. A one-arm cantilever tubular truss to support these signs should be used to eliminate an obstacle on one side of the roadway.

Option:

M04A A signal mast arm design (without signal head) may be used to mount Intersection Lane Control signs, which allows a longer arm than standard one or two arm tubular sign supports. The upright post may be placed on either side of the roadway, and if possible, placed so that roadway geometrics draw traffic away from the post and footing.

Guidance:

M04B The Left Only (R3-5L) sign should be installed on the back side of the mast arms over the left turn lanes where practical.

MoDOT specific language from the EPG. Revised Dec. 2025

05 Where overhead mounting on the approach is impracticable for the Advance and/or Intersection ~~lane~~ 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.

Standard:

08 Except as provided in the last paragraph of this article, ~~A~~at roundabouts, Intersection Lane Control (R3-5, R3-6, and R3-8 series) signs ~~may~~ shall display curved-stem arrow symbols as ~~any of the arrow symbol options~~ shown in Figure 2B-5.

Option:

M08A Normal-stem arrow symbol options may be displayed on Intersection Lane Control (R3-5, R3-6, and R3-8 series) signs at roundabouts where they more effectively indicate road geometry based on engineering judgment.

MoDOT has standardized the use of the curve-stem arrow. Revised Dec. 2025

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

MoDOT does not use the R3-19 series signs or the R3-20 sign. Revised Dec. 2025

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 R3-7 sign 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.**~~

MoDOT does not use supplemental plaques with Intersection Lane Control signs. Revised Dec. 2025

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:*~~ **Standard:**

05 The use of the Mandatory Movement Lane Control (R3-7) word message sign ~~*should*~~ shall be limited to only locations ~~*that are adjacent to the full-width portion of*~~ where through lanes approaching an intersection become ~~*a*~~ mandatory turn lanes. ~~*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.*~~

EPG upgrades this statement to a Standard. Revised Dec. 2025

M05A Mandatory Movement Lane Control Signs shall not be used on roadways with speed limits 50 mph or greater. Contact Highway Safety and Traffic Division for alternatives when speed limits are 50 mph or greater.

The text on R3-7R signs is difficult to read at high speeds. Revised Dec. 2025

Guidance:

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.*~~

MoDOT does not use supplemental plaques with Intersection Lane Control signs. Revised Dec. 2025

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.~~

MoDOT does not use supplemental plaques with Intersection Lane Control signs. Revised Dec. 2025

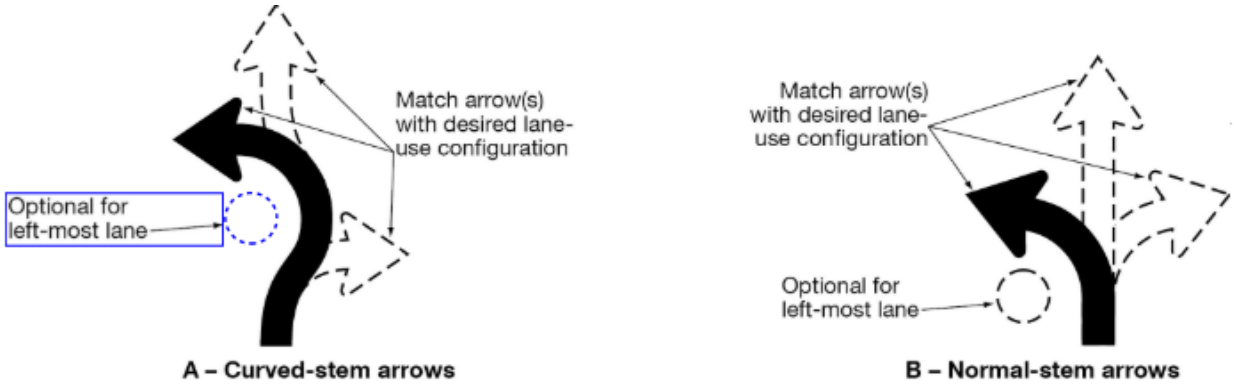
~~10 Where a mandatory left or U-turn lane is added at a median location, a LANE FOR LEFT TURN ONLY (R3-19) or LANE FOR U-TURN ONLY (R3-19a) sign may be post-mounted on the median at the beginning of the taper. Where a U-turn and a left turn are both allowed, a LANE FOR U-AND LEFT TURNS ONLY (R3-19b) 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.~~

MoDOT does not use the R3-19 series signs. Revised Dec. 2025

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.

Figure 2B-5. Intersection Lane Control Sign Arrow Options for Roundabouts



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.

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, R3-8a, and R3-8b) signs (see Figure 2B-4) may be used to indicate the configuration of all lanes ahead.

02 The word message~~s~~ 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.~~

MoDOT does not use supplemental plaques with Intersection Lane Control signs. Additional word messages are not included in MoDOT standard signs. Revised Dec. 2025

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~~Section 9B.03).

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.**~~

MoDOT does not use supplemental plaques with Intersection Lane Control signs. Revised Dec. 2025

~~Section 2B.31 RIGHT (LEFT) LANE MUST EXIT Signs (R3-33, R3-33a)~~

~~Option:~~

~~01 A RIGHT (LEFT) LANE MUST EXIT (R3-33) sign (see Figure 2B-4) may be used to supplement an overhead EXIT ONLY guide sign to inform road users that traffic in the right-hand (left-hand) lane of a roadway that is approaching a grade-separated interchange is required to depart the roadway on the exit ramp at the next interchange.~~

~~02 The R3-33a sign (see Figure 2B-4) may be used in place of the R3-33 sign where the roadside width is limited and will not accommodate the R3-33 sign.~~

~~Support:~~

~~03 Section 2C.50 contains information regarding a warning sign that can be used in advance of lane drops at grade-separated interchanges.~~

MUTCD Section 2B.31 is not adopted. MoDOT does not use regulatory RIGHT (LEFT) LANE MUST EXIT Signs. The warning sign versions of these signs are used by MoDOT. Revised Dec. 2025

Section 2B.32 Two-Way Left-Turn-Only Signs (R3-9a and R3-9b) and Plaques

Support:

M00A Missouri Statute 300.215, which governs two-way left turn lane movements states:

Designated two-way left turn lanes: Where a special lane for making left turns by drivers proceeding in opposite directions have been indicated by official traffic control devices:

A. A left turn shall not be made from any other lane;

B. A vehicle shall not be driven in the lane except when preparing for or making a left turn from or into the roadway or when preparing for or making a U-turn when otherwise permitted by law;

C. A vehicle shall not be driven in the lane for a distance more than five hundred feet.

Missouri specific regulations regarding two-way left-turn lanes. Revised Dec. 2025

Standard:

M00B Two-Way Left Turn Only (R3-9a) signs shall be used for overhead installation only.

M00C Center Lane Only (R3-9b) signs shall be post mounted installations.

MoDOT specific language from the EPG. Revised Dec. 2025

Guidance:

01 A Two-Way Left-Turn-Only (R3-9a or R3-9b) sign (see Figure 2B-6) should be used in conjunction with the required pavement markings where a non-reversible lane is reserved for the exclusive use of left-turning vehicles in either direction and is not used for passing, overtaking, or through travel.

Option:

02 The post-mounted R3-9b sign may be used as an alternate to or a supplement to the overhead R3-9a sign. ~~The legend BEGIN or END may be used within the border of the main sign itself, or on an R3-9cP or R3-9dP plaque (see Figure 2B-6) mounted immediately above it.~~

MoDOT does not use supplemental plaques or additional text with Intersection Lane Control signs. Revised Dec. 2025

M02A Additional R3-9b signs may be installed after major intersections, or in situations that require additional emphasis of the proper use of this lane.

MoDOT specific language from the EPG. Revised Dec. 2025

Support:

03 Signing is especially helpful to drivers in areas where the two-way left-turn-only maneuver is new, in areas subject to environmental conditions that frequently obscure the pavement markings, and on peripheral streets with two-way left-turn-only lanes.

~~Section 2B.33 BEGIN and END Plaques (R3-9cP and R3-9dP)~~

~~Option:~~

~~01 The BEGIN (R3-9cP) or END (R3-9dP) plaque (see Figure 2B-6), mounted directly above a regulatory sign, may be used to inform road users of the location where a regulatory condition begins or ends.~~

MUTCD Section 2B.33 is not adopted. BEGIN and END plaques are not used by MoDOT. Revised Dec. 2025

~~Section 2B.34 Reversible Lane Control Signs (R3-9c through R3-9i)~~

~~Option:~~

~~01 A reversible lane may be used for through traffic (with left turns either permitted or prohibited) in alternating directions during different periods of the day, and the lane may be used for exclusive left turns in one or both directions during other periods of the day as well. Reversible Lane Control (R3-9c through R3-9i) signs (see Figure 2B-6) may be either static type or changeable message type. These signs may be either post-mounted or overhead. Lane-use control signals (see Chapter 4T) may also be used for reversible lanes.~~

Standard:

02 Where it is determined by an engineering study that lane-use control signals or physical barriers are not necessary, the lane shall be controlled by overhead Reversible Lane Control signs (see Figure 2B-7).

03 post-mounted Reversible Lane Control signs shall be used only as a supplement to overhead signs or signals. post-mounted signs shall be identical in design to the overhead signs and an additional legend such as CENTER LANE shall be added to the top of the sign (R3-9f) to indicate which lane is controlled.

Option:

04 Reversing traffic flow may be controlled with pavement markings and Reversible Lane Control signs (without the use of lane-use control signals), when all of the following conditions are met:

A. Only one lane is being reversed,

B. An engineering study indicates that the use of Reversible Lane Control signs alone would result in an acceptable level of safety and efficiency, and

C. There are no unusual or complex operations in the reversible lane pattern.

Standard:

05 Reversible Lane Control signs shall contain the legend or symbols designating the allowable uses of the lane and the time periods such uses are allowed. Where symbols and legends are used, their meanings shall be as shown in Table 2B-2.

06 Reversible Lane Control signs shall consist of a white background with a black legend and border, except for the R3-9c sign, where the color red is used for the X symbol.

07 Symbol signs, such as the R3-9c sign, shall consist of the appropriate symbol in the upper portion of the sign with the appropriate times of the day and days of the week below it. All times of the day and days of the week shall be accounted for on the sign to eliminate confusion to the road user.

08 In situations where more than one message is conveyed to the road user, such as on the R3-9c sign, the sign legend shall be arranged as follows:

A. The prohibition or restriction message is the primary legend and shall be on the top for word message signs and to the far left for symbol signs,

B. The permissive use message shall be displayed as the second legend, and

C. The OTHER TIMES message shall be displayed at the bottom for word message signs and to the far right for symbol signs.

Option:

09 The symbol signs may also include a downward-pointing arrow with the legend THIS LANE. The term OTHER TIMES may be used for either the symbol or word message sign.

Standard:

10 A Reversible Lane Control sign shall be mounted over the approximate center of the lane that is being reversed.

11 If the vertical or horizontal alignment is curved to the degree that a driver would be unable to see at least one sign, and preferably two signs, then additional overhead signs shall be installed. The placement of the signs shall be such that the driver will have a definite indication of the lanes specifically reserved for use at any given time. Special consideration shall be given to major generators introducing traffic between the normal sign placement.

12 Transitions at the entry to and exit from a section of roadway with reversible lanes shall include advance signs to notify or warn drivers of the boundaries of the reversible lane controls. The R3-9g or R3-9h signs (see Figure 2B-6) shall be used for this purpose.

~~Option:~~

~~13 More than one End Reverse Lane (R3-9i) sign (see Figure 2B-6) may be used at the termination of the reversible lane to emphasize the importance of the message.~~

~~14 Where longitudinal barriers separate opposing directions of traffic, the R3-9g or R3-9h signs may be omitted.~~

~~Standard:~~

~~15 Flashing beacons, if used to supplement the overhead Reversible Lane Control signs, shall comply with the applicable requirements for flashing beacons in Chapter4S.~~

~~16 When used in conjunction with Reversible Lane Control signs, the Turn Prohibition (R3-1 through R3-4, and R3-18) signs shall be mounted overhead and separate from the Reversible Lane Control signs. The Turn Prohibition signs shall be designed and installed in accordance with Section 2B.26.~~

~~*Guidance:*~~

~~*17 For additional emphasis, a supplemental plaque stating the distance of the prohibition, such as NEXT 1 MILE, should be added to the Turn Prohibition signs that are used in conjunction with Reversible Lane Control signs.*~~

~~*18 If used, overhead signs should be located at intervals not greater than ¼ mile. The bottom of the overhead Reversible Lane Control signs should not be more than 19 feet above the pavement grade.*~~

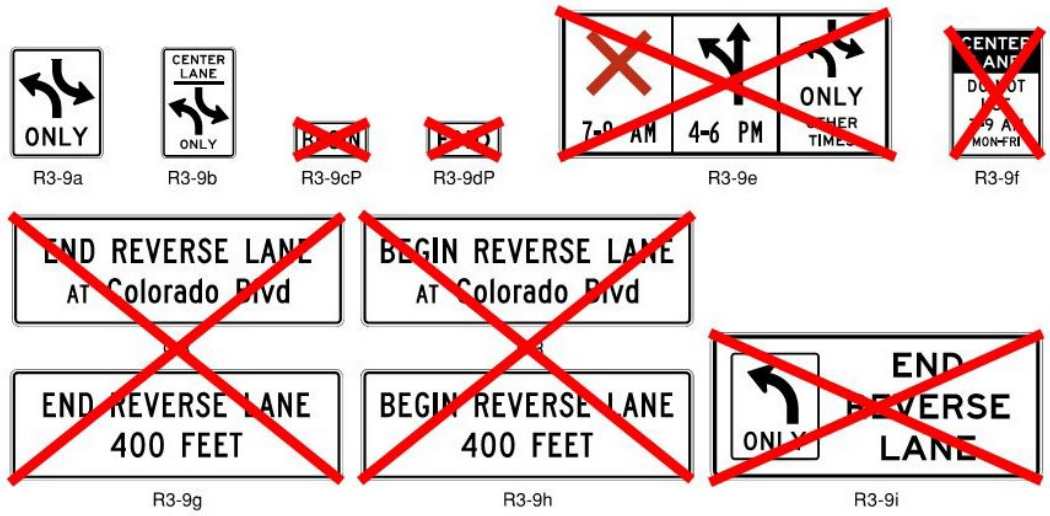
~~*19 Where more than one sign is used at the termination of a reversible lane, they should be at least 250 feet apart. Longer distances between signs are appropriate for streets with speeds over 35 mph, but the separation should not exceed 1,000 feet.*~~

~~*20 Because left-turning vehicles have a significant impact on the safety and efficiency of a reversible lane operation, if a mandatory left-turn lane or two-way left-turn lane cannot be incorporated into the lane use pattern for a particular peak or off-peak period, consideration should be given to prohibiting left turns and U-turns during that time period.*~~

~~*21 Reversible Lane Control signs and parking signs should be consistent in message during the same operational periods.*~~

MUTCD Section 2B.34 is not adopted. Reversible lanes are not used on the MoDOT system. Revised Dec. 2025

Figure 2B-6. Center and Reversible Lane Control Signs and Plaques



R3-9a R3-9b R3-9cP R3-9dP R3-9e R3-9f

R3-9g R3-9h R3-9i

Table 2B-2. Meanings of Symbols and Legends on Reversible Lane Control Signs

Symbol / Word Message	Meaning
Red X on white background	Lane closed
Upward-pointing black arrow on white background (if left turns are permitted, the arrow shall be modified to show left / through arrow)	Lane open for through travel and any turns not otherwise prohibited
Black two-way left-turn arrows on white background and legend ONLY	Lane may be used only for left turns in either direction (i.e., as a two-way left-turn lane)
Black single left-turn arrow on white background and legend ONLY	Lane may be used only for left turns in one direction (without opposing left turns in the same lane)

Table 2B-2 is not adopted by MoDOT. Revised Dec. 2025

Figure 2B-7. Location of Reversible Two-Way Left-Turn Signs

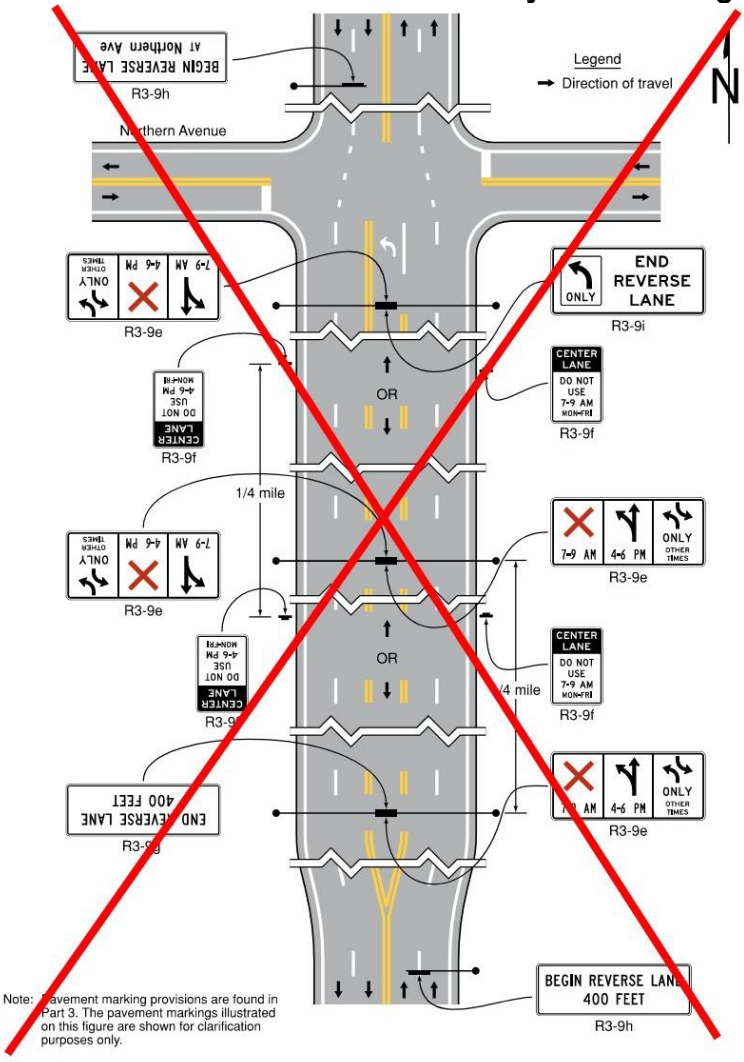


Figure 2B-7 is not adopted by MoDOT. Revised Dec. 2025

Section 2B.35 Jughandle Signs (R3-23, R3-24, R3-25, and R3-26 Series)

Guidance:

M00 There are limited cases where these signs are applicable to the MoDOT system. Any use of these signs requires authorization from the Highway Safety and Traffic Division.

~~Support:~~

~~01 A jughandle turn is a left turn or U-turn that because of special geometry is made by initially making a right turn. This type of turn can increase the operational efficiency of a roadway by eliminating the need for mandatory left-turn lanes and can increase the operational efficiency of a traffic control signal by eliminating the need for protected left-turn phases. A jughandle turn can also provide an opportunity for trucks and commercial vehicles to make a U-turn where the median and roadway are not of sufficient width to accommodate a traditional U-turn by these vehicles.~~

~~02 Figure 2B-8 shows the various signs that can be used for signing jughandle turns. Figure 2B-9 shows examples of regulatory and destination guide signing for various types of jughandle turns.~~

~~**Standard:**~~

~~**03 On multi-lane roadways, since road users generally anticipate that they need to be in the left-hand lane when approaching a location where they desire to turn left or make a U-turn, an ALL TURNS FROM RIGHT LANE (R3-23) or a U-TURN FROM RIGHT LANE (R3-23a) sign (see Figure 2B-8) shall be installed in advance of the location to inform drivers that left turns and/or U-turns will be made from the right-hand lane.**~~

~~Option:~~

~~04 Where a median of sufficient width is available, supplemental regulatory or guide signs may also be placed on the left-hand side of the roadway.~~

~~**Standard:**~~

~~**05 The R3-24 series sign with an upward diagonal arrow pointing to the right if the jughandle entrance is designed as an exit ramp (see Drawings A and B in Figure 2B-9), or the R3-25 series sign with a horizontal arrow pointing to the right if the jughandle entrance is designed as an intersection, shall be installed on the right-hand side of the roadway at the entrance to the jughandle. The legend on the sign shall be ALL TURNS, U-TURN, or U AND LEFT TURNS, as appropriate.**~~

~~**06 If the jughandle is designed such that the jughandle entrance is downstream of the location where the turn would normally have been made (see Drawing C in Figure 2B-9), the R3-26 series sign with an arrow pointing straight upward shall be installed on the right-hand side of the roadway at the intersection to inform road users that they need to proceed straight through the intersection in order to make a left turn or U-turn. The legend on the sign shall be U-TURN or U AND LEFT TURNS, as appropriate.**~~

~~Support:~~

~~07 The R3-24, R3-25, and R3-26 series of signs are designed to be mounted below conventional guide signs.~~

~~08 Section 2C.12 contains information regarding the use of advisory exit and ramp speed signs for exit ramps.~~

~~09 Section 2D.40 contains information regarding the use of guide signs for jughandles.~~

MUTCD Section 2B.35 is not adopted. There are very limited cases where these signs are applicable to the MoDOT system. Any use of these signs requires authorization from the Highway Safety and Traffic Division.

Figure 2B-8. Jughandle Regulatory Signs

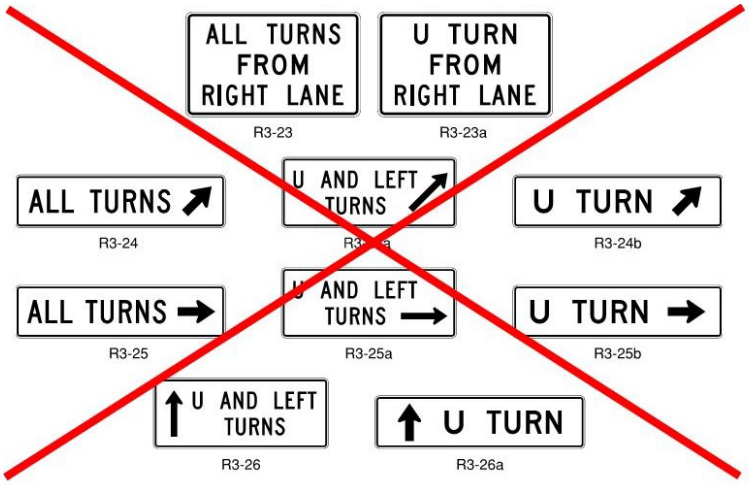


Figure 2B-8 is not adopted by MoDOT. Revised Dec. 2025

Figure 2B-9. Examples of Applications of Jughandle Regulatory and Guide Signing
(Sheet 1 of 3)



Figure 2B-9 is not adopted by MoDOT. Revised Dec. 2025

Figure 2B-9. Examples of Applications of Jughandle Regulatory and Guide Signing
(Sheet 2 of 3)

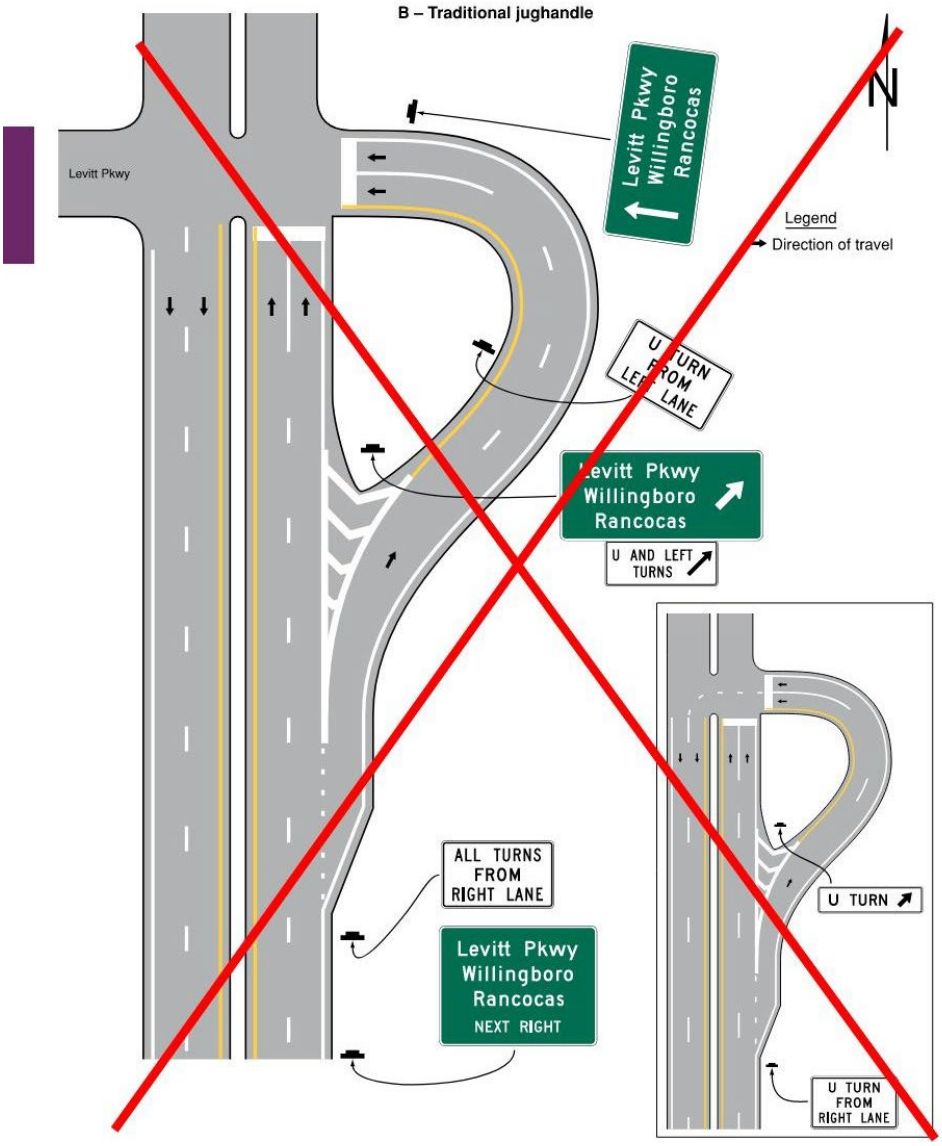


Figure 2B-9 is not adopted by MoDOT. Revised Dec. 2025

Figure 2B-9. Examples of Applications of Jughandle Regulatory and Guide Signing
(Sheet 3 of 3)

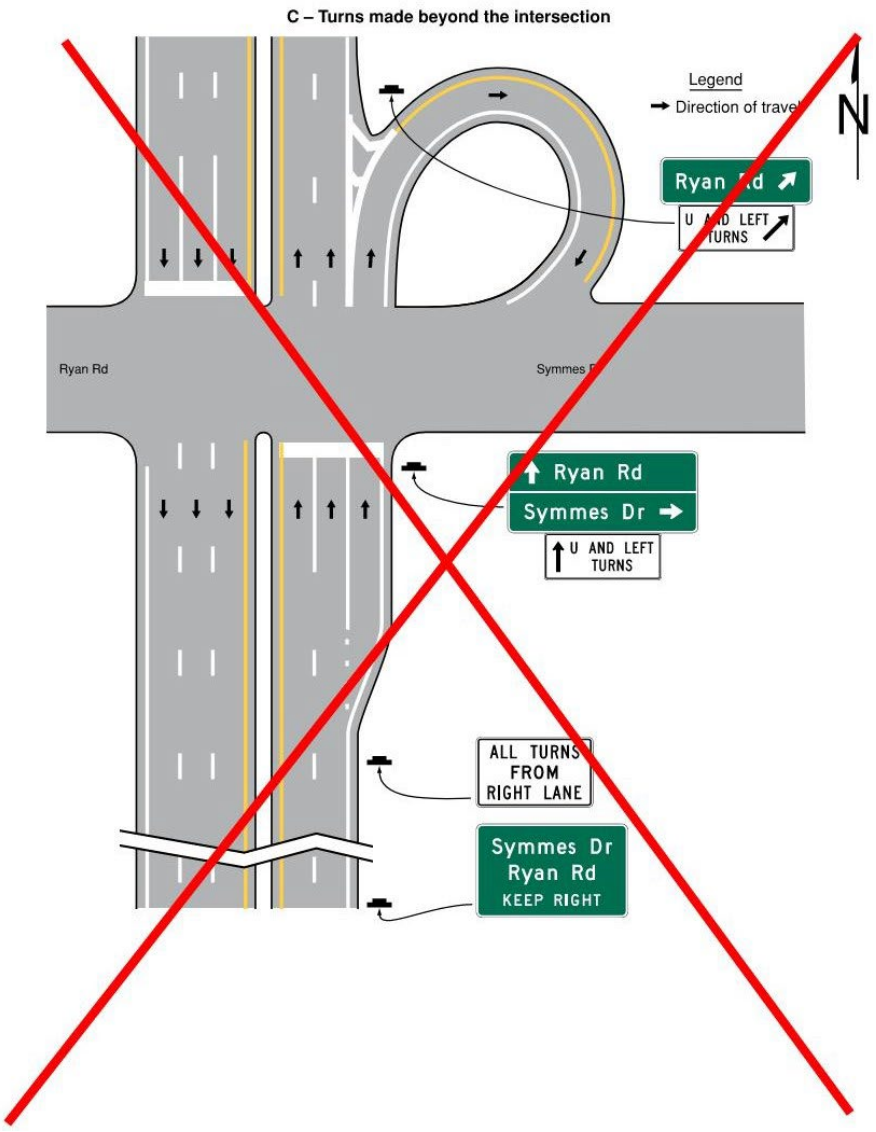


Figure 2B-9 is not adopted by MoDOT. Revised Dec. 2025

PASSING, KEEP RIGHT, AND SLOW TRAFFIC SIGNS

Section 2B.36 DO NOT PASS Sign (R4-1)

Option:

01 The DO NOT PASS (R4-1) sign (see Figure 2B-10) may be used in addition to pavement markings (see Section 3B.03) to emphasize the restriction on passing. The DO NOT PASS sign may be used at ~~the beginning of, and at intervals within, a zone through which sight distance is restricted or where other conditions make overtaking and passing inappropriate.~~ one-lane bridges and work zones. Any other use of this sign requires authorization from the Highway Safety and Traffic Division.

MoDOT uses the sign only for one-lane bridges and work zones. Revised Dec. 2025

~~02 If signing is needed on the left-hand side of the roadway for additional emphasis, NO PASSING ZONE (W14-3) signs may be used (see Section 2C.53).~~

MoDOT does not use the W14-3 sign. Revised Dec. 2025

Support:

03 Standards for determining the location and extent of no-passing zone pavement markings are set forth in Section 3B.03.

Standard:

M04 PASS WITH CARE (R4-2) signs shall be used in conjunction with the DO NOT PASS sign.

MoDOT specific language from the EPG. Revised Dec. 2025

Section 2B.37 PASS WITH CARE Sign (R4-2)

Guidance:

01 The PASS WITH CARE (R4-2) sign (see Figure 2B-10) should be installed at the downstream end of a no-passing zone if a DO NOT PASS sign has been installed at the upstream end of the zone.

Standard:

M02 The PASS WITH CARE sign shall be the same size and shall be erected in the same manner as the DO NOT PASS (R4-1) sign.

Section 2B.38 KEEP RIGHT EXCEPT TO PASS Sign (R4-16)~~,~~ and SLOWER TRAFFIC KEEP RIGHT Sign (R4-3)~~, and TRUCKS USE RIGHT LANE Sign (R4-5)~~

MoDOT does not use the R4-5 sign. Revised Dec. 2025

Option:

01 The KEEP RIGHT EXCEPT TO PASS (R4-16) sign (see Figure 2B-10) may be used on roadways where there are two lanes in one direction of travel to direct drivers to stay in the right-hand lane except when they are passing another vehicle.

Guidance:

02 If used, the KEEP RIGHT EXCEPT TO PASS sign should be installed at or just beyond the beginning of a two-lane section of roadway and at selected locations along two-lane roadways where additional emphasis is needed.

Option:

03 The SLOWER TRAFFIC KEEP RIGHT (R4-3) ~~or the TRUCKS USE RIGHT LANE (R4-5)~~ sign (see Figure 2B-10) may be used on multi-lane through roadways to improve capacity or reduce unnecessary lane changing due to the presence of slower vehicles that impede the normal flow of traffic.

Standard:

M03A The SLOWER TRAFFIC KEEP RIGHT (R4-3) sign shall be required for climbing lanes.

MoDOT specific language from the EPG. Revised Dec. 2025

Guidance:

04 If used, the SLOWER TRAFFIC KEEP RIGHT sign ~~or the TRUCKS USE RIGHT LANE sign~~ should be installed at or just beyond the beginning of a multi-lane roadway section or at the beginning of an extra lane provided for trucks and/or other slow-moving traffic, and at selected locations where there is a tendency on the part of some road users to drive in the left-hand lane(or lanes) below the normal speed of traffic. These signs should not be used on the approach to an interchange or through an interchange area where traffic is entering or exiting, or along deceleration or acceleration lanes.

~~Option:~~

~~05 The TRUCKS USE RIGHT LANE sign may be used as a supplement to the SLOWER TRAFFIC KEEP RIGHT sign.~~

~~*Guidance:*~~

06 If an extra lane has been provided for trucks and other slow-moving traffic, a Lane Ends sign (see Section 2C.47) should be installed in advance of the point where the extra lane ends. Appropriate pavement markings should be installed at both the upstream and downstream ends of the extra lane (see Section 3B.12 and Figure 3B-14).

Section 2B.39 Keep Right and Keep Left Signs (R4-7 Series and R4-8 Series)

Option:

01 The Keep Right (R4-7) sign (see Figure 2B-10) may be used at locations where it is necessary for traffic to pass only to the right-hand side of a roadway feature or obstruction. The Keep Left (R4-8) sign (see Figure 2B-10) may be used at locations where it is necessary for traffic to pass only to the left-hand side of a roadway feature or obstruction.

Guidance:

02 At locations where it is not readily apparent that traffic is required to keep to the right, a Keep Right sign should be used.

Standard:

03 If Keep Right signs are installed at the start of a median or at a median opening, they shall be placed as close as practicable to the approach ends of the medians, and shall be visible to traffic on the divided highway ~~and angled toward the applicable crossroad approach as shown in Figure 2B-20~~.

MoDOT does not angle Keep Right signs toward crossroad approaches. Revised Dec. 2025

Guidance:

04 If used, the Keep Right sign should be mounted on the face of or just in front of a pier or other obstruction separating opposite directions of traffic in the center of the highway such that traffic will have to pass to the right-hand side of the sign.

05 Where the approach end of the island channelizes traffic away from the approach direction, the word legend (R4-7a, R4-7b, R4-8a, or R4-8b) signs (see Figure 2B-10) should be used instead of the symbol (R4-7 or R4-8) signs to emphasize the degree of curvature away from the approach direction (see Figure 2B-11).

M05A Where a two-lane, two-way highway transitions to a divided highway, the KEEP RIGHT (R4-7b) sign should be installed within 50 ft. of the gore point, if possible. The edge of the sign should be a minimum of 6 ft. from the curb or shoulder.

MoDOT specific language from the EPG. Revised Dec. 2025

~~*06 Where a regulatory sign is used within the central island of a neighborhood traffic circle to direct traffic counter-clockwise around the central island, the Keep Right with diagonal arrow (R4-7b) sign should be used (see Figure 2B-24). The mounting height of the sign should be at least 4 feet, measured vertically from the bottom of the sign to the elevation of the near-edge of the traveled way.*~~

Neighborhood traffic circles are not used on the MoDOT system. Revised Dec. 2025

Standard:

07 The Keep Right (Left) sign shall not be installed on the right-hand (left-hand) side of the roadway in a position where traffic must pass to the left-hand (right-hand) side of the sign.

Option:

08 The Keep Right sign may be omitted at intermediate ends of divisional islands and medians.

~~09 Word message KEEP RIGHT (LEFT) with an arrow (R4-7a or R4-7b) signs (see Figure 2B-10) may be used instead of the R4-7 or R4-8 symbol signs.~~

Guidance P5 and Figure 2B-11 indicate where signs with word messages should be used. Revised Dec. 2025

10 A narrow Keep Right (R4-7c) sign (see Figure 2B-10) may be installed on the approach end of a median island that is less than 4 feet wide at the point where the sign is to be located.

Standard:

11 A narrow Keep Right (R4-7c) sign shall not be installed on a median island that has a width of 4 feet or more at the point where the sign is to be located.

Option:

12 The Keep Right sign may be installed in the median of a divided highway crossing that functions as a single intersection such that it is visible to traffic on the divided highway ~~and angled as needed toward the applicable crossroad approach~~ as shown in Figure 2B-20 and Figure 2B-20A.

MoDOT does not angle Keep Right signs toward crossroad approaches. Revised Dec. 2025

Support:

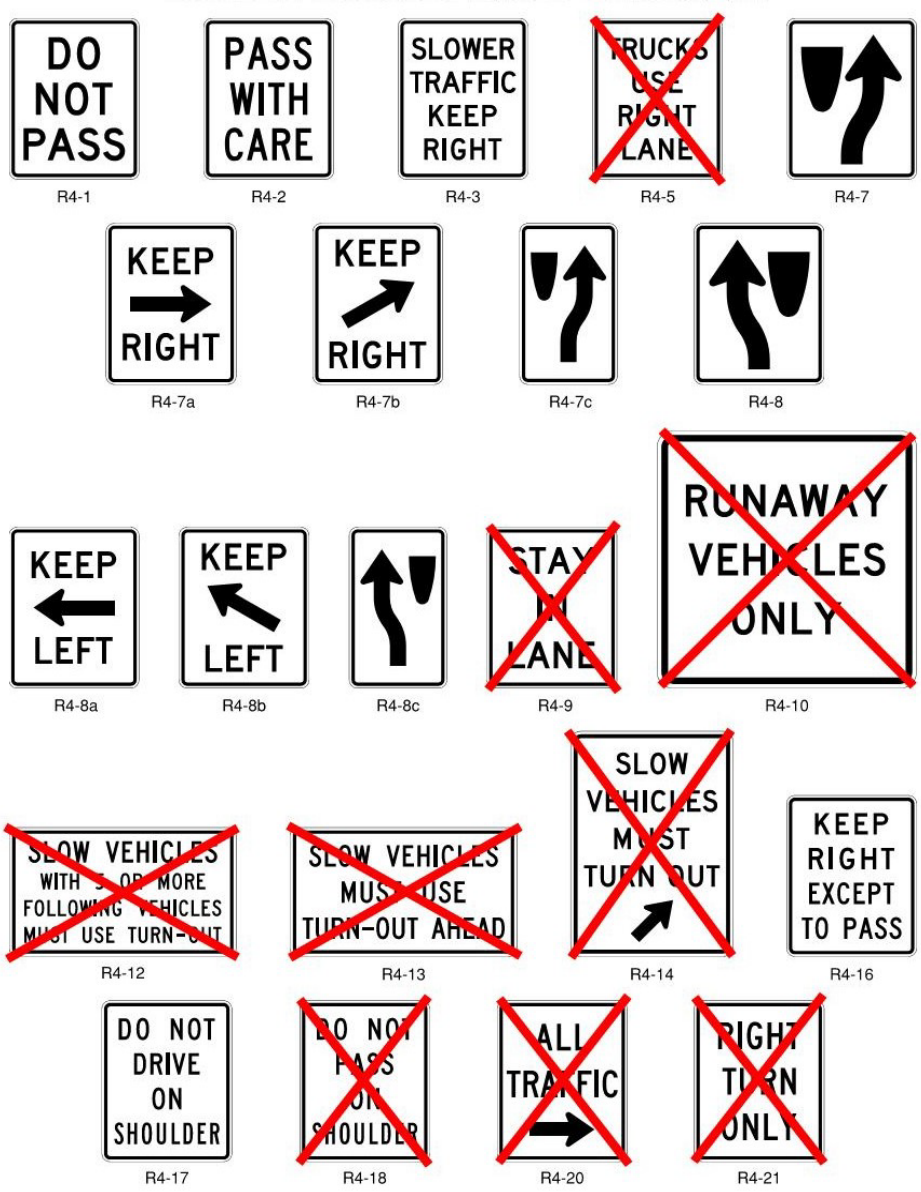
13 Section 2B.49 provides more information about the use of the Keep Right sign in combination with or in lieu of ONE-WAY signs at divided highway crossings.

Standard.

M14 The KEEP RIGHT (R4-7b) sign shall be installed as close to the median nose as possible where an undivided highway transitions into a divided highway.

MoDOT specific language from the EPG. Revised Dec. 2025

Figure 2B-10. Passing, Keep Right, and Slow Traffic Signs



~~**Section 2B.40 STAY IN LANE Sign (R4-9)**~~

~~Option:~~

~~01 A STAY IN LANE (R4-9) sign (see Figure 2B-10) may be used on multi-lane highways to direct road users to stay in their lane until conditions permit shifting to another lane.~~

~~*Guidance:*~~

~~*02 If a STAY IN LANE sign is used, it should be accompanied by a solid double white lane line(s) to prohibit lane changing.*~~

MUTCD Section 2B.40 is not adopted. MoDOT does not use the R4-9 sign. Revised Dec. 2025

~~Section 2B.41 RUNAWAY VEHICLES ONLY Sign (R4-10)~~

~~*Guidance:*~~

~~*01 A RUNAWAY VEHICLES ONLY (R4-10) sign (see Figure 2B-10) should be installed near a truck escape (or runaway truck) ramp entrance to discourage other road users from entering the ramp.*~~

MUTCD Section 2B.41 is not adopted. MoDOT does not use the R4-10 sign. Rev. 12/010/2025

~~Section 2B.42 Slow Vehicle Turn-Out Signs (R4-12, R4-13, and R4-14)~~

~~Support:~~

~~01 On two-lane highways in areas where traffic volumes and/or vertical or horizontal curvature make passing difficult, turn-out areas are sometimes provided for the purpose of giving a group of faster vehicles an opportunity to pass a slow-moving vehicle.~~

~~Option:~~

~~02 A SLOW VEHICLES WITH XX OR MORE FOLLOWING VEHICLES MUST USE TURN-OUT (R4-12) sign (see Figure 2B-10) may be installed in advance of a turn-out area to inform drivers who are driving so slow that they have accumulated a specific number of vehicles behind them that they are required by the traffic laws of that State to use the turn-out to allow the vehicles following them to pass.~~

~~Support:~~

~~03 The specific number of vehicles displayed on the R4-12 sign provides law enforcement personnel with the information they need to enforce this regulation.~~

~~Option:~~

~~04 If an R4-12 sign has been installed in advance of a turn-out area, a SLOW VEHICLES MUST USE TURN-OUT AHEAD (R4-13) sign (see Figure 2B-10) may also be installed downstream from the R4-12 sign, but upstream from the turn-out area, to remind slow drivers that they are required to use a turn-out that is a short distance ahead.~~

~~Standard:~~

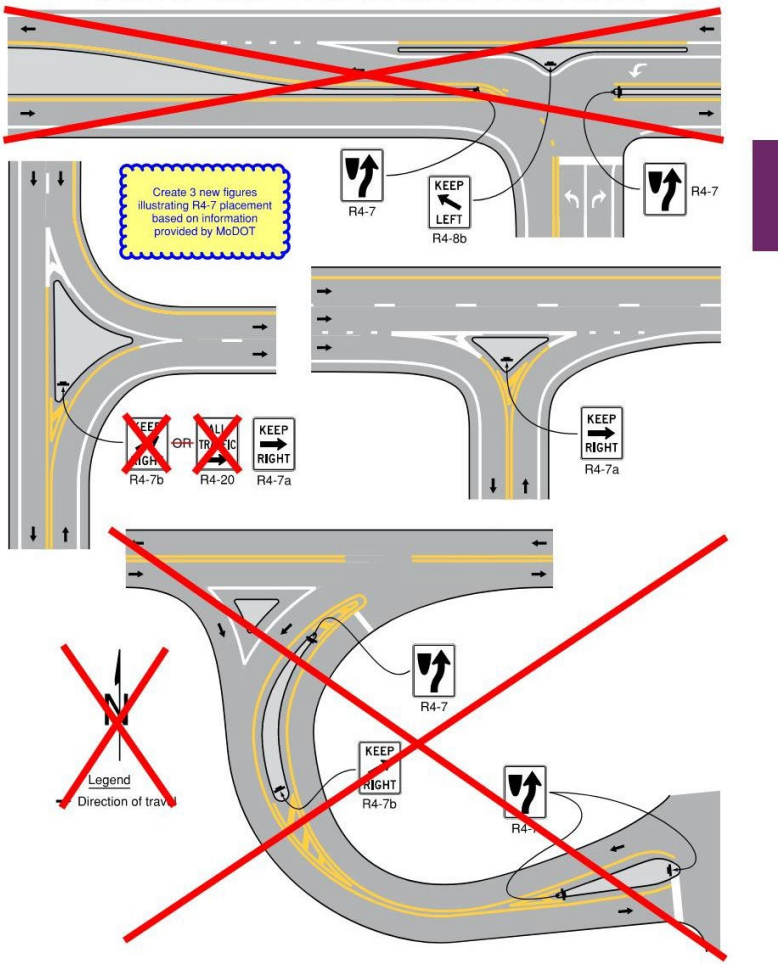
~~05 If an R4-12 sign has been installed in advance of a turn-out area, a SLOW VEHICLES MUST TURN OUT (with arrow) (R4-14) sign (see Figure 2B-10) shall be installed at the entry point of the turn-out area.~~

~~Support:~~

~~06 Section 2D.54 contains information regarding advance information signs for slow vehicle turn-out areas.~~

MUTCD Section 2B.42 is not adopted. MoDOT does not use the R4-12, R4-13, or R4-14 signs. Revised Dec. 2025

Figure 2B-11. Examples of Keep Right and Keep Left Sign Placement



Section 2B.43 DO NOT DRIVE ON SHOULDER Sign (R4-17) ~~and DO NOT PASS ON SHOULDER Sign (R4-18)~~

Option:

01 The DO NOT DRIVE ON SHOULDER (R4-17) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway as a travel lane is prohibited.

Guidance:

M01A The DO NOT DRIVE ON SHOULDER (R4-17) sign should be considered for special conditions if there is a need determined by district traffic engineering staff. The sign should be considered as a temporary tool to aid in the enforcement of the condition. After it appears the problem has been corrected, these signs should be removed.

Support:

M01B The R4-17 sign is to be used only where necessary. MoDOT does not want to set driver expectations for general use of this sign.

MoDOT specific language from the EPG. Revised Dec. 2025

~~02 The DO NOT PASS ON SHOULDER (R4-18) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway to pass other vehicles is prohibited.~~

MoDOT does not use the R4-18 sign. Revised Dec. 2025

~~Section 2B.44 ALL TRAFFIC Sign (R4-20) and RIGHT (LEFT) TURN ONLY Sign (R4-21)~~

~~Option:~~

~~01 The ALL TRAFFIC (R4-20) sign may be used at an intersection where all traffic on the approach to the intersection must turn in the direction indicated and the Movement Prohibition (see Section 2B.26) and/or ONE WAY (see Section 2B.49) signs do not adequately convey the allowable direction of travel.~~

~~02 The RIGHT (LEFT) TURN ONLY (R4-21) sign may be used at or on an approach to an intersection where all traffic on that approach must turn in the direction indicated.~~

~~*Guidance:*~~

~~*03 The RIGHT (LEFT) TURN ONLY sign should not be used for a channelized turn lane separated from the adjacent travel lanes by an island.*~~

~~**Standard:**~~

~~**04 The ALL TRAFFIC sign shall not be used to substitute for the Keep Right (R4-7 series) or Keep Left (R4-8 series) signs.**~~

~~**05 The RIGHT (LEFT) TURN ONLY sign shall not be used to substitute for the Mandatory Movement Lane Control signs (see Sections 2B.27 and 2B.28).**~~

MUTCD Section 2B.44 is not adopted. MoDOT does not use the R4-20 or R4-21 signs. Revised Dec. 2025

Section 2B.45 Selective Exclusion Signs and Plaques

Option:

01 Selective Exclusion signs (see Figure 2B-12) may be used to provide notice to road users that State or local statutes or ordinances exclude designated types of traffic from using particular roadways or facilities.

Standard:

02 Selective Exclusion signs shall clearly indicate the type of traffic that is excluded.

Support:

03 Typical exclusion messages include:

A. No Trucks (R5-2),

~~B. NO MOTOR VEHICLES (R5-3),~~

~~C. NO COMMERCIAL VEHICLES (R5-4),~~

~~D. NO VEHICLES WITH LUGS (R5-5),~~

~~E. No Bicycles (R5-6),~~

~~F. NO NON-MOTORIZED TRAFFIC (R5-7),~~

~~G. NO MOTOR-DRIVEN CYCLES (R5-8),~~

H. No Pedestrian Crossing (R9-3),

~~I. No Skaters (R9-13),~~

~~J. No Equestrians (R9-14),~~

~~K. No Snowmobiles (R9-15),~~

~~L. No All-Terrain Vehicles (R9-16),~~

~~M. Hazardous Material (R14-3) (see Section 2B.67),~~

~~N. NO THRU TRAFFIC (R5-12),~~

~~O. NO THRU TRUCKS (R5-2b),~~

~~P. EXCEPT ON SHOULDER (R9-19P) plaque, and~~

Q. EXCEPT LOCAL DELIVERY (R5-2aP) plaque.

R. NO VENDING (R5-24)

S. NO FISHING FROM BRIDGE (R5-25)

T. AUTHORIZED AND EMERGENCY VEHICLES ONLY (R5-29)

MoDOT does use many of the MUTCD's selective exclusion signs. MoDOT does have three unique selective exclusion signs in the EPG. Revised Dec. 2025

~~Option:~~

~~04 Appropriate combinations or groupings of these legends into a single sign, such as NO PEDESTRIANS BICYCLES MOTOR-DRIVEN CYCLES (R5-10 and R5-10a) or NO PEDESTRIANS OR BICYCLES (R5-10b), may be used.~~

Guidance:

05 If an exclusion is governed by vehicle weight, a Weight Limit sign (see Section 2B.64) should be used instead of a Selective Exclusion sign.

~~*06 If used on a ramp to a freeway or expressway where pedestrian and bicyclist travel are prohibited by law or regulation, the NO PEDESTRIANS OR BICYCLES (R5-10b) sign should be installed*~~

~~*in a location where it is clearly visible to any pedestrian or bicyclist attempting to enter the limited access facility from a street intersecting the ramp. In locations where a freeway or expressway is accessed from a ramp from a roadway parallel to the freeway or expressway, the sign should be placed in a location that clearly indicates the prohibition applies only to the freeway or expressway or to the ramp.*~~

Missouri does not prohibit pedestrian or bicycle travel on freeways or expressways. Revised Dec. 2025

07 The Selective Exclusion sign should be placed on the right-hand side of the roadway at an appropriate distance from the intersection so as to be clearly visible to all road users turning into the roadway that has the exclusion. The ~~NO PEDESTRIANS (R5-10c) or~~ No Pedestrian Crossing (R9-3) sign (see Section 2B.57) should be installed so as to be clearly visible to pedestrians who are at a location where an alternative route is available.

Option:

08 The ~~NO PEDESTRIANS (R5-10c) or~~ No Pedestrian Crossing (R9-3) sign may also be used at underpasses or elsewhere where pedestrian facilities are not provided.

~~09 The NO THRU TRAFFIC (R5-12) or NO THRU TRUCKS (R5-2b) signs may be used at locations to prohibit through traffic from using a particular roadway or facility.~~

10 The EXCEPT LOCAL DELIVERY (R5-2aP) plaque may be mounted below the R5-2 ~~or R5-2b~~ sign.

~~11 The EXCEPT ON SHOULDER (R9-19P) plaque may be used where such modes are allowed on a shoulder but not on the traveled way and placed at intersections with other roads and established paths or trails, where such vehicles or modes are expected to enter the highway.~~

M11A The NO VENDING (R5-24) sign may be used at locations where vending is taking place within the right-of-way.

Standard:

M11B When used, the NO FISHING FROM BRIDGE (R5-25) sign shall be mounted at or near the bridge ends.

Option:

M11C The NO FISHING FROM BRIDGE (R5-25) sign may be used at locations where fishing from a bridge creates a safety hazard.

MoDOT specific language for unique signs from the EPG. Revised Dec. 2025

Guidance:

12 The AUTHORIZED AND EMERGENCY VEHICLES ONLY (R5-~~11~~29) sign should be used at ~~median openings and other locations~~ emergency crossovers to prohibit vehicles from using the ~~median opening or facility~~ emergency crossover unless they have special permission (such as law enforcement vehicles or emergency vehicles) or are performing official business (such as highway agency vehicles).

M13 The No U Turn sign should be installed above the AUTHORIZED AND EMERGENCY VEHICLES ONLY sign.

M14 Signing for both directions of traffic should be provided on one post with the signs being installed 90 degrees to the roadway. The signs should be mounted back to back. The post should be located approximately in the middle of the median. If median width is greater than 60 ft., consideration should be given to install separate signs.

MoDOT modifications to the sign from the EPG. Revised Dec. 2025

Figure 2B-12. Selective Exclusion Signs and Plaques



DO NOT ENTER, WRONG WAY, ONE WAY, AND RELATED SIGNS AND PLAQUES

Section 2B.46 DO NOT ENTER Sign (R5-1)

Standard:

01 The DO NOT ENTER (R5-1) sign (see Figure 2B-13) shall be used at the following locations:

- **A. Where a two-way roadway becomes a one-way roadway ~~(see Figure 2B-18)~~;**
- **B. The intersection of an interchange exit ramp with a crossroad as specified in Section 2B.48 (see Figure 2B-15);**
- **C. The intersection of a channelized or turning roadway with a two-way undivided crossroad; and**
- **D. Except as provided in ~~Paragraph 4 of this Section~~ the fourth paragraph of this article, an intersection with a divided highway ~~where the crossing functions as two separate intersections~~ (see Figure 2B-14).**

MoDOT does not differentiate between median widths for DO NOT ENTER signing. Revised Dec. 2025

M01A If the DO NOT ENTER sign is mounted behind a STOP or YIELD sign:

- **A. A 36 x 36 inch DO NOT ENTER sign shall be used behind a 48 x 48 inch STOP sign; and**
- **B. A 30 x 30 inch. DO NOT ENTER sign shall be used behind a 60 x 60 inch YIELD sign.**

MoDOT specific language from the EPG. Revised Dec. 2025

Guidance:

02 A DO NOT ENTER sign should be installed at other locations where additional emphasis is needed where wrong-way movements are prominent or where the intersecting angle of roadways is such that the visibility of ONE WAY signs alone does not sufficiently convey the restriction.

Option:

~~03 A DO NOT ENTER sign may be installed at an intersection with a divided highway where the crossing functions as a single intersection as shown in Figure 2B-20.~~

MoDOT does not differentiate between median widths for DO NOT ENTER signing. Revised Dec. 2025

04 A DO NOT ENTER sign may be omitted on a low-speed urban street that is a divided highway at a crossing that functions as two separate intersections.

~~05 An EXCEPT BICYCLES (R3-7bP) plaque (see Figure 2B-4) may be used with a DO NOT ENTER sign when counter-flow bicycle traffic is allowed.~~

MoDOT does not use the R3-7bP plaque. Revised Dec. 2025

Guidance:

06 The DO NOT ENTER sign, if used, should be placed directly in view of a road user at the point where a road user could wrongly enter a divided highway, one-way roadway, or ramp. The sign should be mounted facing traffic that might enter the roadway or ramp in the wrong direction.

07 At a crossing with a divided highway ~~that functions as a single intersection~~; the sign, if used, should be placed on the outside edge side of the roadway facing traffic that might enter the roadway in the wrong direction.

08 If the DO NOT ENTER sign would be visible to traffic to which it does not apply, the sign should be turned away from, or shielded from, the view of that traffic.

~~Option:~~

09 A second DO NOT ENTER sign ~~may~~ should be used, particularly where traffic approaches from an intersecting roadway (see Figure 2B-14).

~~Support:~~

~~10 Section 2B.48 contains information regarding an optional lower mounting height for DO NOT ENTER signs that are located along an exit ramp facing a road user who is traveling in the wrong direction.~~

MoDOT does not use a lower mounting height for R5-1 signs at exit ramps. Revised Dec. 2025

11 Section 2A.12 contains the provisions for the use of continuously-operated or actuated LEDs to enhance the conspicuity of signs.

Figure 2B-13. DO NOT ENTER, WRONG WAY, ONE WAY, and Related Signs and Plaques

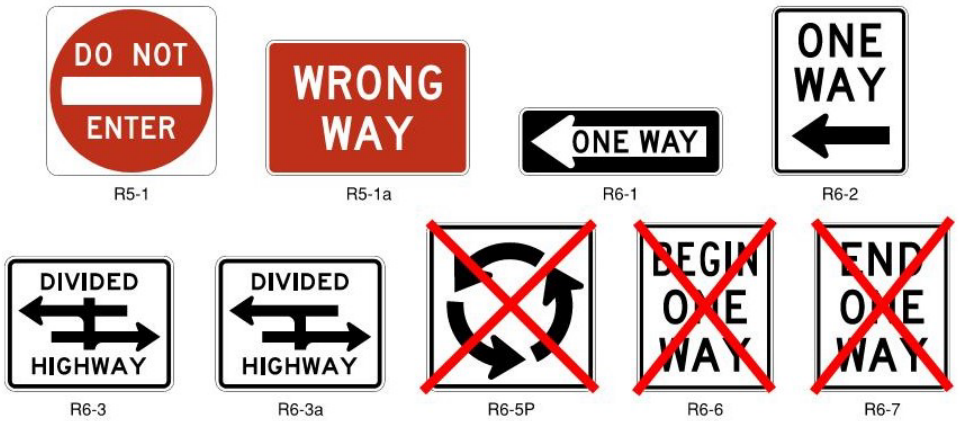
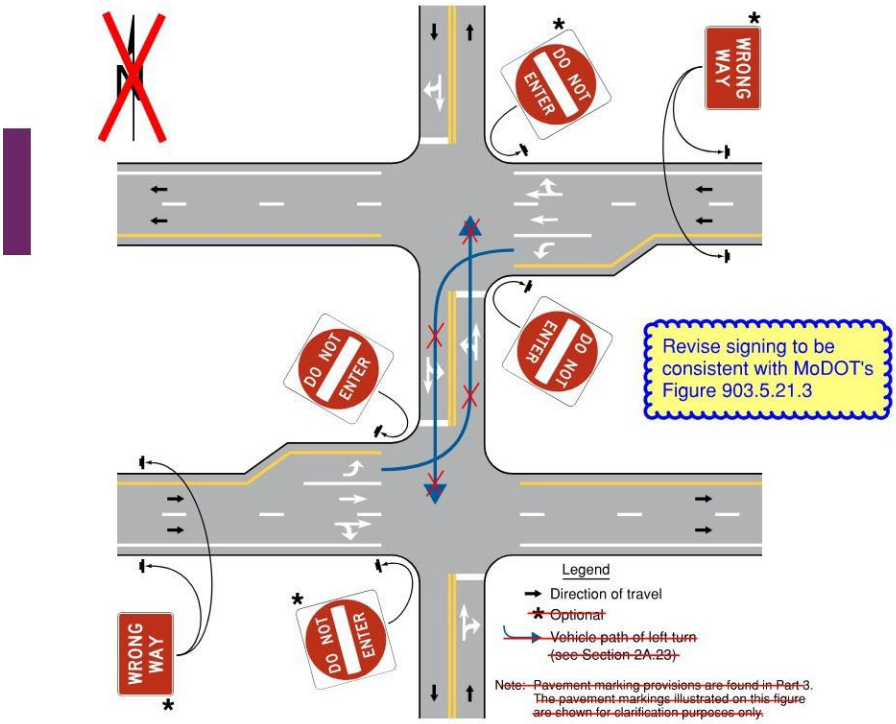


Figure 2B-14. Locations of DO NOT ENTER and WRONG WAY Signing for Divided Highway Crossings that Function as Two Separate Intersections



Section 2B.47 WRONG WAY Sign (R5-1a)

Option:

01 The WRONG WAY (R5-1a) sign (see Figure 2B-13) may be used as a supplement to the DO NOT ENTER sign where a crossroad intersects a one-way roadway in a manner that does not physically discourage or prevent wrong-way entry (see Figure~~s~~ 2B-14~~ and 2B-20~~).

Guidance:

02 If used, the WRONG WAY sign should be placed at a location along the one-way roadway farther from the crossroad than the DO NOT ENTER sign (see Section 2B.46).

03 The WRONG WAY sign should be placed on the same side of the road as the DO NOT ENTER sign.

~~Support:~~

~~04 Section 2B.48 contains information regarding an optional lower mounting height for WRONG WAY signs that are located along an exit ramp facing a road user who is traveling in the wrong direction.~~

MoDOT does not use a lower mounting height for R5-1 signs at exit ramps. Revised Dec. 2025

05 Section 2A.12 contains the provisions for the use of continuously-operated or actuated LEDs to enhance the conspicuity of signs.

Section 2B.48 Wrong-Way Traffic Control at Interchange Ramps

Standard:

01 At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following signs shall be used (see Figure 2B-15):

- **A. At least one ONE WAY sign for each direction of travel on the crossroad shall be placed where the exit ramp intersects the crossroad.**
- **B. At least one DO NOT ENTER sign shall be conspicuously placed near the downstream end of the exit ramp in positions appropriate for full view of a road user starting to enter wrongly from the crossroad.**
- **C. At least one WRONG WAY sign shall be placed on the exit ramp facing a road user traveling in the wrong direction.**

Guidance:

02 In addition, the following pavement markings should be used (see Figure 2B-15):

- *A. On two-lane paved crossroads at interchanges, solid double yellow lines should be used as a center line for an adequate distance on both sides approaching the ramp intersections.*
- *B. Where crossroad channelization or ramp geometrics do not make wrong-way movements difficult, a lane-use arrow should be placed in each lane of an exit ramp near the crossroad terminal where it will be clearly visible to a potential wrong-way road user.*

Option:

03 The following traffic control devices may be used to supplement the signs and pavement markings described in ~~Paragraphs 1 and 2 of this Section~~ the first and second paragraphs of this article:

- A. Additional ONE WAY signs may be placed, especially on two-lane rural crossroads, appropriately in advance of the ramp intersection to supplement the required ONE WAY sign(s).
- B. Additional WRONG WAY signs may be used.
- C. Slender, elongated wrong-way arrow pavement markings (see Figure 3B-21) intended primarily to warn wrong-way road users that they are traveling in the wrong direction may be placed upstream from the ramp terminus (see Figure 2B-15) to indicate the correct direction of traffic flow. Wrong-way arrow pavement markings may also be placed on the exit ramp at appropriate locations near the crossroad junction to indicate wrong-way movement. ~~The wrong-way arrow~~

markings may consist of pavement markings or bidirectional red-and-white raised pavement markers or other units that show red to wrong-way road users and white to other road users.

MoDOT does not typically use raised pavement markers for this application. Revised Dec. 2025

D. Lane-use arrow pavement markings may be placed on the exit ramp and crossroad near their intersection to indicate the permissive direction of flow.

E. Freeway entrance signs (see Section 2D.50) may be used.

F. Lane control signs or movement prohibition signs may be used on the approaches to the exit ramp.

G. A Keep Right (R4-7 or R4-7c) may be used on a ramp median nose for wrong-way traffic control.

MoDOT does not use freeway entrance signs. Revised Dec. 2025

Guidance:

04 On interchange entrance ramps where the ramp merges with the through roadway and the design of the interchange does not clearly make evident the direction of traffic on the separate roadways or ramps, a ONE WAY sign visible to traffic on the entrance ramp and through roadway should be placed on each side of the through roadway near the entrance ramp merging point as illustrated in Figure 2B-16.

Option:

05 On interchange entrance ramps where the ramp merges with the through roadway and the design of the interchange does not clearly make evident the direction of traffic on the separate roadways or ramps a No Left Turn (R3-2) sign may be located on the left-hand side of the entrance ramp at the gore (see Figure 2B-16). If a No Left Turn (R3-2) sign is located on the left-hand side, a supplemental R3-2 sign may be installed on the right-hand side of the entrance ramp.

06 On interchange entrance ramps where the ramp merges with the through roadway and the design clearly indicates the direction of flow, a ONE WAY sign may be placed visible to traffic on the entrance ramp and/or a NO TURNS (R3-3) sign may be placed visible to traffic on the entrance ramp and through roadway at the gore area as illustrated in Figure 2B-16.

Remove references to Figure 2B-16, as MoDOT has not adopted the figure. Revised Dec. 2025

07 Where there are no parked cars, pedestrian activity, or other obstructions such as snow or vegetation, and if an engineering study indicates that a lower mounting height would address wrong-way movements on freeway or expressway exit ramps, a DO NOT ENTER sign(s) and/or a WRONG WAY sign(s) that is located along the exit ramp at a location downstream from the intersection with the crossroad facing a road user who is traveling in the wrong direction may be installed at a minimum mounting height of 3 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. At the intersection with the crossroad, a WRONG WAY sign may be mounted at a minimum height of 3 feet on the same support on which a DO NOT ENTER sign is mounted at a height that complies with the provisions of Section 2A.15 (see Figure 2B-17).

MoDOT does not use a lower mounting height for R5-1 or R5-1a signs at exit ramps. Revised Dec. 2025

Support:

08 Sections 2B.46, 2B.47, and 2B.49 contain further information on signing to avoid wrong-way movements at at-grade intersections on expressways.

Figure 2B-15. Example of Application of Regulatory Signing and Pavement Markings at an Exit Ramp Termination to Deter Wrong-Way Entry

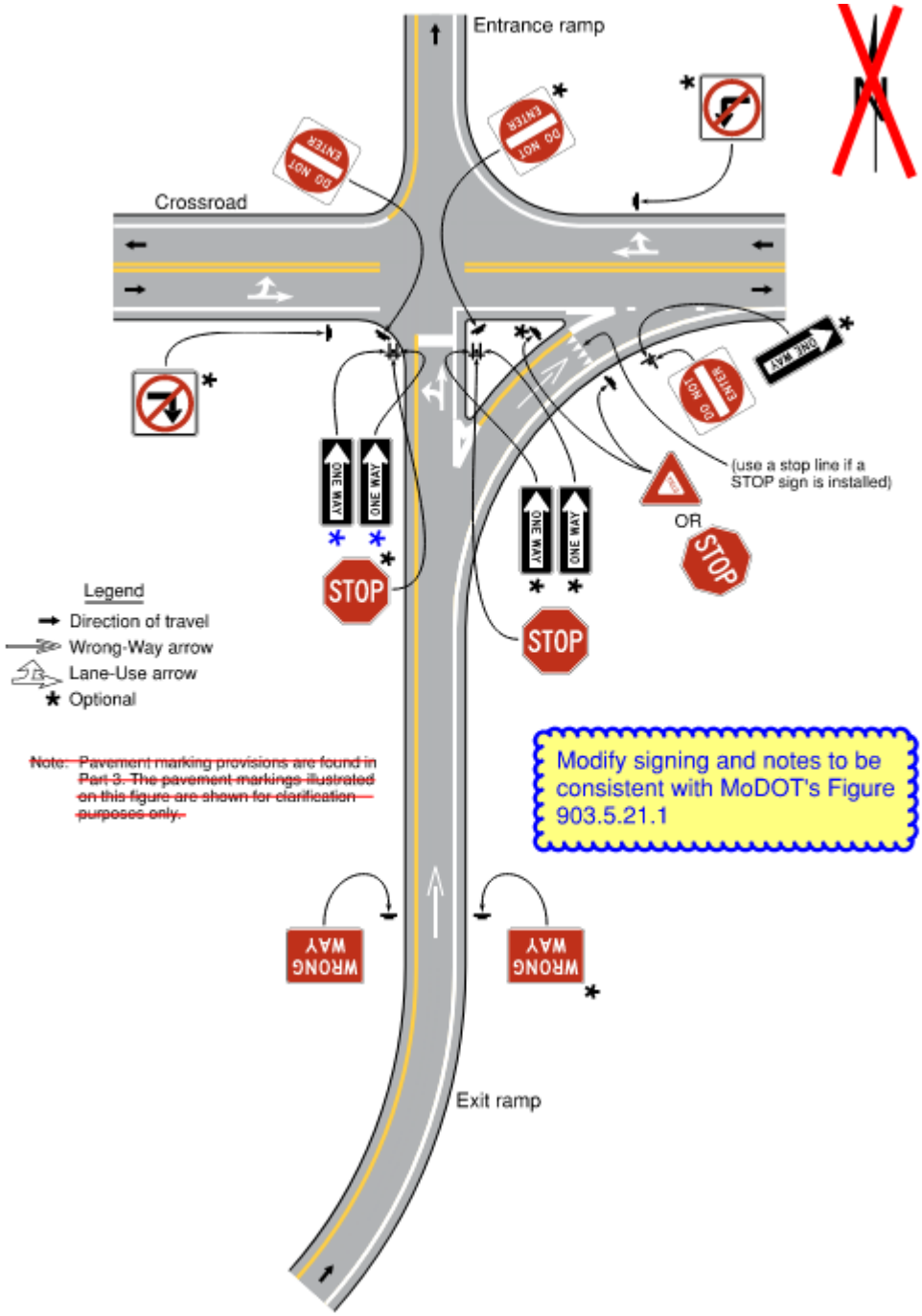


Figure 2B-16. Example of Application of Regulatory Signing and Pavement Markings at an Entrance Ramp Terminal

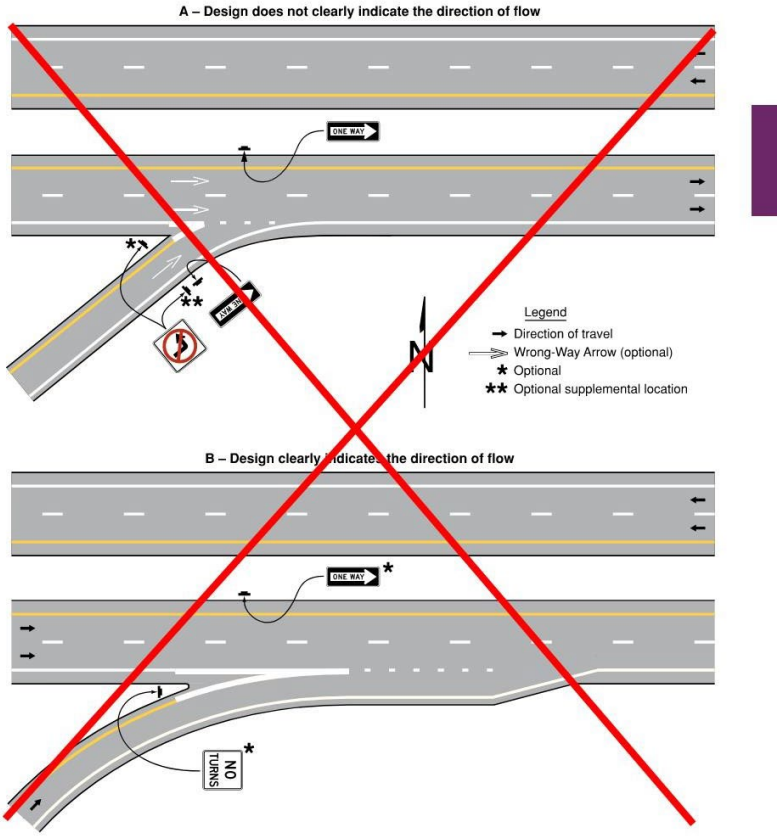


Figure 2B-16 is not adopted by MoDOT. Revised Dec. 2025

Section 2B.49 ONE WAY Signs (R6-1 and R6-2)

Standard:

01 Except as provided in ~~Paragraph 6 of this Section~~ the sixth paragraph of this article, the ONE WAY (R6-1 or R6-2) sign (see Figure 2B-13) shall be used to indicate streets or roadways upon which vehicular traffic is allowed to travel in one direction only.

02 ONE WAY signs shall be placed parallel to the one-way street at all alleys and roadways that intersect one-way roadways ~~as shown in Figure 2B-18~~.

03 At the crossing of a roadway with a divided highway that functions as two separate intersections, ONE WAY signs shall be placed, visible to each crossroad approach, on the near right and far left corners of each intersection with the directional roadways (see Figure 2B-19).

04 At the crossing of a roadway with a divided highway that functions as a single intersection Keep Right (R4-7) signs (see Section 2B.39) and/or ONE WAY signs shall be installed (see Figure 2B-20). If Keep Right signs are installed, they shall be placed as close as practicable to the approach ends of the medians and shall be visible to traffic on the divided highway ~~and angled (as needed) toward the applicable crossroad approach~~ as shown in Figure 2B-20. If ONE WAY signs are installed, they shall be placed on the near right and far left corners of the intersection and shall be visible to each crossroad approach.

Option:

05 At the crossing of a roadway with a divided highway, regardless of function as a single or separate intersections, ONE WAY signs may also be placed on the far right corner of the intersection as shown in Figures 2B-19, 2B-19A, 2B-20 and 2B-20A.

06 ONE WAY signs may be omitted on the one-way roadways of divided highways, where the design of interchanges indicates the direction of traffic on the separate roadways.

~~07 An EXCEPT BICYCLES (R3-7bP) plaque (see Figure 2B-4) may be used with a ONE WAY sign when counter-flow bicycle traffic is allowed.~~

MoDOT does not use R3-7BP plaques. Revised Dec. 2025

Support:

08 Section 2B.48 contains information for the placement of ONE WAY signs at a crossroad with an interchange.

Standard:

09 If used at unsignalized intersections with one-way streets, ONE WAY signs shall be placed on the near right and the far left corners of the intersection facing traffic entering or crossing the one-way street (~~see Figure 2B-18~~).

10 If used at signalized intersections with one-way streets, ONE WAY signs shall be placed near the appropriate signal faces, on the poles holding the traffic signals, on the mast arm or span wire holding the signals, or at the locations specified for unsignalized intersections.

11 At unsignalized T-intersections where the roadway at the top of the T-intersection is a one-way roadway, ONE WAY signs shall be placed on the near-right and the far side of the intersection facing traffic on the stem approach ~~(see Figure 2B-18)~~.

Option:

M11A ONE WAY (R6-2) signs may be used in lieu of ONE WAY (R6-1) signs on mast arms for signals or where lateral space is limited.

MoDOT specific language from the EPG. Revised Dec. 2025

12 Where the central island of a roundabout allows for the installation of signs, ONE WAY signs may be used to direct traffic counter-clockwise around the central island (see Figures 2B-22 and 2B-23).

Guidance:

13 Where used on the central island of a roundabout, the mounting height of a ONE WAY sign should be at least 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.

~~Option:~~

~~14 The BEGIN ONE WAY (R6-6) sign (see Figure 2B-13) may be used to notify road users of the beginning point of a one direction of travel restriction on the street or roadway. The END ONE WAY (R6-7) sign (see Figure 2B-13) may be used to notify road users of the ending point of a one direction of travel restriction on the street or roadway.~~

MoDOT does not use R6-6 signs. Revised Dec. 2025

Figure 2B-17. Examples of Low-Mounted WRONG WAY Signs with DO NOT ENTER Signs for Wrong-Way Traffic Control

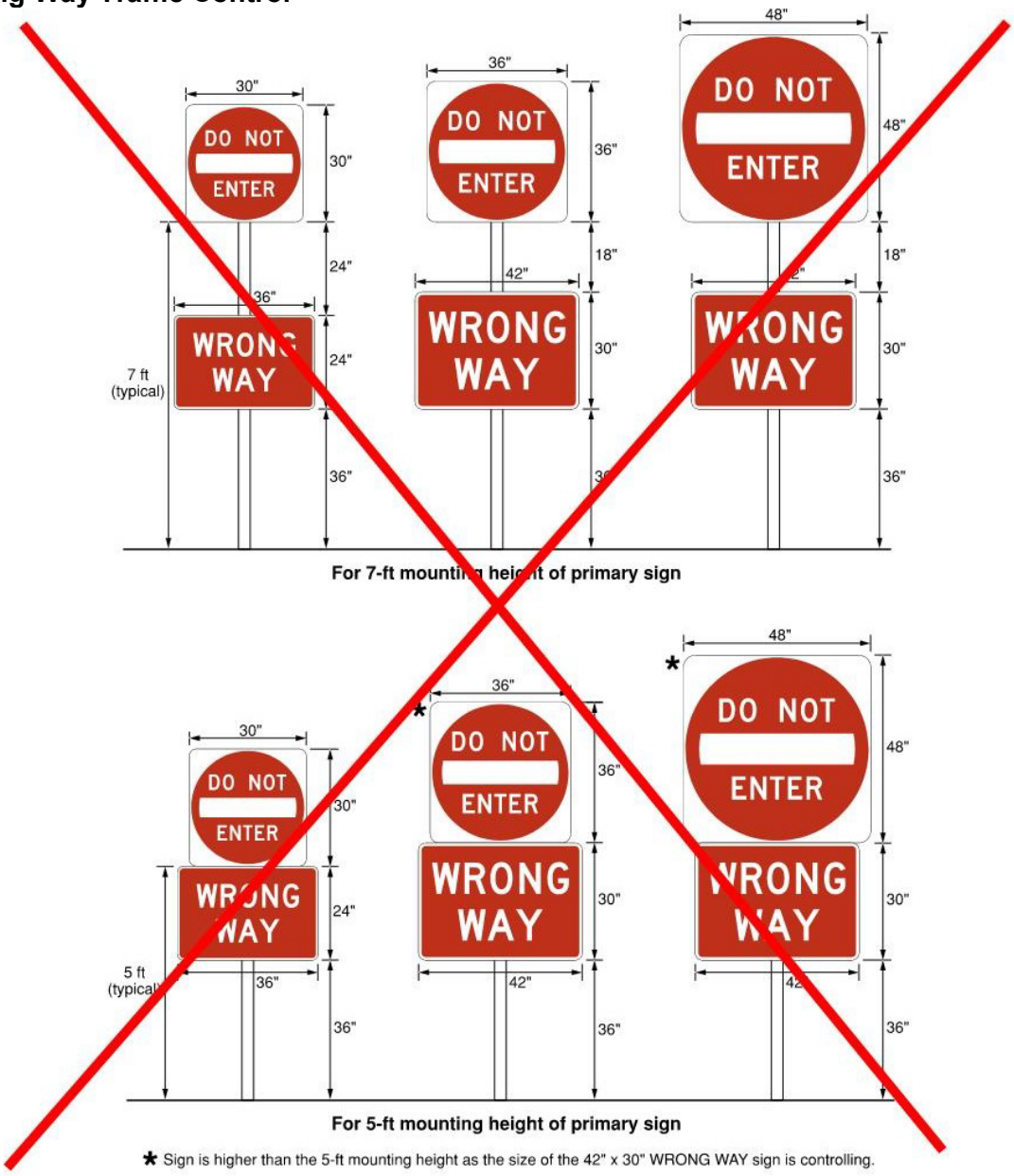


Figure 2B-17 is not adopted by MoDOT. Revised Dec. 2025

Figure 2B-18. Locations of ONE WAY Signs

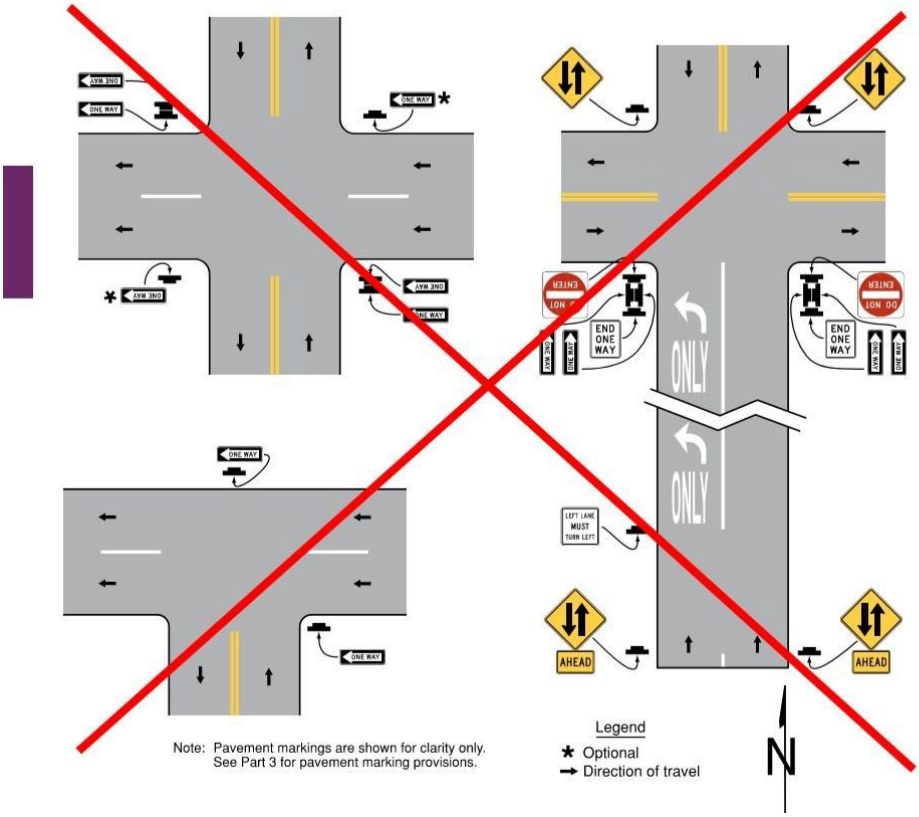

ONE WAY
ONE WAY
ONE WAY

Figure 2B-19. ONE WAY Signing for Divided Highway Crossings that Function as Two Separate Intersections

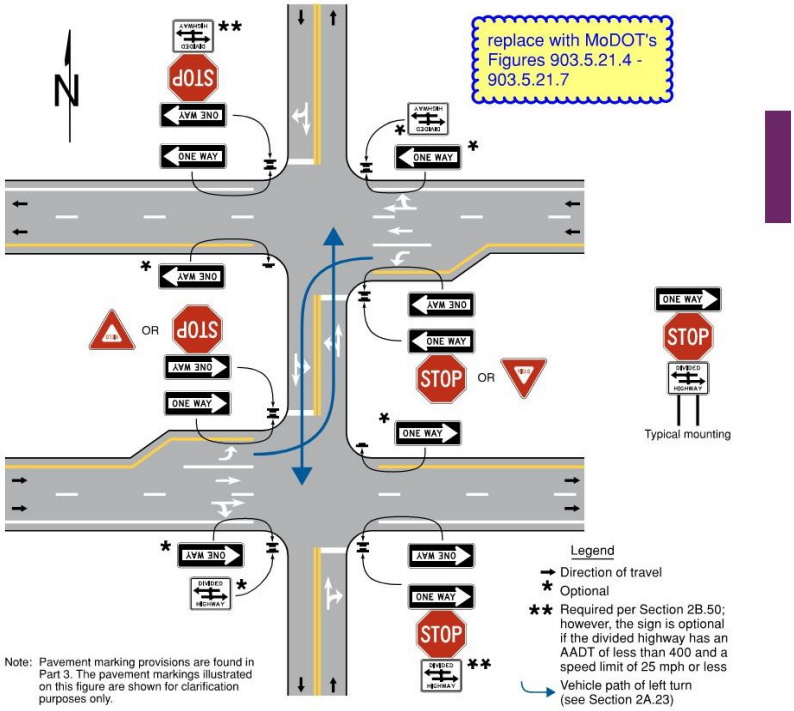


Figure 2B-19 is not adopted by MoDOT. Revised Dec. 2025

Figure 2B-20. ONE WAY, DO NOT ENTER, and WRONG WAY Signing for Divided Highway Crossings that Function as a Single Intersection

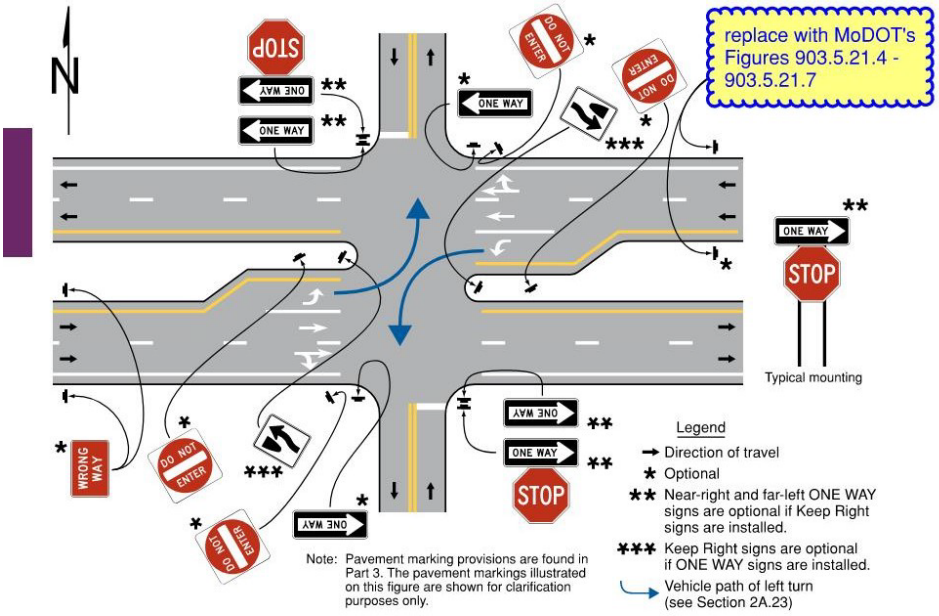


Figure 2B-20 is not adopted by MoDOT. Revised Dec. 2025

Section 2B.50 Divided Highway Crossing Signs (R6-3 and R6-3a)

Standard:

01 On unsignalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway at a crossing that functions as two separate intersections (see Section 2A.23), ~~except as provided in Paragraph 2 of this Section,~~ a Divided Highway Crossing (R6-3 or R6-3a) sign (see Figure 2B-13) shall be used to advise road users that they are approaching an intersection with a divided highway (see Figure 2B-19).

~~Option:~~

~~02 If the divided highway has a traffic volume of less than 400 AADT and a speed limit of 25 mph or less, at a crossing that functions as two separate intersections, the Divided Highway Crossing signs facing the unsignalized minor-street approaches may be omitted.~~

~~03 A Divided Highway Crossing sign may be used on signalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway to advise road users that they are approaching an intersection with a divided highway.~~

Options not included in the EPG. Revised Dec. 2025

Standard:

04 If a Divided Highway Crossing sign is used at a four-leg intersection, the R6-3 sign shall be used. If used at a T-intersection, the R6-3a sign shall be used.

05 The Divided Highway Crossing sign shall be located on the near right corner of the intersection, mounted beneath a STOP or YIELD sign or on a separate support.

M05A The DIVIDED HIGHWAY (R6-3b) sign may be used in situations where the R6-3 or R6-3a Divided Highway Crossing signs may be confusing.

~~Option:~~

~~06 An additional Divided Highway Crossing sign may be installed on the left-hand side of the approach to supplement the Divided Highway Crossing sign on the near right corner of the intersection.~~

Option not included in the EPG. Revised Dec. 2025

~~Section 2B.51 Roundabout Circulation Plaque (R6-5P)~~

~~*Guidance:*~~

~~*01 Where the central island of a roundabout or neighborhood traffic circle does not provide a reasonable place to install a sign as provided elsewhere in this Chapter, Roundabout Circulation (R6-5P) plaques (see Figure 2B-13) should be placed below the YIELD signs on each approach.*~~

~~Support:~~

~~02 Paragraph 6 of Section 2B.39 contains information about the use of a Keep Right (R4-7b) sign in the central island of a neighborhood traffic circle.~~

~~03 Paragraph 12 of Section 2B.49 contains information about the use of a One Way (R6-1 or R6-2) sign in the central island of a roundabout.~~

~~Option:~~

~~04 At roundabouts where ONE WAY signs have been installed in the central island, Roundabout Circulation plaques may be placed below the YIELD signs on approaches to roundabouts to supplement the central island signs.~~

~~05 The Roundabout Circulation plaque may be used at any type of circular intersection.~~

~~Support:~~

~~06 Examples of regulatory and warning signs for roundabouts and neighborhood traffic circles are shown in Figures 2B-21 through 2B-24.~~

MoDOT does not use R6-5P plaques.

MoDOT makes the advanced warning sign for roundabouts a standard, which negates the need for the regulatory sign under the yield. The configuration of MoDOT roundabouts typically makes it clear which type of intersection a driver is approaching. Revised Dec. 2025

Figure 2B-21. Example of Regulatory and Warning Signs for a Mini-Roundabout

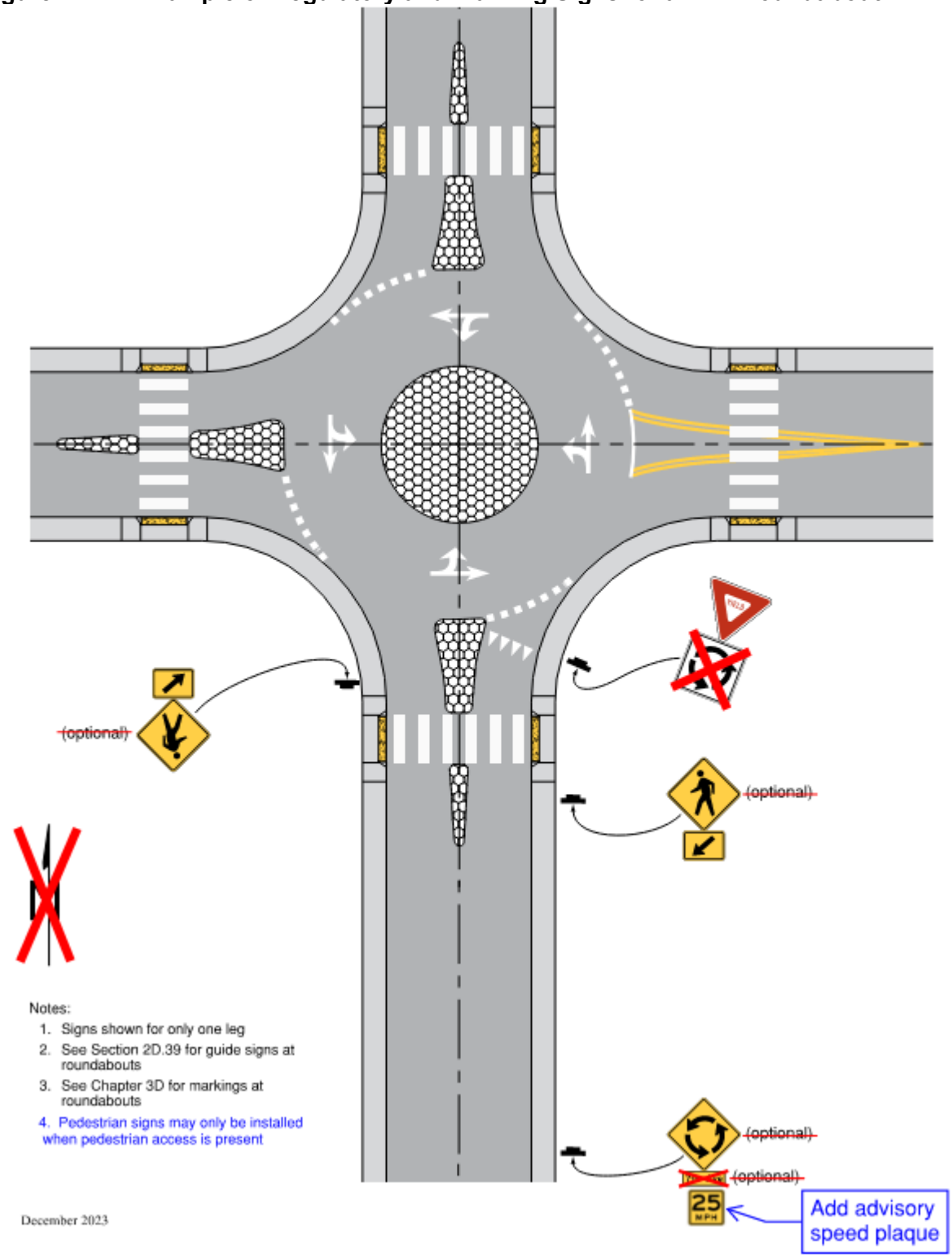


Figure 2B-22. Example of Regulatory and Warning Signs for a One-Lane Roundabout

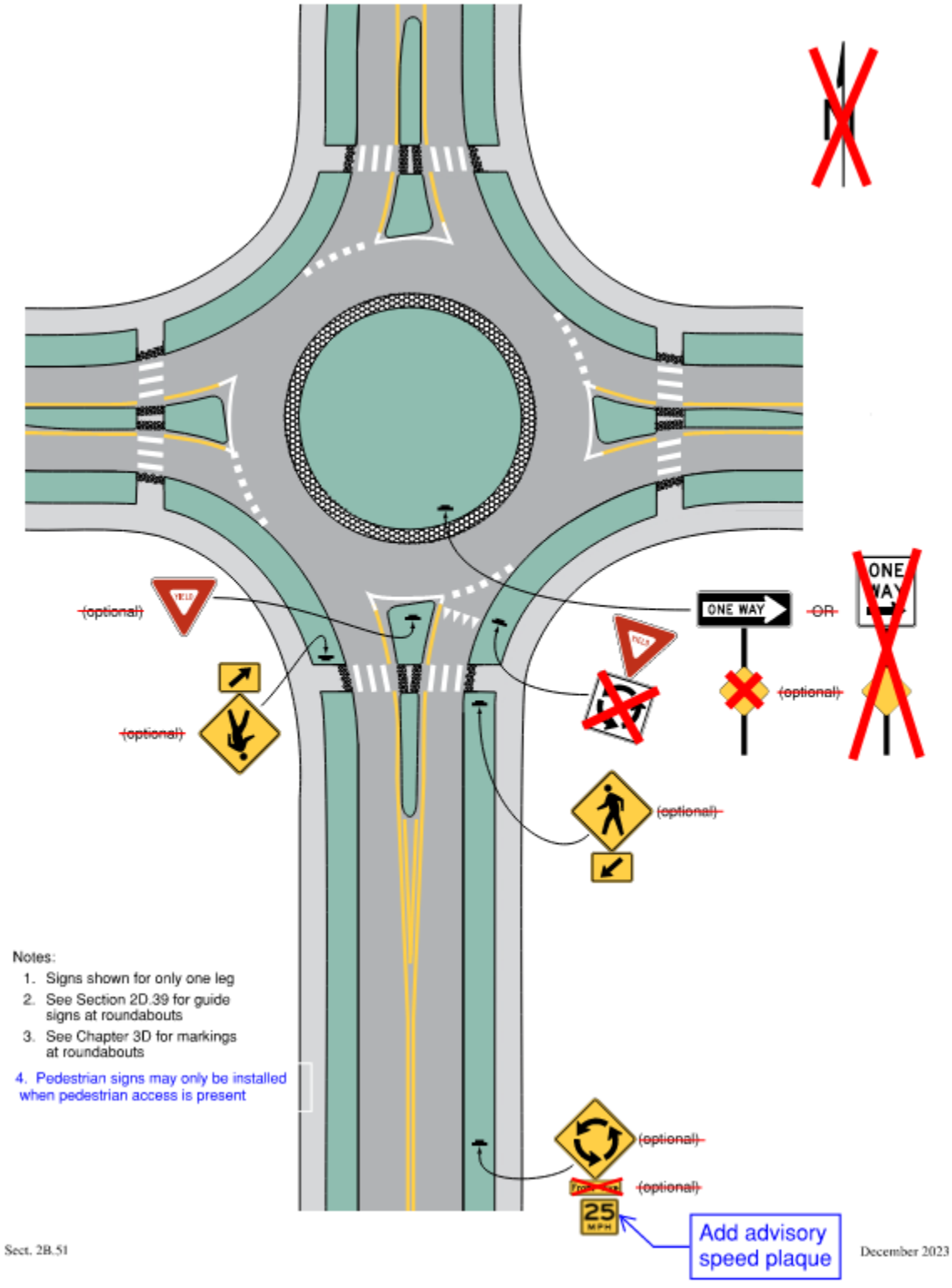


Figure 2B-23. Example of Regulatory and Warning Signs for a Two-Lane Roundabout with Consecutive Double Lefts

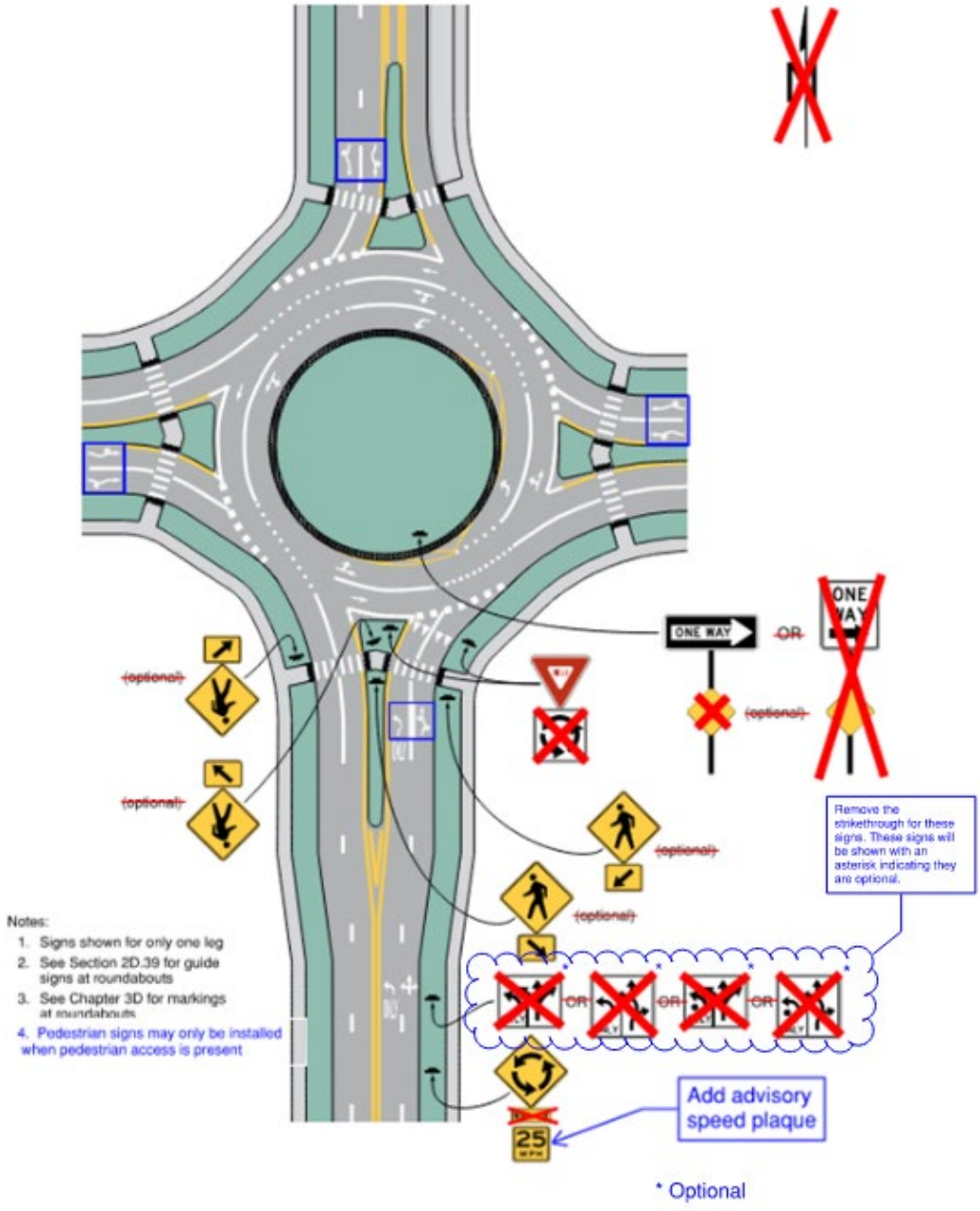


Figure 2B-24. Example of Regulatory and Warning Signs for a Neighborhood Traffic Circle

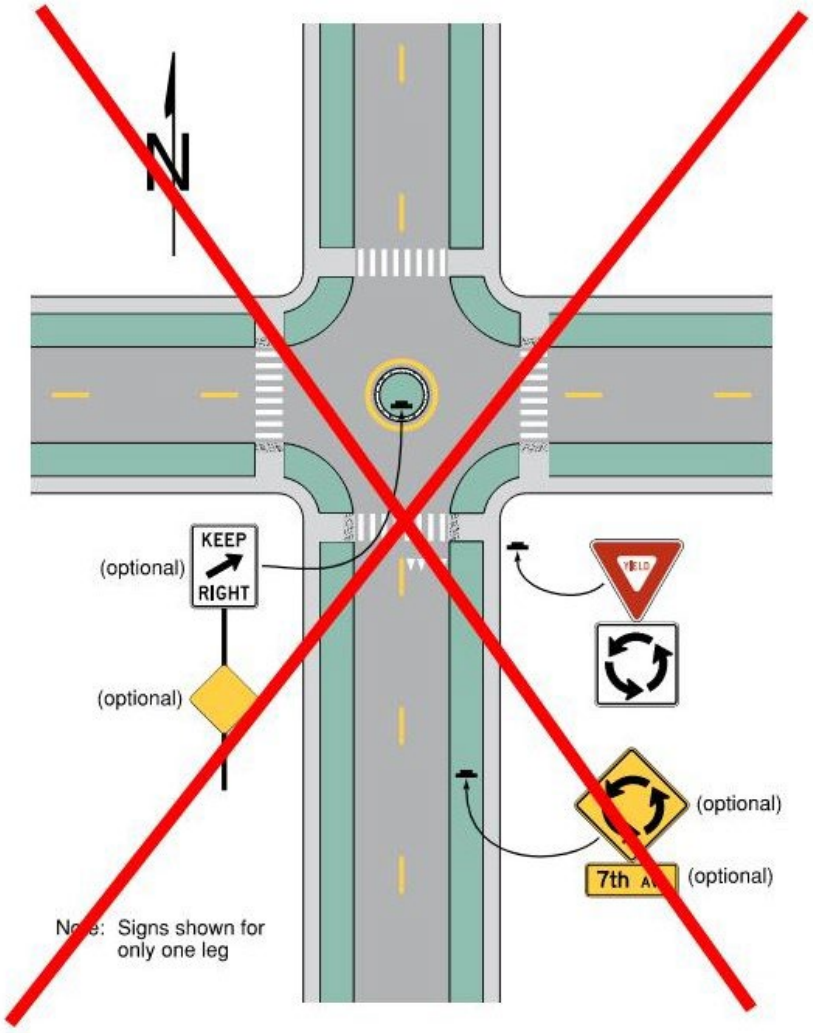


Figure 2B-24 is not adopted by MoDOT. Revised Dec. 2025

PARKING, STANDING, STOPPING, AND EMERGENCY RESTRICTION SIGNS

Section 2B.52 Parking, Standing, and Stopping Signs (R7 and R8 Series)

Support:

01 Parking signs pertain to the parking, standing, and stopping of vehicles along the roadway and in designated parking areas. They cover a wide variety of regulations, and only general guidance can be provided here. The word "standing" when used on the R7 and R8 series of signs refers to the practice of a driver keeping the vehicle in a stationary position while continuing to occupy the vehicle. The word "stopping" when used on the R7 and R8 series signs refers to any vehicle, occupied by a driver or not, that stops other than to avoid conflict with other traffic or to comply with official direction. Other types of activities such as active loading, active passenger loading, and/or waiting might be established in State or local codes for use on R7 and R8 series signs.

02 Parking signs are categorized as either (1) prohibiting parking or (2) permitting parking with restrictions on how parking is allowed.

03 The types of parking, standing, or stopping prohibitions that might be encountered include, but are not limited to:

A. Prohibited at all times;
B. Prohibited only at certain times of the day and/or days of the week;
C. Prohibited with exceptions, such as for bus stops, loading/unloading zones, persons with disabilities, or electric vehicle charging stations; or
D. Prohibited under certain conditions, such as Snow Emergency Routes.

04 Permissive parking signs allowing parking with restrictions include, but are not limited to:

A. Parking only allowed for limited time duration (such as 30 minutes or for 1 hour);
B. Metered parking requiring payment at an individual or a multi-space parking meter, or through electronic means such as by telephone or mobile application~~.~~;
C. Parking only for specific persons (such as those with disabilities or patrons or employees of a business) or specific vehicle types (such as electric vehicles, police/government vehicles, motorcycles, bicycles, or taxis);
D. Angled or back-in angled parking when it is not commonly used in the area;
E. Parking programs such as neighborhood/residential permits, school areas, or special events; and
F. Emergency parking or stopping only.

M05 The District Engineer is authorized to act on requests for parking restrictions within incorporated areas upon receipt of a city ordinance requesting the same.

Option:

M06 The District Engineer may authorize parking restrictions after completion of a study by the district staff and review by county and local law enforcement.

M07 Within interchange areas and on ramps the standard NO PARKING ANYTIME (R7-1) sign may be used.

Guidance:

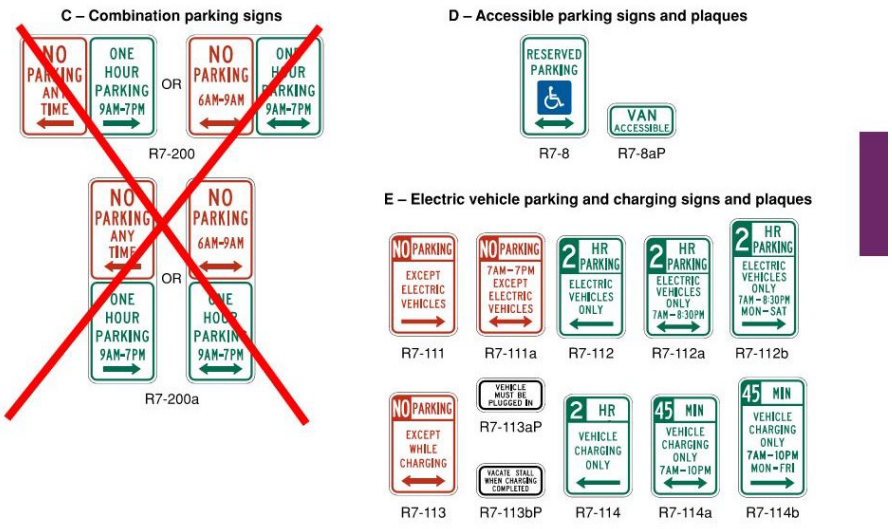
M08 Local law enforcement agencies should be consulted when determining if there is a need for no parking signs to be installed.

MoDOT specific language from the EPG. Revised Dec. 2025

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.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).~~

MoDOT does not use R8 series signs. Revised Dec. 2025

~~*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.*~~

MoDOT does not use R7-203 signs. Revised Dec. 2025

~~*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.~~

There is no paid parking on MoDOT facilities. Revised Dec. 2025

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.

M17A The RESERVED PARKING for Persons with Disabilities (R7-8) sign shall be installed in rest area parking lots 10 ft. to 16 ft. from the edge of the handicap ramp.

Support:

M17B The R7-8L has a left arrow and the R7-8R a right arrow. The R7-8 does not have an arrow.

MoDOT specific language from the EPG. Revised Dec. 2025

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.~~

MoDOT does not use the signs described in P21 through P24. Revised Dec. 2025

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 FHWA "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.

M29 The NO PARKING ON BRIDGE sign (R7-35) should be used at bridge ends or on bridges where motorists tend to block or endanger through traffic by parking on the bridge.

MoDOT specific language from the EPG. Revised Dec. 2025

Section 2B.54 Placement of Parking, Standing, and Stopping Signs

Support:

01 The efficacy of parking, standing, and stopping signs, when used on conventional roads in urbanized or developed environments, depends on their visibility and consistent placement along a street or within a particular block. It is often impracticable for the entire legend to be legible from similar distances as for other types of signs. Therefore, it is important that their conventional form be recognizable from an adequate distance such that the road user can obtain the information upon closer inspection.

Guidance:

02 When signs with arrows are used to indicate the extent of the restricted zones, the signs should be set at an angle of not less than 30 degrees nor more than 45 degrees with the line of traffic flow in order to be visible to approaching traffic.

03 When signs are placed at the head of perpendicular parking stalls, the signs should be parallel to the roadway facing the parking stall.

04 Spacing of signs should be based on legibility, conspicuity, and sign orientation.

05 If the zone is long, signs should be used at intermediate points within the zone.

06 If the signs are mounted at an angle of 90 degrees to the curb line, two signs should be mounted back to back at the transition point between two parking zones, each with an appended THIS SIDE OF SIGN (R7-202P) supplemental plaque (see Drawing A in Figure 2B-25).

07 If the signs are mounted at an angle of 90 degrees to the curb line, signs without any arrows or appended plaques should be used at intermediate points within a parking zone, facing in the direction of approaching traffic. Otherwise, the standards of placement should be the same as for signs using directional arrows.

Option:

08 Blanket parking regulations that apply to an entire jurisdiction may, if legal, be posted in the vicinity of the jurisdictional boundary lines. Blanket parking regulations that apply to a posted zone or district may, if legal, be posted at the entry points to the zone or district.

Section 2B.55 Emergency Restriction Signs (~~R8-4 and~~ R8-7)

Standard:

01 Emergency Restriction signs (see Figure 2B-26) shall be rectangular and shall have a black legend and border on a white background.

Option:

02 The ~~EMERGENCY PARKING ONLY (R8-4) sign or the~~ EMERGENCY STOPPING ONLY (R8-7) sign may be used to discourage or prohibit shoulder parking~~, particularly where scenic or other attractions create a tendency for road users to desire to stop temporarily~~ on the interstate and other freeway highway systems based on the Missouri Revised Statutes, Section 304.024.

MoDOT specific language from the EPG. Revised Dec. 2025

Guidance:

M02A The use of the EMERGENCY STOPPING ONLY sign should be held to a minimum and not erected unless there is a specific problem.

MoDOT specific language from the EPG. Revised Dec. 2025

Support:

03 Section 8B.07 contains information for the use of the DO NOT STOP ON TRACKS (R8-8) sign (see Figure 8B-1) to discourage or prohibit parking or stopping on railroad or light rail transit tracks.

Figure 2B-26. Emergency Restriction Signs



~~Section 2B.56 WALK ON LEFT FACING TRAFFIC and No Hitchhiking Signs (R9-1, R9-4, and R9-4a)~~

~~Option:~~

~~01 The WALK ON LEFT FACING TRAFFIC (R9-1) sign (see Figure 2B-27) may be used on highways where no sidewalks are provided.~~

~~**Guidance:**~~

~~**02 If used, the WALK ON LEFT FACING TRAFFIC sign should be installed on the right-hand side of the road where pedestrians walk on the pavement or shoulder in the absence of pedestrian pathways or sidewalks.**~~

~~Option:~~

~~03 The No Hitchhiking (R9-4) sign (see Figure 2B-27) may be used to prohibit standing in or adjacent to the roadway for the purpose of soliciting a ride. The R9-4a word message sign (see Figure 2B-27) may be used as an alternate to the R9-4 symbol sign.~~

MoDOT does not use WALK ON LEFT FACING TRAFFIC or NO Hitchhiking Signs. Revised Dec. 2025

Section 2B.57 Pedestrian Crossing Signs (~~R9-2 and~~ R9-3)

Option:

01 Pedestrian Crossing signs may be used to limit pedestrian crossing to specific locations.

Standard:

02 If used, Pedestrian Crossing signs shall be installed to face pedestrian approaches.

Option:

~~03 Where crosswalks are clearly defined, the CROSS ONLY AT CROSSWALKS (R9-2) sign may be used to prohibit pedestrians from crossing at locations away from crosswalks.~~

04 The No Pedestrian Crossing (R9-3) sign may be used to prohibit pedestrians from crossing a roadway at an undesirable location or in front of a school or other public building where a crossing is not designated.

05 The NO PEDESTRIAN CROSSING (R9-3a) word message sign may be used as an alternate to the R9-3 symbol sign. ~~The USE CROSSWALK (R9-3bP) supplemental plaque, along with an arrow, may be installed below either sign to designate the direction of the crossing.~~

Support:

06 Pedestrians with vision disabilities might need features other than traffic control devices to provide effective communication of the prohibition of pedestrian crossing.

~~Guidance:~~

~~07 The R9-3bP plaque should not be installed in combination with educational plaques.~~

MoDOT does not use R9-2 and R9-3bP signs. Revised Dec. 2025

Section 2B.58 Traffic Signal Pedestrian and Bicyclist Actuation Signs ~~(R10-1 through R10-4 and R10-24 through R10-26)~~ (R10-3b, R10-3d, R10-3e, R10-4, and R10-25).

Standard:

01 Where manual actuation of a traffic signal is required for pedestrians or bicyclists to call a signal phase to cross the roadway, traffic signal signs applicable to pedestrian actuation (see Figure 2B-27) or bicyclist actuation (see Figure 9B-1) shall be mounted immediately above or incorporated into the push button detector units (see Section 4I.05).

Support:

02 Traffic signal signs applicable to pedestrians include:

~~A. CROSS ONLY ON GREEN (symbolic circular green) (R10-1),~~

~~B. CROSS ONLY ON (symbolic walk indication) SIGNAL (R10-2),~~

C. Push Button for Walk Signal (R10-3 series), and

D. Push Button for Green Signal (R10-4 series).

Option:

M02A If the signalized intersection has push buttons but no pedestrian heads the PUSH BUTTON FOR GREEN SIGNAL (R10-4) sign may be used instead of the R10-3e and R10-3j signs.

MoDOT specific language from the EPG. Revised Dec. 2025

~~03 The following signs may be used as an alternate for the R10-3 and R10-4 signs:~~

~~A. Push Button to Cross Street Wait for Walk Signal (R10-3a); or~~

~~B. Push Button to Cross Street Wait for Green Signal (R10-4a).~~

~~04 The name of the street to be crossed may be substituted for the word STREET in the legends on the R10-3a and R10-4a signs.~~

Guidance:

05 The finger in the push button symbol on the ~~R10-3, R10-3a,~~ R10-4 sign~~, and R10-4a signs~~ should point in the same direction as the arrow on the sign.

Option:

06 Where symbolic pedestrian signal indications are used, an educational sign (R10-3b) may be used ~~instead of the R10-3 sign to improve pedestrian understanding of pedestrian indications~~ at signalized intersections. ~~Where word legend pedestrian signal indications are being retained for the remainder of their useful service life, the legends WALK/DONT WALK may be substituted for the symbols on the educational sign R10-3b, thus creating educational sign R10-3c.~~ The R10-3d educational sign may be used to inform pedestrians that the pedestrian clearance time is sufficient only for the pedestrian to cross to the median at locations where pedestrians cross in two stages using a median refuge island. The R10-3e educational sign may be used where countdown pedestrian signals have been provided. ~~In order to assist the pedestrian in understanding which push button to push, the R10-3f through R10-3i educational signs that provide the name of the street to be crossed may be used instead of the R10-3b through R10-3e educational signs.~~

M06A The R10-3e sign shall be used with pre-timed pedestrian signals. For actuated pedestrian signal, the R10-3eL and R10-3eR shall be mounted immediately above or incorporated in pedestrian pushbutton units.

MoDOT specific language from the EPG. Revised Dec. 2025

~~07 The R10-24 or R10-26 sign (see Section 9B.20) may be used where a push button detector has been installed exclusively to actuate a green phase for bicyclists.~~

08 The R10-25 sign (see Figure 2B-27) may be used where a push button detector has been installed for pedestrians to activate In-Roadway Warning Lights (see Chapter 4U) or flashing beacons that have been added to the pedestrian warning signs.

~~Support:~~

~~09 Section 4I.05 contains information regarding the application of the R10-32P plaque.~~

MoDOT does not use many of the pedestrian and bicycle actuation signs. Revised Dec. 2025

Figure 2B-27. Pedestrian Signs and Plaques (Sheet 1 of 2)



Figure 2B-27. Pedestrian Signs and Plaques (Sheet 2 of 2)



Section 2B.59 Traffic Signal Signs and Plaques (R10-5 through R10-23a~~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), and

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, or 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.

MoDOT does not use flashing red arrow indications. Revised Dec. 2025

Standard:

M03A The LEFT TURN SIGNAL (R10-10L) sign has been discontinued by MoDOT. These signs shall remain in place until the circular red indication is replaced with a red left arrow (see Section 4F.06 Signal Indications for Protected Only Mode Left-Turn Movements in a Separate Signal Face).

M03B If an existing R10-10L is at the end of its service life, it shall be removed, and the circular red indication shall be replaced with a red left arrow.

MoDOT specific language from the EPG. Revised Dec. 2025

Guidance:

04 If used, the RIGHT ON GREEN ARROW ONLY sign, the RIGHT TURN SIGNAL sign, or 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.

Guidance:

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

M14A Currently the R10-12b sign is not used by MoDOT. Contact the Highway Safety and Traffic division when considering the use of this sign.

~~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.~~

MoDOT does not use the R10-12b sign. Revised Dec. 2025

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.**~~

MoDOT does not use the R10-15a sign because state law does not require drivers to stop for pedestrians. Revised Dec. 2025

~~*Guidance:*~~

18 The R10-15 series signs, 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)

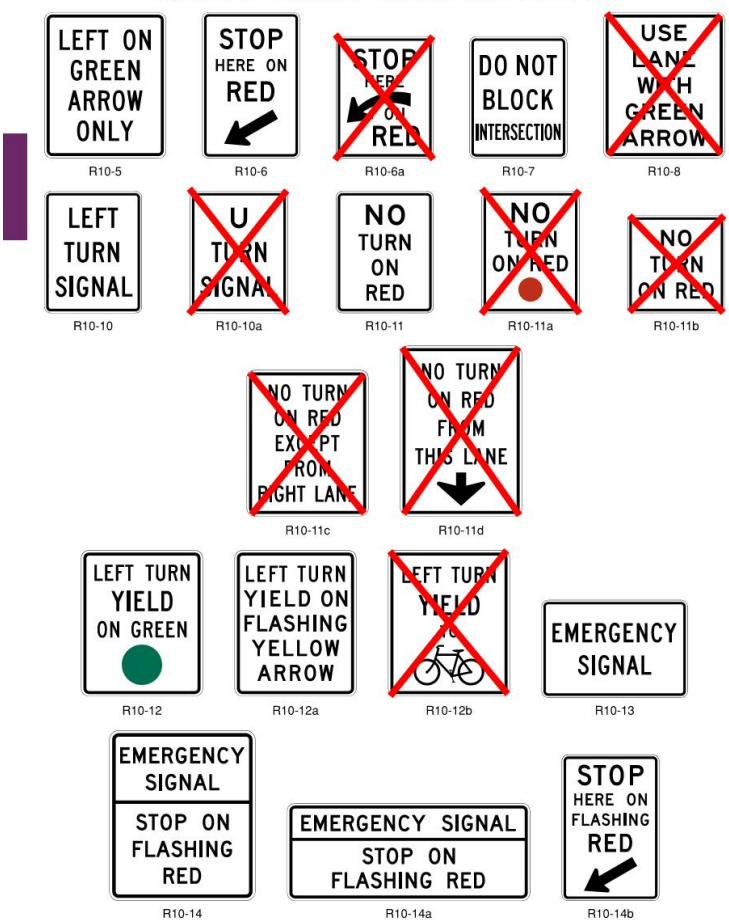
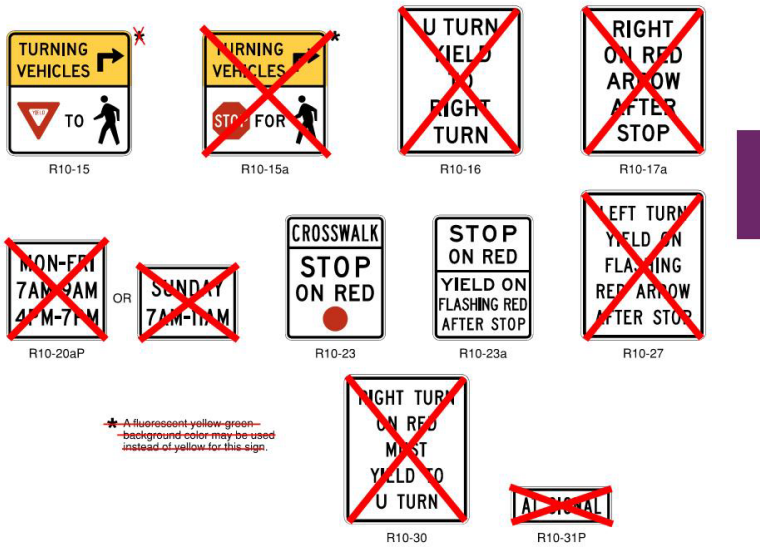


Figure 2B-28. Traffic Signal Signs and Plaques (Sheet 2 of 2)



Section 2B.60 No Turn on Red Signs (R10-11 ~~Series, R10-17a,~~ and R10-30a)

Standard:

01 Where a right turn on a circular red signal indication (or a left turn on a circular red signal indication from a one-way street to a one-way street) is to be prohibited, a NO TURN ON RED (R10-11~~, R10-11b~~) word message sign (see Figure 2B-28) shall be used. ~~A NO TURN ON RED (symbolic circular red) (R10-11a) sign (see Figure 2B-28) shall be used when the approach is controlled by both circular red and red arrow indications.~~

MoDOT does not use the R10-11a through R10-11d or R10-17 signs. Revised Dec. 2025

M01A The NO TURN ON RED (R10-11) sign shall be used to prohibit a right turn on red.

MoDOT specific language from the EPG. Revised Dec. 2025

Guidance:

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

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

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

Standard:

04 If an R10-11~~, R10-11a, R10-11b, or R10-17a~~ sign with conventional road size as shown in Table 2B-1 is used on an approach on the far side of the intersection and the distance between the stop line and the sign is greater than 120 feet, then a duplicate sign shall be located on the near side of the intersection to supplement the sign on the far side of the intersection.

M04A Except as provided by the option below, if right turn on red (RTOR) is restricted, then the NO TURN ON RED (R10-11) sign shall be used in lieu of the RIGHT TURN SIGNAL sign.

Guidance:

M04B If used, the NO TURN ON RED sign should be mounted adjacent to the far right signal indication (see EPG 902.6.13).

Option:

M04C Where space is limited, the square-shaped NO TURN ON RED (R10-11b) sign may be used instead of the R10-11 sign.

MoDOT specific language from the EPG. Revised Dec. 2025

Option:

05 When a no-turn-on-red restriction applies during certain time periods only, the following alternatives may be used:

- A. Movement Prohibition (R3-1, R3-2, R3-4, R3-18, and R3-27) signs or NO TURN ON RED signs displayed by using a blank-out sign for the time period or one or more portion(s) of a particular cycle of the traffic control signal during which the prohibition is applicable; or

B. Static signs incorporating a supplemental legend or with a supplemental R10-20aP plaque (see Figure 2B-28) showing the hours and days during which the prohibition is applicable.

06 White LEDs may be used in the border and activated during periods of turn prohibition to enhance the sign conspicuity (See Section 2A.12).

07 On signalized approaches with more than one right-turn lane, a NO TURN ON RED EXCEPT FROM RIGHT LANE (R10-11c) sign (see Figure 2B-28) may be post-mounted at the intersection or a NO TURN ON RED FROM THIS LANE (with down arrow) (R10-11d) sign (see Figure 2B-28) may be mounted over the approximate center of the lane from which turns on red are prohibited.

Guidance:

08 Where turns on red are permitted and the signal indication is a steady RED ARROW, the RIGHT (LEFT) ON RED ARROW AFTER STOP (R10-17a) sign (see Figure 2B-28) should be installed adjacent to the RED ARROW signal indication.

Option:

09 A RIGHT TURN ON RED MUST YIELD TO U-TURN (R10-30) sign (see Figure 2B-28) may be installed to remind road users that they must yield to conflicting U-turn traffic on the street or highway onto which they are turning right on a red signal after stopping.

M09A A RIGHT TURN MUST YIELD TO U-TURN (R10-30a) sign may be installed under a yield sign to remind road users that they must yield to conflicting U-turn traffic on the street or highway on to which they are turning right controlled by a yield sign.

MoDOT specific language from the EPG. Revised Dec. 2025

Section 2B.61 Ramp Metering Signs (R10-28 and R10-29)

Option:

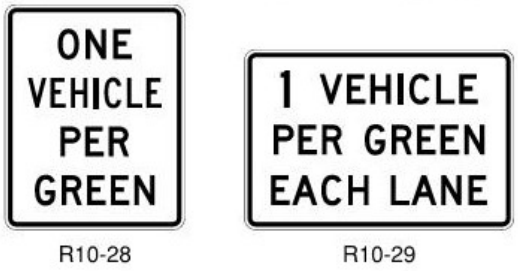
01 When ramp control signals (see Chapter 4P) are used to meter traffic on a freeway or expressway entrance ramp, regulatory signs with legends appropriate to the control may be installed adjacent to the ramp control signal faces.

02 For entrance ramps with only one controlled lane, an XX VEHICLE(S) PER GREEN (R10-28) sign (see Figure 2B-29) may be used to inform road users of the number of vehicles that are permitted to proceed during each short display of the green signal indication. For entrance ramps with more than one controlled lane, an XX VEHICLE(S) PER GREEN EACH LANE (R10-29) (see Figure 2B-29) sign may be used to inform road users of the number of vehicles that are permitted to proceed from each lane during each short display of the green signal indication.

Support:

03 Chapter 2L contains provisions for the use of blank-out or changeable message signs when the metering is limited by time, day, or condition.

Figure 2B-29. Ramp Metering Signs



ROAD CLOSED AND WEIGHT LIMIT SIGNS

Section 2B.62 KEEP OFF MEDIAN Sign (R11-1)

Option:

01 The KEEP OFF MEDIAN (R11-1) sign (see Figure 2B-30) may be used to prohibit driving into or parking on the median.

Guidance:

02 The KEEP OFF MEDIAN sign should be installed on the left-hand side of the roadway within the median at random intervals as needed wherever there is a tendency for encroachment.

Support:

M03 A median is the area between two roadways of a divided highway measured from edge of travel way to edge of travel way or the area between a highway and an outer road.

MoDOT specific language from the EPG. Revised Dec. 2025

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,~~ and 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.

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.~~

MoDOT does not use different legends for Road Closed signs. Revised Dec. 2025

Section 2B.64 Weight Limit Sign~~s~~ (R12-1 ~~through R12-7~~)

Support:

M00A In 2022, a new load posting policy was implemented by MoDOT in the EPG. This new policy resulted from a plan of corrective action with FHWA. With this new policy, all structures on the national bridge inventory will be categorized under this new policy within the next 10 years. There are 10,387 structures on the state system. 270 of these structures are major or unusual structures and these will be categorized over the next 10 years. The remaining 10,117 structures consist of 6,940 normal bridges and 3,177 culverts. The normal bridges will be categorized in the next 4 years and the culverts will be reviewed in the last 3 years of the 10 year timeline of the plan. The R12-1 sign remains in use, with the remaining MoDOT bridge posting signs being replaced by one of three new bridge posting signs in this section.

MoDOT specific language from the EPG. Revised Dec. 2025

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.

MoDOT only posts weight limit signs for structures. Revised Dec. 2025

Guidance:

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

MoDOT only adopts the R12-1 sign, which uses tons. Revised Dec. 2025

~~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:**~~

~~**08 The symbols shown on the R12-5 and R12-6 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.**~~

M12A Weight limit signs shall be installed in accordance with the new bridge posting classifications once completed.

MoDOT specific language from the EPG. Revised Dec. 2025

13 A weight limit sign (see Figure 2B-30) shall be located at the applicable ~~section of highway or~~ structure in accordance with (see Table 903.2.53 and Figures 903.2.53.1 to 903.2.53.3).

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.

M14A In commercial zones, bridges with the capacity of more the 65 tons shall not be posted, as normally loads in excess of 65 tons will not occur.

M14B Once a bridge has been categorized, the bridge posting signs shall be updated within 30 days of the bridge posting reclassification. This includes installing the correct sign and configuring the sign locations to match the appropriate bridge posting figure (see Figures 903.5.53.1 to 903.2.53.3).

Support:

M14C If existing weight limit signs need to be replaced prior to a bridge being categorized, contact Highway Safety and Traffic Division, Signing Section, for guidance.

MoDOT specific language from the EPG. Revised Dec. 2025

~~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 Sign (R13-~~1~~ Series)

~~*Guidance:*~~

~~01 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.~~

~~02 The R13-1 sign should be supplemented by the D8 series of guide signs (see Section 2D.51).~~

Standard:

M03 The BUSES WEIGH sign (R13-11) should be used at all weigh stations to supplement the standard weigh station signing.

Guidance:

M04 The OPEN-CLOSED plaque (R13-15P) should be installed below all WEIGH STATION RIGHT LANE signs whenever an automatic OPEN-CLOSED sign has not been provided.

M05 The BEFORE PULLING ONTO SCALE (R13-16) sign should be installed just to the right of the weigh scale and immediately in front thereof. A 30 in. STOP sign should be mounted above the sign.

MoDOT specific language from the EPG. Revised Dec. 2025

Section 2B.66 TRUCK ROUTE Sign (R14-1)

Guidance:

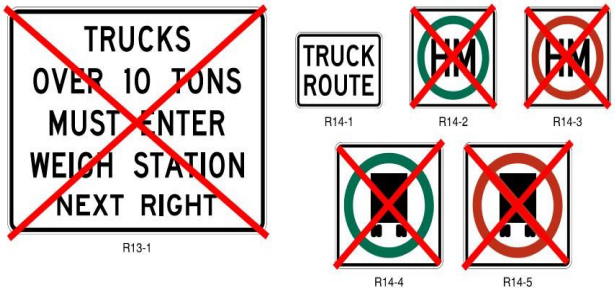
01 The TRUCK ROUTE (R14-1) sign (see Figure 2B-31) should be used to mark a route that has been designated to allow truck traffic.

~~Support:~~

~~02 Section 2D.20 contains information regarding the use of the TRUCK (M4-4P) auxiliary plaque (see Figure 2D-5) on a designated numbered alternative route.~~

MoDOT does not use M4-4P plaques. Revised Dec. 2025

Figure 2B-31. Truck Signs



~~Section 2B.67 Hazardous Material Signs (R14-2 and R14-3)~~

~~Option:~~

~~01 The Hazardous Material Route (R14-2) sign (see Figure 2B-31) may be used to identify routes that have been designated by proper authority for vehicles transporting hazardous material.~~

~~02 On routes where the transporting of hazardous material is prohibited, the Hazardous Material Prohibition (R14-3) sign (see Figure 2B-31) may be used.~~

~~*Guidance:*~~

~~*03 If used, the Hazardous Material Prohibition sign should be installed on a street or roadway at a point where vehicles transporting hazardous material have the opportunity to take an alternate route.*~~

MoDOT does not use the R14-2 or R14-3 sign. Revised Dec. 2025

~~Section 2B.68 National Network Signs (R14-4 and R14-5)~~

~~Support:~~

~~01 The signing of the National Network routes for trucking is optional.~~

~~**Standard:**~~

~~**02 When a National Network route is signed, the National Network (R14-4) sign (see Figure 2B-31) shall be used.**~~

~~Option:~~

~~03 The National Network Prohibition (R14-5) sign (see Figure 2B-31) may be used to identify routes, portions of routes, and ramps where trucks are prohibited. The R14-5 sign may also be used to mark the ends of designated routes.~~

MoDOT does not use the R14-4 or R14-4 sign. Revised Dec. 2025

OTHER REGULATORY SIGNS AND PLAQUES

Section 2B.69 Photo Enforced Signs and Plaques (~~R10-18~~, R10-18a~~,~~ and R10-19P~~, R10-19aP~~)

Option:

~~01 A Traffic Laws Photo Enforced (R10-18) sign (see Figure 2B-32) may be installed at a jurisdictional boundary to advise road users that some of the traffic regulations within that jurisdiction are being enforced by photographic equipment.~~

~~02 A Traffic Signal Photo Enforced (R10-18a) sign (see Figure 2B-32) may be installed in advance of or at a traffic signal to advise road users that compliance with the signal is enforced by photographic equipment.~~ A Signal Ahead (W3-3) sign and a Traffic Signal Photo Enforced (R10-18a) sign may be used on the same approach provided that they are on separate supports.

03 A Photo Enforced (R10-19P) plaque ~~or a PHOTO ENFORCED (R10-19aP) word message plaque~~ (see Figure 2B-32) may be mounted below a regulatory sign to advise road users that the regulation is being enforced by photographic equipment.

Standard:

M03A The Traffic Signal Photo Enforced (R10-18a) sign shall be used on approaches to signalized locations where red-light cameras are present.

MoDOT specific language from the EPG. Revised Dec. 2025

04 The Traffic Signal Photo Enforced (R10-18a) sign shall not be installed on approaches to signalized locations where red-light cameras are not present on any of the approaches to the signalized location.

05 A Traffic Signal Photo Enforced (R10-18a) sign shall not be installed on the same support in combination with a Signal Ahead (W3-3) sign.

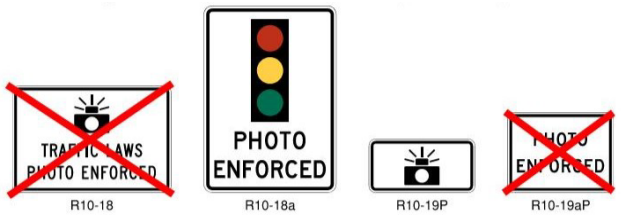
06 If used below a regulatory sign, the Photo Enforced (R10-19P ~~or R10-19aP~~) plaque shall be a rectangle with a black legend and border on a white background.

Support:

M07 For more information about photo enforcement requirements, see EPG 950 Automated Traffic Enforcement.

MoDOT specific language from the EPG. Revised Dec. 2025

Figure 2B-32. Photo Enforcement Signs and Plaques



~~Section 2B.70 Move Vehicles from Travel Lanes Sign (R16-4)~~

~~Option:~~

~~01 A STATE LAW MINOR CRASHES MOVE VEHICLES FROM TRAVEL LANES (R16-4) sign (see Figure 2B-33) may be installed in accordance with the provisions of Section 2A.01 to require motorists to move their vehicle out of the travel lanes if they have been involved in a crash.~~

~~02 If the specific requirements of a State law vary, the word legend of the R16-4 sign may be modified to reflect the appropriate law.~~

MoDOT does not use the R16-4 sign. Revised Dec. 2025

Section 2B.71 ~~Move Over or Reduce Speed Sign (R16-3)~~ STATE LAW MOVE OVER OR SLOW DOWN FOR STOPPED EMERGENCY VEHICLES Sign (R16-25)

~~Option:~~

~~01 A STATE LAW MOVE OVER OR REDUCE SPEED FOR VEHICLES STOPPED ON SHOULDER (R16-3) 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 on the shoulder.~~

~~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:

M03 The STATE LAW MOVE OVER OR SLOW DOWN FOR STOPPED EMERGENCY VEHICLES (R16-25) sign is used to inform motorists of Missouri Revised Statutes 304.022, which requires motorists to drive with caution when approaching stopped emergency vehicles.

Guidance:

M04 The STATE LAW MOVE OVER OR SLOW DOWN FOR STOPPED EMERGENCY VEHICLES sign should be installed on Interstates entering the state at the state line. The location of the sign should be as close to the state line as possible and placed at the discretion of MoDOT.

Option:

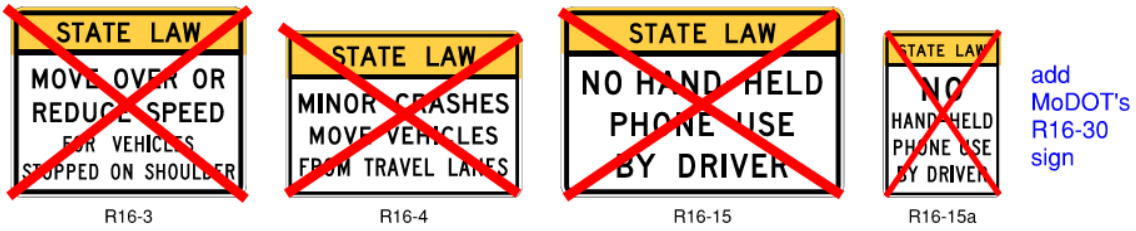
M05 Additional STATE LAW MOVE OVER OR SLOW DOWN FOR STOPPED EMERGENCY VEHICLES signs may be installed on U.S. routes entering the state where there are no adjacent interstates and rest areas at the request of the Missouri State Highway Patrol.

Standard:

M06 Requests for additional signs shall be forwarded to the appropriate district engineer for approval. These signs shall only be installed on divided highways. The installation of this sign shall not interfere with or detract from any other regulatory, warning, or guide signs.

MoDOT language from the EPG replaces MUTCD language as it is more specific to the sign MoDOT uses. Revised Dec. 2025

Figure 2B-33. Other Regulatory Signs



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

~~Option:~~

~~01 A STATE LAW NO HAND-HELD PHONE USE BY DRIVER (R16-15 or R16-15a) 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.~~

~~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.~~

MoDOT only uses the R16-30 sign. Revised Dec. 2025

Section 2B.73 Headlight Use Signs (R16-5a ~~through R16-11~~)

Support:

M00A The HEADLIGHTS ON WHEN WIPERS ARE REQUIRED (R16-5a) sign, supported by RSMo 307.020 in 2004, was developed to inform motorists of the new law directing them to turn on headlights when wipers are on and during inclement weather. The use of these signs has been discontinued as the law has been in place for more than 15 years and many vehicles come equipped with headlights that turn on when wipers are activated. Existing signs are to be removed at the end of their sign life.

~~01 Some States require road users to turn on their vehicle headlights under certain weather conditions, as a safety improvement measure on roadways experiencing high crash rates, or in special situations such as when driving through a tunnel.~~

~~02 Figure 2B-34 shows the various signs that can be used for informing motorists of these requirements.~~

~~Option:~~

~~03 A LIGHTS ON WHEN USING WIPERS (R16-5) sign or a LIGHTS ON WHEN RAINING (R16-6) sign may be installed in accordance with the provisions of Section 2A.01 to inform road users of State laws regarding headlight use. Although these signs are typically installed facing traffic entering the State just inside the State border, they also may be installed at other locations within the State.~~

~~*Guidance:*~~

~~*04 If a particular section of roadway has been designated as a safety improvement zone within which headlight use is required, a TURN ON HEADLIGHTS NEXT XX MILES (R16-7) sign or a BEGIN DAYTIME HEADLIGHT SECTION (R16-10) sign should be installed at the upstream end of the section, and an END DAYTIME HEADLIGHT SECTION (R16-11) sign should be installed at the downstream end of the section.*~~

~~Option:~~

~~05 A TURN ON HEADLIGHTS (R16-8) sign may be installed to require road users to turn on their headlights in special situations such as when driving through a tunnel. A CHECK HEADLIGHTS (R169) sign may be installed downstream from the special situation to inform drivers that using their headlights is no longer required.~~

MoDOT specific language from the EPG replaces MUTCD language. Revised Dec. 2025

Figure 2B-34. Headlight Use Signs

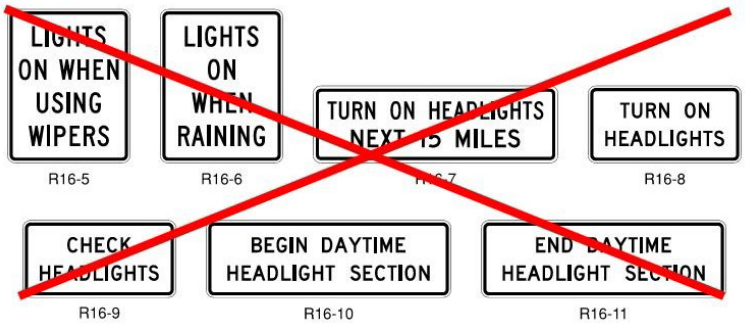


Figure is not adopted by MoDOT. Revised Dec. 2025

Section 2B.74 Seat Belt Symbol

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 FHWA "Standard Highway Signs" publication (see Section 1A.05).

Guidance:

M03 The R16-2, R16-3, R16-24, R16-27 and R16-27a seatbelt signs have been discontinued. These signs should remain in place to the end of their service life.

M04 The STATE LAW BUCKLE UP PHONE DOWN (R16-30) sign should be installed at the end of the on ramp of rest areas and Missouri Welcome Centers on the interstate system. The STATE LAW BUCKLE UP PHONE DOWN (R16-30a) sign should be installed on Interstate and U.S. Routes at the state line entering Missouri. Neither sign should be installed at any other location along a roadway.

Support:

M05 A growing number of cities and counties are passing local ordinances to make seat belt usage a primary law in their communities. To promote the use of seat belts a PRIMARY SEAT BELT CITY / COUNTY - ORDINANCE sign may be installed by MoDOT upon request.

Standard:

M06 If a city/county has an established primary seat belt ordinance, MoDOT will install PRIMARY SEAT BELT CITY / COUNTY - ORDINANCE signs upon request once a copy of the ordinance has been received. When the PRIMARY SEAT BELT CITY / COUNTY - ORDINANCE is installed they shall be mounted to the right of the city limit sign or the entering county line sign.

Option:

M07 If insufficient space is available to mount the assembly to the right of these signs, the assembly shall be installed 200 ft. downstream of the city limit or county line signs at the appropriate sign spacing.

MoDOT specific language from the EPG. Revised Dec. 2025

BARRICADES ~~AND GATES~~

Section 2B.75 Barricades

Option:

01 Barricades may be used to mark any of the following conditions:

A. The end of a roadway,

B. A ramp or lane that is closed for operational purposes, or

C. The permanent or semi-permanent closure or termination of a roadway.

Standard:

02 When used to warn and alert road users of the terminus of a roadway, other than in temporary traffic control zones, barricades shall meet the design criteria of Section 6K.07 for a Type 3 Barricade, except that the colors of the stripes shall be retroreflective white and retroreflective red.

Option:

03 An end-of-roadway marker or markers may be used as described in Section 2C.73.

Guidance:

04 Appropriate advance warning signs (see Chapter 2C) should be used.

~~Section 2B.76 Gates~~

~~Support:~~

~~01 Gates described in this section used for weather or other emergency conditions are typically permanently installed to enable the gate to be immediately deployed as needed to prohibit the entry of traffic to the highway segment(s).~~

~~02 A gate typically features a gate arm that is moved from a vertical to a horizontal position or is rotated in a~~

~~horizontal plane from parallel to traffic to perpendicular to traffic. Traffic is obstructed and required to stop when the gate arm is placed in a horizontal position perpendicular to traffic. Another type of gate consists of a segment of fence (usually on rollers) that swings open and closed, or that is retracted to open and then extended to close.~~

~~03 Gates are sometimes used to enforce a required stop. Some examples of such uses are the following:~~

~~A. Parking facility entrances and exits,~~
~~B. Private community entrances and exits,~~
~~C. Military base entrances and exits,~~
~~D. Toll plaza lanes,~~
~~E. Movable bridges (see Chapter 4Q),~~
~~F. Automated Flagger Assistance Devices (see Chapter 6L), and~~
~~G. Grade crossings (see Part 8).~~

~~04 Gates are sometimes used to periodically close a roadway or a ramp. Some examples of such uses are the following:~~

~~A. Closing ramps to implement counter-flow operations for evacuations,~~
~~B. Closing ramps that lead to reversible lanes, and~~
~~C. Closing roadways for weather events such as snow, ice, or flooding, or for other emergencies.~~

~~**Standard:**~~

~~**05 Except as provided in Paragraph 6 of this Section, gate arms, if used, shall be fully retroreflective on both sides, have vertical stripes alternately red and white at 16-inch intervals**~~

measured horizontally as shown in Figure 8D-1. The width (which becomes the height of the retroreflective sheeting when the gate is in the down position) of the retroreflective sheeting on the front of the gate arm shall be at least 4 inches.

Option:

06 If used on a one-way roadway or ramp, the retroreflective sheeting may be omitted on the side of the gate (or rolling fence) facing away from approaching traffic.

07 Where gate arms are used to block off ramps into reversible lanes or to redirect approaching traffic, the red and white striping may be angled such that the stripes slope downward at an angle of 45 degrees toward the side of the gate arm on which traffic is to pass.

Standard:

08 The gate arm shall extend across the approaching lane or lanes of traffic to effectively block motor vehicle, bicycle, and/or pedestrian travel as appropriate.

Guidance:

09 When a gate that is rotated in a horizontal plane is in the position where it is parallel to traffic (indicating that the roadway is open), the outer end of the gate arm should be rotated to the downstream direction (from the perspective of traffic in the lane adjacent to the gate support) to prevent spearing if the gate is struck by an errant vehicle.

Standard:

10 If red lights are attached to a traffic gate, the red lights shall be steadily illuminated or flashed only during the period when the gate is in the horizontal or closed position and when the gate is in the process of being opened or closed.

11 Except as provided in Paragraph 6 of this Section, rolling sections of fence, if used, shall include either a horizontal strip of retroreflective sheeting on both sides of the fence with vertical stripes alternately red and white at 16-inch intervals measured horizontally to simulate the appearance of a gate arm in the horizontal position, or one or more Type 4 object markers (see Section 2C.73), or both. If a horizontal strip of retroreflective sheeting is used, the bottom of the sheeting shall be located 3.5 to 4.5 feet above the roadway surface.

MoDOT does not install or maintain gates. Revised Dec. 2025

CHAPTER 2C. [EPG 903.3]
WARNING SIGNS AND OBJECT MARKERS
GENERAL

Section 2C.01 Application of Warning Signs

Standard:

01 The use of warning signs shall be based on an engineering study or on engineering judgment.

02 Warning signs shall be retroreflective ~~or illuminated (see Section 2A.21)~~.

MoDOT does not use illuminated signs. Revised Dec. 2025

Guidance:

03 The use of warning signs should be kept to a minimum as the unnecessary use of warning signs tends to breed disrespect for all signs. In situations where the condition or activity is seasonal or temporary, the warning sign should be removed or covered when the condition or activity does not exist.

Support:

M04 The decision to use most warning signs is based on prevailing conditions. The items to be considered when determining the need for a warning sign are stopping sight distance and prevailing speed. Prevailing speed is determined by using either the posted or 85th percentile speed on the facility. Stopping sight distance is the distance a driver requires to perceive, react, and respond to a condition. The prevailing speed affects the amount of sight distance required for a condition.

M05 It is recommended to use Table 903.3.1 to determine the stopping sight distance needed when considering the use of most warning signs. If the stopping sight distance is less than that in Table 903.3.1, a sign may be needed.

MoDOT specific content from the EPG. Revised Dec. 2025

Table 903.3.1. Stopping Sight Distance Requirements

Prevailing Speed (mph)	Distance (ft.)
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

Section 2C.02 Design of Warning Signs

Standard:

01 Except as provided in ~~Paragraph 2 of this Section~~ the following Option paragraph or unless specifically designated otherwise, all warning signs shall be diamond-shaped (square with one diagonal vertical) with a black legend and border on a fluorescent yellow background. Warning signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the FHWA "Standard Highway Signs" publication (see Section 1A.05).

Option:

02 A warning sign that is larger than the size shown in the Oversized column in Table 2C-1 for that particular sign may be diamond-shaped or may be rectangular or square in shape.

Support:

03 The use of a shape other than diamond-shaped is typical for overhead installations.

04 Section 2A.05 contains information on allowable methods to accommodate a diamond-shaped warning sign where the lateral space available in which to install a diamond-shaped warning sign is constrained, such as in urban locations, when mounting on a narrow median barrier or adjacent to a retaining wall, including the display of the standard legend in a vertically oriented rectangle.

05 The use of LEDs in the border and legend of warning signs is described in Section 2A.12.

Option:

~~06 Except for symbols on warning signs, minor modifications may be made to the design provided that the essential appearance characteristics are met. Modifications may be made to the symbols shown on combined horizontal alignment/intersection signs (see Section 2C.09) and intersection warning signs (see Section 2C.41) in order to approximate the geometric configuration of the intersecting roadway(s).~~

MoDOT has standardized sign faces to be used on the state highway system. Revised Dec. 2025.

07 Word message warning signs other than those provided in ~~this Manual~~ the EPG may be developed and installed by ~~State and local highway agencies~~ MoDOT for conditions otherwise not addressed by standard signs (see Section 2A.04).

~~08 Warning signs regarding conditions associated with pedestrians, bicyclists, and playgrounds and their related plaques may have a black legend and border on a yellow or fluorescent yellow-green background.~~

Support:

M08A MoDOT uses the fluorescent yellow-green (FYG) color exclusively for school signs. The only application where MoDOT would use the FYG color for bicycle or pedestrian signs is if a state route and local street intersected and the local jurisdiction utilized FYG color signs on their legs of the intersection. This would only be done to be in compliance with the MUTCD requirement that FYG and yellow shall not be intermixed in an application.

M08B There are two primary reasons MoDOT has chosen not to use FYG color for bicycle or pedestrian signs. The first reason involves the MUTCD requirement that FYG color signs shall not be intermixed with other yellow color signs. A transition to FYG color signs would result in the premature replacement of all signs in an area when just one sign reached the end of its life or was damaged, resulting in wasted resources. The second reason, and most important, is to reserve FYG color signs for school signing to make these signs stand out from other signing, as school children are especially vulnerable road users.

M08C In response to repeated requests by a local jurisdiction for MoDOT to use the FYG color for bicycle and pedestrian signs, MoDOT initiated a research study to determine if there were any documented safety benefits for using the FYG color for these signs. Having previously adopted fluorescent orange for all work zone signs, MoDOT made the transition from standard yellow to fluorescent yellow (FY) for all warning signs as there was documentation to support this change in sheeting color. However, no documentation could be found to indicate that the FYG sign color provides

any safety benefits when compared to the FY sign color. The research study surveyed other state DOTs as well as local MPOs to determine if they made a change to the FYG color, how they made the decision to do so, and if they could provide any research documentation which would support FYG to be safer than FY. The study showed there was no conclusive evidence to demonstrate that FYG sign color had any safety benefit compared to the FY sign color that MoDOT was already using. Most agencies who adopted FYG did so based on engineering judgement and not based on the results of research.

Standard:

09 Warning signs regarding conditions associated with school buses and schools and their related supplemental plaques shall have a black legend and border on a fluorescent yellow-green background (see Section 7B.01).

Option:

10 Consistent with the provisions of Section 4S.03, a Warning Beacon may be used in combination with a standard warning sign.

Section 2C.03 Size of Warning Signs and Plaques

Standard:

01 Except as provided in Section 2A.07, the sizes for warning signs shall be as shown in Table 2C-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2C-1.

~~**Standard:**~~

~~**03 Except as provided in Paragraph 5 of this Section, the minimum size for all diamond-shaped warning signs facing traffic on a multi-lane conventional road where the posted speed limit is higher than 35 mph shall be 36 x 36 inches.**~~

MoDOT sign sizes for conventional roads meet or exceed MUTCD minimums for multi-lane conventional roads. Revised Dec. 2025

~~**04 The minimum size for supplemental warning plaques that are not included in Table 2C-1 shall be as shown in Table 2C-2.**~~

EPG Table 903.3.3 includes supplemental warning plaques. Revised Dec. 2025

Option:

~~05 If a diamond-shaped warning sign is placed on the left-hand side of a multi-lane roadway to supplement the installation of the same warning sign on the right-hand side of the roadway, the minimum size identified in the Single Lane column in Table 2C-1 may be used.~~

MoDOT uses two sizes for warning signs, one for conventional roads and one for freeways/expressways. Revised Dec. 2025

06 Signs and plaques larger than those shown in Tables 2C-1 ~~and 2C-2~~ may be used (see Section 2A.11) for special applications where speed, volume or other factors result in conditions where increased emphasis, improved recognition or increased legibility would be desirable, with approval from the MoDOT Highway Safety and Traffic Division.

Guidance:

07 The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps at ~~major~~ interchanges ~~connecting an Expressway or Freeway with an Expressway or Freeway (see Section 2E.11)~~ should be the size identified in Table 2C-1 for the mainline roadway classification (~~Expressway or Freeway~~Freeway/Expressway). ~~If a minimum size is not provided in the Freeway Column, the Expressway size should be used. If a minimum size is not provided in the Freeway or the Expressway Column, the Oversized size should be used.~~

Table 2C-1. Warning Sign and Plaque Sizes

Sign or Plaque	Sign Designation	EPG Article	Conventional Road (in. x in.)			Freeway/ Expressway (in. x in.)
			Standard	Oversized	Special	Mainline & Ramps
Turn	W1-1	903.3.7	36 X 36	48 X 48		48 X 48
Curve	W1-2	903.3.7	36 X 36	48 X 48		48 X 48
Reverse Turn	W1-3	903.3.7	36 X 36	48 X 48		48 X 48
Reverse Curve	W1-4	903.3.7	36 X 36	48 X 48		48 X 48
Winding Road	W1-5	903.3.7	36 X 36	48 X 48		48 X 48
One-Direction Large Arrow	W1-6	903.3.10	48 X 24	72 X 36		72 X 36
Two-Direction Large Arrow	W1-7	903.3.34	48 X 24	72 X 36		72 X 36
Chevron	W1-8	903.3.8	18 X 24	30 X 36		30 X 36
Combination Horizontal Alignment/Intersection	W1-10 Series	903.3.9	36 X 36	48 X 48		48 X 48
Hairpin Curve	W1-11	903.3.7	36 X 36	48 X 48		48 X 48
Truck Rollover	W1-13	903.3.11	-	-		48 X 48
270° Curve	W1-15	903.3.7	-	-		48 X 48
Cross road	W2-1	903.3.33	36 X 36	48 X 48		48 X 48
Side Road	W2-2	903.3.33	36 X 36	48 X 48		48 X 48
Side Road (45°)	W2-3, 3a	903.3.33	36 X 36	48 X 48		48 X 48
T Intersection	W2-4	903.3.33	36 X 36	48 X 48		48 X 48
Y Intersection	W2-5	903.3.33	36 X 36	48 X 48		48 X 48
Circular Intersection	W2-6	903.3.33	36 X 36	48 X 48		48 X 48
Offset Side Road	W2-7	903.3.33	36 X 36	48 X 48		48 x 48
Double Side Roads	W2-8	903.3.33	36 X 36	48 X 48		48 X 48
Stop Ahead	W3-1	903.3.29	36 X 36	48 X 48		48 X 48
Yield Ahead	W3-2	903.3.29	36 X 36	48 X 48		48 X 48
Signal Ahead	W3-3	903.3.29	36 X 36	48 X 48		48 X 48
Be Prepared to Stop	W3-4	903.3.29	36 X 36	48 X 48		48 X 48
Reduced Speed Ahead	W3-5	903.3.32	36 X 36	48 X 48		48 X 48
Ramp Meter Ahead	W3-7	903.3.30	36 X 36	-		-
Ramp Metered When Flashing	W3-8	903.3.30	36 X 36	-		-
Ferry Crossing Ahead	W3-18	903.3.XX	36 X 36	48 X 48		-
Merge	W4-1	903.3.36	36 X 36	48 X 48		48 X 48
Lane Ends	W4-2	903.3.38	36 X 36	48 X 48		48 X 48
Added Lane	W4-3	903.3.37	36 X 36	48 X 48		48 X 48
Cross Traffic Does Not Stop (plaque)	W4-4P	903.3.XX	24 X 12	36 X 18		36 X 18
Traffic From Left Does Not Stop (plaque)	W4-4aPL	903.3.XX	24x12	36 X 18		36 X 18
Traffic From Right Does Not Stop (plaque)	W4-4aPR	903.3.XX	24x12	36 X 18		36 X 18
Oncoming Traffic Does Not Stop (plaque)	W4-4bP	903.3.XX	24x12	36 X 18		36 X 18
Entering Roadway Merge	W4-5	903.3.36	36 X 36	48 X 48		48 X 48
Entering Roadway Added Lane	W4-6	903.3.37	36 X 36	48 X 48		48 X 48
Single Lane Transition	W4-8	903.3.XX	36 X 36	48 X 48		48 X 48
ROAD NARROWS	W5-1	903.3.15	36 X 36	48 X 48		48 X 48
NARROW BRIDGE	W5-2	903.3.16	36 X 36	48 X 48		48 X 48
ONE LANE BRIDGE	W5-3	903.3.17	36 X 36	48 X 48		-
Divided Highway	W6-1	903.3.18	36 X 36	48 X 48		-
Divided Highway Ends	W6-2	903.3.19	-	-		48 X 48
Two-Way Traffic	W6-3	903.3.41	36 X 36	48 X 48		-
Two-Way Traffic (2-Lane)	W6-5	903.3.XX	36 X 36	48 X 48		
Two-Way Traffic (3-Lane)	W6-5a	903.3.XX	36 X 36	48 X 48		
Passing Lane (plaque)	W6-6aP	903.3.XX	42 X 12	-		-
Passing Lane Ends	W6-16	903.3.XX	36 X 36	-		-
Watch for Left-Turning Traffic in Passing Lane	W6-17	903.3.XX	72" X 48"	-		-
Hill	W7-1	903.3.XX	36 X 36	48 X 48		48 X 48
Uphill	W7-1c	903.3.XX	36 X 36	48 X 48		48 X 48
Percent Grade	W7-3P	903.3.XX	24 X 18	30 X 24		30 X 24
Next _ Miles (plaque)	W7-3aP	903.3.XX	24 X 18	30 X 24		30 X 24
Bump	W8-1	903.3.23	36 X 36	48 X 48		48 X 48
Dip	W8-2	903.3.23	36 X 36	48 X 48		48 X 48
Pavement Ends	W8-3	903.3.24	36 X 36	-		-
Slippery When Wet	W8-5	903.3.25	36 X 36	48 X 48		48 X 48

Table 2C-1 Continued. Warning Sign and Plaque Sizes

Truck Crossing	W8-6	903.3.XX	36 X 36	48 X 48		48 X 48
Fallen Rocks	W8-14	903.3.26	36 X 36	48 X 48		48 X 48
Road May Flood	W8-18	903.3.28	36 X 36	48 X 48		48 X 48
Depth Gauge	W8-19	903.3.28	12 X 72	-		-
Impassable During High Water	W8-34	903.3.28	36 X 36	48 X 48		48 X 48
Low Water Crossing	W8-35	903.3.28	36 X 36	-		-
Left (Right) Lane Ends	W9-1	903.3.38	36 X 36	48 X 48		48 X 48
Lanes Merge	W9-4	903.3.39	36 X 36	48 X 48		48 X 48
Right (Left) Lane Exit Only	W9-7	903.3.40	132 X 70	-		132 X 70
Bicycle	W11-1	903.3.XX	36 X 36	-		-
Pedestrian	W11-2	903.3.XX	36 x 36	48 X 48		-
Cattle	W11-4	903.3.XX	36 x 36	48 X 48		
Farm Vehicle	W11-5	903.3.XX	36 X 36	-		-
Equestrian	W11-7	903.3.XX	36 X 36	-		-
Emergency Vehicle	W11-8	903.3.XX	36 X 36	48 X 48		48 X 48
Truck Entrance	W11-10	903.3.XX	36 X 36	48 X 48		48 X 48
Emergency Signal Ahead (plaque)	W11-12P	903.3.XX	36 X 30	-		36 X 30
Horse-Drawn Vehicle	W11-14	903.3.XX	36 X 36	48 X 48		48 X 48
Bike / Ped	W11-15	903.3.XX	36 X 36	48 X 48		48 X 48
Trail Crossing	W11-15a	903.3.XX	36 X 36	-		-
Double Arrow	W12-1	903.3.20	30 X 30	36 X 36		36 X 36
Low Clearance Advance	W12-2	903.3.22	36 X 36	48 X 48		48 X 48
Low Clearance (overhead)	W12-2a	903.3.22	84 X 24	-		84 X 24
Advisory Speed	W13-1P	903.3.33	24 X 24	30 X 30		30 X 30
Advisory Speed (plaque)	W13-1aP	903.3.33	48 x 15	-		48 x 15
Advisory Exit Speed	W13-2	903.3.12	-	-		48 X 60
Advisory Ramp Speed	W13-3	903.3.12	-	-		48 X 60
Advisory Exit Speed with 270° Loop Arrow	W13-6	903.3.12	-	-		48 x 84
Advisory Exit Speed with 180° Hairpin Arrow	W13-8	903.3.12	-	-		48 x 84
Advisory Ramp Speed with 180° Hairpin Arrow	W13-9	903.3.12	-	-		48 x 84
Advisory Exit Speed with 90° Turn Arrow	W13-10	903.3.12	-	-		48 X 72
Advisory Ramp Speed with 90° Turn Arrow	W13-11	903.3.12	-	-		48 X 72
Advisory Exit Speed with Truck Rollover	W13-12	903.3.12	-	-		48 x 84
Advisory Ramp Speed with Truck Rollover	W13-13	903.3.12	-	-		48 x 84
Vehicle Speed Feedback Sign	W13-20	903.3.13	30 X 36	-		48 X 60
Vehicle Speed Feedback (plaque)	W13-20aP	903.3.13	30 X 24	-		48 X 36
Dead End	W14-1	903.3.21	36 X 36	36 X 36		-
No Outlet	W14-2	903.3.21	36 X 36	36 X 36		-
No Passing Zone (pennant)	W14-3	903.3.42	-	-		-
Road Ends	W14-13	903.3.21	36 X 36	36 X 36		-
In Road (plaque)	W16-1P	903.3.XX	24 X 18	-		24 X 18
_ FEET (plaque)	W16-2P	903.3.XX	24 X 18	30 X 24		30 X 24
_ MILES (plaque)	W16-3P	903.3.XX	24 X 18	30 X 24		30 X 24
NEXT _ FEET (plaque)	W16-4P	903.3.XX	24 X 18	30 X 24		30 X 24
Directional Arrow (plaque)	W16-5P	903.3.XX	30 X 21	-		30 X 21
Advance Turn Arrow (plaque)	W16-6P	903.3.XX	30 X 21	-		30 X 21
Downward Diagonal Arrow (plaque)	W16-7P	903.3.XX	30 X 21	-		30 X 21
Dual Downward Diagonal Arrow (plaque)	W16-7aP	903.3.XX	30 X 21			30 X 21
Two Line Street Name (plaque)	W16-8aP	903.3.XX	Varies X 15	Varies X 24		Varies X 24
Advance Street Name (plaque)	W16-8P	903.3.XX	Varies X 8	Varies X 12		Varies X 12
Ahead (plaque)	W16-9P	903.3.XX	30 x 18	-		30 x 18
Notice (plaque)	W16-18P	903.3.XX	36x12	48x18		48x18
Except to Exit (plaque)	W16-24P	903.3.XX				
Double Reverse Curve Left - 1 Lane	W24-1L	903.3.7	36 X 36	-		36 X 36
Double Reverse Curve Left - 2 Lanes	W24-1aL	903.3.7	36 X 36	-		36 X 36
Double Reverse Curve Left - 3 Lanes	W24-1bL	903.3.7	36 X 36	-		36 X 36
All Lanes (plaque)	W24-1cP	903.3.7	36x12	48x12		48x12
Oncoming Traffic Has Extended Green	W25-1	903.3.35	24 X 30	-		-
Oncoming Traffic May Have Extended Green	W25-2	903.3.35	24 X 30	-		-
Watch for Stopped Traffic	W26-1	903.3.31	36 X 36	48 X 48		48 X 48
Travel Safe Zone	W27-1	903.3.XX	36 X 48	48 X 60		48 X 60

MoDOT does not differentiate between classification of interchanges. All signing on ramps is per the Freeway/Expressway columns. Revised Dec. 2025

~~*08 The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps at all other interchanges (see Section 2E.11) should be 36 x 36 inches.*~~

All diamond shape warning signs used by MoDOT are 36"x36" or 48"x48" per the sign size table in the EPG. Revised Dec. 2025

~~*09 The typical size of warning signs used on low-volume rural roads with operating speeds of 30 mph or less should be in accordance with the minimum column of Table 2C-1.*~~

MUTCD minimum sizes of signs and plaques are not adopted by MoDOT. MoDOT does not classify any of its routes to be "low volume" rural roads by definition even though many routes do have AADTs below 400, these routes are treated like any other minor route with higher AADT with respect to sign applications. Revised Dec. 2025

Table 2C-2. Minimum Size of Supplemental Warning Plaques

Size of Warning Sign	Size of Supplemental Plaque			
	Rectangular			Square
	1 Line	2 Lines	Arrow	
24 x 24 30 x 30	24 x 12	24 x 18	21 x 15	18 x 18
36 x 36 48 x 48	30 x 18	30 x 24	30 x 21	24 x 24

~~Notes:~~

~~1. Larger supplemental plaques may be used when appropriate~~

~~2. Dimensions are shown as width x height, in inches~~

Table 2C-2 is not adopted by MoDOT. Revised Dec. 2025

Section 2C.04 Placement of Warning Signs

Support:

01 Information on the placement of warning signs is contained in Sections 2A.13 through 2A.18.

02 The time needed for detection, recognition, decision, and reaction is called the Perception-Response Time (PRT). Table 2C-3 is provided as an aid for determining warning sign location. The distances shown in Table 2C-3 can be adjusted for roadway features, other signing, and to improve visibility.

Guidance:

03 Warning signs should be placed so that they provide an adequate PRT. The distances contained in Table 2C-3 should be applied with engineering judgment.

04 Minimum spacing between warning signs with different messages should be based on the estimated PRT for driver comprehension of and reaction to the second sign.

05 The effectiveness of the placement of warning signs should be periodically evaluated ~~under both day and night conditions~~. This is typically accomplished during routine sign inspection cycles. Section 2A.19 contains information regarding MoDOT's sign maintenance program.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

M06 When any part of a warning sign assembly (post, sign, plaque, etc.) is replaced, maintained or modified, the placement of the sign shall be reviewed based on Table 2C-3. Additionally, mounting height shall be reviewed for conformance with Section 2A.15.

MoDOT specific content from the EPG. Revised Dec. 2025

Table 2C-3. Guidelines for Advance Placement of Warning Signs

Posted or 85th-Percentile Speed	Advance Placement Distance[1]									
	Condition A: Speed reduction and lane changing in heavy traffic[2]	Condition B: Deceleration to the listed advisory speed (mph) for the condition								
		0[3]	10[4]	20[4]	30[4]	40[4]	50[4]	60[4]	70[4]	80[4]
20 mph	225 ft	115 ft	N/A[5]	–	–	–	–	–	–	–
25 mph	325 ft	155 ft	N/A[5]	N/A[5]	–	–	–	–	–	–
30 mph	460 ft	200 ft	N/A[5]	N/A[5]	–	–	–	–	–	–
35 mph	565 ft	250 ft	N/A[5]	N/A[5]	N/A[5]	–	–	–	–	–
40 mph	670 ft	305 ft	100 ft[6]	100 ft[6]	N/A[5]	–	–	–	–	–
45 mph	775 ft	360 ft	125 ft	100 ft[6]	100 ft[6]	N/A[5]	–	–	–	–
50 mph	885 ft	425 ft	200 ft	175 ft	125 ft	100 ft[6]	–	–	–	–
55 mph	990 ft	495 ft	275 ft	225 ft	200 ft	125 ft	N/A5	–	–	–
60 mph	1,100 ft	570 ft	350 ft	325 ft	275 ft	200 ft	100 ft[6]	–	–	–
65 mph	1,200 ft	645 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft[6]	–	–
70 mph	1,250 ft	730 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	–	–
75 mph	1,350 ft	820 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft[6]	–
80 mph	1,475 ft	910 ft	725 ft	700 ft	625 ft	550 ft	450 ft	350 ft	200 ft	–
85 mph	1,600 ft	1,010 ft	825 ft	800 ft	750 ft	675 ft	575 ft	450 ft	300 ft	150 ft

The distances are adjusted for a sign legibility distance of 180 feet for Condition A. The distances for Condition B (with the exception of the potential stop condition) have been adjusted for a sign legibility distance of 250 feet, which is appropriate for an alignment warning symbol sign. For Conditions A and B, warning signs with less than 6-inch legend or more than four words, a minimum of 100 feet should be added to the advance placement distance to provide adequate legibility of the warning sign.

[2] Typical conditions are locations where the road user must use extra time to adjust speed and change lanes in heavy traffic because of a complex driving situation. Typical signs are Merge and Right Lane Ends. The distances are determined by providing the driver a PRT of 14.0 to 14.5 seconds for vehicle maneuvers (2018 AASHTO Policy, Table 3-3, Decision Sight Distance, Avoidance Maneuver E) and adjusted for a legibility distance of 180 feet for the appropriate sign.

[3] Typical condition is the warning of a potential stop situation. Typical signs are Stop Ahead, Yield Ahead, Signal Ahead, and Intersection Warning signs. The distances are based on the 2018 AASHTO Policy, Table 3-1, Stopping Sight Distance, providing a PRT of 2.5 seconds, a deceleration rate of 11.2 feet/second^2.

[4] Typical conditions are locations where the road user must decrease speed to maneuver through the warned condition. Typical signs are Turn, Curve, Reverse Turn, or Reverse Curve. The distance is determined by providing a 2.5 second PRT, a vehicle deceleration rate of 10 feet/second^2, and adjusted for a sign legibility distance of 250 feet.

[5] No suggested distances are provided for these speeds, as the placement location is dependent on site conditions and other signing. An alignment warning sign may be placed anywhere from the point of curvature up to 100 feet in advance of the curve. However, the alignment warning sign should be installed in advance of the curve and at least 100 feet from any other signs.

[6] The minimum advance placement distance is listed as 100 feet to provide adequate spacing between signs.

Note: Warning signs that advise road users about conditions that are not related to a specific location, such as Deer Crossing or SOFT SHOULDER, can be installed in an appropriate location, based on engineering judgment.

add MoDOT notes

HORIZONTAL ALIGNMENT WARNING SIGNS AND PLAQUES

Section 2C.05 Horizontal Alignment Warning Signs – General

Support:

01 A variety of horizontal alignment warning signs ~~(see Figure 2C-1),~~ pavement markings (see Chapter 3B), and delineation (see Chapter 3G) can be used to advise motorists of a change in the roadway alignment. Uniform application of these traffic control devices with respect to the amount of change in the roadway alignment conveys a consistent message establishing driver expectancy and promoting effective roadway operations. The design and application of horizontal alignment warning signs to meet those requirements are addressed in Sections 2C.05 through 2C.12.

02 The following list identifies treatments that might be used in advance of or within a change in horizontal alignment:

A. Horizontal alignment (Turn (W1-1), Curve (W1-2, W1-10 series, W1-11, W1-13, W1-15), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), Exit Speed (W13-2), Ramp Speed (W13-3), and Combination Horizontal Alignment (Advisory Exit or Ramp Speed W13-6 through W13-11)) signs (see Sections 2C.07, 2C.09, and 2C.12)
B. Advisory Speed (W13-1P) plaque (see Section 2C.59)
C. Chevron Alignment (W1-8) signs (see Section 2C.08)
~~D. Delineators (see Chapter 3G)~~
E. One Direction Large Arrow (W1-6) sign (see Section 2C.10)
~~F. Raised Retroreflective Pavement Markers (see Sections 3B.15 through 3B.17)~~
G. Sign or marking conspicuity enhancements (see Section 2A.11)
~~H. Wide edge lines (see Section 3A.04)~~
~~I. Pavement word, symbol and arrow markings (symbol or words) (see Sections 3B.20 through 3B.22)~~
J. Longitudinal ~~R~~rumble strips (see ~~Chapter~~ Section 3K.01)
K. Vehicle Speed Feedback Sign (see Section 2C.13)
~~L. Speed reduction markings (see Section 3B.28)~~

MoDOT does not use all items in this list as treatments at changes in horizontal alignment. Revised Dec. 2025

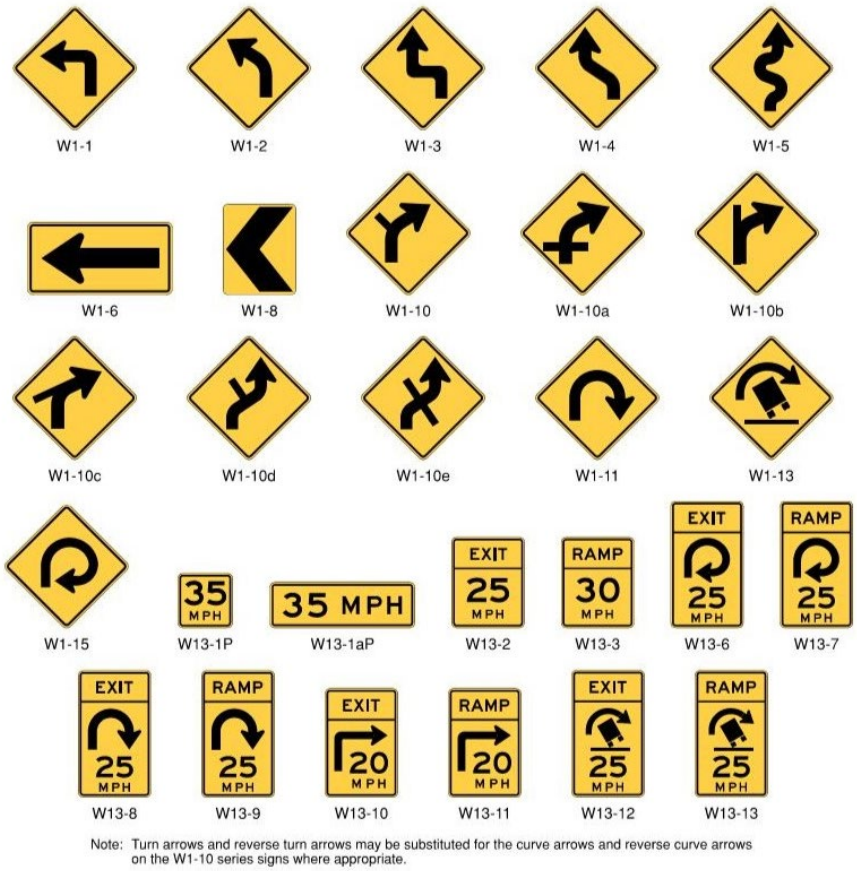
03 In addition, considerations other than traffic control devices, such as improved surface friction (high friction surface treatments), pavement edge treatments, lighting improvements, increased superelevation, and longitudinal rumble strips, might be used in advance of or within a change in horizontal alignment.

Guidance:

04 Except as provided in Section 2C.06, the selection of traffic control devices used to warn road users of a change in horizontal alignment or to provide guidance in navigating the change in horizontal alignment should be based on consideration of one or more of the following factors:

A. The speed of traffic on the approach to the change in horizontal alignment
B. The recommended advisory speed for the change in horizontal alignment
C. The difference between the speed limit and the advisory speed, or the speed differential for the change in horizontal alignment
D. Daily traffic volumes on the roadway
E. The typical mix of vehicle types on the roadway
F. Sight distance throughout the change in horizontal alignment
G. Other types of traffic control devices that are used in advance of and within the change in horizontal alignment on the same roadway segment
H. The crash history of the change in horizontal alignment
I. The presence of driveways or intersections within the curve radius

Figure 2C-1. Horizontal Alignment Signs and Plaques



Note: Turn arrows and reverse turn arrows may be substituted for the curve arrows and reverse curve arrows on the W1-10 series signs where appropriate.

Section 2C.06 Device Selection for Changes in Horizontal Alignment

Standard:

01 ~~The criteria shown in Chart A of Table 2C-4 shall be used to determine the need for devices for changes in horizontal alignment. If the use of a device or devices is indicated by Chart A of Table 2C-4, then Chart B of~~ Table 2C-4 shall be used to specify the type(s) of ~~devices~~ warning signs to be used in advance of, and/or along, a horizontal curve, except as provided in ~~Paragraphs 3, 5, and 6 of this Section~~ the following Option paragraph. The speed differential ~~in Chart B of Table 2C-4~~ shall be the difference between the horizontal curve's advisory speed and the roadway's posted speed limit~~, statutory speed limit, or the 85th percentile speed~~ on the approach to the curve.

~~Support:~~

~~02 Chart A of Table 2C-4 represents existing AADT, type of roadway, and whether or not there are existing markings.~~

Table 2C-4 Chart A and Chart B are replaced with a new table to clarify the criteria for signing required at changes in horizontal alignment. Revised Dec. 2025

Option:

03 A One Direction Large Arrow (W1-6) sign may be used ~~in place of or~~ to supplement ~~delineators (see Chapter 3G)~~ or Chevron Alignment (W1-8) signs when:

A. Site conditions limit the number of ~~delineators or~~ Chevron Alignment signs that are visible; or

B. The number of ~~delineators or~~ Chevron Alignment signs that can be installed within the change in horizontal alignment is less than the number determined by the spacing specified in Sections

2C.08 ~~or 3G.04~~.

04 Additional or supplemental devices may be used for a change in horizontal alignment on the basis of engineering judgment.

M04A If engineering judgment indicates the need for the horizontal alignment sign for a curve that can be driven at or above the posted speed limit, horizontal alignment signs may be installed with the Advisory Speed Plaque (W13-1P) displaying an advisory speed equal to the posted speed limit.

MoDOT specific content from the EPG. Revised Dec. 2025

~~05 Devices for changes in horizontal alignment may be omitted when the speed limit on the approach to an alignment change is 20 mph or less.~~

~~06 Devices for changes in horizontal alignment may be omitted on urban streets with an AADT of 1,000 vehicles per day or less.~~

~~Support:~~

07 ~~For purposes of selecting traffic control devices for changes in horizontal alignment, an arterial or collector is considered to have pavement markings when either a center line, edge lines, or both are present.~~ Warrants for center lines and edge lines are provided in Sections 3B.02 and 3B.10, respectively.

MoDOT requirements for traffic control devices at changes in horizontal alignment are not based on traffic volume or roadway classification. Revised Dec. 2025

M07A Provisions for delineators are contained in Chapter 3G.

M07B Provisions for Advisory Speed (W13-1P) plaques are contained in Section 2C.59.

Table 2C-4. Application of ~~Traffic Control Devices~~ Warning Signs for Changes in Horizontal Alignment

A - Determination of the Need for Devices for Changes in Horizontal Alignment[1]

Roadway Type	AADT			
	Less than 1,000	1,000-2,999	3,000-3,999	Greater than 3,999
Freeways and Expressways	Required	Required	Required	Required
Arterial or Collector without Pavement Markings	Optional	Recommended	Required	Required
Arterial or Collector with Pavement Markings[2]	Optional	Recommended	Recommended	Required
All other roadways	Optional	Optional	Optional	Optional

[1] If devices are determined to be needed, the selection of the device(s) is based on Chart B below.

[2] An arterial or collector is considered to have pavement markings when either a center line, edge lines, or both are present.

B - Selection of Devices for Changes in Horizontal Alignment

Speed Differential[3]	Devices for Change in Horizontal Alignment[3]
5 mph	Pavement markings or advance horizontal alignment warning sign on paved roadways. Advance horizontal alignment warning sign on unpaved roadways.[4]
10 mph	Advance horizontal alignment warning sign
15 mph	Delineators[5] and advance horizontal alignment warning sign
20 mph or more	Chevrons[5] and advance horizontal alignment warning sign

[3] The provisions for the use of Horizontal Alignment warning signs and devices are contained in Section 2C.06. The need for devices is determined by Chart A above.

[4] A roadway is considered to have pavement markings when either a center line, edge lines, or both are present.

[5] Section 2C.06 contains information about the use of a One Direction Large Arrow (W1-6) sign in place of or to supplement delineators and chevrons.

Table 2C-4A. Application of Warning Signs for Changes in Horizontal Alignment

Speed Differential[1]	Warning Signs Required
5 to 10 mph	Horizontal Alignment warning sign[2] Advisory Speed plaque[3]
15 mph or more	Horizontal Alignment warning sign[2] Advisory Speed plaque[3] Chevron Alignment signs[4]

1 Speed differential shall be the difference between the horizontal curve's advisory speed and the roadway's posted speed limit

2 Provisions for the use of Horizontal Alignment warning signs are contained in Section 2C.06.

3 Provisions for Advisory Speed (W13-1P) plaques are contained in Section 2C.59.

4 Section 2C.06 contains information about the use of a One Direction Large Arrow (W1-6) sign in place of or to supplement chevron alignment signs.

Section 2C.07 Horizontal Alignment Signs (W1-1 through W1-5, W1-11, ~~and~~ W1-15, W24-1)

Standard:

01 ~~If Table 2C-4 indicates that~~ When a horizontal alignment sign ~~(see Figure 2C-1)~~ is required as provided in Section 2C.06~~, recommended, or allowed,~~ the sign installed in advance of the curve shall be a Curve (W1-2) sign unless a different sign is recommended or allowed by the provisions of this Section.

Language modified to reflect changes to Section 2C.06. Revised Dec. 2025

~~*Guidance:*~~

02 A Turn (W1-1) sign ~~*should*~~ shall be used instead of a Curve (W1-2) sign in advance of a horizontal curve that has an advisory speed of 30 mph or less.

Paragraph to remain a Standard statement as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

Guidance:

03 Where there are two changes in roadway alignment in opposite directions that are separated by a tangent distance of less than 600 feet, the Reverse Turn (W1-3) sign should be used instead of multiple Turn (W1-1) signs or the Reverse Curve (W1-4) sign should be used instead of multiple Curve (W1-2) signs.

Support:

04 Figure 2C-2 provides examples of warning signs used for turns and curves.

Option:

05 A Winding Road (W1-5) sign may be used instead of multiple Turn (W1-1) or Curve (W1-2) signs where there are three or more changes in roadway alignment each separated by a tangent distance of less than 600 feet.

06 A NEXT XX MILES (W7-3aP) supplemental distance plaque (see Section 2C.61) may be installed below the Winding Road sign where continuous roadway curves exist for a specific distance.

07 If the curve has a change in horizontal alignment of 135 degrees or more, the Hairpin Curve (W1-11) sign may be used instead of a Turn or Curve sign.

08 If the curve has a change of direction of approximately 270 degrees, such as on a cloverleaf interchange ramp, the 270-degree Loop (W1-15) sign may be used instead of a Turn or Curve sign.

Guidance:

09 When the Hairpin Curve sign or the 270-degree Loop sign is installed, either a One-Direction Large Arrow (W1-6) sign or Chevron Alignment (W1-8) signs should be installed on the outside of the turn or curve.

Option:

M10 A double reverse left sign (W24-1L) and advisory speed plaque may be used on the crossroad approaches to a Diverging Diamond Interchange (DDI) when the difference between the speed limit and the advisory speed is 5 mph or greater. The need for this signing is based on engineering judgment if speeding through a DDI is a concern. An advisory speed plaque is typically installed where the posted speed on the crossroad of the DDI is 40 mph or greater.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

M11 If used with an advisory speed plaque, the W24-1L sign shall display the number of double reverse arrows which indicates the number of lanes on the crossroad going through the DDI in the direction of travel where the sign is observed.

Support:

M12 See Section 2C.59 for information regarding Advisory Speed Plaques (W13-1P).

Figure 2C-2. Examples of Warning Signs for Changes in Horizontal Alignment
(Sheet 1 of 2)

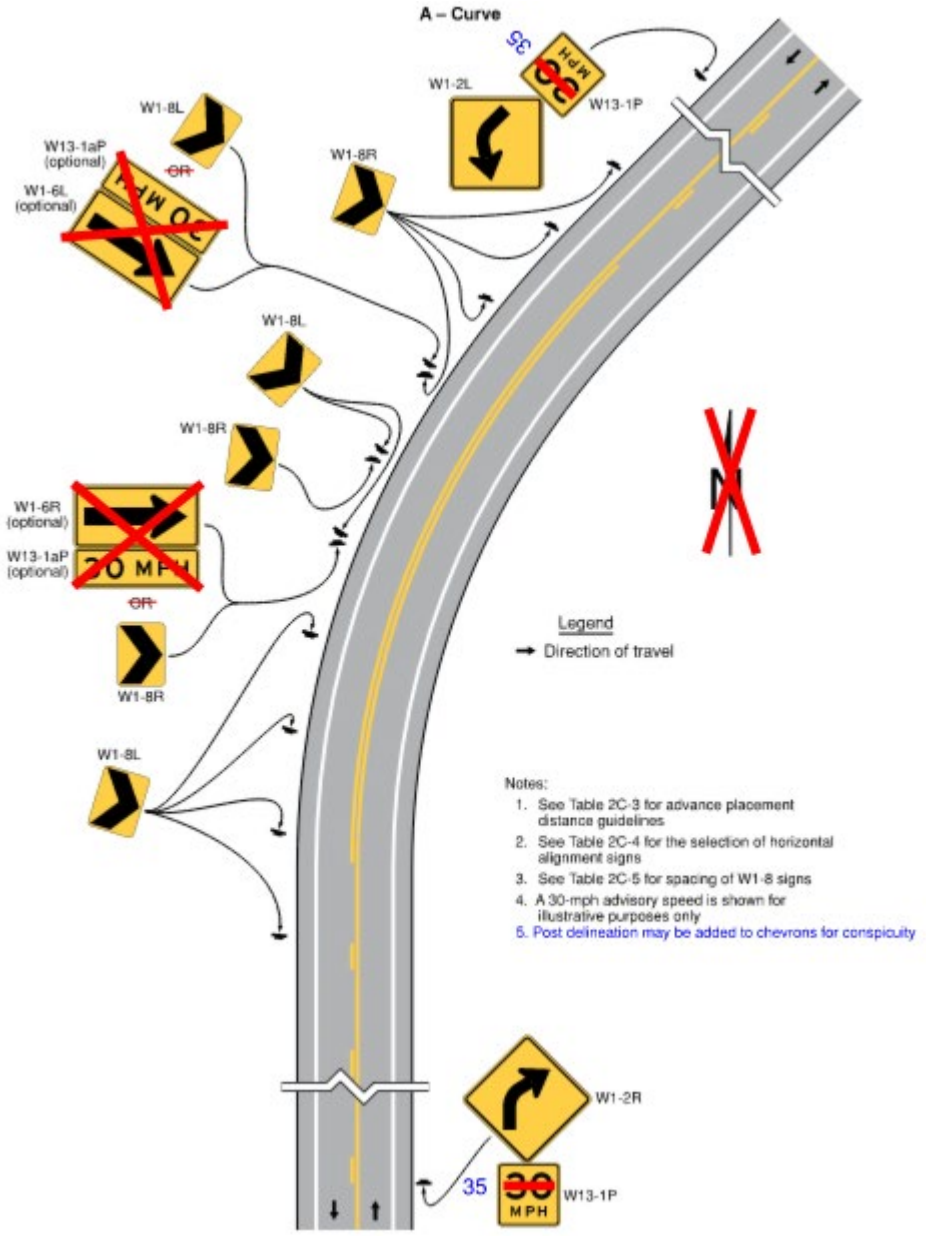
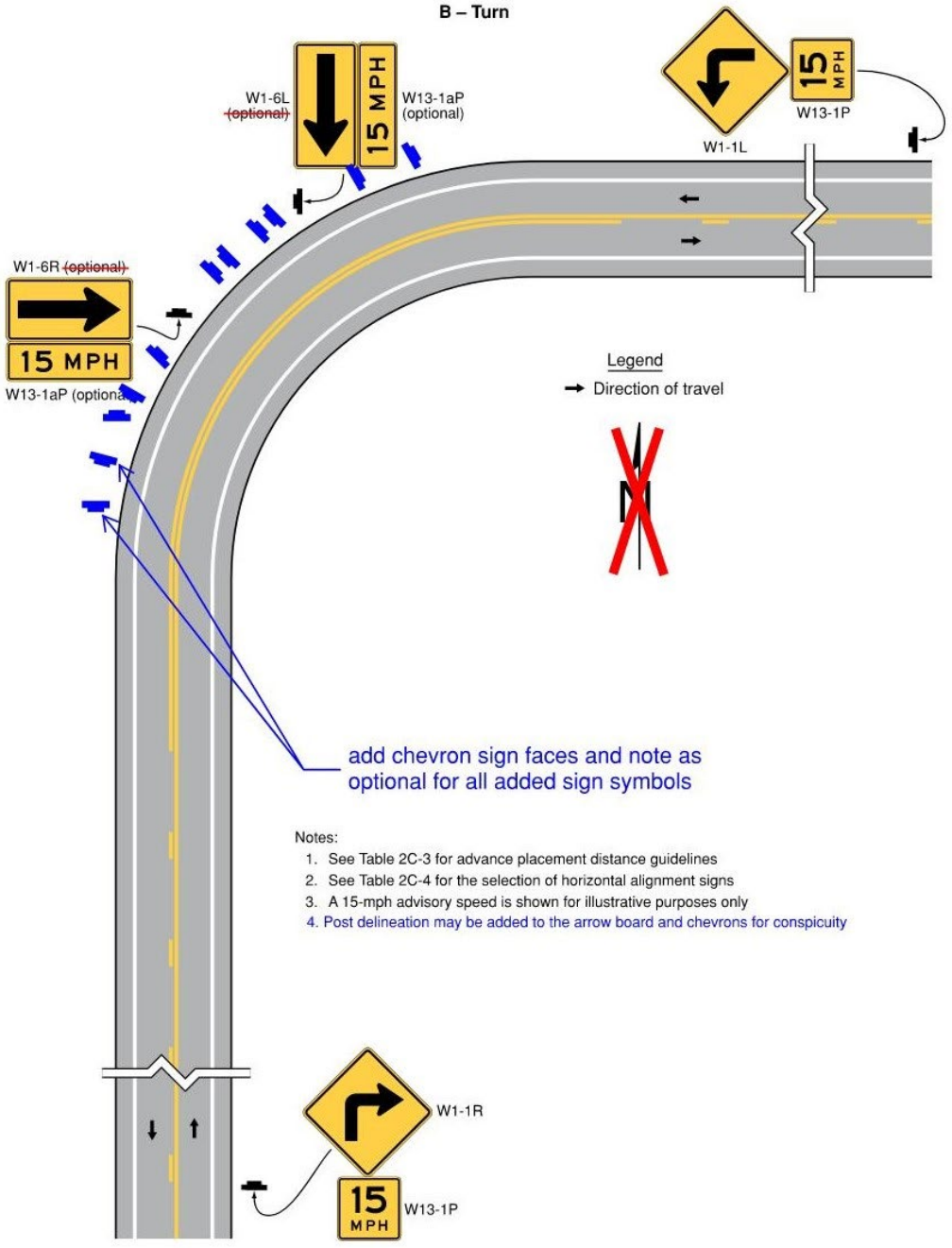


Figure 2C-2. Examples of Warning Signs for Changes in Horizontal Alignment
(Sheet 2 of 2)



Section 2C.08 Chevron Alignment Sign (W1-8)

Support:

M00A Examples of when to use Chevron signs include locations where there is a crash history, evidence of drivers losing control on a curve or turn, a sharp change in horizontal alignment not readily visible to the driver, or as a systemic curve improvement program.

M00B The majority of fatal and serious injury crashes are attributed to lane departure crashes (State Strategic Highway Safety Plan). Chevrons are a highly cost-effective way to reduce lane departure crashes in curves and turns.

M00C Implementation of the 2009 MUTCD requirements for chevron deployments resulted in a statewide reduction in severe lane departure crashes in horizontal curves. To maintain this observed safety benefit, MoDOT has established standards based on the 2009 MUTCD criteria, which is above the minimum requirements in the 11th Edition of the MUTCD. For more details on the safety benefits of chevrons, contact the Highway Safety and Traffic Division.

MoDOT Support statements from the EPG. Revised Dec. 2025

Standard:

01 The use of the Chevron Alignment (W1-8) sign (see Figure~~s 2C-1 and~~ 2C-2) to provide additional emphasis and guidance for a change in horizontal alignment shall be in accordance with the information ~~shown in Table 2C-4~~ provided in Section 2C.06.

Language modified to reflect changes to Section 2C.06. Revised Dec. 2025

~~Option:~~

~~02 Chevron Alignment signs may be used instead of or in addition to standard delineators.~~

Option is not included in the EPG. Revised Dec. 2025

Standard:

03 The Chevron Alignment sign shall be a vertical rectangle. No border shall be used on the Chevron Alignment sign.

04 If used, Chevron Alignment signs shall be installed on the outside of a turn or curve, in line with and at approximately a right angle to approaching traffic. Chevron Alignment signs shall be installed at a minimum height of 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, which will locate the sign at approximately the driver's eye height.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

05 The approximate spacing of Chevron Alignment signs on the turn or curve measured from the point of curvature (PC) should be as shown in Table 2C-5.

M05A In addition to the Chevron Alignment signs placed throughout the curve, there should be one sign in advance of the PC and one after the PT. These signs should be spaced the same as the Chevron Alignment signs in the curve.

Option:

M05B The values in Table 2C-5 are typical and variances for driveways, public roads, and other signs may alter the spacing. Engineering judgment may also be used to modify the spacing as long as road users always have at least two Chevron Alignment signs in view until the change in alignment eliminates the need for the signs.

M05C Based on engineering judgement, chevron alignment signs may be omitted within incorporated city limits.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

06 The Chevron Alignment signs should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.

M06A The single-sided Chevron sign should only be used where only one direction of travel is impacted, such as on an expressway. The double-side Chevron (W1-8D) should be used on two-lane, two-way roads.

M06B At the end of a four-lane divided highway, where the traffic reduces to two lanes, chevrons should be used to direct traffic from the dual lanes that are ending and being redirected to the two-lane roadway.

Option:

M06C Chevron Alignment signs may also be used on any other roadways based on engineering judgment.

M06D Chevron Alignment signs may be used, in addition to, the One-Direction Large Arrow (W1-6) sign on turns posted at 30 mph or less.

Guidance:

M06E As chevrons are installed, all horizontal alignment signing (chevrons, curve and turn signing, advisory speed plaques and arrow boards) on a corridor should be evaluated to ensure the installations meet current standards. Aspects of existing horizontal alignment signs to look at should include spacing of existing chevrons, offset and mounting heights of any horizontal alignment sign as well as the distance advanced warning signs are installed from the curve/turn. The need for curve/turn signs should be reevaluated if the ball banking measurements from when the signs were installed is out of date due to roadway/pavement improvements or due to changes in vehicle performance.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

07 LEDs may be used to enhance the conspicuity of Chevron Alignment signs (see Section 2A.12).

Standard:

08 The LEDs used in the Chevron Alignment sign shall consist of yellow LEDs outlining the chevron symbol.

09 Chevron Alignment signs shall not be placed on the far side of a T-intersection facing traffic on the stem approach to warn drivers that a through movement is not physically possible, as this is the function of a Two-Direction (or One-Direction) Large Arrow sign.

10 Chevron Alignment signs shall not be used to mark obstructions within or adjacent to the roadway, including the beginning of guardrails or barriers, as this is the function of an object marker (see Section 2C.70).

11 Chevron Alignment signs directing traffic to the right shall not be used in the central island of a roundabout or a neighborhood traffic circle.

Table 2C-5. Typical Spacing of Chevron Alignment Signs on Horizontal Curves

Advisory Speed	Curve Radius	Sign Spacing
15 mph or less	Less than 200 feet	40 feet
20 to 30 mph	200 to 400 feet	~~80 feet~~ 60 feet
35 to 45 mph	401 to 700 feet	~~120 feet~~ 80 feet
50 to 60 mph	701 to 1,250 feet	~~160 feet~~ 100 feet
More than 60 mph	More than 1,250 feet	~~200 feet~~ 140 feet

Note: The relationship between the curve radius and the advisory speed shown in this table should not be used to determine the advisory speed.

Section 2C.09 Combination Horizontal Alignment/Intersection Signs (W1-10 Series)

Option:

01 The Turn (W1-1) sign, the Curve (W1-2) sign, and the Reverse Curve (W1-4) sign may be combined with the Cross Road (W2-1) sign or the Side Road (W2-2 or W2-3) sign to create a combination Horizontal Alignment/Intersection (W1-10 series) sign ~~(see Figure 2C-1)~~ that depicts the condition where an intersection occurs within or immediately adjacent to a turn or curve.

Support:

02 Section 2C.65 contains information about the use of an advance street name plaque to identify an intersecting road.

Guidance:

03 Elements of the combination Horizontal Alignment/Intersection sign related to horizontal alignment should comply with the provisions of Section 2C.07, and elements related to intersection configuration should comply with the provisions of Section 2C.41. The symbol design should approximate the configuration of the intersecting roadway(s). No more than one Cross Road or two Side Road symbols should be displayed on any one combination Horizontal Alignment/Intersection sign.

M03A A layout of the proposed sign should be included when ordering or when including the sign in design plans.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

04 The use of the combination Horizontal Alignment/Intersection sign shall be in accordance with the provisions of Section 2C.07 for the appropriate Turn or Curve sign.

M05 If used, a W1-10L sign designation shall indicate a curve to the left, while a W1-10R sign designation shall indicate a curve to the right.

MoDOT Standard statement from the EPG. Revised Dec. 2025

Section 2C.10 One-Direction Large Arrow Sign (W1-6)

Standard:

M00 A One-Direction Large Arrow sign shall be used to delineate a change in horizontal alignment where the advisory speed is 30 mph or lower.

MoDOT Standard statement from the EPG. Revised Dec. 2025

~~Option:~~

~~01 A One-Direction Large Arrow (W1-6) sign (see Figure 2C-1) may be used either as a supplement or alternative to Chevron Alignment signs or delineators in order to delineate a change in horizontal alignment~~

~~(see Figure 2C-2).~~

~~02 A One-Direction Large Arrow (W1-6) sign may be used to supplement a Turn (W1-1) or Reverse Turn (W1-3) sign (see Figure 2C-2) to emphasize the abrupt curvature.~~

Option statement is replaced by Standard Paragraph M00 above. Revised Dec. 2025

Standard:

03 The One-Direction Large Arrow sign shall be a horizontal rectangle with an arrow pointing to the left or right.

04 If used, the One-Direction Large Arrow sign shall be installed on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.

05 The One-Direction Large Arrow sign shall not be used where there is no alignment change in the direction of travel, such as at the beginnings and ends of medians or at center piers.

06 The One-Direction Large Arrow sign directing traffic to the right shall not be used in the central island of a roundabout ~~or a neighborhood traffic circle~~.

Guidance:

07 The One-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.

M08 If Chevron Alignment signs are used to supplement the One-Direction Large Arrow sign, chevrons and arrow signs should be installed so they do not visually block each other.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2C.11 Truck Rollover Sign (W1-13)

Option:

01 A Truck Rollover (W1-13) sign ~~(see Figure 2C-1)~~ may be used as a supplement to a horizontal alignment warning sign to warn drivers of vehicles with a high center of gravity, such as trucks, tankers, and recreational vehicles, of a curve or turn where there are:

A. Past incidents of truck rollovers at the specific location,
B. High volumes of trucks, or
C. A speed differential (see Section 2C.06) that might pose a greater risk for vehicles with high centers of gravity.

Guidance:

02 Where engineering judgment determines the need for the installation of a Truck Rollover (W1-13) sign, it should be located downstream of the horizontal alignment warning sign in advance of the curve.

Standard:

03 If a Truck Rollover (W1-13) sign is used, it shall be accompanied by an Advisory Speed (W13-1P) plaque indicating the recommended speed for vehicles with a higher center of gravity.

Option:

04 The Truck Rollover sign may include conspicuity enhancements, or may be a blank-out sign, activated by the detection of an approaching vehicle with a high center of gravity that is traveling in excess of the recommended speed for the condition.

Support:

05 The curved arrow on the Truck Rollover sign shows the direction of roadway curvature. The truck tips in the opposite direction.

Section 2C.12 Advisory Exit and Ramp Speed Signs (W13-2 and W13-3) and Combination Horizontal Alignment/Advisory Exit and Ramp Speed Signs (W13-6 through W13-13)

Standard:

01 Where an advisory speed is posted in advance of a freeway or expressway exit, the Advisory Exit Speed (W13-2) sign ~~(see Figure 2C-1)~~ shall be used.

02 Where an advisory speed is posted in advance of a conventional road ramp or to another roadway or roadside facility, the Advisory Ramp Speed (W13-3) sign ~~(see Figure 2C-1)~~ shall be used.

03 An Advisory Exit Speed or Advisory Ramp Speed sign shall be used when the difference between the mainline roadway speed limit and the exit or ramp advisory speed in the vicinity of the departure is 20 mph or greater.

Guidance:

04 An Advisory Exit Speed or Advisory Ramp Speed sign should be used when the difference between the mainline roadway speed limit and the exit or ramp advisory speed in the vicinity of the departure is 15 mph.

Option:

05 An Advisory Exit Speed or Advisory Ramp Speed sign may be used based on engineering judgment when the difference between the mainline roadway speed limit and the exit or ramp advisory speed in the vicinity of the departure is 10 mph or less.

06 The Combination Horizontal Alignment/Advisory Exit Speed (W13-6, W13-8, and W13-10) signs ~~(see Figure 2C-1)~~ may be used in lieu of the Advisory Exit Speed (W13-2) sign, and the combination Horizontal Alignment/Advisory Ramp Speed (W13-7, W13-9, and W13-11) signs (see Figure 2C-1) may be used in lieu of the Advisory Ramp Speed (W13-3) sign.

07 The Combination Truck Rollover/Advisory Exit Speed and Truck Rollover/Advisory Ramp Speed (W13-12 and W13-13) signs ~~(see Figure 2C-1)~~ may be used in lieu of the W13-2 and W13-3 signs respectively if the tip over condition is in the vicinity of the gore.

Standard:

08 Roadway geometrics represented on the Combination Horizontal Alignment/Advisory Exit and Combination Horizontal Alignment/Advisory Ramp Speed signs ~~(see Figure 2C-1)~~ shall be limited to the standard signs shown in this Manual.

Guidance:

09 If used, the Advisory Exit Speed sign or the Combination Horizontal Alignment/Advisory Exit Speed sign should be installed along the deceleration lane. The Advisory Exit Speed or the Combination Horizontal Alignment/Advisory Exit Speed signs should be visible in time for the road user to decelerate and make an exiting maneuver.

10 Regulatory Speed Limit signs (see Section 2B.21) should not be located in the vicinity of exit ramps or deceleration lanes, particularly where they will conflict with the advisory speed displayed on the Advisory Exit or Ramp Speed signs.

Support:

11 Section 2C.06 contains provisions for the determination of the displayed advisory speed.

12 Table 2C-3 lists recommended advance sign placement distances for deceleration to various advisory speeds.

Option:

13 Where there is a need to remind road users of the recommended advisory speed, a horizontal alignment warning sign with an advisory speed plaque displaying the same advisory speed may be installed at a downstream location along the ramp.

Guidance:

14 If the ramp curvature changes to the extent that it warrants a lower advisory speed, a horizontal alignment warning sign with the new advisory speed should be displayed in advance of the change in curvature.

Option:

15 The One-Direction Large Arrow (W1-6) sign may be installed beyond the exit gore on the outside of the curve to provide additional warning of an immediate change in curvature. When used in conjunction with the exit speed, the One-Direction Large Arrow (W1-6) sign may be supplemented with a Confirmation Advisory Speed (W13-1aP) plaque ~~(see Figure 2C-1)~~ when the plaque is not used with the Exit Gore (E5-1 series) sign.

Guidance:

16 The horizontal alignment symbol displayed on the Combination Horizontal Alignment/Advisory Exit and Ramp Speed signs should be consistent with the horizontal geometry of the ramp.

Support:

17 Examples of advisory speed signing for exit ramps are shown in Figure 2C-3.

Figure 2C-3. Examples of Exit Ramp Advisory Speed and Other Warning Signs
(Sheet 1 of 5)

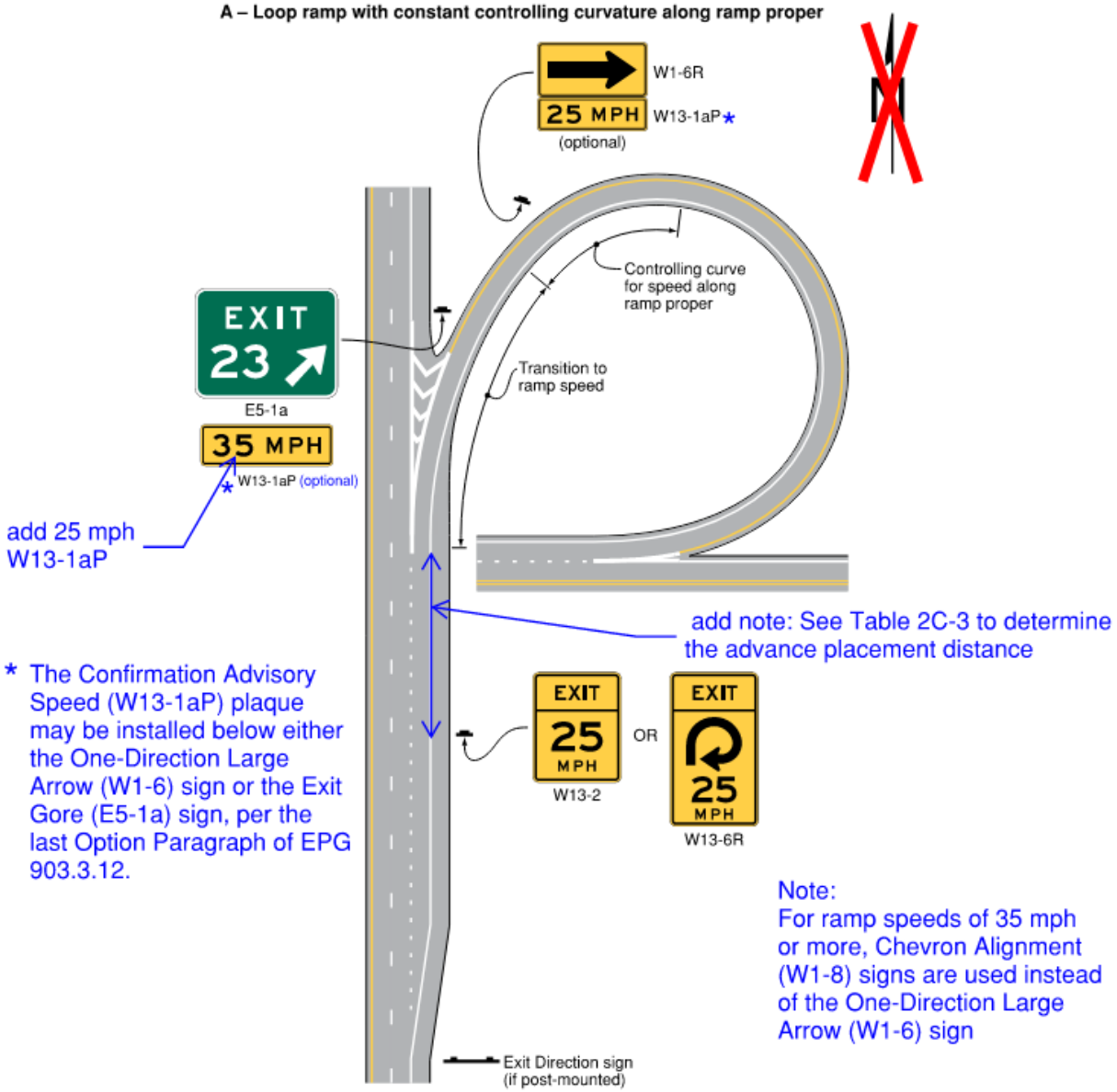


Figure 2C-3. Examples of Exit Ramp Advisory Speed and Other Warning Signs
(Sheet 2 of 5)

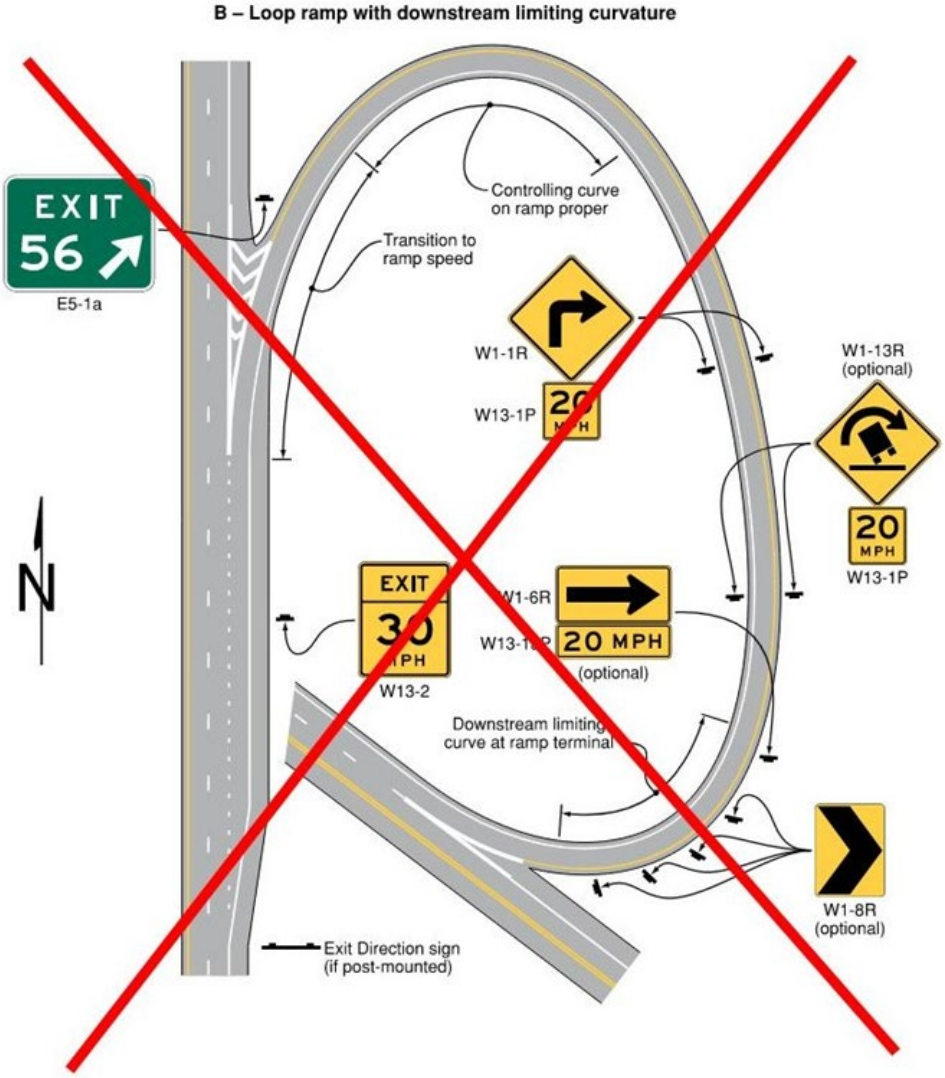


Figure 2C-3 (Sheet 2) is not adopted by MoDOT. Revised Dec. 2025

Figure 2C-3. Examples of Exit Ramp Advisory Speed and Other Warning Signs
(Sheet 3 of 5)

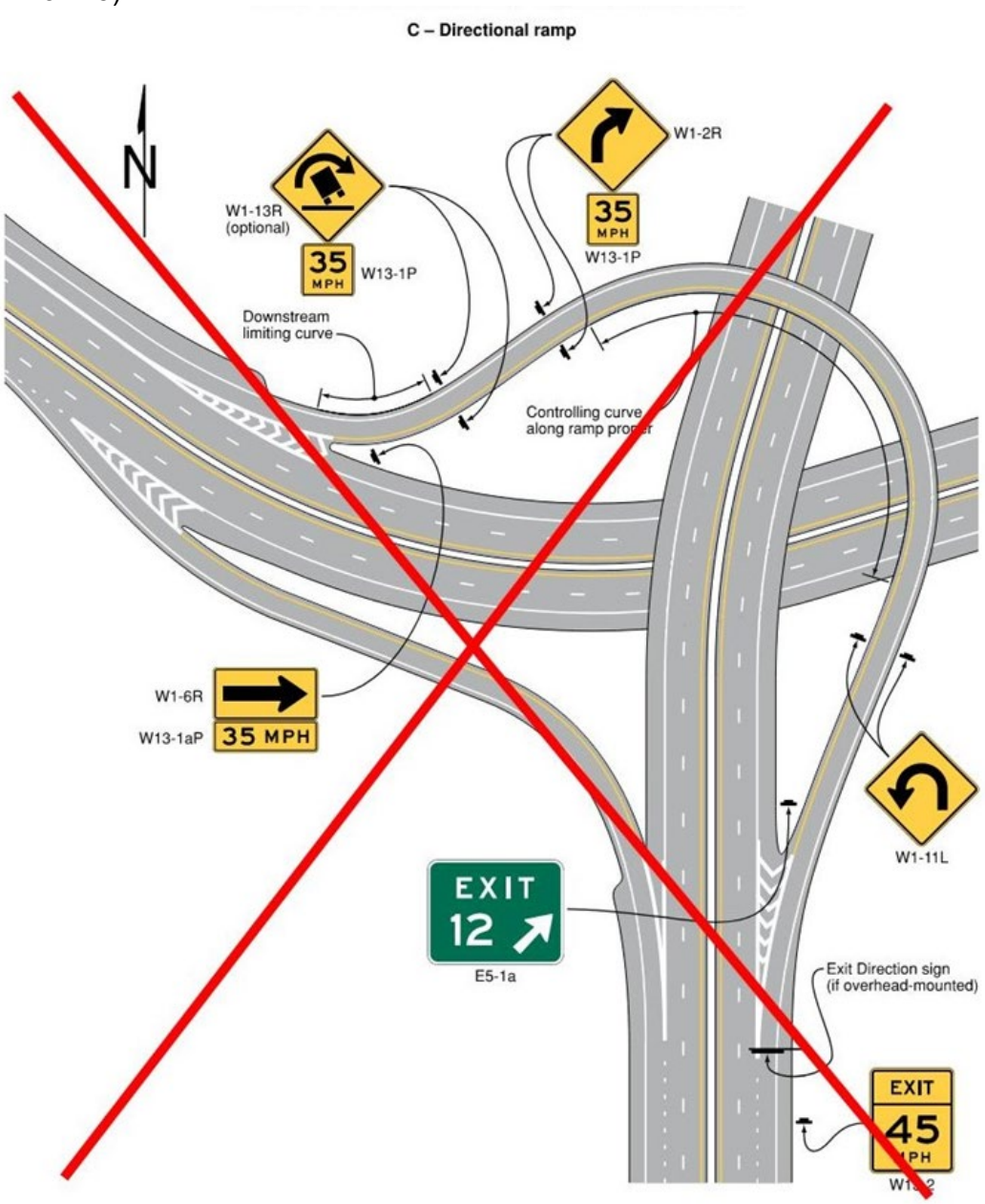


Figure 2C-3 (Sheet 3) is not adopted by MoDOT. Revised Dec. 2025

Figure 2C-3. Examples of Exit Ramp Advisory Speed and Other Warning Signs
(Sheet 4 of 5)



Figure 2C-3 (Sheet 4) is not adopted by MoDOT. Revised Dec. 2025

Figure 2C-3. Examples of Exit Ramp Advisory Speed and Other Warning Signs
(Sheet 5 of 5)



Figure 2C-3 (Sheet 4) is not adopted by MoDOT. Revised Dec. 2025

Section 2C.13 Vehicle Speed Feedback Sign and Plaque (W13-20 and W13-20aP)

Option:

01 A Vehicle Speed Feedback (W13-20) sign or (W13-20aP) plaque (see Figure 2C-4) that displays the speed of an approaching vehicle to the vehicle operator may be used to provide warning to drivers of their speed in relation to either a speed limit (R2-1) sign or a horizontal alignment warning sign assembly with a posted advisory speed.

Standard:

02 When used to display the speed of an approaching vehicle in relation to the posted speed limit, the Vehicle Speed Feedback (W13-20aP) plaque shall be mounted below a Speed Limit (R2-1) sign (see Section 2B.21).

M02A The Vehicle Speed Feedback assembly shall not be installed at a location where the posted speed limit on the route changes. Vehicle Speed Feedback assemblies shall be placed anywhere downstream of a speed limit change but shall be a minimum of 200 feet downstream of a speed limit change on conventional routes and a minimum of 400 feet downstream of a speed limit change on expressways of freeways. Vehicle Speed Feedback assemblies shall be installed in accordance with the Vehicle Speed Feedback Assembly Typical Application.

03 When used to supplement a horizontal alignment warning sign advisory speed, the Vehicle Speed Feedback (W13-20) sign shall be an independent installation near the point of curvature of a horizontal curve (see Section 2C.06).

04 The legend YOUR SPEED shall be a black legend on a yellow retroreflective background, except as provided in Sections 6H.01 and 7B.01. The changeable legend displaying the speed of the approaching vehicle shall be a yellow luminous legend on a black opaque background. The vehicle speed displayed on the changeable portion of the sign shall be displayed as an integer. The Vehicle Speed Feedback sign and plaque shall not flash, strobe, change color, or use other animated elements integrated into the changeable legend display. When no vehicles are approaching, the changeable display shall not display a legend.

M04A Vehicle Speed Feedback sign equipment shall not have the capability to collect, store or transmit personally identifiable information of any type.

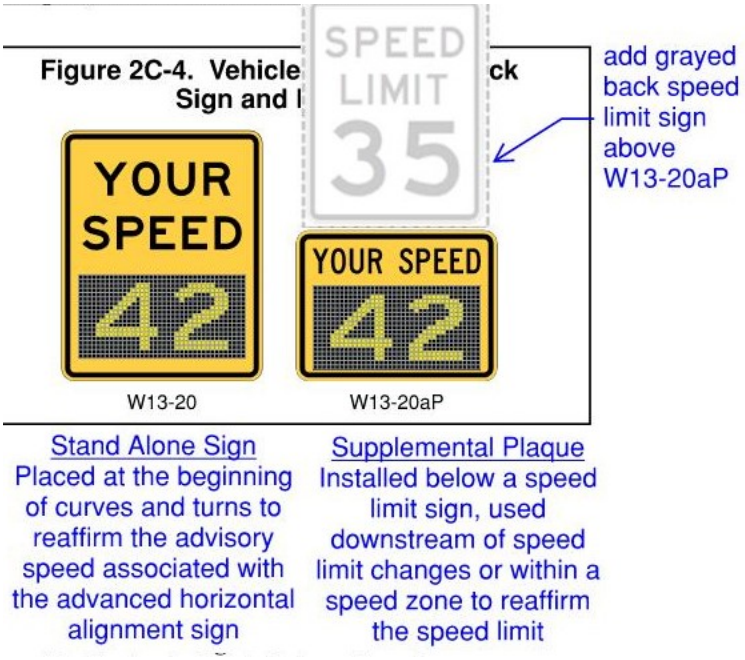
MoDOT Standard statements from the EPG. Revised Dec. 2025

Guidance:

05 The changeable portion of the Vehicle Speed Feedback legend should be approximately the same height, width, and stroke of those on the Speed Limit sign it supplements or is mounted below.

06 When a W13-20aP plaque is used with a Speed Limit sign it should be approximately the same width as the Speed Limit sign it is mounted below.

Figure 2C-4. Vehicle Speed Feedback Sign and Plaque



VERTICAL GRADE WARNING SIGNS AND PLAQUES

Section 2C.14 Hill Signs (W7-1 ~~and W7-1a~~)

Guidance:

01 The Hill (W7-1) sign ~~(see Figure 2C-5)~~ should be used in advance of a downgrade where the length, percent of grade, horizontal curvature, and/or other physical features require special precautions on the part of road users.

02 The Hill sign and supplemental grade (W7-3P) plaque (see ~~Figure 2C-5 and~~ Section 2C.64) used in combination, or the W7-1a sign used alone, should be installed in advance of downgrades for the following conditions:

- *A. 5% grade that is more than 3,000 feet in length,*
- *B. 6% grade that is more than 2,000 feet in length,*
- *C. 7% grade that is more than 1,000 feet in length,*
- *D. 8% grade that is more than 750 feet in length, or*
- *E. 9% grade that is more than 500 feet in length.*

03 These signs should also be installed for steeper grades or where crash experience and field observations indicate a need.

04 Supplemental plaques (see Sections 2C.57 and 2C.64) and larger signs should be used for emphasis or where special hill characteristics exist. On longer grades, the use of the Hill sign with a distance (W7-3aP) plaque ~~or the combination distance/grade (W7-3bP) plaque (see Figure 2C-5)~~ at periodic intervals of approximately 1-mile spacing should be considered.

~~Option:~~

~~05 A USE LOW GEAR (W7-2P) or TRUCKS USE LOWER GEAR (W7-2bP) supplemental plaque (see Figure 2C-5) may be used to indicate a situation where downshifting as well as braking might be advisable.~~

MoDOT does not use the W7-2 series or W7-3bP plaques. Revised Dec. 2025

Support:

M06 The Uphill (W7-1c) sign is also available by special request.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2C-5. Vertical Grade Signs and Plaques



~~Section 2C.15 Truck Escape Ramp Signs (W7-4 Series)~~

~~*Guidance:*~~

~~*01 Where applicable, truck escape (or runaway truck) ramp advance warning signs (see Figure 2C-5) should be located approximately 1 mile and approximately ½ mile in advance of the grade, and of the escape ramp. An additional W7-4b or W7-4c sign should be placed at the gore.*~~

~~*02 A RUNAWAY VEHICLES ONLY (R4-10) sign (see Section 2B.41) should be installed near the escape ramp entrance to discourage other road users from entering the ramp. No Parking (R8-3) signs should be placed near the ramp entrance.*~~

~~**Standard:**~~

~~**03 When truck escape ramps are installed, at least one of the W7-4 series signs shall be used.**~~

~~Option:~~

~~04 A SAND (W7-4dP), GRAVEL (W7-4eP), or PAVED (W7-4fP) supplemental plaque (see Figure 2C-5) may be used to describe the ramp surface. State and local highway agencies may develop appropriate word message signs for the specific situation.~~

MoDOT does not use W7-4 Series signs. Revised Dec. 2025

~~Section 2C.16 HILL BLOCKS VIEW Sign (W7-6)~~

~~Option:~~

~~01 A HILL BLOCKS VIEW (W7-6) sign (see Figure 2C-5) may be used on the approach to a crest vertical curve where the vertical curvature provides inadequate stopping sight distance at the posted speed limit.~~

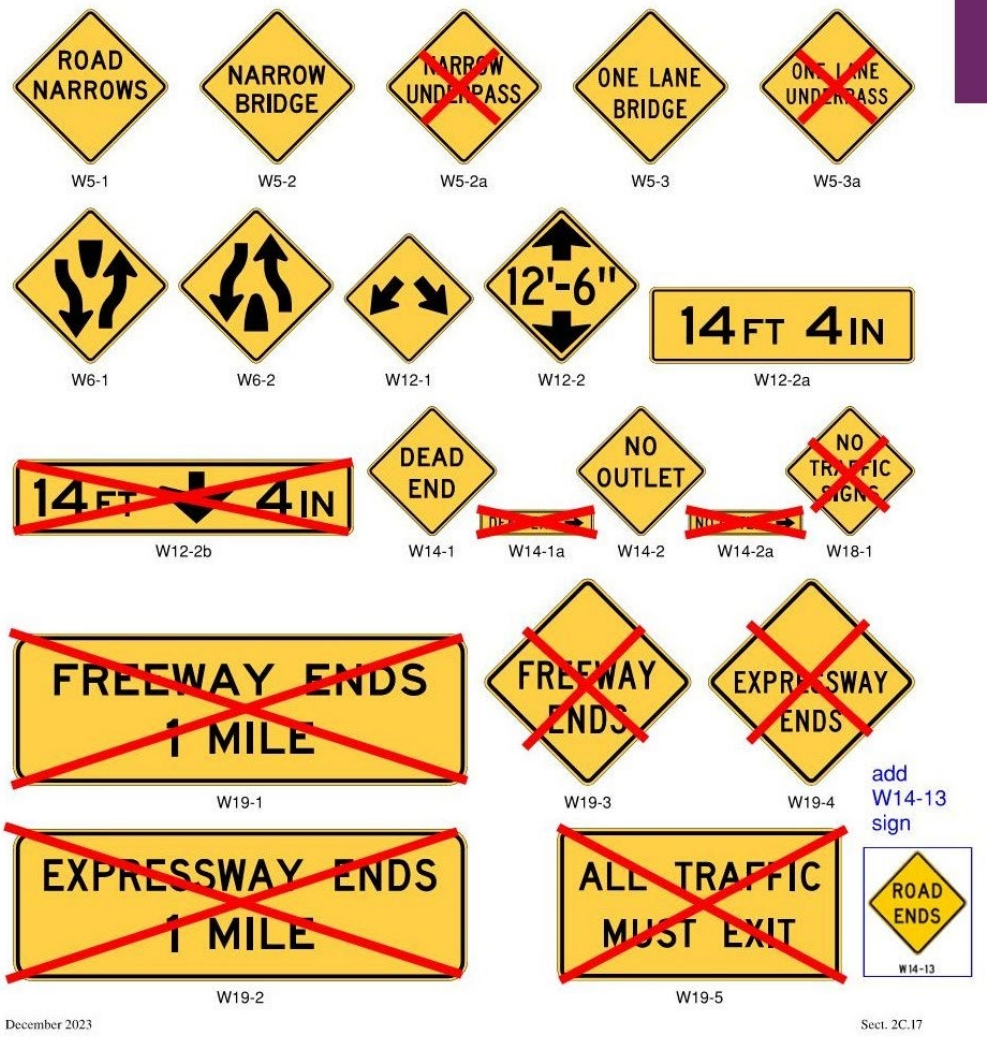
~~*Guidance:*~~

~~*02 When a vertical curve results in a sight distance obstruction to a specific condition beyond the crest of the vertical curve, the warning sign for the specific condition beyond the vertical crest should be used rather than the HILL BLOCKS VIEW sign.*~~

~~*03 When a HILL BLOCKS VIEW sign is used, it should be supplemented by an Advisory Speed (W13-1P) plaque (see Figure 2C-1) indicating the recommended speed for traveling over the hillcrest based on available stopping sight distance.*~~

MoDOT does not use W7-6 signs. Revised Dec. 2025

Figure 2C-6. Miscellaneous Warning Signs



ROADWAY GEOMETRY WARNING SIGNS

Section 2C.17 ROAD NARROWS Sign (W5-1)

Guidance:

01 ~~Except as provided in Paragraph 2 of this Section,~~ ~~a~~ A ROAD NARROWS (W5-1) sign ~~(see Figure 2C-6)~~ should be used in advance of a transition on two-lane roads where the pavement width is reduced abruptly to a width such that vehicles traveling in opposite directions cannot simultaneously travel through the narrow portion of the roadway without reducing speed.

Option:

~~02 The ROAD NARROWS (W5-1) sign may be omitted on low-volume local streets that have speed limits of 30 mph or less.~~

MoDOT does not consider any state routes to be low-volume local streets. Revised Dec. 2025

03 Additional emphasis may be provided by the use of object markers and delineators (see Sections 2C.70 through 2C.73 and Chapter 3G). The Advisory Speed (W13-1P) plaque (see ~~Figure 2C-1 and~~ Section 2C.59) may be used to indicate the recommended speed.

Section 2C.18 NARROW BRIDGE ~~and NARROW UNDERPASS~~ Sign~~s~~ (W5-2 ~~and W5-2a~~)

Guidance:

01 A NARROW BRIDGE (W5-2) sign ~~(see Figure 2C-6)~~ should be used in advance of any bridge or culvert having a two-way roadway horizontal clearance of 16 to 18 feet, or any bridge or culvert having a roadway horizontal clearance less than the width of the approach travel lanes. ~~Where these conditions exist for an underpass, a NARROW UNDERPASS (W5-2a) sign (see Figure 2C-6) should be used.~~

02 Additional emphasis should be provided by the use of object markers, delineators, and/or pavement markings.

Option:

03 A NARROW BRIDGE sign may be used in advance of a bridge or culvert on which the approach shoulders are narrowed or eliminated. ~~Where these conditions exist for an underpass, a NARROW UNDERPASS sign may be used.~~

~~04 The NARROW BRIDGE or NARROW UNDERPASS sign may be omitted on low-volume rural roads where there is adequate sight distance to the bridge, culvert, or underpass on both approaches.~~

MoDOT does not use W5-2a signs. Revised Dec. 2025

Section 2C.19 ONE LANE BRIDGE ~~and ONE LANE UNDERPASS~~ Sign~~s~~ (W5-3 ~~and W5-3a~~)

Guidance:

01 A ONE LANE BRIDGE (W5-3) sign ~~(see Figure 2C-6)~~ should be used on two-way roadways in advance of any bridge or culvert:

A. Having a roadway horizontal clearance of less than 16 feet, or

B. Having a roadway horizontal clearance of less than 18 feet when commercial vehicles constitute a high proportion of the traffic, or

C. Having a roadway horizontal clearance of 18 feet or less where the sight distance on the approach is less than that shown in Condition A of Table 2C-3.

~~02 Where these conditions exist for an underpass, a ONE LANE UNDERPASS (W5-3a) sign (see Figure 2C-6) should be used.~~

03 Additional emphasis should be provided by the use of object markers, delineators, and/or pavement markings.

Option:

~~04 The ONE LANE BRIDGE or ONE LANE UNDERPASS sign may be omitted on low-volume rural roads where there is adequate sight distance to the bridge, culvert, or underpass on both approaches.~~

05 STOP (R1-1) or YIELD (R1-2) signs (see Sections 2B.04 and 2B.05) and related pavement markings (see Sections 3B.21 and 3B.22) may be used when conditions A, B, or C in the first Guidance paragraph ~~Paragraph 1~~ of this ~~Section~~ article apply.

MoDOT does not use W5-3a signs. Revised Dec. 2025

Section 2C.20 Divided Highway Sign (W6-1)

Guidance:

01 A Divided Highway (W6-1) sign ~~(see Figure 2C-6)~~ should be used on the approaches to a section of highway (not an intersection or junction) where the opposing flows of traffic are separated by a median or other physical barrier.

Standard:

02 The Divided Highway (W6-1) sign shall not be used instead of a Keep Right (R4-7 series) sign on the approach end of a median island.

Section 2C.21 Divided Highway Ends Sign (W6-2)

Guidance:

01 A Divided Highway Ends (W6-2) sign ~~(see Figure 2C-6)~~ should be used in advance of the end of a section of physically divided highway (not an intersection or junction) as a warning of two-way traffic ahead.

02 The Two-Way Traffic (W6-3) sign (see Section 2C.51) should be used to give warning and notice of the transition to a two-lane, two-way section.

~~Section 2C.22 Freeway or Expressway Ends Signs (W19 Series)~~

~~Option:~~

~~01 A FREEWAY ENDS XX MILES (W19-1) sign or a FREEWAY ENDS (W19-3) sign (see Figure 2C-6) may be used in advance of the end of a freeway.~~

~~02 An EXPRESSWAY ENDS XX MILES (W19-2) sign or an EXPRESSWAY ENDS (W19-4) sign (see Figure 2C-6) may be used in advance of the end of an expressway.~~

~~03 The rectangular W19-1 and W19-2 signs may be post-mounted or may be mounted overhead for increased emphasis.~~

~~*Guidance:*~~

~~*04 If the reason that the freeway is ending is that the next portion of the freeway is not yet constructed and as a result all traffic must use an exit ramp to leave the freeway, an ALL TRAFFIC MUST EXIT (W19-5) sign (see Figure 2C-6) should be used in addition to the Freeway Ends signs in advance of the downstream end of the freeway.*~~

MoDOT does not use W19 Series signs. Revised Dec. 2025

Section 2C.23 Double Arrow Sign (W12-1)

Option:

01 The Double Arrow (W12-1) sign ~~(see Figure 2C-6)~~ may be used to advise road users that traffic is permitted to pass on either side of an island, obstruction, or gore in the roadway. Traffic separated by this sign may either rejoin or change directions.

Guidance:

02 If used on an island, the Double Arrow sign should be mounted near the approach end (see Section 2A.13).

03 If used in front of a pier or obstruction, the Double Arrow sign should be mounted on the face of, or just in front of, the pier or obstruction. Where stripe markings are used on the pier or obstruction, they should be discontinued to leave a 3-inch space around the outside of the Double Arrow sign.

Section 2C.24 DEAD END, NO OUTLET, and ROAD ENDS Signs (W14-1, ~~W14-1a,~~ W14-2, ~~W14-2a, W8-26,~~ and ~~W8-26a~~ W14-13)

Option:

01 The DEAD END (W14-1) sign ~~(see Figure 2C-6)~~ may be used at the entrance to a single road or street that terminates without intersecting another street. The NO OUTLET (W14-2) sign ~~(see Figure 2C-6)~~ may be used at the entrance to a road or road network from which there is no other exit.

M01A The ROAD ENDS (W14-13) sign may be used to warn of a roadway which has no outlet and which terminates in a dead end and may be used in place of the DEAD END or NO OUTLET sign where the use of the DEAD END and NO OUTLET signs would have a negative effect on traffic generators or public perceptions due to the negative connotation of the message.

MoDOT Option statement from the EPG for special sign. Revised Dec. 2025

~~02 DEAD END (W14-1a) or NO OUTLET (W14-2a) signs (see Figure 2C-6) may be used in combination with Street Name (D3-1) signs (see Section 2D.45) to warn turning traffic that the cross street ends in the direction indicated by the arrow.~~

~~03 At locations where the cross street does not have a name, a W14-1a or W14-2a sign may be used alone in place of a street name sign.~~

MoDOT does not use W14-1a or W14-2a signs. Revised Dec. 2025

Guidance:

04 When the W14-1, ~~or~~ W14-2, or W14-13 sign is used, the sign should be posted as near as practicable to the entry point or at a sufficient advance distance to permit the road user to avoid the dead end or no outlet condition by turning at the nearest intersecting street.

Standard:

~~05 The DEAD END (W14-1a) or NO OUTLET (W14-2a) sign shall not be used instead of the W14-1 or W14-2 signs where traffic can proceed straight through the intersection into the dead end street or no outlet area.~~

MoDOT does not use W14-1a or W14-2a signs. Revised Dec. 2025

M05A The W14-1, W14-2, or W8-26 sign shall not be used in place of the ROAD CLOSED (R11-2) sign for temporary conditions, such as high water, bridge out, etc.

MoDOT Standard statements from the EPG. Revised Dec. 2025

~~Option:~~

~~06 The ROAD ENDS XX FT (W8-26) or STREET ENDS XX FT (W8-26a) sign (see Figure 2C-11) may be used on the approach to the end of a conventional road or street where the terminus is not apparent.~~

Support:

07 Information about the use of Type 4 object markers to mark the end of the road or street is contained in Section 2C.73.

~~Standard:~~

~~08 The W8-26 and W8-26a signs shall not be used in place of a W14-1 or W14-2 sign at the entrance to such a road or street.~~

MoDOT does not use W8-26 or W8-26a signs. Revised Dec. 2025

~~Support:~~

~~09 Section 2C.22 contains information on signs for use on the approach to the end of a freeway or expressway.~~

Section 2C.25 Low Clearance Signs (W12-2, and W12-2a~~, and W12-2b~~)

Support:

M00 MoDOT is responsible for installing and maintaining overhead low clearance signs mounted on all structures passing over MoDOT routes as well as installing and maintaining overhead low clearance signs mounted all MoDOT structures passing over non-MoDOT routes (this does not include MoDOT structures passing over rail lines). MoDOT has developed specific provisions for the use of Low Clearance signs.

Standard:

~~01 The Low Clearance Advance (W12-2) sign (see Figure 2C-6) shall be used to warn road users of vertical clearances less than 14 feet 6 inches, or vertical clearances less than 12 inches above the statutory maximum vehicle height, whichever is greater.~~

M01A Low Clearance signing shall be installed to display vertical clearances available under structures within specified limits of statutory maximum vehicle heights.

MoDOT specific content from the EPG replaces MUTCD Paragraph 1. Revised Dec. 2025

~~*Guidance:*~~

~~*02 The actual clearance should be displayed on the Low Clearance (W12-2, and W12-2a, and W12-2b) sign to the nearest 1 inch not exceeding the actual clearance. However, in areas that experience changes in temperature causing frost action, a reduction, not exceeding 3 inches, should be used for this condition.*~~

Guidance Paragraph 2 is replaced by Standard Paragraphs 2A – 2C. Revised Dec. 2025

M02A The clearance displayed on the Low Clearance (W12-2 and W12-2a) signs shall be 2 inches less than the measured clearance to account for possible packed snow and ice. For example, a measured vertical clearance of 15 ft. shall be posted as 14 ft. 10 in. All clearance measurements shall be rounded down to the nearest full inch. For example, a measured vertical clearance of 14 ft. 9 ½ in. would be rounded down to 14 ft. 9 in. and posted as 14 ft. 7 in.

M02B The statutory maximum vehicle heights and vertical clearances are as follows:

A. **Within Commercial Zones = 15 ft. statutory maximum vehicle height (16’ 0” maximum posting)**
B. **On Interstate and designated highway network routes and on all routes within 10 miles of Interstate and designated highway network routes = 14 ft. statutory maximum vehicle height (15’ 0” maximum posting)**
C. **On routes greater than 10 miles from Interstate and designated highway network routes = 13 ft. 6 in. statutory maximum vehicle height (15’ 0” maximum posting).**

Support:

M02C For specific details on commercial zone limits and designated highway network routes, see Missouri Vehicle Route Map.

MoDOT specific criteria from the EPG replaces MUTCD Paragraph 2. Revised Dec. 2025

Standard:

M02D The MoDOT posting requirements for Low Clearance signs are as follows:

A. **Case I – Two Signs Required: Where the measured vertical clearance is 15 ft. 2 in. or less, but more than 13 ft. 8 in., two signs shall be used. First, a Low Clearance Overhead (W12-**

2a) sign shall be installed on the structure, and second, a ground-mounted Low Clearance Advance (W12-2) sign shall be placed approximately 750 ft. in advance of the structure. When an interchange is involved, the ground-mounted Low Clearance (W12-2) sign shall be located approximately 750 ft. in advance of the off-ramp.

B. Case II – Three Signs Required: Where the measured vertical clearance is 13 ft. 8 in. or less, three signs shall be used. First, a Low Clearance Overhead (W12-2a) sign shall be installed on the structure, second, a ground-mounted Low Clearance Advance (W12-2) sign shall be placed approximately 750 ft. in advance of the structure, and third, an additional Low Clearance Advance (W12-2) sign with a Distance Ahead (W16-2P or W16-3P) plaque below the sign shall be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.

C. Case III – One Sign: Where the measured vertical clearance is 15 ft. 2 in. or less and where the bridge is state maintained but the road beneath is not, a Low Clearance Overhead (W12-2a) sign shall be installed on the structure, but the ground-mounted Low Clearance Advance (W12-2) sign shall not be installed by MoDOT. The Low Clearance Advance sign may be installed and maintained by the local jurisdiction.

D. Case IV – Commercial Zones: Vertical clearance signing shall be provided for structures within commercial zones (see Section 304.190 of the Revised Statutes of Missouri). Any structure with a measured vertical clearance of 16 ft. 2 in. or less within the commercial zone limits shall be posted. For measured vertical clearances greater than 15 ft. 2 in. and equal to or less than 16 ft. 2 in. within commercial zones a Low Clearance Overhead (W12-2a) sign shall be installed on the structure. The signing for measured vertical clearances of 15 ft. 2 in. or less within commercial zones shall be as described for Case I or Case II.

M02E In the case of an arch structure or a structure which has a sloping span resulting in different vertical clearances per lane, one Low Clearance Overhead (W12-2a) sign shall be centered over each lane displaying the vertical clearance available for that lane. One sign per lane shall be applied if the difference in vertical clearance between adjacent lanes is 6 inches or greater or when the vertical clearance between the far-right lane and far-left lane is 12 inches or greater.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

03 Clearances should be evaluated periodically to verify the displayed clearances are accurate and to determine if additional low clearance signing is necessary, particularly when resurfacing operations have occurred, on routes onto which over-height vehicles are normally directed under the permit process, and structures that are susceptible to catastrophic failure when struck by over-height vehicles. The information should be updated in the TMS.

~~*04 The W12-2 sign with a supplemental distance plaque should also be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.*~~

Paragraph 4 content is included in Paragraph M02D, Case II. Revised Dec. 2025

05 Where there is a need to warn of a low clearance on an intersecting road or off a freeway or expressway exit, a rectangular warning sign with an appropriate word legend should be used rather than a W12-2 sign.

Option:

~~06 The Low Clearance Overhead (W12-2a or W12-2b) sign (see Figure 2C-6) may be installed on the structure to supplement the advance warning sign.~~

Paragraph 6 is replaced by M02D. Revised Dec. 2025

~~07 In cases where physical conditions on a structure limit the width such that the W12-2a or W12-2b signs are physically unable to fit, a W12-2 sign may be installed overhead on the structure or post-mounted in front of the structure, in addition to the required W12-2 sign at the advance location.~~

Paragraph 7 is replaced by M07A. Revised Dec. 2025

M07A When only one Overhead Low Clearance (W12-2a) sign is required and mounting one sign centered over the roadway is not practical, two W12-2a signs may be installed with one sign installed to the right of the travel lanes and one sign installed to the left of the travel lanes.

MoDOT specific content from the EPG. Revised Dec. 2025

~~*Guidance:*~~

~~*08 In the case of an arch, or other structure under which the clearance varies greatly, two or more Low Clearance Overhead (W12-2a or 12-2b) signs should be installed on the structure itself to give information as to the clearances over the low clearance portions of the roadway.*~~

Paragraph 8 is replaced by Paragraph M02E. Revised Dec. 2025

~~**Standard:**~~

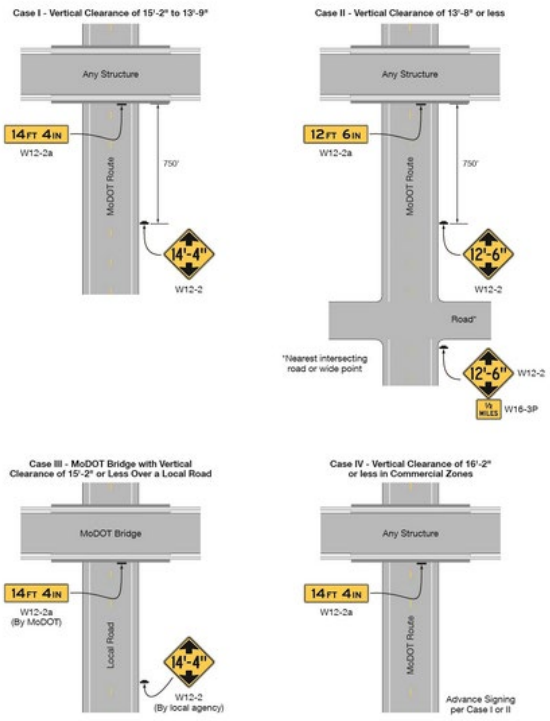
~~**09 If used, the Low Clearance Overhead (W12-2b) sign shall be placed over a lane or shoulder to indicate the portion of the structure with low clearance if the posted clearance does not apply to the entire structure.**~~

MoDOT does not use the W12-2b sign. Revised Dec. 2025

Guidance:

10 The clearance shown on the Low Clearance Advance (W12-2) sign should match the clearance on the W12-2a ~~or W12-2b~~ sign or, if there are multiple W12-2~~b~~a signs, should match the lowest clearance.

Figure 903.3.25 Examples of Low Clearance Signs



ROADWAY AND WEATHER-CONDITION WARNING SIGNS AND PLAQUES

Section 2C.26 BUMP and DIP Signs (W8-1 and W8-2)

Support:

M00A BUMP and DIP signs (W8-1, W8-2) are limited use signs, only being used for locations where the condition cannot be corrected, such as low water crossings or highway-rail grade crossings.

M00B See Section 8B.16 for low ground clearance conditions at highway-rail grade crossings.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

01 BUMP (W8-1) and DIP (W8-2) signs ~~(see Figure 2C-7)~~ should be used in advance of a sharp rise or depression in the profile of the road.

Option:

02 These signs may be supplemented with an Advisory Speed plaque (see ~~Figure 2C-1~~ and Section 2C.59).

Guidance:

03 The DIP sign should not be used in advance of a short stretch of depressed alignment that might momentarily hide a vehicle.

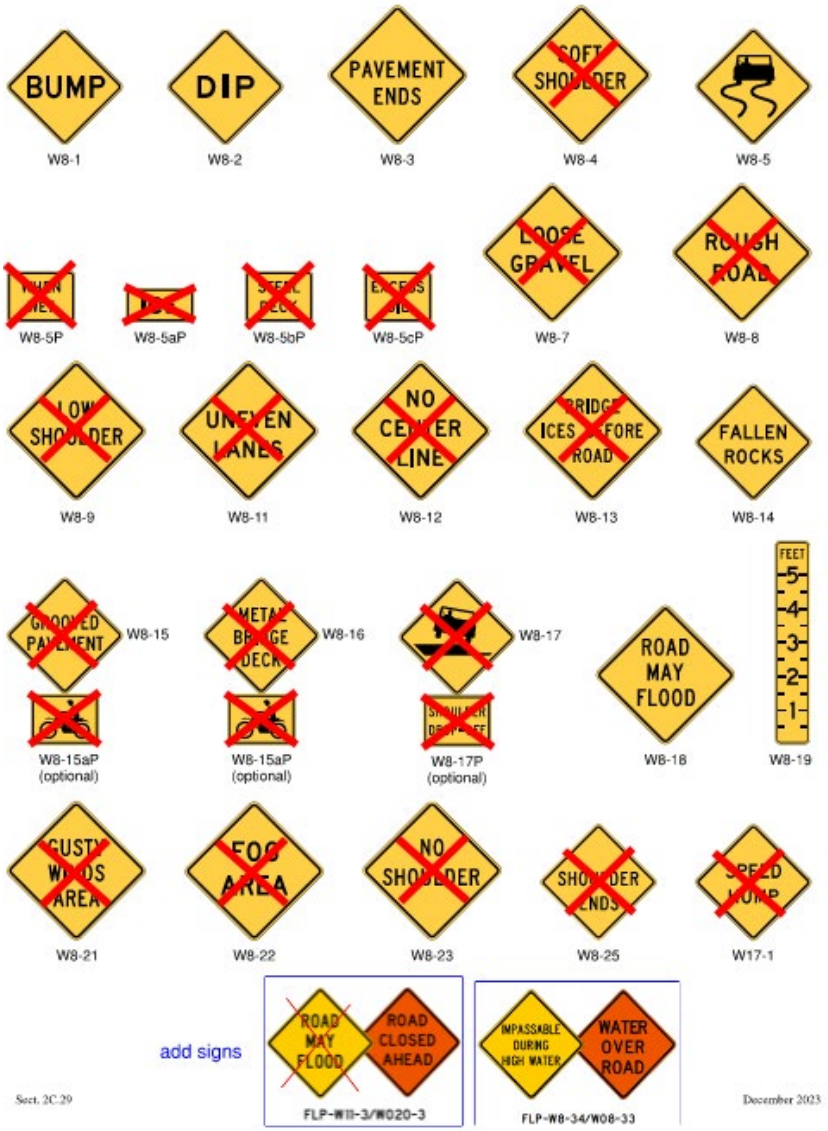
04 A short stretch of depressed alignment that might momentarily hide a vehicle should be treated as a no-passing zone when center line striping is provided on a two-lane or three-lane road (see Section 3B.03).

Option:

M05 BUMP and DIP signs may be used as temporary traffic control signs (WO8-1, WO8-2) for locations where the condition is temporary and/or where the condition can be corrected in the future (See EPG 616.6.50 Other Warning Signs).

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2C-7. Roadway and Weather Condition Signs and Plaques



~~Section 2C.27~~ SPEED HUMP Sign (W17-1)

~~*Guidance:*~~

~~*01 The SPEED HUMP (W17-1) sign (see Figure 2C-7) should be used in advance of a vertical deflection in the roadway that is designed to limit the speed of traffic.*~~

~~*02 If used, the SPEED HUMP sign should be supplemented by an Advisory Speed plaque (see Figure 2C-1 and Section 2C.59).*~~

~~Option:~~

~~03 If a series of speed humps exists in close proximity, an Advisory Speed plaque may be eliminated on all but the first SPEED HUMP sign in the series.~~

~~04 The legend SPEED BUMP may be used instead of the legend SPEED HUMP on the W17-1 sign.~~

~~Support:~~

~~05 Speed humps generally provide more gradual vertical deflection than speed bumps. Speed bumps limit the speed of traffic more severely than speed humps. Other forms of speed humps include speed tables and raised crosswalks or intersections. However, these differences in engineering terminology are not well known by the public, so for signing purposes these terms are interchangeable.~~

~~06 Sections 3B.29 and 3B.30 contain information about the use of markings at and in advance of speed humps.~~

MoDOT does not use the W17-1 sign. Revised Dec. 2025

Section 2C.28 PAVEMENT ENDS Sign (W8-3)

Guidance:

01 A PAVEMENT ENDS (W8-3) sign ~~(see Figure 2C-7)~~ should be used where a paved surface changes to either a gravel treated surface or an earth road surface.

Option:

02 An Advisory Speed plaque (see ~~Figure 2C-1 and~~ Section 2C.59) may be used when the change in roadway condition requires a reduced speed.

~~Section 2C.29 Shoulder Signs (W8-4, W8-9, W8-17, W8-23, and W8-25)~~

~~Option:~~

~~01 The SOFT SHOULDER (W8-4) sign (see Figure 2C-7) may be used to warn of a soft shoulder condition.~~

~~02 The LOW SHOULDER (W8-9) sign (see Figure 2C-7) may be used to warn of a shoulder condition where there is an elevation difference of 3 inches or less between the shoulder and the travel lane.~~

~~*Guidance:*~~

~~*03 The Shoulder Drop Off (W8-17) sign (see Figure 2C-7) should be used where an unprotected shoulder drop-off, adjacent to the travel lane, exceeds 3 inches in depth for a significant continuous length along the roadway, based on engineering judgment.*~~

~~Option:~~

~~04 A SHOULDER DROP-OFF (W8-17P) supplemental plaque (see Figure 2C-7) may be mounted below the W8-17 sign.~~

~~05 The NO SHOULDER (W8-23) sign (see Figure 2C-7) may be used to warn road users that a shoulder does not exist along a portion of the roadway.~~

~~06 The SHOULDER ENDS (W8-25) sign (see Figure 2C-7) may be used to warn road users that a shoulder is ending.~~

~~Guidance:~~

~~07 Additional shoulder signs should be placed at appropriate intervals along the road where the condition continually exists.~~

MoDOT does not use W8-4, W8-9, W8-17, W8-23, or W8-25 signs. Revised Dec. 2025

Section 2C.30 ~~Surface Condition Signs~~ Slippery When Wet Sign (W8-5~~, W8-7, W8-8, W8-11, W8-13, and W8-14~~)

Guidance:

M00 The Slippery When Wet sign (W8-5) is a limited use sign that should not be installed for locations where the condition can be corrected. Existing Slippery When Wet (W8-5) signs should be left in place until the condition is corrected.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

01 The Slippery When Wet (W8-5) sign ~~(see Figure 2C-7)~~ may be used to warn of unexpected slippery conditions. ~~Supplemental plaques (see Figure 2C-7) with legends such as ICE, WHEN WET, STEEL DECK, or EXCESS OIL may be used with the W8-5 sign to indicate the reason that the slippery conditions might be present.~~

~~02 The LOOSE GRAVEL (W8-7) sign (see Figure 2C-7) may be used to warn of loose gravel on the roadway surface.~~

~~03 The ROUGH ROAD (W8-8) sign (see Figure 2C-7) may be used to warn of a rough roadway surface.~~

~~04 An UNEVEN LANES (W8-11) sign (see Figure 2C-7) may be used to warn of a difference in elevation between travel lanes.~~

~~05 The BRIDGE ICES BEFORE ROAD (W8-13) sign (see Figure 2C-7) may be used in advance of bridges to advise bridge users of winter weather conditions. The BRIDGE ICES BEFORE ROAD sign may be removed or covered during seasons of the year when its message is not relevant.~~

MoDOT does not use W8-7, W8-8, W8-11, or W8-13 signs. Revised Dec. 2025

~~06 The FALLEN ROCKS (W8-14) sign (see Figure 2C-7) may be used in advance of an area that is adjacent to a hillside, mountain, or cliff where rocks frequently fall onto the roadway.~~

Paragraph 6 for the W8-14 sign is included in the section below. Revised Dec. 2025

Guidance:

07 When used, ~~Surface Condition~~ Slippery When Wet signs should be placed in advance of the beginning of the affected section (see Table 2C-3), and additional signs should be placed at appropriate intervals along the road where the condition exists.

Option:

M08 The Slippery When Wet sign may be used as a temporary traffic control sign (WO8-5) for locations where the condition is temporary and/or where the condition can be corrected in the future (See EPG 616.6.50 Other Warning Signs).

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2C.30A FALLEN ROCKS Signs (W8-14)

Option:

M01 The FALLEN ROCKS (W8-14) sign may be used in advance of an area that is adjacent to a hillside, mountain, or cliff where rocks frequently fall onto the roadway.

Guidance:

M02 When used, FALLEN ROCK signs should be placed in advance of the beginning of the affected section (see Table 2C-3), and additional signs should be placed at appropriate intervals along the road where the condition exists.

The EPG includes MUTCD content in a separate section for the W8-14 sign. Revised Dec. 2025

Standard:

M03 The district shall perform an evaluation of the FALLEN ROCKS site to determine whether existing installations of the FALLEN ROCKS sign is still necessary. If it is determined that the sign is not necessary, the sign will not be replaced at the end of the service life.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2C.31 Warning Signs and Plaque for Motorcyclists (W8-15, W8-15aP, and W8-16)

Support:

M01 MoDOT does not install permanent W8-15, W8-15aP, and W8-16 signs and plaques. For temporary applications, see EPG 616.16.

~~01 The signs and plaques described in this Section are intended to give motorcyclists advance notice of surface conditions that might adversely affect their ability to maintain control of their motorcycle under wet or dry conditions. The use of some of the advance surface condition warning signs described in Section 2C.30, such as Slippery When Wet, LOOSE GRAVEL, or ROUGH ROAD, can also be helpful to motorcyclists if those conditions exist.~~

~~Option:~~

~~02 If a portion of a street or highway features a roadway pavement surface that is grooved or textured instead of smooth, such as a grooved skid resistance treatment for a horizontal curve or a brick pavement surface, a GROOVED PAVEMENT (W8-15) sign (see Figure 2C-7) may be used to provide advance warning of this condition to motorcyclists, bicyclists, and other road users. Alternate legends such as TEXTURED PAVEMENT or BRICK PAVEMENT may also be used on the W8-15 sign.~~

~~03 If a bridge or a portion of a bridge includes a metal or grated surface, a METAL BRIDGE DECK (W8-16) sign (see Figure 2C-7) may be used to provide advance warning of this condition to motorcyclists, bicyclists, and other road users.~~

~~04 A Motorcycle (W8-15aP) plaque (see Figure 2C-7) may be mounted below or above a W8-15 or W8-16 sign if the warning is intended to be directed primarily to motorcyclists.~~

MoDOT does not install permanent W18-15, W18-15aP, or W18-16 signs. Revised Dec. 2025

~~Section 2C.32 NO CENTER LINE Sign (W8-12)~~

~~Option:~~

~~01 The NO CENTER LINE (W8-12) sign (see Figure 2C-7) may be used to warn of a roadway without center line pavement markings.~~

MoDOT does not use the W18-12 sign. Revised Dec. 2025

~~Section 2C.33 NO TRAFFIC SIGNS Sign (W18-1)~~

~~Option:~~

~~01 The NO TRAFFIC SIGNS (W18-1) sign (see Figure 2C-6) may be used only on low-volume rural roads to advise road users that no signs are installed along the distance of the road. The sign may be installed at the point where road users would enter the low-volume road or where, based on engineering judgment, the road user might need this information.~~

~~02 A W7-3aP (see Figure 2C-5), W16-2P (see Figure 2C-16), or W16-9P (see Figure 2C-16) supplemental plaque with the legend NEXT XX MILES, XX FEET, or AHEAD may be installed below the W18-1 sign when appropriate.~~

MoDOT does not use the W18-1 sign. Revised Dec. 2025

Section 2C.34 ~~Weather Condition Signs (W8-18, W8-19, W8-21, and W8-22)~~ IMPASSABLE WHEN WATER OVER ROAD Sign

~~Option:~~

~~01 The ROAD MAY FLOOD (W8-18) sign (see Figure 2C-7) may be used to warn road users that a section of roadway is subject to frequent flooding. A Depth Gauge (W8-19) sign (see Figure 2C-7) may also be installed within a roadway section that frequently floods.~~

~~*Guidance:*~~

~~*02 If used, the Depth Gauge sign should be in addition to the ROAD MAY FLOOD sign and should be mounted at the appropriate height to indicate the depth of the water at the deepest point on the roadway.*~~

~~Option:~~

~~03 The GUSTY WINDS AREA (W8-21) sign (see Figure 2C-7) may be used to warn road users that wind gusts frequently occur along a section of highway that are strong enough to impact the stability of trucks, recreational vehicles, and other vehicles with high centers of gravity. A NEXT XX MILES (W7-3aP) supplemental plaque (see Figure 2C-5) may be mounted below the W8-21 sign to inform road users of the length of roadway that frequently experiences strong wind gusts.~~

~~04 The FOG AREA (W8-22) sign (see Figure 2C-7) may be used to warn road users that foggy conditions frequently reduce visibility along a section of highway. A NEXT XX MILES (W7-3aP) supplemental plaque (see Figure 2C-5) may be mounted below the W8-22 sign to inform road users of the length of roadway that frequently experiences foggy conditions.~~

MoDOT does not use W8-21 or W8-22 signs. Revised Dec. 2025

Support:

~~05 Chapter 2L contains provisions for the use of blank-out or changeable message signs that can be activated by detection of the applicable condition.~~

Support:

M01 When a road goes underwater, MoDOT requires the road to be closed to traffic regardless of the depth of water over the road. This closure is accomplished by following TA-8W in EPG 616.6. This TA displays two figures; the first figure applies to locations which do not flood on a frequent basis and uses standard work zone signs to close the road. The second figure applies to roads that frequently go under water and utilize permanently installed signs. These permanent signs provide critical guidance to motorists between the time the road begins to flood to the time maintenance crews can physically close the road.

M02 MoDOT has discontinued the use of the LOW WATER CROSSING (W8-35) sign, low water crossings are designed for water to routinely flow over the roadway while traffic passes through the water. MoDOT no longer maintains low water crossings on State routes, and MoDOT's direction is to close any road covered in any depth of water.

M03 MoDOT has discontinued the use of the WATER GAUGE (W8-19a). Water gauges are intended to indicate the depth of the water over a road to allow motorists to judge if it is safe to proceed, however, MoDOT no longer supports motorists driving through any depth of water and closes any road which is covered by water.

Standard:

M04 Any roadway location which goes underwater shall be closed to traffic as soon as possible. Any location, regardless of flooding frequency, shall be closed using the signing package in the first figure of TA-8W.

Guidance:

M05 Any roadway which historically floods one or more times per year should have the permanent signing package found in the second figure of TA-8W installed. This applies to locations where streams and rivers rise and flood the road surface, but not in urban areas where a road floods due to blocked or overwhelmed storm drains. This signing package, which includes the DO NOT ENER WHEN WATER OVER ROAD (R5-22) sign, provides motorists with advanced information on how they need to react to the flooded road before maintenance crews can get to the location and physically close the roadway. The flip signs allow for an expedited closure with the work zone signs already in place, only needing to flip

them from the warning sign message to the work zone message upon arriving at the location, as well as deploying the barricades and ROAD CLOSED (R11-2) sign.

M06 Existing LOW WATER CROSSING (W8-35) signs should be removed at the earliest convenience; the presence of these signs may encourage motorists to enter a flooded road if they see the depth of water and incorrectly believe it is shallow enough to safely pass.

Option:

M07 The signing package in the second figure of TA-8W may be installed at any location that may flood less than one time per year to facilitate quicker road closures.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2C.35 Advance Traffic Control Signs (W3-1, W3-2, W3-3, and W3-4)

Standard:

01 The Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) Advance Traffic Control signs ~~(see Figure 2C-8)~~ shall be installed on an approach to a primary traffic control device that is not visible for a sufficient distance to permit the road user to respond to the device (see Table 2C-3). The visibility criteria for a traffic control signal shall be based on having a continuous view of at least two signal faces for the distance specified in Table 4D-2.

Guidance:

02 Where intermittent obstructions occur, engineering judgment should determine the treatment to be implemented.

M02A The minimum visibility distance of a signal for a facility with a speed limit above 60 mph should be determined by summing the stopping sight distance (see Table 903.3.1) and the assumed queue length. The assumed queue length should be determined by engineering judgment.

M02B If an advance traffic control sign is warranted for an approach at an intersection of a MoDOT maintained road and non-MoDOT maintained road, the agency responsible for the maintenance of the non-MoDOT road should be notified of the condition.

MoDOT specific content from the EPG. Revised Dec. 2025.

Support:

~~03 Figure 2A-4 shows examples of the typical placement of an Advance Traffic Control sign.~~

04 Permanent obstructions causing the limited visibility might include roadway alignment or structures. Intermittent obstructions might include foliage or parked vehicles.

Option:

05 An Advance Traffic Control sign may be used for additional emphasis of the primary traffic control device, even when the visibility distance to the device is satisfactory.

M05A Signal Ahead (W3-3) signs may be posted on the right- and left-hand sides of the road on a high speed divided approach.

MoDOT specific content from the EPG. Revised Dec. 2025.

Support:

06 Section 2C.65 contains information about the use of an advance street name plaque to identify an intersecting road.

Option:

07 A BE PREPARED TO STOP (W3-4) sign ~~(see Figure 2C-8)~~ may be used to warn of stopped traffic caused by a traffic control signal~~.~~ in advance of a section of roadway that regularly experiences traffic congestion, history of crashes, or based on engineering judgment.

08 A Warning Beacon (see Section 4S.03) ~~or yellow LEDs within the border of the sign~~ may be used with an Advance Traffic Control or BE PREPARED TO STOP (W3-4) sign. If a warning beacon is used, the beacon(s) may be activated before the start of the yellow change interval referred to as lead flash, which is the time before the onset of yellow at which the warning beacon(s) begin to flash. Recommended values for lead flash in accordance with the posted speed limit are specified in Table 903.3.29.

MoDOT policy for BE PREPARED TO STOP signs. Revised Dec. 2025

Table 903.3.29 Design Parameters for Advance Warning System

Posted speed (mph)	Distance between warning sign and stop line (ft)	Lead flash, advance warning before the end of green (sec)
70	871 to 975 max**	8
70	730 min* to 870	7
65	811 to 905 max**	8
65	645 min* to 810	7
60	661 to 745 max **	7
60	570 min* to 660	6
55	606 to 685 max**	7
55	495 min* to 605	6
50	476 to 550 max**	6
50	425 min* to 475	5
45	426 to 495 max**	6
45	360 min* to 425	5

*The advance traffic control sign shall not be installed less than this minimum distance.

**The sign placement distance can go beyond this "max" distance. Please consult with the MoDOT Highway Safety and Traffic Division to determine lead flash time.

Standard:

09 When a BE PREPARED TO STOP (W3-4) sign is used in advance of a traffic control signal, it shall be used in addition to a Signal Ahead sign and shall be placed a minimum of 200 feet downstream from the Signal Ahead sign. The BE PREPARED TO STOP (W3-4) and SIGNAL AHEAD (W3-3) signs shall be installed as specified in Table 2C-3.

M09A A BE PREPARED TO STOP (W3-4) sign with a warning beacon shall not be considered for intersection approaches with a posted speed limit of 40 mph or less.

MoDOT policy for BE PREPARED TO STOP signs. Revised Dec. 2025

~~*Guidance:*~~

~~*10 When a Warning Beacon is interconnected with a traffic control signal or queue detection system, the BE PREPARED TO STOP sign should be supplemented with a WHEN FLASHING (W16-13P) plaque (see Figure 2C-16).*~~

MoDOT does not use the W16-13P plaque. Revised Dec. 2025

~~Support:~~

~~11 Section 2C.45 contains information regarding the use of a NO MERGE AREA (W4-5aP) supplemental plaque in conjunction with a Yield Ahead sign.~~

MoDOT does not use the W4-5aP plaque. Revised Dec. 2025.

Figure 2C-8. Advance Traffic Control Signs



Figure 903.3.29.1 Example for Placement of BE PREPARED TO STOP Sign

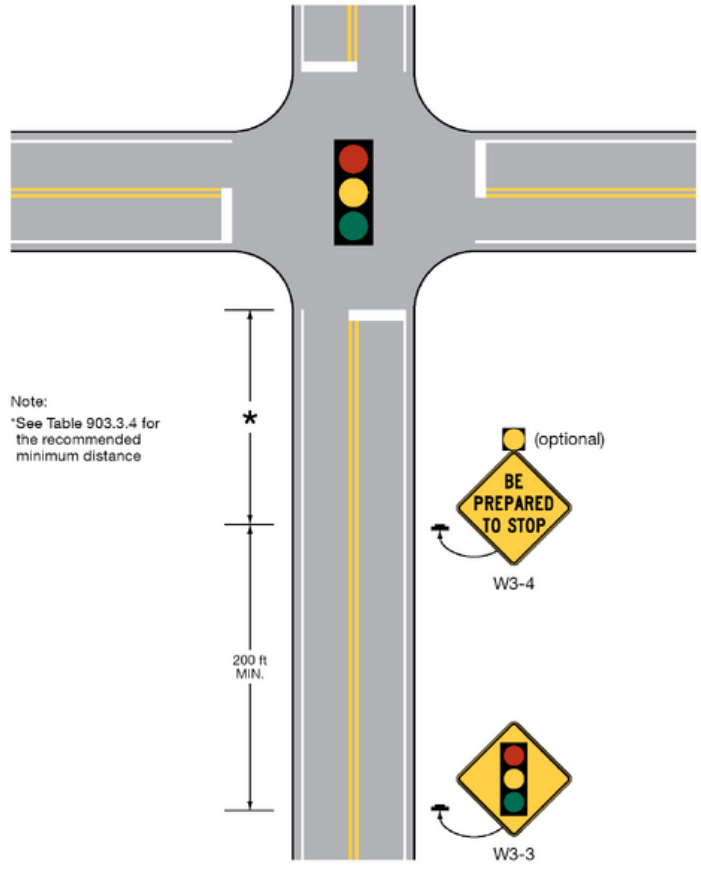
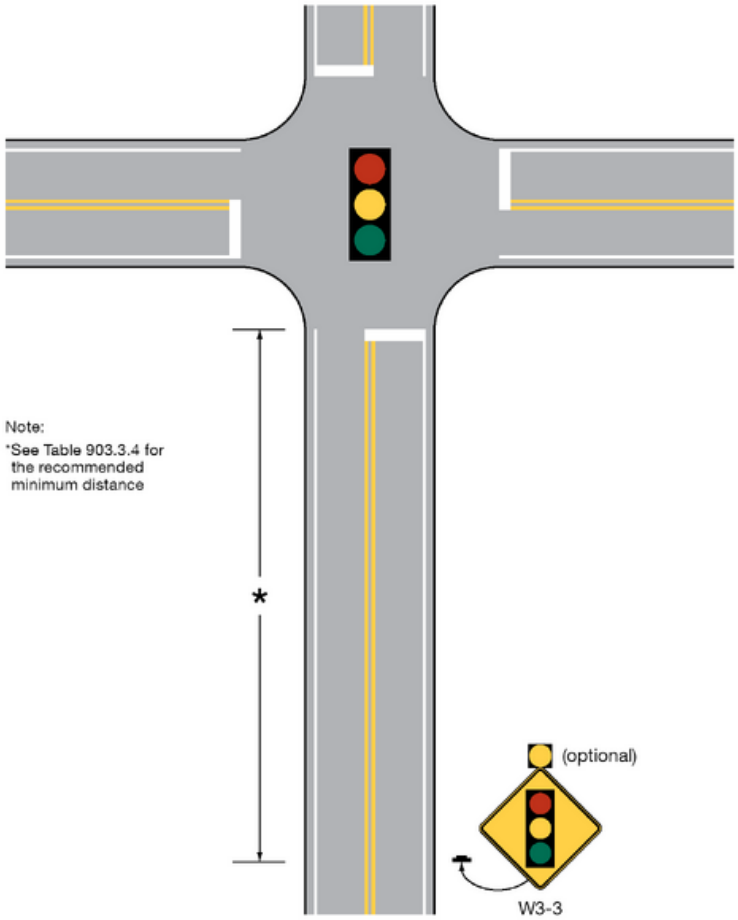


Figure 903.3.29.2 Example for Placement of Signal Ahead Sign



~~**Section 2C.36 DRAW BRIDGE Sign (W3-6)**~~

~~**Standard:**~~

~~**01 A DRAW BRIDGE (W3-6) sign (see Figure 2C-8) shall be used in advance of movable bridge signals and gates (see Section 4Q.02) to give warning to road users.**~~

MoDOT does not use the W3-6 sign. Revised Dec. 2025

Section 2C.37 Advance Ramp Control Signal Signs (W3-7 and W3-8)

Option:

01 A RAMP METER AHEAD (W3-7) sign ~~(see Figure 2C-8)~~ may be used to warn road users that a freeway entrance ramp is metered and that they will encounter a ramp control signal (see Chapter 4P).

Guidance:

02 When the ramp control signals are operated only during certain periods of the day, a RAMP METERED WHEN FLASHING (W3-8) sign ~~(see Figure 2C-8)~~ should be installed in advance of the ramp control signal near the entrance to the ramp, or on the arterial on the approach to the ramp, to alert road users to the presence and operation of ramp meters.

Standard:

The RAMP METERED WHEN FLASHING sign shall be supplemented with a Warning Beacon (see Section 4S.03) that flashes when the ramp control signal is in operation.

~~**Section 2C.38 NEW TRAFFIC PATTERN and NEW SIGNAL OPERATION AHEAD Signs (W23-2 and W23-2a)**~~

~~Option:~~

~~01 A NEW TRAFFIC PATTERN AHEAD (W23-2) sign (see Figure 2C-8) may be used on the approach to an intersection or along a section of roadway to provide advance warning of a change in traffic patterns, such as revised lane usage or roadway geometry.~~

~~02 A NEW SIGNAL OPERATION AHEAD (W23-2a) sign (see Figure 2C-8) may be used on the approach to a signalized intersection to provide advance warning of a change in signal phasing.~~

~~*Guidance:*~~

~~*03 The NEW TRAFFIC PATTERN or NEW SIGNAL OPERATION AHEAD sign should be removed when the traffic pattern returns to normal, when the changed pattern is no longer considered to be new, or within 12 months.*~~

MoDOT does not use W23-3 or W23-2a signs. Revised Dec. 2025

Section 2C.39 WATCH FOR STOPPED TRAFFIC Sign (W26-1)

Option:

01 The WATCH FOR STOPPED TRAFFIC (W26-1) sign ~~(see Figure 2C-8)~~ may be used to warn road users of the possibility of vehicles stopping abruptly in the travel lane due to recurring congested conditions.

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

~~*Guidance:*~~ **Standard:**

01 A Reduced Speed Limit Ahead (W3-5~~ *or W3-5a*~~) ~~*or Truck Speed Zone Ahead (W3-5c)*~~ sign ~~*(see Figure 2C-9) should*~~ shall 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.*~~

MoDOT upgrades the first portion of paragraph 1 to a standard statement. MoDOT does not useW3-5a or W3-5c signs. Revised Dec. 2025

Option:

M01A A Reduced Speed Limit Ahead (W3-5) sign may be used to inform road users of a reduced speed zone where the speed limit is being reduced by 10 mph or less based if engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.

MoDOT specific content from the EPG, based on the second portion of Paragraph 1 above. Revised Dec. 2025

~~*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.*~~

MoDOT does not use the W3-5b sign. Revised Dec. 2025

Standard:

03 If used, a Reduced Speed Limit Ahead,~~ Variable Speed Zone, or Truck Speed Zone Ahead~~ sign~~s~~ shall be followed by a Speed Limit (R2-1) sign (see ~~Figure 2B-3~~Section 2B.21), ~~with the Trucks (R2-2P) plaque (see Figure 2B-3) if applicable,~~ installed at the beginning of the zone where the speed limit applies.

MoDOT does not use the R2-2P plaque. Revised Dec. 2025

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

MoDOT does not useW3-5a or W3-5c signs. Revised Dec. 2025

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



Section 2C.41 Intersection Warning Signs (W2-1 through W2-8)

Support:

M00 Intersection Warning Signs are used when there is limited stopping sight distance, history of crashes, or based on engineering judgment.

Option:

01 A Cross Road (W2-1), Side Road (W2-2, W2-3, or W2-3a), T-Intersection (W2-4), or Y-Intersection (W2-5) sign ~~(see Figure 2C-10)~~ may be used in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic.

~~02 The Circular Intersection (W2-6) sign (see Figure 2C-10) may be installed in advance of a circular intersection (see Figures 2B-21 through 2B-23).~~

Paragraphs 2A and 2B below replace paragraphs 2 and 3. Revised Dec. 2025

Standard:

M02A The Circular Intersection (W2-6) sign shall be installed in advance of roundabout intersections. The appropriate Advisory Speed supplemental plaque (W13-1P) shall be installed below the Circular Intersection sign.

Option:

M02B If other circular intersections exist, that would not be classified as roundabouts, the Circular Intersection (W2-6) sign may be used.

MoDOT specific content from the EPG replaces paragraphs 2 and 3. Revised Dec. 2025

~~*Guidance:*~~

~~*03 If an approach to a circular intersection has a statutory or posted speed limit of 40 mph or higher, the Circular Intersection (W2-6) sign should be installed in advance of the circular intersection.*~~

~~Option:~~

~~04 An educational plaque (see Figure 2C-10) with a legend such as TRAFFIC CIRCLE (W16-12P) or ROUNDABOUT (W16-12aP) may be mounted below a Circular Intersection sign.~~

MoDOT no longer uses the W16-12aP plaque. Revised Dec. 2025

Support:

05 Section 2C.65 contains information about the use of an advance street name plaque to identify an intersecting road.

Guidance:

06 The Intersection Warning sign should illustrate and depict the general configuration of the intersecting roadway, such as a cross road, side road, T-intersection, or Y-intersection.

07 Intersection Warning signs, other than the Circular Intersection (W2-6) sign, the T-intersection (W2-4) sign, and the Grade Crossing and Intersection Advance Warning (W10-2, W10-3, and W10-4~~,~~

~~*W10-11, and W10-12*~~*) signs (see* ~~*Figure 8B-4*~~ *Section 8B.06) should not be used on approaches controlled by STOP signs, YIELD signs, or signals.*

MoDOT does not use W10-11 or W10-12 signs. Revised Dec. 2025

08 If an Intersection Warning sign is used where the side roads are not opposite of each other, the Offset Side Roads (W2-7) sign ~~*(see Figure 2C-10)*~~ *should be used instead of the Cross Road sign.*

09 If an Intersection Warning sign is used where two closely-spaced side roads are on the same side of the highway, the Double Side Roads (W2-8) sign ~~*(see Figure 2C-10)*~~ *should be used instead of the Side Road sign.*

10 No more than two side roads should be depicted on the same side of the highway on a W2-7 or W2-8 sign, and no more than three side roads should be depicted on a W2-7 or W2-8 sign.

~~Option:~~

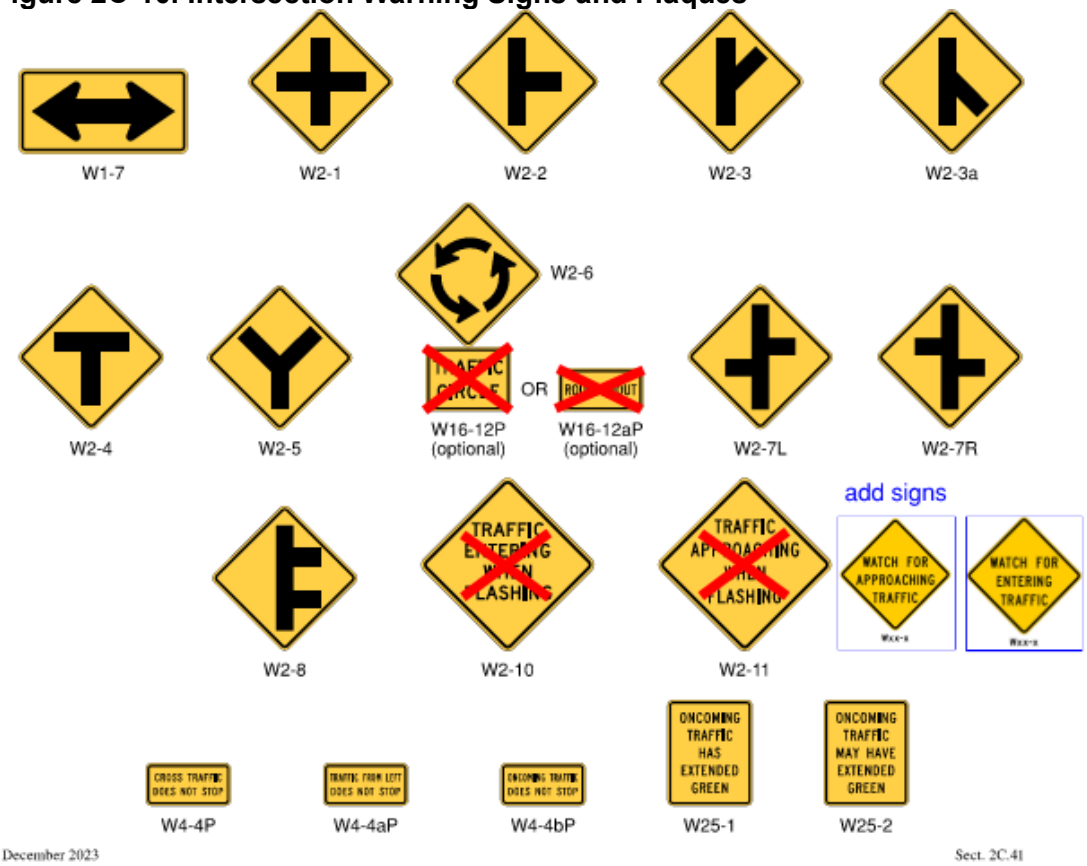
~~11 When at least one side road is shown, the stem of an additional side road representing a significantly lower relative volume may be depicted using a line that is two-thirds the width of the through road based on engineering judgment.~~

Option is not included in the EPG. Revised Dec. 2025

~~Support:~~

~~12 Figure 2A-4 shows examples of the typical placement of an Intersection Warning sign.~~

Figure 2C-10. Intersection Warning Signs and Plaques



Section 2C.42 ~~Actuated~~ Advance Intersection Signs (W2-10a and W2-11a)

Support:

01 ~~Actuated~~ Advance Intersection signs are typically associated with restricted sight distance and gap selection at stop controlled intersections.

Option:

02 The ~~TRAFFIC ENTERING WHEN FLASHING~~ WATCH FOR ENTERING TRAFFIC (W2-10a) sign ~~(see Figure 2C-10)~~ may be used on the uncontrolled through roadway approach to a side or cross road stop controlled intersection to warn of entering traffic from the side or cross road.

03 The ~~TRAFFIC APPROACHING WHEN FLASHING~~ WATCH FOR APPROACHING TRAFFIC (W2-11a) sign ~~(see Figure 2C-10)~~ may be used on the side road stop controlled approach to warn of traffic approaching on the uncontrolled through road.

~~**Standard:**~~

~~**04 When used, the TRAFFIC ENTERING WHEN FLASHING sign, and the TRAFFIC APPROACHING WHEN FLASHING sign shall be supplemented with a Warning Beacon (see Section 4S.03) that activates when a vehicle on a conflicting approach is detected.**~~

MoDOT does not use actuated warning beacons for these signs. Revised Dec. 2025

Section 2C.43 Two-Direction Large Arrow Sign (W1-7)

Standard:

01 The Two-Direction Large Arrow (W1-7) sign ~~(see Figure 2C-10)~~ shall be a horizontal rectangle.

02 If used, the Two-Direction Large arrow sign shall be installed on the far side of a T-intersection in line with, and at approximately a right angle to, traffic approaching from the stem of the T-intersection.

03 The Two-Direction Large Arrow sign shall not be used where there is no change in the direction of travel such as at the beginnings and ends of medians or at center piers.

Guidance:

04 The Two-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the intersection configuration.

Section 2C.44 Traffic Signal Oncoming Extended Green Signs (W25-1 and W25-2)

Standard:

01 At locations where either a W25-1 or a W25-2 sign is required based on the provisions in Section 4F.01, the W25-1 or W25-2 sign ~~(see Figure 2C-10)~~ shall be installed near the left-most signal face for the approach.

MERGING, TWO-WAY TRAFFIC, AND NO PASSING WARNING SIGNS AND PLAQUES

Section 2C.45 Merge Signs and Plaque (W4-1, and W4-5, and W4-5aP)

Option:

01 A Merge (W4-1) sign (see Figure 2C-11) may be used to warn road users on the major roadway that merging movements might be encountered in advance of a point where lanes from two separate roadways converge as a single traffic lane and no turning conflict occurs.

02 A Merge sign may also be installed on the side of the entering roadway to warn road users on the entering roadway of the merge condition.

Guidance:

03 The Merge (W4-1) sign should be installed on the side of the major roadway where merging traffic will be encountered and in such a position as to not obstruct the road user's view of entering traffic.

04 When a Merge sign is installed on a major roadway, the symbol should be oriented right or left as appropriate to depict the side from which the merge occurs, with the arrow representing the major roadway and the curved stem representing the entering roadway (see Figure 2C-11).

05 When a Merge sign is to be installed on an entering roadway that curves before merging with the major roadway, such as a ramp with a curving horizontal alignment as it approaches the major roadway, the Entering Roadway Merge (W4-5) sign (see Figure 2C-11) should be used to better portray the actual geometric conditions to road users on the entering roadway.

06 Where two roadways of approximately equal importance converge and merging movements are required, a Merge sign should be placed on each roadway.

07 The Merge sign should not be used where two roadways converge and merging movements are not required.

Standard:

08 The Merge sign shall not be used in place of a Lane Ends (W4-2) sign (see Section 2C.47) where lanes of traffic moving on a single roadway must merge because of a reduction in the actual or usable pavement width.

Option:

09 An Entering Roadway Merge (W4-5) sign with a NO MERGE AREA (W4-5aP) supplemental plaque (see Figure 2C-11) mounted below it may be used to warn road users on an entering roadway that they will encounter an abrupt merging situation without an acceleration lane at the downstream end of the ramp.

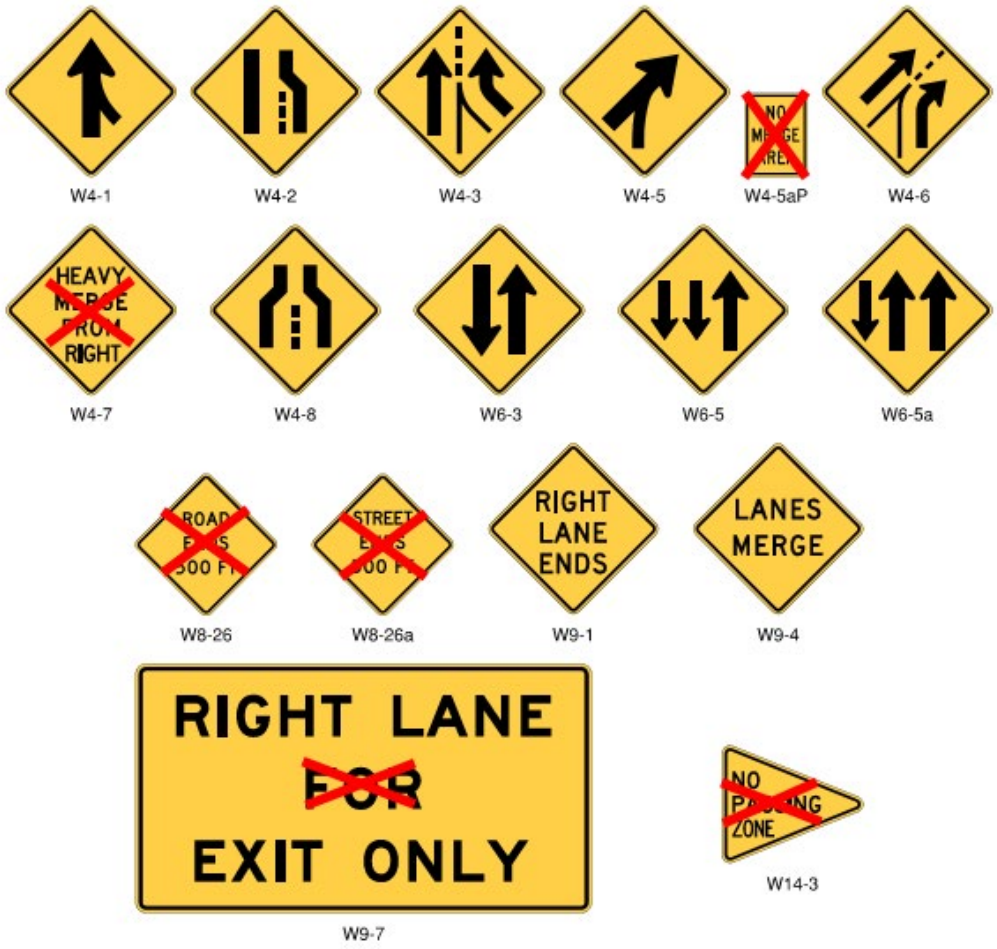
10 A Merge (W4-1) sign with a NO MERGE AREA (W4-5aP) supplemental plaque mounted below it may be used to warn road users on the major roadway that traffic on an entering roadway will encounter an abrupt merging situation without an acceleration lane at the downstream end of the ramp.

11 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane, a NO MERGE AREA (W4-5aP) supplemental plaque may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.

Support:

12 Examples of the use of Merge (W4-1) signs are shown in Drawing A in Figure 2C-12.

Figure 2C-11. Merging and Passing Signs and Plaques



Section 2C.46 Added Lane Signs (W4-3 and W4-6)

Guidance:

01 The Added Lane (W4-3) sign ~~(see Figure 2C-11)~~ should be installed in advance of a point where two roadways converge and merging movements are not required. When possible, the Added Lane sign should be placed such that it is visible from both roadways; if this is not possible, an Added Lane sign should be placed on the side of each roadway.

02 When an Added Lane (W4-3) sign is installed on a major roadway, the symbol should be oriented right or left as appropriate to depict the side from which the entering roadway converges, with the straight arrow representing the major roadway and the curved arrow representing the entering roadway. The sign should be located on the side of the major roadway from which the entering roadway converges.

03 When an Added Lane sign is to be installed on a roadway that curves before converging with another roadway that has a tangent alignment at the point of convergence, the Entering Roadway Added Lane (W4-6) sign ~~(see Figure 2C-11)~~ should be used to better portray the actual geometric conditions to road users on the curving roadway.

Support:

04 Examples of the use of Added Lane (W4-3) and Entering Roadway Added Lane (W4-6) signs are shown in Drawing B in Figure 2C-12.

Section 2C.47 Lane Ends Signs (W4-2 and W9-1)

Support:

01 The Lane Ends (W4-2) and RIGHT (LEFT) LANE ENDS (W9-1) signs ~~(see Figure 2C-11)~~ are used to warn of the reduction in the number of traffic lanes in the direction of travel.

02 The sequence of the W4-2 and W9-1 signs is illustrated in Figure 2C-13.

Guidance:

03 The Lane Ends (W4-2) sign should be installed at the advance placement distance in accordance with Table 2C-3.

~~Option:~~

04 A RIGHT (LEFT) LANE ENDS (W9-1) sign ~~may~~ should be installed in advance of the Lane Ends sign, at the advance placement distance in accordance with Table 2C-3, to provide additional warning that a lane is ending and that a merging maneuver will be required.

MoDOT upgrades this paragraph to a Guidance statement and specifies that the W9-1 sign is to be installed at the advance placement distance from the W4-2 sign. Revised Dec. 2025

~~*Guidance:*~~

05 If a W9-1 sign is installed, a Distance (W16-2P series or W16-3P series) plaque (see ~~Figure 2C-16~~ Section 2C.61) should be installed below the W9-1 sign.

06 On one-way streets or on divided highways where the left-hand lane is ending and the width of the median will permit, the W9-1 and W4-2 signs should be placed facing approaching traffic on the left-hand side or median.

Option:

07 Where a lane ends a distance beyond the intersection that is less than the advance placement distance indicated in Table 2C-3, the W4-2 sign may be located at the far side of the intersection (see Sheet 4 of Figure 2C-13).

Guidance:

08 When the W4-2 sign is located at the far side of the intersection in accordance with ~~Paragraph 7 of this Section~~ the Option paragraph above, the W9-1 sign should be placed upstream of the intersection with the appropriate distance plaque.

Support:

09 Section 3B.12 contains information regarding the use of pavement markings in conjunction with a lane reduction.

Guidance:

10 Lane Ends signs should not be installed in advance of the downstream end of an acceleration lane.

Standard:

11 The W4-2 and W9-1 signs shall not be used in dropped lane situations. In dropped lane situations on conventional roads at intersections, regulatory signs (see Section 2B.28) shall be used to inform road users that a through lane becomes a mandatory turn lane.

Figure 2C-12. Examples of Merge and Added Lane Sign Placement for Entering and Converging Roadways

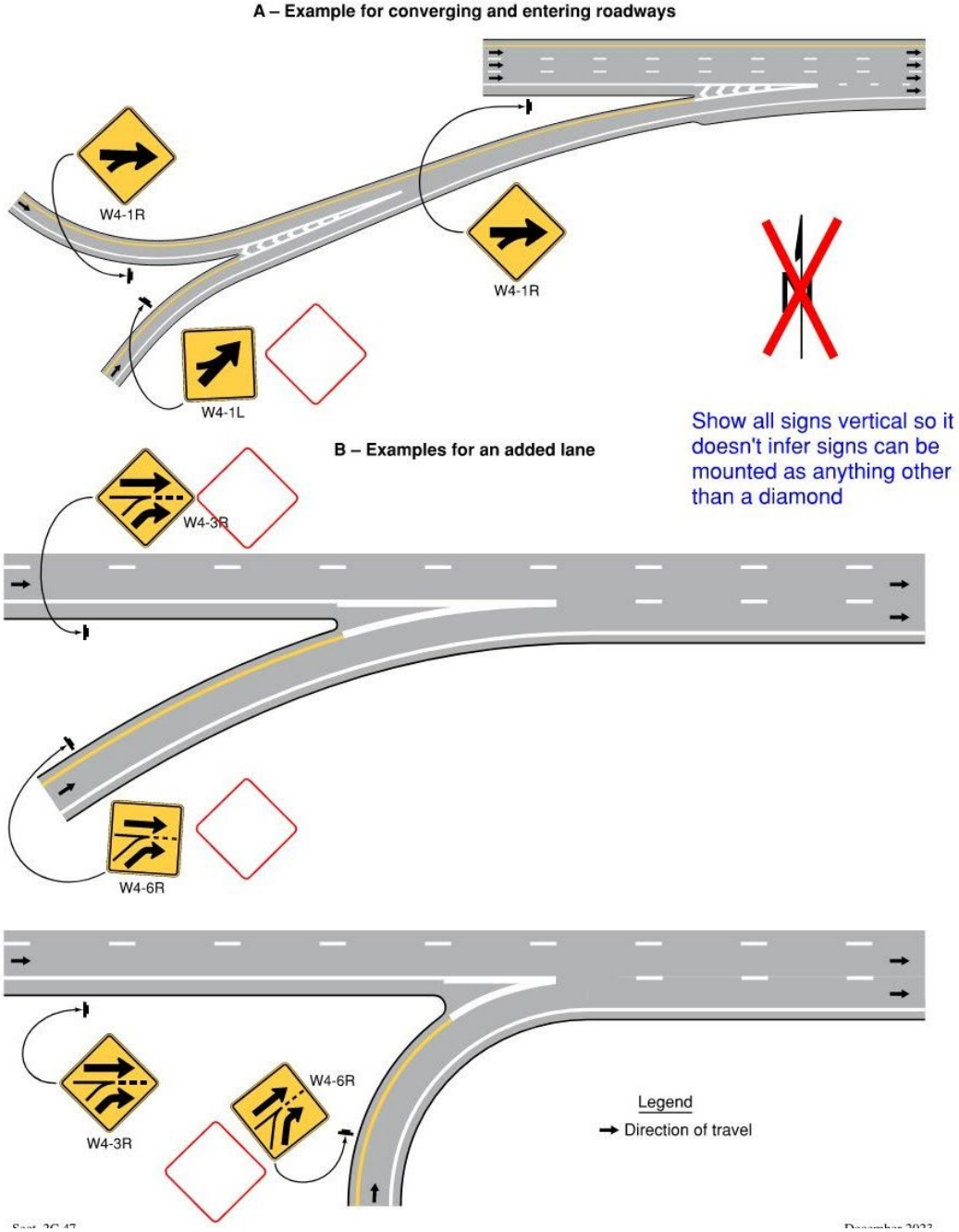


Figure 2C-13. Examples Sequences for Lane Ends and Lane Merge Signs (Sheet 1 of 5)

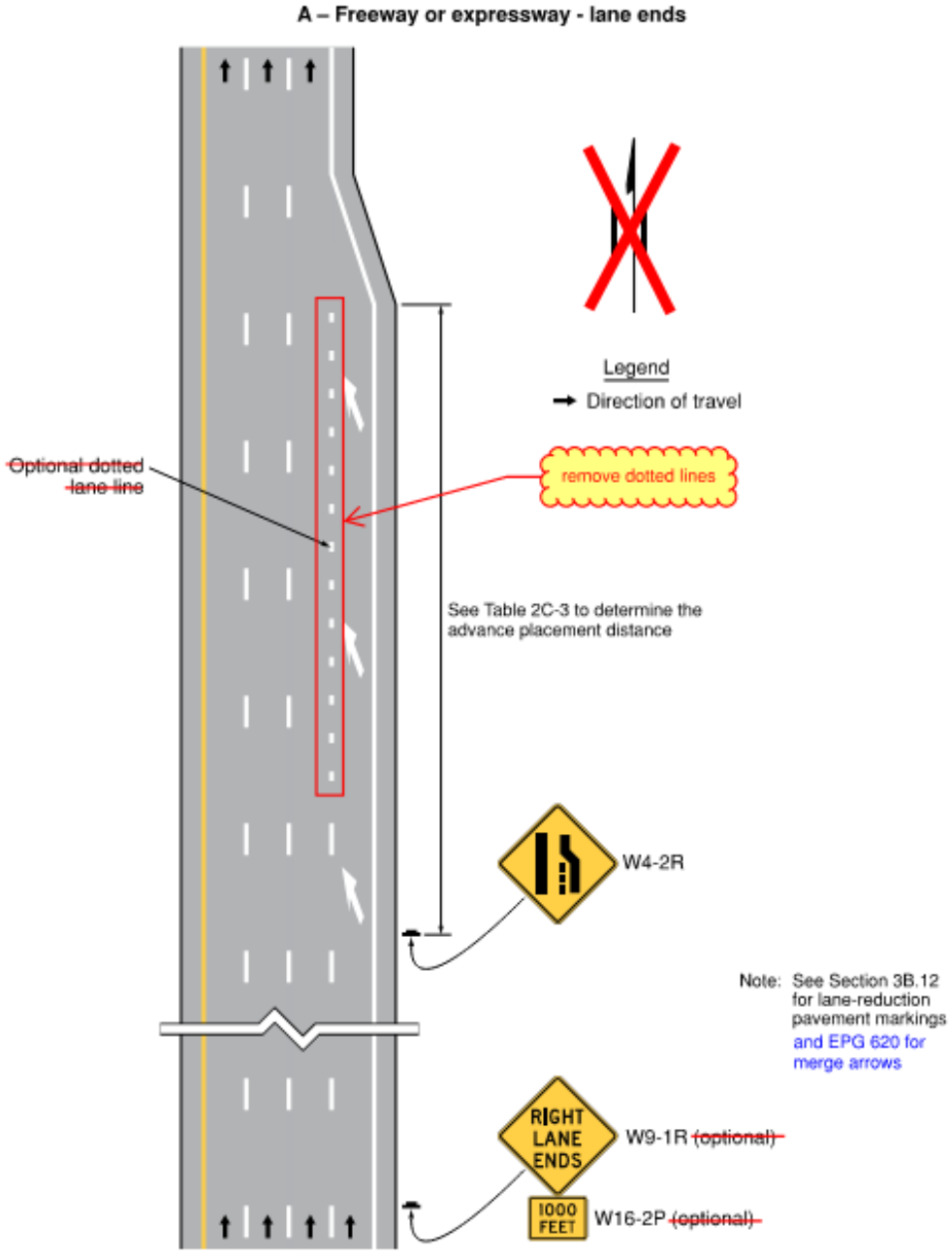


Figure 2C-13. Examples Sequences for Lane Ends and Lane Merge Signs (Sheet 2 of 5)

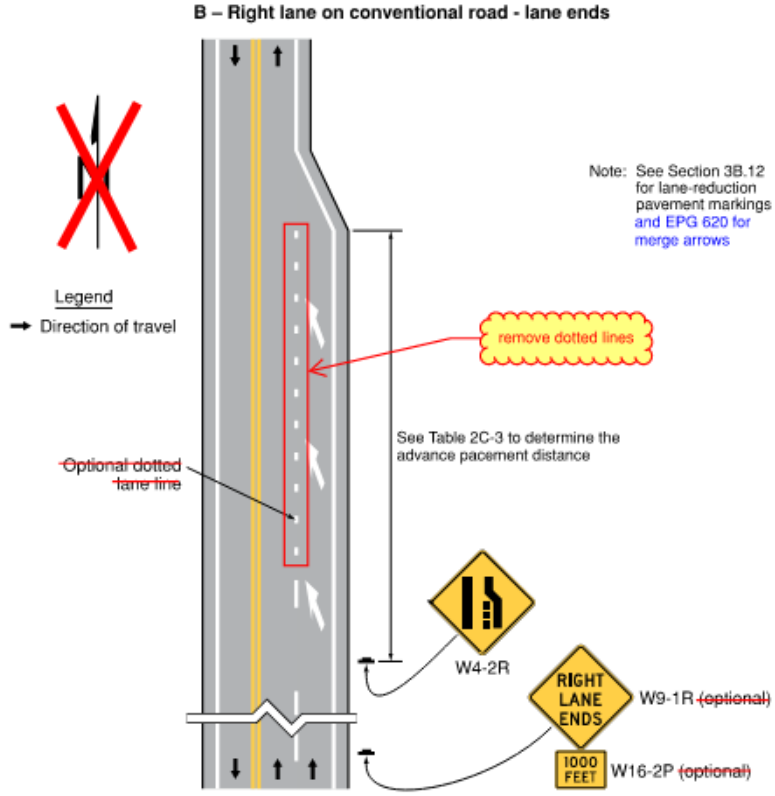


Figure 2C-13. Examples Sequences for Lane Ends and Lane Merge Signs (Sheet 3 of 5)

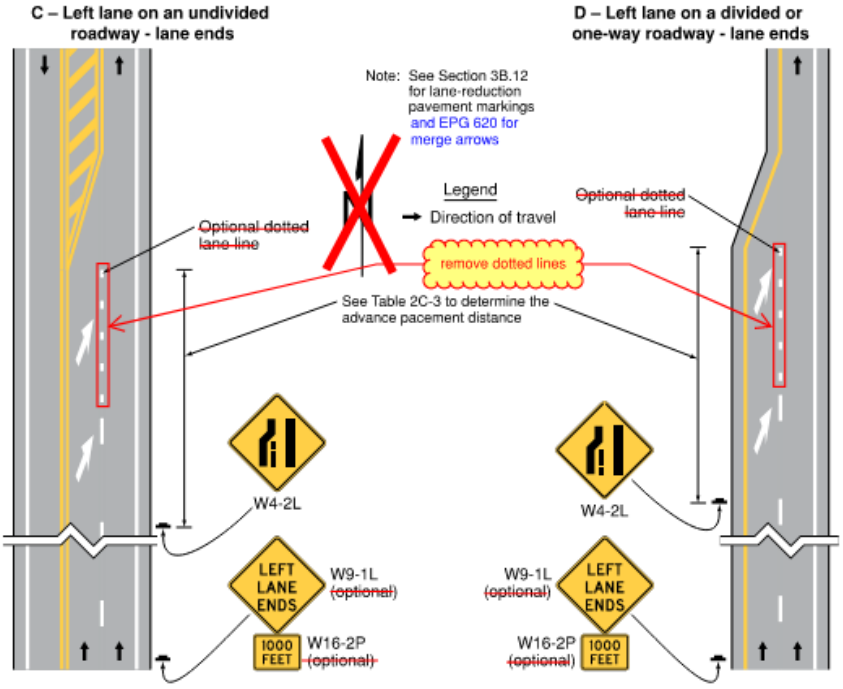


Figure 2C-13. Examples Sequences for Lane Ends and Lane Merge Signs (Sheet 4 of 5)

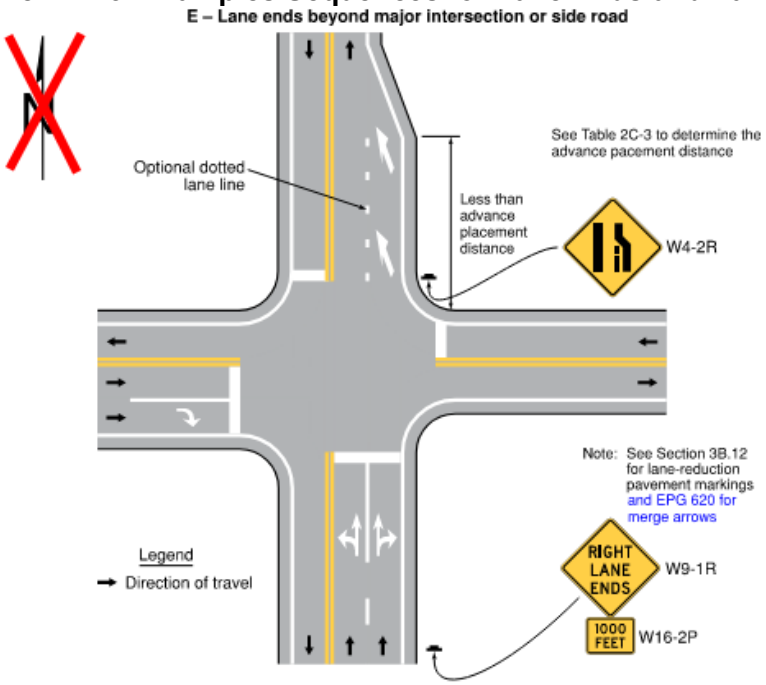
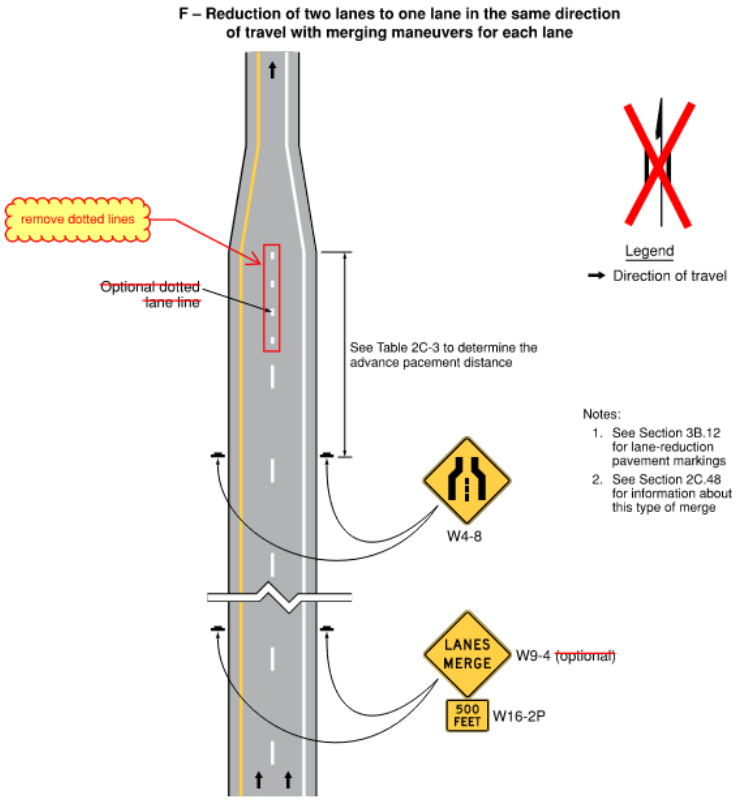


Figure 2C-13. Examples Sequences for Lane Ends and Lane Merge Signs (Sheet 5 of 5)



Section 2C.48 Lanes Merge Signs (W9-4 and W4-8)

Support:

01 The LANES MERGE (W9-4) and Single-Lane Transition (W4-8) signs (see Figure 2C-11) are used to warn of a merge of two lanes to one in the same direction of travel with a merging maneuver required for each lane (see Sheet 5 of Figure 2C-13). This type of merge is for a geometric condition where both approach lanes merge into a single lane, not where one lane merges into the other. Section 6H.08 contains information about the use of the late merge sign.

Guidance:

02 The Single-Lane Transition (W4-8) sign should be located at the advance placement distance in accordance with Table 2C-3.

~~Option:~~

03 The Lanes Merge (W9-4) sign ~~may~~ should be used in advance of the W4-8 sign to provide additional warning that both lanes form a single lane and that a merging maneuver is needed for the traffic in each lane.

MoDOT upgrades this paragraph to a Guidance statement and specifies that the W9-4 sign should be installed in advance of the W4-8 sign. Revised Dec. 2025

~~Section 2C.49 HEAVY MERGE FROM LEFT (RIGHT) Sign (W4-7)~~

~~Option:~~

~~01 The HEAVY MERGE FROM LEFT (RIGHT) (W4-7) sign (see Figure 2C-11) may be used to supplement a W4-1 sign at multilane approaches to congested areas to inform road users that it is desirable for through traffic to move out of a lane that will be occupied by a high volume of entering traffic. If used, the W4-7 sign may be supplemented with a W16-2P series or W16-3P series plaque (see Section 2C.61).~~

~~**Standard:**~~

~~**02 If used, the W4-7 sign shall be installed at a location upstream from the location of the W4-1 sign.**~~

MoDOT does not use the W4-7 sign. Revised Dec. 2025

Section 2C.50 RIGHT (LEFT) LANE ~~FOR~~ EXIT ONLY Sign (W9-7)

Option:

01 The RIGHT (LEFT) LANE ~~FOR~~ EXIT ONLY (W9-7) sign ~~(see Figure 2C-11)~~ may be used to provide advance warning to road users that traffic in the right-hand (left-hand) lane of a roadway will be required to depart the roadway at the next exit.

Guidance:

02 If used, the W9-7 sign should be installed upstream from the first overhead guide sign that contains an EXIT ONLY sign panel or upstream from the first RIGHT (LEFT) LANE MUST EXIT (R3-33) regulatory sign, if used, whichever is farther upstream from the exit.

~~Option:~~

~~03 A legend or plaque displaying the distance may be added to the W9-7 sign where the distance along the dropped lane between the sign and the exit ramp is greater than 1 mile.~~

~~Support:~~

~~04 Section 2B.31 contains information regarding a regulatory sign that can be used for lane drops at grade-separated interchanges.~~

MoDOT has modified the W9-7 sign to remove the word "FOR" to reduce the sign size and to be consistent with current MoDOT practice. Revised Dec. 2025

Section 2C.51 Two-Way Traffic Sign (W6-3)

Guidance:

01 A Two-Way Traffic (W6-3) sign ~~(see Figure 2C-11)~~ should be used to warn road users of a transition from a multi-lane divided section of roadway to a two-lane, two-way section of roadway.

02 A Two-Way Traffic (W6-3) sign with an AHEAD (W16-9P) plaque (see ~~Figure 2C-16~~ Section 2C.57) should be used to warn road users of a transition from a one-way street to a two-lane, two-way section of roadway (see Figure 2B-18).

Option:

03 The Two-Way Traffic sign may ~~be used at intervals along a two-lane, two-way roadway and may~~ be used to supplement the Divided Highway (Road) Ends (W6-2) sign discussed in Section 2C.21.

~~Support:~~

~~04 Section 6H.17 contains information on a Narrow Two-Way Traffic (W6-4) sign for use in temporary traffic control situations.~~

MoDOT does not adopt Section 6H.17. Revised Dec. 2025

~~Section 2C.52 Two-Way Traffic on a Three-Lane Roadway Signs (W6-5 and W6-5a)~~

~~Option:~~

~~01 The Two-Way Traffic on a Three-Lane Roadway (W6-5 and W6-5a) signs (see Figure 2C-11) may be installed along three-lane roadways with two lanes in one direction and one in the opposing direction.~~

MoDOT does not use the W6-5 or W6-5a signs. Revised Dec. 2025

Section 2C.53 NO PASSING ZONE Sign (W14-3)

Support:

M00 The NO PASSING ZONE (W14-3) sign is not to be used on a system-wide basis. It is intended for special use as a measure to reduce crashes at locations where there is a history of crashes related to passing maneuvers.

Standard:

01 The NO PASSING ZONE (W14-3) sign ~~(see Figure 2C-11)~~ shall be a pennant-shaped isosceles triangle with its longer axis horizontal and pointing to the right. When used, the NO PASSING ZONE sign shall be installed on the left-hand side of the roadway at the beginning of no-passing zones identified by pavement markings or DO NOT PASS signs or both (see Sections 2B.36 and 3B.03).

M02 The use of the NO PASSING ZONE sign shall be approved by the State Highway Safety and Traffic Engineer.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2C.54 Vehicular Traffic Warning Signs ~~(W8-6, W11-1, W11-5, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, and W11-15a)~~

Option:

01 Vehicular Traffic Warning ~~(W8-6, W11-1, W11-5, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, and W11-15a)~~ signs (see Figure 2C-14) may be used to alert road users to locations where unexpected entries into the roadway by trucks, bicycles, farm vehicles, emergency vehicles, golf carts, horse-drawn vehicles, or other vehicles might occur. ~~The TRUCK CROSSING (W8-6) word message sign may be used as an alternate to the Truck (W11-10) symbol sign.~~

~~Support:~~

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

Guidance:

03 Vehicular Traffic Warning signs should be used only at locations where the road user's sight distance is restricted, or the condition, activity, or entering traffic would be unexpected.

04 If the condition or activity is seasonal or temporary, the Vehicular Traffic Warning sign should be removed or covered when the condition or activity does not exist.

Guidance:

M04A Before advanced warning signs are installed, all efforts to correct the sight distance issues should be made as this will be far more effective to improve safety compared to installing a sign. Roadway alignments cannot be corrected easily, but removal of vegetation on and off the state right of way that blocks sight distance can addressed sight distance issues.

Option:

~~05 The Trail Crossing (W11-15) sign may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path. A TRAIL X-ING (W11-15P) supplemental plaque (see Figure 2C-14) may be mounted below the W11-15 sign. The TRAIL CROSSING (W11-15a) sign may be used to warn of shared-use path crossings where pedestrians, bicyclists, and other user groups might be crossing the roadway.~~

~~06 The W11-1, W11-15, and W11-15a signs and their related supplemental plaques may have a fluorescent yellow-green background with a black legend and border.~~

07 Supplemental plaques (see ~~Figure 2C-16 and~~ Section 2C.57) with legends such as AHEAD, XX FEET, NEXT XX MILES, IN STREET, or IN ROAD may be mounted below Vehicular Traffic Warning signs to provide advance notice to road users of unexpected entries.

~~*Guidance:*~~

~~*08 If used in advance of a trail crossing, a W11-15 or W11-15a sign should be supplemented with an AHEAD or XX FEET plaque to inform road users that they are approaching a point where crossing activity might occur.*~~

Standard:

~~**09 If a post-mounted W11-1, W11-11, W11-15, or W11-15a sign is placed at the location of the crossing point where golf carts, pedestrians, bicyclists, or other shared-use path users 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 W11-1, W11-11, W11-15, or W11-15a sign is mounted overhead, the W16-7P supplemental plaque shall not be used.**~~

Paragraph 9 content is included in the applicable individual sections below. Revised Dec. 2025

10 A Vehicular Traffic Warning sign assembly shall not be installed on an approach controlled by a STOP or a YIELD sign, except as provided in Paragraphs 11 and 12 of this Section

Option:

11 The Vehicular Traffic 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 the circulatory roadway.

12 At a signalized or stop-controlled intersection the Vehicular Traffic 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.

~~13 The crossing location identified by a W11-1, W11-11, W11-15, or W11-15a sign may be defined with crosswalk markings (see Chapter 3C).~~

~~**Standard:**~~

~~**14 The Emergency Vehicle (W11-8) sign (see Figure 2C-14) with the EMERGENCY SIGNAL AHEAD (W11-12P) supplemental plaque (see Figure 2C-14) shall be placed in advance of all emergency-vehicle traffic control signals (see Chapter 4M).**~~

Paragraph 14 content is included in the individual section for the Emergency Vehicle sign below. Revised Dec. 2025

~~Option:~~

~~15 The Emergency Vehicle (W11-8) sign, or a word message sign indicating the type of emergency vehicle (such as rescue squad), may be used in advance of the emergency-vehicle station when no emergency-vehicle traffic control signal is present.~~

16 A Warning Beacon (see Section 4S.03) may be used with any Vehicular Traffic 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.

~~17 A supplemental WHEN FLASHING (W16-13P) plaque (see Figure 2C-16) may be used with any Vehicular Traffic 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.~~

MoDOT has divided MUTCD Section 2C.54 content into multiple new sections by sign number so that specific MoDOT guidance can be added for each sign. Revised Dec. 2025

Section 2C.54A Bicycle Warning (W11-1) Sign

Guidance:

M01 Bicycle Warning (W11-1) signs should be used only at locations where the road user's sight distance is restricted, and the condition, activity, or entering traffic would be unexpected.

Option:

M02 Bicycle Warning (W11-1) signs may be used to alert road users to locations where unexpected entries into the roadway by cyclists might occur.

Support:

M03 Bicycle warning (W11-1) signs with a diagonal downward-pointing arrow (W16-7P) plaques are used to alert road users of locations where bicyclists routinely cross state highways.

Standard:

M04 If a post-mounted W11-1 sign is placed at the location of a bicycle crossing, a diagonal downward pointing arrow (W16-7P) plaque shall be mounted below the sign. The bicycle crossing warning sign with diagonal arrow supplemental plaque should be placed immediately in advance of, as near as possible, the crossing in both directions of travel. If the W11-1 sign is mounted overhead, the W16-7P supplemental plaque shall not be used.

Paragraph M04 includes content from Standard paragraph 9 of Section 2C.54. Revised Dec. 2025

Guidance:

M05 Bicycle crossing warning signs should be installed at locations where an established independent bicycle path crosses a state route. Bicycle crossing warning signs should not be installed where an established "US Bike Route" crosses a state route or where cyclists riding on the public roadways cross a state route.

Option:

M06 A Bicycle Warning (W11-1) sign with an AHEAD (W16-9P) supplemental plaque may be added in advance of the bicycle crossing if engineering judgement determines a need based on limited sight distance of the crossing.

M07 Bicycle Warning (W11-1) signs with an In Road (W16-1P) plaque may be used to alert road users to locations where cyclists riding on the roadway might occur.

Standard:

M09 When bicycle warnings signs are installed to warn motorists of bicycle activity along a state highway, the IN ROAD (W16-1P) plaque shall be installed below the Bicycle Warning (W11-1) sign and shall match the color of the warning sign.

Support:

M10 Bicycle warning signs with the IN ROAD supplemental plaques (IN ROAD plaque replaces the SHARE THE ROAD plaque) are used to alert road users where bicyclists routinely ride along specific sections of state highways, in the travel lane or on the shoulder of the roadway.

Guidance:

M11 The use of Bicycle warning signs to warn road users of cyclist activity along specific sections of roadway should be based on identifiable, routine and/or frequent cyclist activity. Indications bicycle warnings signs should be installed should be based on conditions, such as, but not limited to:

A. Requests received by bicycle groups, or clubs, who indicate the state highways which are part of their group's frequent cycling routes.

B. Requests from Amish, Mennonite or other communities who utilize bicycles as one of their primary modes of routine transportation, indicating the state highways which service their community's cycling needs.

C. Sections of a state route where an established bicycle trail overlaps the state route for some length, using the roadway and not a dedicated bike lane, before returning to the independent trail again.

D. Cycling activity occurs a minimum of 3 days per week, 6 months per year

M12 Bicycle warning signs should not be installed along routes for the following conditions:

A. For the purpose of promoting cycling or conveying a bicycle friendly organization when there is no routine cycling activity on that route,

B. When cyclists have access to a dedicated bicycle lane along the route,

C. Where cyclists have access to a parallel bike facility, or multi-use path, or

D. In response to a request from an individual without verifying the need as described in this article.

M13 Bicycle warning signs used to notify drivers of bicycle traffic on the state route should only be ground-mounted installations. Signs should be installed at the point on the route the activity begins and downstream of major public road entry points onto the state route.

Option:

M14 Additional bicycle warning signs may be installed based on engineering judgement if the distance between major road intersections is excessive or if there are areas with limited sight distance which may obscure bicycle traffic.

M15 A NEXT XX MILES (W7-3aP) plaque (See Section 2C.61) may be installed below the IN ROAD plaque if engineering judgement determines the need to notify road users of the length of roadway over which unexpected cyclists riding along the road may occur.

MoDOT specific section for warning sign installations where bicycles routinely ride within the roadway. Revised Dec. 2025

Section 2C.54B Combined Bicycle/Pedestrian Crossing (W11-15) Sign

Option:

M01 Combined Bicycle/Pedestrian Crossing (W11-15) signs may be used to alert road users to locations where unexpected entries into the roadway by cyclists and pedestrians might occur.

Guidance:

M02 Combined Bicycle/Pedestrian warning signs should be installed at locations where an established shared use path crosses a state route.

Support:

M03 The combined Bicycle/Pedestrian (W11-15) sign is used where both bicyclists and pedestrians might be crossing the roadway at intersections with a shared-use path and state routes. A shared-use path is defined as a paved or gravel path, 8-10 foot wide, dedicated to bike and pedestrian traffic which is an independent facility from the roadway.

Standard:

M04 If a post-mounted W11-15 sign is placed at the location of the combined Bicycle/Pedestrian crossing, a diagonal downward pointing arrow (W16-7P) plaque shall be mounted below the sign. The Bicycle/Pedestrian warning sign with diagonal downward pointing arrow plaque shall be placed immediately in advance of, as near as possible, the crossing in both directions of travel. If the W11-15 sign is mounted overhead, the W16-7P supplemental plaque shall not be used.

Paragraph M04 includes content from Standard paragraph 9 of Section 2C.54. Revised Dec. 2025

Option:

M05 An advanced Bicycle/Pedestrian warning sign with an AHEAD (W16-9P) supplemental plaque may be added in advance of the Bicycle/Pedestrian crossing if engineering judgement determines a need based on limited sight distance of the crossing.

MoDOT specific section for Combined Bicycle/Pedestrian Crossing. Revised Dec. 2025

Section 2C.54C Trail Crossing (W11-15a) Sign

Option:

M01 TRAIL CROSSING (W11-15a) signs may be used to alert road users to locations where unexpected entries into the roadway by cyclists, pedestrians or equestrian activity might occur.

Support:

M02 The TRAIL CROSSING sign is used to warn of a rustic trail where pedestrian, bicyclist, or equestrian activities, might be crossing the state highway. A rustic trail would typically be an unpaved trail of an undefined width, but one that is visible and identifiable by a motorist as it crosses the right of way.

Guidance:

M03 TRAIL CROSSING signs should be installed at locations where an established rustic trail used by pedestrians, bicyclists, and equestrian activities crosses a state route.

Standard:

M04 If a post-mounted W11-15a sign is placed at the location of the rustic trail crossing, a diagonal downward pointing arrow (W16-7P) plaque shall be mounted below the sign. The W11-15a sign with diagonal downward pointing arrow plaque shall be placed immediately in advance of,

as near as possible, the crossing in both directions of travel. If the W11-15a sign is mounted overhead, the W16-7P supplemental plaque shall not be used.

Paragraph M04 includes content from Standard paragraph 9 of Section 2C.54. Revised Dec. 2025

Option:

M05 A TRAIL CROSSING warning sign with an AHEAD (W16-9P) supplemental plaque may be added in advance of the trail crossing if engineering judgement determines a need based on limited sight distance of the crossing.

MoDOT specific section for warning sign installations at rustic trail path crossings. Revised Dec. 2025

Section 2C.54D Horse-Drawn Vehicle (W11-14) Sign

Option:

M01 Horse-Drawn Vehicle (W11-14) signs may be used to alert road users to locations where unexpected horse-drawn vehicles are traveling along the roadway might occur.

Guidance:

M02 W11-14 signs should be used only at locations where the road user's sight distance is restricted, and the condition, activity, or entering traffic would be unexpected.

Support:

M03 Horse-Drawn Vehicle warning signs with the IN ROAD (W16-1P) supplemental plaque (IN ROAD plaque replaces the SHARE THE ROAD plaque) are used to alert road users where horse-drawn vehicle traffic is routinely traveling along specific sections of state highways, in the travel lane or on the shoulder of the roadway.

Standard:

M04 When Horse-drawn vehicle warnings signs are installed to warn motorists of Horse-drawn vehicle activity along a state highway, the IN ROAD (W16-1P) plaque shall be installed below the Horse-drawn vehicle warning sign and shall match the color of the warning sign.

Guidance:

M05 The use of Horse-Drawn Vehicle signs to warn road users of horse-drawn vehicle activity along specific section of roadway should be based on identifiable, routine and/or frequent horse-drawn vehicle activity. The application of horse-drawn vehicle warning signs is limited to the Amish, Mennonite or other communities who utilize horse-drawn vehicles as one of their primary modes of routine transportation. The district should work with community leadership to determine the state routes their communities utilize on a routine basis to determine the most appropriate sign installation locations.

M06 Horse-Drawn Vehicle signs used to notify drivers of horse-drawn vehicle traffic on the state route should only be ground-mounted installations. Signs should be installed at the point on the route the activity begins and downstream of each major public road entry points onto the state route.

Option:

M07 Additional Horse-Drawn Vehicle signs with IN ROAD plaques may be installed based on engineering judgement if the distance between major road intersections is excessive or if there are areas with limited sight distance which may obscure horse-drawn vehicle traffic.

M08 A NEXT XX MILES (W7-3aP) plaque may be added below the IN ROAD plaque if engineering judgement determines the need to notify drivers of the length of roadway affected by the warning sign.

MoDOT specific section for warning sign installations where there is horse-drawn vehicle activity in the road. Revised Dec. 2025

Section 2C.54E TRUCK CROSSING (W8-6) Sign

Option:

M01 Truck Crossing (W8-6) signs may be used to alert road users to locations where unexpected entries into the roadway by trucks crossing the road might occur.

Guidance:

M02 W8-6 signs should be used only at locations where the road user's sight distance is restricted, and the condition, activity, or entering traffic would be unexpected.

Support:

M03 The W8-6 sign is used to alert road users to locations where trucks are routinely crossing a state highway at a commercial entrance intersection. A typical example would be a company with facilities on either side of a highway where raw materials, finished goods, etc. are routinely moved sites. In these cases, warning signs with fluorescent yellow backgrounds are installed in a permanent installation.

Option:

M04 For cases involving temporary truck crossings, such as haul roads moving earth or quarry materials, a TR12 Truck crossing agreement (EPG 153.21) may be used to install a temporary traffic control sign with a fluorescent orange background.

Guidance:

M05 W8-6 signs should be installed at locations where there is consistent and routine truck traffic crossing a state route where the road user's sight distance is restricted, and the crossing would be unexpected based on engineering judgement.

M07 The truck crossing for which the warning sign is being installed should be recognizable by the presence of a on premise business marquee sign, business name on structures or other indicators to allow drivers to associate the warning sign to the entrance/site where trucks could be crossing the state highway.

Standard:

M08 If used, the TRUCK CROSSING sign shall be placed in accordance with Table 2C-3.

M09 The TRUCK CROSSING sign shall only be installed for the direction of travel where the road user's sight distance is restricted.

M10 The TRUCK CROSSING sign shall not be used on state highways at intersections with city streets or county roads, to address issues at these types of intersections other warning signs, such as Intersection Warning signs are more appropriate.

MoDOT specific section for warning sign installations where trucks routinely cross a state highway. Revised Dec. 2025

Section 2C.54F Truck Entrance (W11-10) Sign

Option:

M01 Truck Entrance (W11-10) signs may be used to alert road users to locations where unexpected entries into the roadway by trucks might occur.

Guidance:

M02 Truck Entrance signs should be used only at locations where the road user's sight distance is restricted, and the condition, activity, or entering traffic would be unexpected.

Support:

M03 The W11-10 sign is used to alert road users to locations where trucks are routinely entering and leaving a state highway at a non-public roadway intersection, commercial entrance. A typical example would be trucks entering and exiting a quarry entrance which has direct access to the state route. In these cases, warning signs with fluorescent yellow backgrounds are installed in a permanent installation.

Option:

M04 For cases involving a temporary truck entrance, such as logging trucks entering and leaving a timber harvest location, a TR12 Truck crossing agreement (EPG 153.21) may be used to install a temporary traffic control sign with a fluorescent orange background.

Guidance:

M05 Truck Entrance signs should be installed at locations where there is consistent and routine truck traffic entering and leaving a state route where the road user's sight distance is restricted, and the crossing would be unexpected based on engineering judgement.

M06 The truck entrance for which the sign is being installed should be recognizable by the presence of a on premise business marquee sign, building with the business name or some other form of marking to allow drivers associate the warning sign to the site where trucks could be entering or leaving the highway.

Standard:

M07 If used, the Truck Entrance sign shall be placed in accordance with EPG Table 2C-3 Guidelines for Advance Placement of Warning Signs.

M08 The Truck Entrance sign shall only be installed for the direction of travel where the road user's sight distance is restricted.

M09 The truck entrance warning sign shall not be used on state highways at intersections with city streets or county roads, to address issues at these types of intersections other warning signs, such as Intersection Warning signs are more appropriate.

MoDOT specific section for warning sign installations where trucks routinely enter and leave a state highway. Revised Dec. 2025

Section 2C.54G Farm Equipment (W11-5) Warning Sign

Option:

M01 Farm Equipment Warning (W11-5) signs may be used to alert road users to locations where unexpected entries into the roadway by farm equipment crossing the road might occur.

Guidance:

M02 W11-5 signs should be used only at locations where the road user's sight distance is restricted, and the condition, activity, or entering traffic would be unexpected.

Support:

M03 The Farm Equipment (W11-5) sign is used to alert road users to locations where slow-moving farm vehicles are routinely entering or crossing the state highway (immediately across or a short transition down the road to a different entrance) if the highway splits the farm. A typical example would be a dairy farm where these crossings take place daily. In these cases, fluorescent yellow warning signs are installed in a permanent installation.

M04 Farm Equipment signs are not installed to warn of farm equipment traveling along a state highway. This warning is the responsibility of the farmer and can be addressed by displaying the appropriate warning lights and signs on the equipment as well as having the appropriate lead and/or trailing vehicles escorting the equipment.

Option:

M05 For cases involving a temporary farm equipment access entrance, such as during planting or harvest season, a TR12 Truck Crossing agreement (EPG 153.21) may be used to install a temporary traffic control sign with a fluorescent orange background.

Guidance:

M06 Farm Equipment signs should be installed at locations where there is consistent and routine farm equipment entering and leaving a state route where the road user's sight distance is restricted, and the crossing would be unexpected based on engineering judgement.

M07 The farm vehicle entrance for which the warning sign is being installed should be recognizable by the presence of a on-premise business marquee sign, presence of farm equipment, farm structures or other indicators to allow drivers to associate the warning sign to the site where farm vehicles could be crossing/entering the highway.

Standard:

M08 If used, the Farm Equipment warning sign shall be placed in accordance with Table 2C-3.

M09 The Farm Equipment warning sign shall only be installed for the direction of travel where the road user's sight distance is restricted.

MoDOT specific section for warning sign installations where slow-moving farm vehicles routinely cross a state highway. Revised Dec. 2025

Section 2C.54H Emergency Vehicle (W11-8) Sign

Option:

M01 Emergency Vehicle (W11-8) signs may be used to alert road users to locations where unexpected entries into the roadway by emergency vehicles might occur.

Guidance:

M02 Emergency Vehicle signs should be used only at locations where the road user's sight distance is restricted, and the condition, activity, or entering traffic would be unexpected.

Support:

M03 The Emergency Vehicle sign is used to alert road users to locations where emergency vehicles are routinely entering and leaving a state highway at dedicated emergency vehicle facility entrances.

Guidance:

M04 Emergency Vehicle signs should be installed at a state route where the road user's sight distance is restricted, and the crossing would be unexpected based on engineering judgement.

M05 The emergency vehicle entrance for which the warning sign is being installed should be recognizable by the presence of a on premise marquee sign, building with the emergency agency name displayed or some other form of marking to allow drivers to associate the warning sign to the site/entrance where emergency vehicles could be entering or leaving the state highway.

Standard:

M06 If used, the Emergency Vehicle warning sign shall be placed in accordance with Table 2C-3.

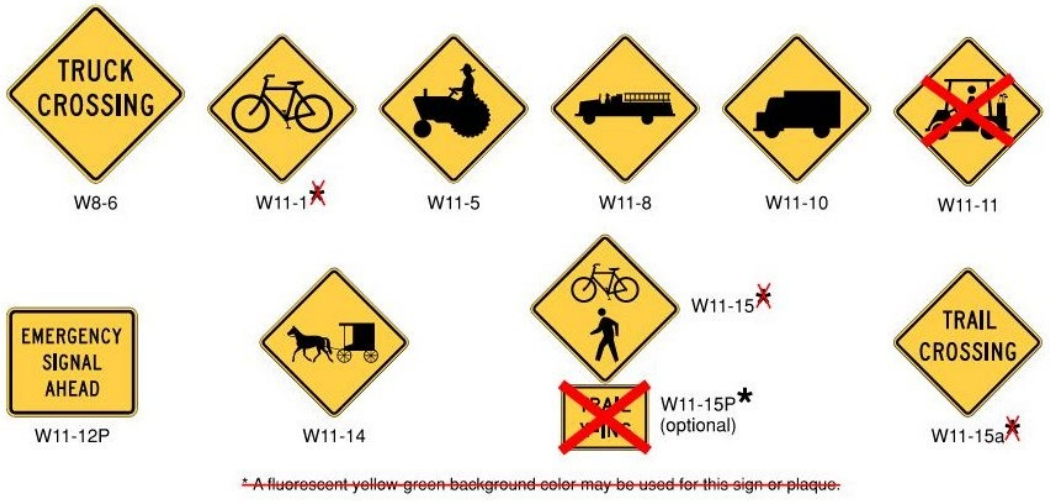
M07 The Emergency Vehicle warning sign shall only be installed for the direction of travel where the road user's sight distance is restricted.

M08 When measuring sight distance for emergency vehicle entrances, the sight distance shall be determined using a 3.5 ft. eye height and an 8 ft. object height in the same method use to evaluate school bus stop sight distances (see EPG 908.2.4).

M09 The Emergency Vehicle sign with the EMERGENCY SIGNAL AHEAD (W11-12P) supplemental plaque shall be placed in advance of all emergency-vehicle traffic control signals (see EPG 902.13).

MoDOT specific section for warning sign installations where emergency vehicles routinely enter and leave a state highway. Revised Dec. 2025

Figure 2C-14. Vehicular Traffic Warning Signs and Plaques



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

Option:

01 Non-Vehicular Warning (W11-2, ~~W11-3,~~ W11-4, ~~W11-6,~~ and 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,~~ and 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,~~ or 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,~~ or 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~~ the first two Option paragraphs below.

M05A Equestrian (W11-7) warning signs shall only be installed at Public Equestrian Trail Crossings. Existing Equestrian (W11-7) Crossing signs that do not meet the Public Equestrian Trail Crossing criteria, shall be left in place until they reach the end of their service life.

M05B The use of the Deer (W11-3) warning signs has been discontinued by MoDOT due to studies proving these signs provide little or no safety benefit. Existing W11-3 signs shall be removed at the end of their service life.

M05C The Cattle (W11-4) sign shall be issued to an individual only when the Application for Sign at Cattle Crossings contract (TR09) is fully executed. See EPG 153.21 for the TR09 Agreement.

MoDOT specific content from the EPG. Revised Dec. 2025

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,~~ or W11-7~~, or W11-9~~ sign may be defined with crosswalk markings (see Chapter 3C).

Standard:

12 The W11-2 ~~and W11-9~~ sign~~s~~ and ~~their~~ related supplemental plaques ~~may~~ shall only have a fluorescent yellow-green background with a black legend and border if the signs are installed within a school area as described in the fifth Support paragraph of Section 2C.02.

MoDOT only allows fluorescent yellow-green background fo the W11-2 sign if it is installed within a school zone to meet the requirement of Guidance paragraph 13 below. Revised Dec. 2025

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.

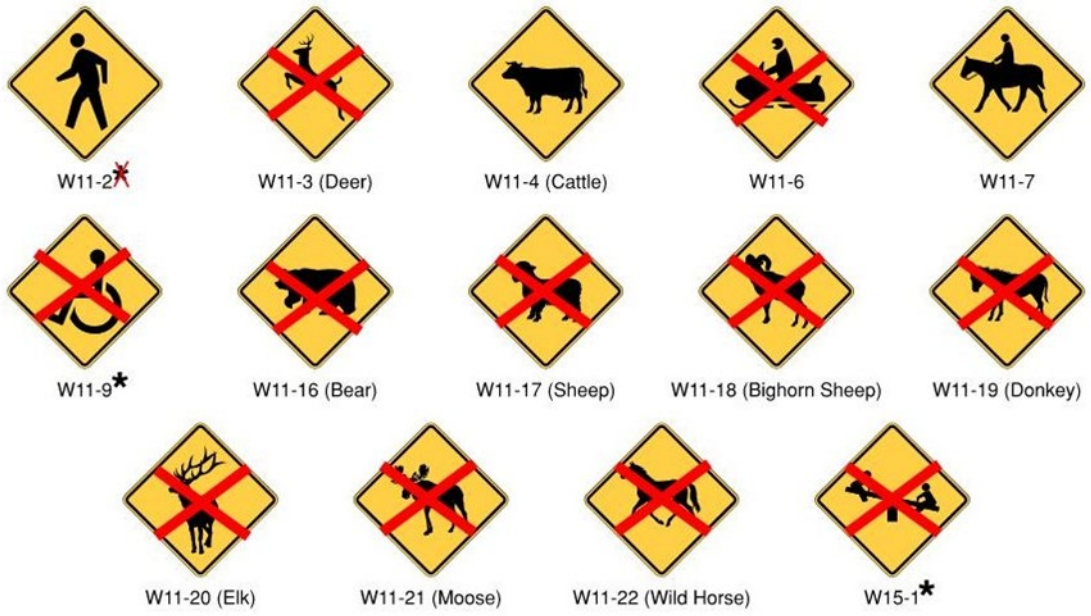
Option:

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.~~

MoDOT does not use the WHEN FLASHING plaque. Revised Dec. 2025

Figure 2C-15. Non-Vehicular Traffic Warning Signs



~~*A fluorescent yellow-green background color may be used for this sign or plaque.~~

~~Section 2C.56 Playground Sign (W15-1)~~

~~Option:~~

~~01 The Playground (W15-1) sign (see Figure 2C-15) may be used to give advance warning of a designated children's playground that is located adjacent to the road.~~

~~02 The Playground sign may have a fluorescent yellow-green background with a black legend and border.~~

~~Guidance:~~

~~03 If the access to the playground area requires a roadway crossing, the application of crosswalk pavement markings (see Chapter 3C) and Non-Vehicular Warning signs (see Section 2C.55) should be considered.~~

MoDOT does not use the W15-1 sign. Revised Dec. 2025

Section 2C.56A FERRY CROSSING AHEAD Sign (W3-18)



Option:

M01 The FERRY CROSSING AHEAD (W3-18) sign may be installed for a ferry crossing. A STOP (R1-1) sign at the ferry crossing may be used as a supplement.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2C.56B Passing Lane Warning Signs (W6-5, W6-5a, W6-6aP, W6-16, and W6-17)



Support:

M01 Alternating passing lanes may be provided on rural, two-lane highways to provide motorists with an opportunity to pass slower vehicles without crossing the centerline. Where passing lanes are provided, operations and safety may be improved by giving motorists advance information about the location of passing lanes. Providing motorists with advance notice of passing lanes may reduce the number of passing maneuvers.

Standard:

M02 The PASSING LANE ENDS (W6-16), WATCH FOR LEFT-TURNING TRAFFIC IN PASSING LANE (W6-17), and PASSING LANE PLAQUE (W6-6aP) signs shall be black legend and fluorescent yellow background and shall only be used in alternating passing lane sections.

M03 The PASSING LANE ENDS sign shall be used prior to the end of the passing lane to warn motorists the passing lane in that direction of travel is ending and merging back to a single lane. The sign shall be placed in advance of the LANE ENDS MERGE RIGHT (W9-2) sign at a distance determined by Table 903.6.6 Guidelines for Advance Placement of Warning Sign.

Option:

M04 The WATCH FOR LEFT TURNING TRAFFIC IN PASSING LANE sign may be used at locations in a passing lane segment where left turns are common, such as at a county road. This sign may be installed at the judgement of the engineer.

MoDOT specific content from the EPG. Revised Dec. 2025

M05 The Two-Way Traffic on a Three-Lane Roadway (W6-5 and W6-5a) signs (see Figure 2C-11) may be installed along three-lane roadways with two lanes in one direction and one in the opposing direction.

MUTCD content from Section 2C.52. Revised Dec. 2025

Section 2C.56C TRAVEL SAFE ZONE – FINES DOUBLED Sign (W27-1)



Support:

M01 The TRAVEL SAFE ZONE - FINES DOUBLED (W27-1) sign is not to be used on a system-wide basis. It is intended for special use at locations where severe crashes are occurring. There is a requirement for regional support to focus a safety campaign involving local law enforcement and public information efforts to reduce the number and severity of crashes within the travel safe zone (see EPG 907.3).

Standard:

M02 A TRAVEL SAFE ZONE – FINES DOUBLED sign shall be used to mark the beginning of a designated travel safe zone. This sign is installed in conjunction with the FINES DOUBLED ENDS (R2-20) sign (see EPG 903.2.72).

MoDOT specific content from the EPG. Revised Dec. 2025

SUPPLEMENTAL WARNING PLAQUES

Section 2C.57 Use of Supplemental Warning Plaques

Option:

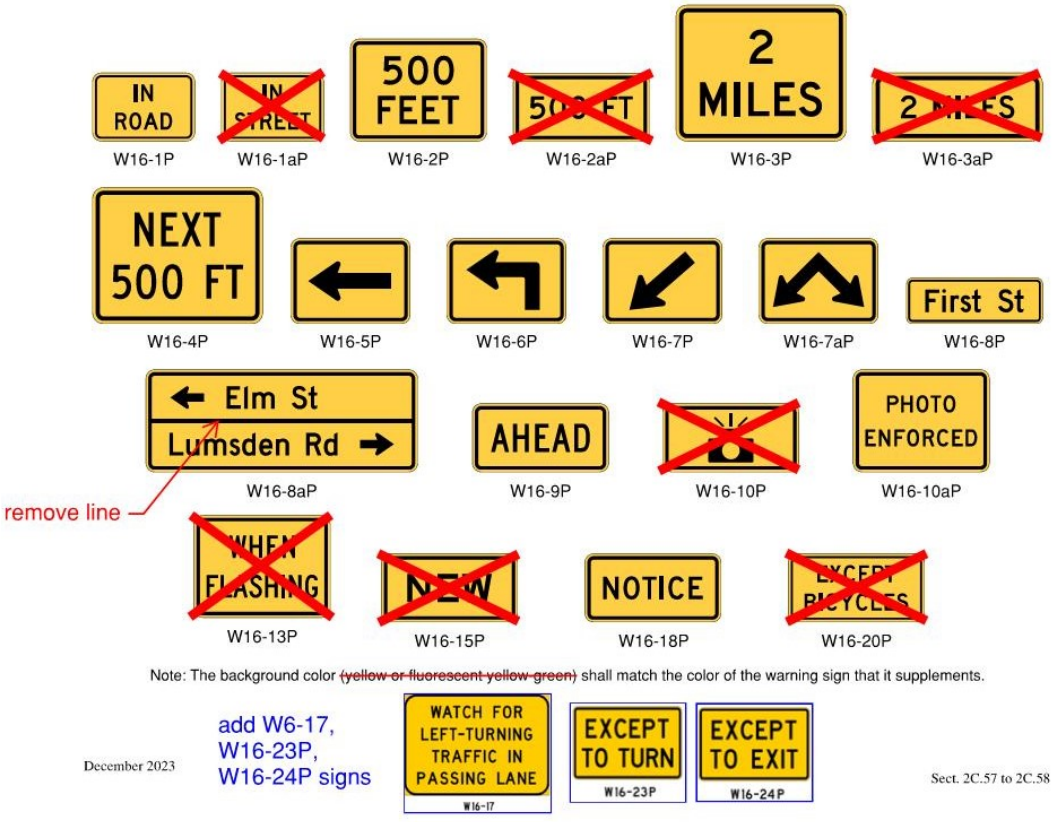
01 A supplemental warning plaque ~~(see Figure 2C-16)~~ may be displayed with a warning or regulatory sign when engineering judgment indicates that road users require additional warning information beyond that contained in the main message of the warning or regulatory sign.

Standard:

02 Supplemental warning plaques shall be used only in combination with and installed on the same post(s) as warning or regulatory signs. They shall not be mounted alone or displayed alone.

03 Unless otherwise provided in ~~this Manual~~ the EPG for a particular plaque, supplemental warning plaques shall be mounted below the sign they supplement.

Figure 2C-16. Supplemental Warning Plaques



Section 2C.58 Design of Supplemental Warning Plaques

Standard:

01 A supplemental warning plaque used with a warning sign shall have the same legend, border, and background color as the warning sign with which it is displayed. A supplemental warning plaque used with a regulatory sign shall have a black legend and border on a yellow background.

02 Supplemental warning plaques shall be square or rectangular.

Section 2C.59 Advisory Speed Plaque (W13-1P) and Confirmation Advisory Speed Plaque (W13-1aP)

Option:

01 The Advisory Speed (W13-1P) plaque ~~(see Figure 2C-1)~~ may be used to supplement an advance warning sign to indicate the advisory speed for a condition.

02 The Confirmation Advisory Speed (W13-1aP) plaque ~~(see Figure 2C-1)~~ may be used to supplement a One-Direction Large Arrow (W1-6) sign on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.

Standard:

03 The use of the Advisory Speed and Confirmation Advisory Speed plaques for horizontal curves shall be in accordance with Section 2C.06 ~~and Table 2C-6. The speed differential in Table 2C-6 shall be the difference between the advisory speed for the horizontal curve and the posted speed limit, statutory speed limit, or the 85th percentile speed on the approach to the curve~~. The Advisory Speed plaque shall also be used where an engineering study indicates a need to advise road users of the advisory speed for other roadway conditions.

04 The speed displayed on the Advisory Speed and Confirmation Advisory Speed plaques shall be a multiple of 5 mph. The maximum advisory speed posted shall never be more than the posted speed limit.

MoDOT specific content from the EPG. Revised Dec. 2025

05 Except in emergencies or when the condition is temporary, an Advisory Speed or Confirmation Advisory Speed plaque shall not be installed until the advisory speed has been determined by an engineering study.

06 The Advisory Speed plaque shall only be used to supplement an advance warning sign. The Advisory Speed plaque or the Confirmation Advisory Speed plaque shall not be installed as a separate sign installation.

Guidance:

07 The Advisory Speed plaque, if used with a sign that is also supplemented with another plaque, such as an Advance Street Name plaque (see Section 2C.65), should be mounted immediately below the primary warning sign with any other plaque mounted below the Advisory Speed plaque.

Standard:

08 The Confirmation Advisory Speed plaque shall only be used to supplement a One-Direction Large Arrow (W1-6) sign (see Section 2C.10) or an Exit Gore (E5-1 series) sign (see Section 2E.26) and shall not be installed as a separate sign installation.

09 The advisory speed shall be determined by an engineering study that follows established engineering practices.

Guidance:

10 The advisory speed should be determined based on free-flowing traffic conditions.

11 Because changes in conditions, such as roadway geometrics, surface characteristics, or sight distance, might affect the advisory speed, each location should be evaluated periodically or when conditions change.

Support:

12 Among the established engineering practices that are appropriate for the determination of the recommended advisory speed for a horizontal curve are the following:

~~A. Compass method~~

~~B. Safety-based method~~

~~C.~~A. Accelerometer method

~~D. Design equation method~~

~~E.~~B. 10 degrees of ball bank for all speeds ~~Ball-bank method using the following criteria:~~

~~1. 16 degrees of ball-bank for speeds of 20 mph or less~~

~~2. 14 degrees of ball-bank for speeds of 25 to 30 mph~~

~~3. 12 degrees of ball-bank for speeds of 35 mph and higher~~

~~13 The 16, 14, and 12 degrees of ball-bank criteria are comparable to the current AASHTO horizontal curve design guidance. Research has shown that drivers often exceed existing posted advisory curve speeds by 7 to 10 mph.~~

Engineering Study for Ball-Banking
The procedure to determine the safe speed on a curve or turn is a ball-bank study. To correctly use the ball-bank indicator, the ball-bank indicator should be mounted on the dashboard of a passenger car and adjusted to read "0" when the car is stationary on a level grade with the ball-bank indicator being in a vertical plane. When adjusting the indicator, all personnel who are to be in the car while testing should be in their seats and all four tires should have the same pressure. It is usually best for at least two persons to be in the car while taking the ball-bank reading: one for driving, the other for observation and recording.
The 10-degree reading that can be maintained the complete length of a curve is the appropriate safe speed for that curve. Care must be taken to maintain the car in its proper lane and to maintain a smooth even speed throughout the curve. It will occasionally be found that a curve will have a higher safe speed in one direction than the other. In such cases, the lower safe speed should be used for both directions. Only increments of 5 mph are used on the Advisory Speed Plaque, therefore the curve shall be posted to the nearest 5 mph speed from the survey.

Table 2C-6. Use of Advisory Speed Plaque for Horizontal Alignment Changes

Speed Differential	Use of Advisory Speed Plaque (W13-1P)[1]
5 mph	Optional
10 mph	Recommended
15 mph or more	Required

[1] See Section 2C.59

~~Section 2C.60 NEW Plaque (W16-15P)~~

~~Option:~~

~~01 A NEW (W16-15P) plaque (see Figure 2C-16) may be mounted above a regulatory sign when a new regulation takes effect in order to alert road users to the new traffic regulation. A NEW plaque may also be mounted above an advance warning sign (such as a Signal Ahead sign for a newly-installed traffic control signal) for a warning of a new traffic condition.~~

~~*Guidance:*~~

~~*02 The NEW plaque should be removed no later than 6-12 months after it was installed.*~~

MoDOT does not use the W16-15P sign. Revised Dec. 2025

Section 2C.61 Distance Plaques (W16-2P ~~Series~~, W16-3P ~~Series~~, W16-4P, and W7-3aP)

Option:

01 The Distance Ahead (W16-2P ~~series~~ and W16-3P ~~series~~) plaques ~~(see Figure 2C-16)~~ may be used to inform the road user of the distance to the condition indicated by the warning sign.

02 The Next Distance (W7-3aP and W16-4P) plaques (see Figures 2C-5 and 2C-16) may be used to inform road users of the length of roadway over which the condition indicated by the warning sign exists.

Standard:

M03 Distances shall be shown in ¼ mile or 100 ft. increments. If the distance is less than a ½ mile then feet shall be used.

Section 2C.62 Supplemental Arrow Plaques (W16-5P and W16-6P)

Guidance:

01 If the condition indicated by a warning sign is located on an intersecting road and the distance between the intersection and condition is not sufficient to provide adequate advance placement of the warning sign, a Supplemental Arrow (W16-5P or W16-6P) plaque ~~(see Figure 2C-16)~~ should be used below the warning sign.

Standard:

02 Supplemental Arrow plaques shall have the same legend design as the Advance Turn Arrow and Directional Arrow auxiliary signs (see Sections 2D.26 and 2D.28) except that they shall have a black legend and border on a fluorescent yellow or fluorescent yellow-green background, as appropriate.

Section 2C.63 Diagonal Downward-Pointing Arrow Plaques (W16-7P and W16-7aP)

Support:

01 Diagonal downward-pointing arrow (W16-7P and W16-7aP) plaques ~~(see Figure 2C-16)~~ are used with certain Vehicular Traffic Warning signs ~~(see Section 2C.54)~~ and certain Non-Vehicular Warning signs (see Section 2C.55), and School Crossing signs (see Section 7B.03) to indicate the specific location of a crossing point.

02 The W16-7P plaque contains a single arrow pointing diagonally down to the right or left, toward the roadway, depending on which side of the roadway it is located.

Option:

03 A W16-7aP plaque may be used with a single crossing sign located on a narrow median separating two roadways with traffic in the same direction where the crossing traverses both roadways.

Section 2C.64 Hill-Related Plaques (~~W7-2 Series and~~ W7-3 Series)

Guidance:

01 Hill-Related (~~W7-2 series and~~ W7-3 series) plaques (see ~~Figure 2C-5~~ Section 2C.14) or other appropriate legends and larger signs should be used for emphasis or where special hill characteristics exist.

02 On longer grades, the use of a distance (W7-3aP ~~or W7-3bP~~) plaque (see ~~Figure 2C-5~~ Section 2C.14) at periodic intervals of approximately 1-mile spacing should be considered.

MoDOT does not use W7-2 series or W7-3bP plaques. Revised Dec. 2025

Section 2C.65 Advance Street Name Plaques (W16-8P and W16-8aP)

Support:

M00 Advance street name signing can provide valuable information to the motorist. Intersections that are signed with Intersection Warning (W2 series) or Advance Traffic Control (W3 series) signs typically have inherent sight distance concerns. The addition of the street name to the warning sign can aid a motorist in making decisions in a timely manner.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

01 An Advance Street Name (W16-8P or W16-8aP) plaque ~~(see Figure 2C-16)~~ may be used with any Intersection (W1-10 series, W2 series, W10-2, W10-3, or W10-4) or Advance Traffic Control (W3 series) sign to identify the name of the intersecting street.

M01A If the side road being signed is maintained by a public agency, the addition of the street name sign may be considered on request.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

02 The lettering on Advance Street Name plaques shall be composed of a combination of lower-case letters with initial upper-case letters.

03 If two street names are used on the Advance Street Name plaque, a directional arrow pointing in the direction of the street shall be placed next to each street name. Arrows pointing to the left shall be placed to the left of the street name, and arrows pointing to the right shall be placed to the right of the street name.

M03A The street name used on an Advance Street Name supplemental sign shall be the approved name used by either the local agency or the Emergency 911 Coordinator.

M03B When used, the Advance Street Name supplemental plaque shall only be mounted below the W2 or W3 series warning sign or the Advisory Speed plaque on the same post.

M03C The Advance Street Name supplemental plaque for a 36 in. x 36 in. warning sign shall be a maximum of 36 in. wide and for a 48 in. x 48 in. warning sign shall be a maximum of 48 in. wide.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

04 If two street names are used on the Advance Street Name plaque, the street names and associated arrows should be displayed in the following order:

A. For a single intersection, the name of the street to the left should be displayed above the name of the street to the right; or

B. For two sequential intersections, such as where the plaque is used with an Offset Side Roads (W2-7) or a Double Side Road (W2-8) sign, the name of the first street encountered should be displayed above the name of the second street encountered, and the arrow associated with the

second street encountered should be an advance arrow, such as the arrow shown on the W16-6P arrow plaque (see ~~Figure 2C-16~~ Section 2C.62).

Section 2C.66 Traffic Does Not Stop Plaques (W4-4P Series)

Option:

01 The CROSS TRAFFIC DOES NOT STOP (W4-4P) plaque ~~(see Figure 2C-10)~~ may be used in combination with a STOP sign when engineering judgment indicates that conditions are present that are causing or could cause road users to misinterpret the intersection as an all-way stop.

02 The TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP (W4-4aP) or ONCOMING TRAFFIC DOES NOT STOP (W4-4bP) plaque may be used when such messages more accurately describe the traffic controls established at the intersection.

Guidance:

03 The W4-4aP and W4-4bP plaques 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.

Standard:

04 If a W4-4P series plaque is used, it shall be mounted below the STOP sign.

~~Support:~~

~~05 Section 9C.06 contains information for Bicycle Cross Traffic warning plaques that can be used below STOP signs on crossroads or driveways that intersect with bicycle facilities.~~

MoDOT does not adopt Section 9C.06. Revised Dec. 2025

Section 2C.67 IN ROAD and IN STREET Plaques (W16-1P ~~and W16-1aP~~)

Option:

01 In situations where there is a need to warn drivers to watch for other slower forms of transportation traveling along the highway, such as bicycles~~, pedestrians, golf carts,~~ or horse-drawn vehicles~~, or farm machinery~~, an IN ROAD (W16-1P) plaque ~~or IN STREET (W16-1aP) plaque (see Figure 2C-16)~~ may be used.

Standard:

02 The background color of the W16-1P ~~or W16-1aP~~ plaque shall match the background color of the warning sign with which it is displayed. If a W16-1P ~~or W16-1aP~~ plaque is used, it shall be mounted below a ~~Vehicular Traffic Warning sign~~ Bicycle (W11-1) or Horse-Drawn Vehicle (W11-14) warning signs (see Section 2C.54) ~~or a Non-Vehicular Warning sign (see Section 2C.55)~~, and shall not be mounted alone.

Support:

03 Section 9B.14 contains information about the use of a Bicycles Allowed Use of Full Lane (R9-20) sign to inform drivers of the presence of bicycles in the roadway or where bicyclists are expected or preferred to use the full lane.

~~Section 2C.68 EXCEPT BICYCLES Plaque (W16-20P)~~

~~Option:~~

~~01 Where it is desired to notify bicyclists that the conditions depicted by a warning sign are not applicable to bicycles, the EXCEPT BICYCLES (W16-20P) supplemental warning plaque (see Figure 2C-16) may be mounted below the warning sign.~~

~~Support:~~

~~02 Examples of warning signs with which an EXCEPT BICYCLES (W16-20P) plaque can be mounted include DEAD END (W14-1) or NO OUTLET (W14-2) signs.~~

MoDOT does not use W16-20P plaques. Revised Dec. 2025

~~**Section 2C.69 Photo Enforced Plaques (W16-10P and W16-10aP)**~~

~~Option:~~

~~01 A Photo Enforced (W16-10P) plaque or a PHOTO ENFORCED (W16-10aP) word message plaque (see Figure 2C-16) may be mounted below a warning sign to advise road users that the regulations associated with the condition being warned about (such as a traffic control signal or a toll plaza) are being enforced by photographic equipment.~~

MoDOT does not use W16-10aP word message plaques due to judicial issues. The limited number of red light photo enforcement sites are signed using R10-18a. Revised Dec. 2025

Section 2C.69A NOTICE Plaque (W16-18p)



Support:

M01 It is sometimes necessary to enhance the conspicuity of a regulatory sign to attract drivers' attention to the message the sign is conveying. This may be necessary to help notify drivers to a speed limit reduction, turning movement prohibition, or bridge weight restriction. The NOTICE (W16-18P) plaque is an alternate to the use of red flags (see Section 2A.11).

Standard:

M02 The NOTICE (W16-18P) plaque shall not be used alone.

M03 When used, the NOTICE plaque shall be installed directly above the regulatory sign it is enhancing.

Guidance:

M04 The use of the NOTICE (W16-18P) plaque should be based on engineering judgment and not systematically applied to a specific sign unless otherwise specified in the EPG.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2C.69B Warning Signs Provided for Other Agencies

Support:

M01 MoDOT will provide, if requested by the appropriate local traffic authority, warning signs for conditions beyond the end of state-maintained right of way.

M02 If the location for placement of an advance warning sign for a curve, turn, paved road, stop condition or other condition deemed appropriate falls on state-maintained right of way, MoDOT will place and maintain the traffic control device on state-maintained right-of-way at the request of the local traffic authority.

Standard:

M03 The placement of all traffic control devices on the state highway system shall be governed by the Engineering Policy Guide. MoDOT is responsible for the placement and maintenance of all signs on state-maintained right-of-way.

OBJECT MARKERS

Section 2C.70 Object Marker Design and Placement Height

Support:

01 Types 1, 2, and 3 object markers are used to mark obstructions within or adjacent to the roadway. Type 4 object markers are used to mark the end of a roadway.

Standard:

02 When used, object markers (see Figure 2C-17) shall not have a border and shall consist of an arrangement of one or more of the following types:

Type 1—a diamond-shaped sign, at least 18 inches on a side, consisting of ~~either a yellow (OM1-1) or black (OM1-2) sign with nine yellow retroreflective devices, each with a minimum diameter of 3 inches, mounted symmetrically on the sign, or~~ an all-yellow retroreflective sign (OM1-3).

Type 2—~~either a marker (OM2-1V or OM2-1H) consisting of three yellow retroreflective devices, each with a minimum diameter of 3 inches, arranged either horizontally or vertically on a white sign measuring at least 6 x 12 inches; or~~ an all-yellow horizontal or vertical retroreflective sign (OM2-2V or OM2-2H), measuring ~~at least~~ 6 x 12 inches.

Type 3—a striped marker, 12 x 36 inches, consisting of a vertical rectangle with alternating black and retroreflective yellow stripes sloping downward at an angle of 45 degrees toward the side of the obstruction on which traffic is to pass. The minimum width of the yellow and black stripes shall be 3 inches.

Type 4—a diamond-shaped sign, at least 18 inches on a side, consisting of ~~either a red (OM4-1) or black (OM4-2) sign with nine red retroreflective devices, each with a minimum diameter of 3 inches, mounted symmetrically on the sign, or~~ an all-red retroreflective sign (OM4-3).

MoDOT does not use retroreflective devices on object markers. Revised Dec. 2025

Support:

03 Type 3 object markers with stripes that begin at the upper right side and slope downward to the lower left side are designated as right object markers (OM3-R). Object markers with stripes that begin at the upper left side and slope downward to the lower right side are designated as left object markers (OM3-L). Object markers with chevron stripes that slope downward to both the lower left and lower right sides are designated as center object markers (OM3-C).

Guidance:

04 When used for marking obstructions within the roadway or obstructions that are 8 feet or less from the shoulder or curb, the minimum mounting height, measured from the bottom of the object marker to the elevation of the near edge of the traveled way, should be 4 feet.

05 When used to mark obstructions more than 8 feet from the shoulder or curb, the clearance from the ground to the bottom of the object marker should be at least 4 feet.

06 Object markers should not present a vertical or horizontal clearance obstacle for pedestrians.

Option:

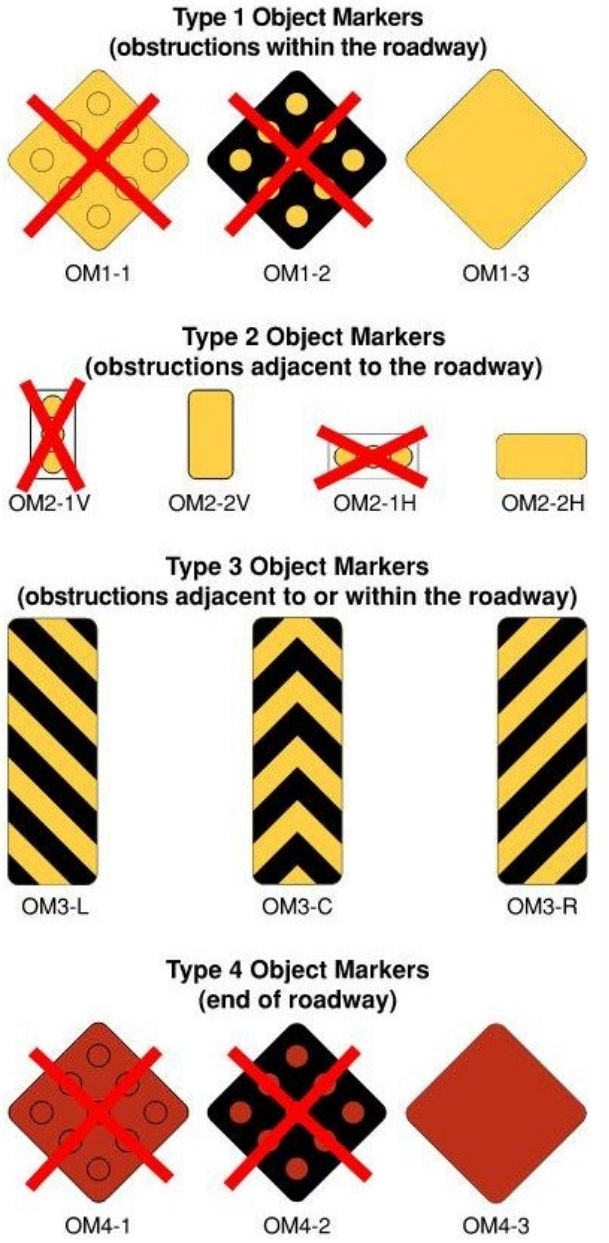
07 When object markers or markings are applied to an obstruction that by its nature requires a lower or higher mounting, the vertical mounting height may vary according to need.

~~Support:~~

~~08 Section 9C.09 contains information regarding the use of object markers on shared-use paths.~~

MoDOT does not adopt Section 9C.09. Revised Dec. 2025

Figure 2C-17. Object Markers



Section 2C.71 Object Markers for Obstructions Within the Roadway

Standard:

01 Obstructions within the roadway shall be marked with a Type 1 or Type 3 object marker. In addition to markers on the face of the obstruction, warning of approach to the obstruction shall be given by appropriate pavement markings (see Section 3B.13).

Option:

02 To provide additional emphasis, a Type 1 or Type 3 object marker may be installed at or near the approach end of a median island.

03 To provide additional emphasis, large surfaces such as bridge piers may be painted with diagonal stripes, 12 inches or greater in width, similar in design to the Type 3 object marker.

Standard:

04 The alternating black and retroreflective yellow stripes (OM3-L, OM3-R) shall be sloped down at an angle of 45 degrees toward the side on which traffic is to pass the obstruction. If traffic can pass to either side of the obstruction, the alternating black and retroreflective yellow stripes (OM3-C) shall form chevrons that point upwards.

Option:

05 Appropriate signs (see Sections 2B.40 and 2C.23) directing traffic to one or both sides of the obstruction may be used instead of the object marker.

Section 2C.72 Object Markers for Obstructions Adjacent to the Roadway

Support:

01 Obstructions not actually within the roadway are sometimes so close to the edge of the road that they need a marker. These include underpass piers, bridge abutments, handrails, ends of traffic barriers, utility poles, and culvert headwalls. In other cases there might not be a physical object involved, but other roadside conditions exist, such as narrow shoulders, drop-offs, gores, small islands, and abrupt changes in the roadway alignment, that might make it undesirable for a road user to leave the roadway, and therefore would create a need for a marker.

~~Option:~~

~~02 Type 2 or Type 3 object markers may be used to mark an obstruction adjacent to the roadway.~~

Standard:

M02A Type 3 object markers shall be used to mark all obstructions within 3 feet of the edge of the travel lane or edge of the shoulder when shoulders are present (paved or aggregate). Type 3 object markers shall not be used to mark obstructions located beyond 8 feet of the edge of the travel lane or edge of the shoulder. See Figures 903.17.4.1 and 903.17.4.2 for standard applications of Type 3 object markers.

Option:

M02B Type 3 object markers may be used to mark obstructions located 3 feet to 8 feet from the edge of the travel lane or edge of the shoulder based on engineering judgment. See Figures 903.17.4.1 and 903.17.4.2 for standard applications of Type 3 object markers.

MoDOT specific content from the EPG replaces paragraph 2. Revised Dec. 2025

Guidance:

03 If a Type 2 or Type 3 object marker is used to mark an obstruction adjacent to the roadway, the edge of the object marker that is closest to the road user should be installed in line with the closest edge of the obstruction.

04 When a marker is applied to the approach ends of guardrail or crash cushion terminals it should have the appearance of a Type 3 object marker and should be directly affixed, without a substrate, to the approach end of the guardrail or crash cushion and generally conform to the size and shape of the approach end of the guardrail or crash cushion.

Standard:

05 Type 1 and Type 4 object markers shall not be used to mark obstructions adjacent to the roadway.

Guidance:

06 Standard warning signs in this Chapter should also be used where applicable.

Section 2C.73 Object Markers for Ends of Roadways

Support:

01 The Type 4 object marker is used to warn and alert road users of the end of a roadway in other than construction or maintenance areas.

Standard:

02 If an object marker is used to mark the end of a roadway, a Type 4 object marker shall be used. See Section 903 of the Missouri Standard Plans for Highway Construction (https://www.modot.org/media/51221) for installation details.

Option:

03 The Type 4 object marker may be used in instances where there are no alternate vehicular paths.

~~04 Where conditions warrant, more than one marker, or a larger marker with or without a Type 3 Barricade (see Section 2B.75), may be used at the end of the roadway.~~

MoDOT does not use a larger marker. Revised Dec. 2025

Standard:

05 The minimum mounting height, measured vertically from the bottom of a Type 4 object marker to the elevation of the near edge of the traveled way, shall be 4 feet.

Guidance:

06 Appropriate advance warning signs in this ~~Chapter~~ EPG 903.3 should be used.

CHAPTER 2D. [EPG 903.4]
GUIDE SIGNS—CONVENTIONAL ROADS
GENERAL DESIGN

Section 2D.01 Scope of Conventional Road Guide Sign Standards and Application

Standard:

01 The provisions of this ~~Chapter~~ EPG 903.4 shall apply to any road or street other than expressways and freeways, except as otherwise provided in ~~this Manual~~ the EPG.

Support:

02 Guide signs direct road users along streets and highways; inform them of intersecting routes; direct them to cities, towns, villages, or other important destinations; identify nearby rivers and streams, parks, forests, and historical sites; and provide information that will help them along their way in the most simple and direct manner possible.

Guidance:

03 The selection of primary or control destinations (those displayed consistently over longer distances along a route) displayed on guide signs should be meaningful to road users in navigation and orientation. The destinations selected should be identifiable on official maps.

~~*04 The familiarity of the road users with the road should be considered in determining the need for guide signs on low-volume roads.*~~

~~Support:~~

~~05 Low-volume roads generally do not require guide signs to the extent that they are needed on higher classes of roads. Because guide signs are typically only beneficial as a navigational aid for road users who are unfamiliar with a low-volume road, guide signs might not be needed on low-volume roads that serve only local traffic.~~

~~06 Guide signs, other than Street Name signs, generally are not used on low-volume rural roads except as needed to guide road users back to the major roadways.~~

~~*Guidance:*~~

~~*07 If used on low-volume roads, destination names should be as specific and descriptive as possible. Destinations such as campgrounds, ranger stations, recreational areas, and the like should be clearly indicated so that they are not interpreted to be communities or locations with road user services.*~~

~~Option:~~

~~08 Guide signs may be used on low-volume roads at intersections to provide information for road users returning to a higher class of roads.~~

Support:

09 ~~Chapter 2A~~ EPG 903.1 addresses placement, location, and other general criteria for signs.

MoDOT does not consider any of its facilities to be low volume rural roads. Revised Dec. 2025

Section 2D.02 Color, and Retroreflection, and Illumination

Support:

01 Requirements for illumination, retroreflection, and color are stated under the specific headings for individual guide signs or groups of signs. General provisions are given in ~~Sections 2A.06, 2A.21, and 2A.22~~ EPG 903.1.6, 903.1.21, and 903.1.22.

Standard:

02 Except as otherwise provided in ~~this Manual~~ the EPG for individual signs or groups of signs, guide signs on streets and highways shall have a white message and border on a green

background. All messages, borders, and legends shall be retroreflective and all backgrounds shall be retroreflective ~~or illuminated~~.

MoDOT does not use illuminated signs. Revised Dec. 2025

Support:

03 Color coding is sometimes used to help road users distinguish between multiple potentially confusing destinations. Examples of valuable uses of color coding include guide signs for roadways approaching or inside an airport property with multiple terminals serving multiple airlines, and community wayfinding guide signs for various traffic generator destinations within a community or area.

Standard:

04 Except as otherwise provided in ~~this Manual~~ the EPG, different color sign backgrounds shall not be used to provide color coding of destinations. The color coding shall be accomplished by the use of different colored square or rectangular sign panels on the face of the guide signs (see Figure 2D-1).

Option:

05 The different colored sign panels on the face of a sign may include a black or white (whichever provides the better contrast with the panel color) letter, numeral, or other appropriate designation to identify an airport terminal or other destination.

Support:

06 Section 2D.55 contains specific provisions regarding Community Wayfinding guide signs.

Figure 2D-1. Examples of Color-Coded Destination Guide Signs



Section 2D.03 Size of Signs

Standard:

01 Except as provided in ~~Section 2A.07~~ EPG 903.1.7, the minimum sizes of conventional road guide signs that have standardized designs shall be as shown in Table 2D-1.

Support:

02 ~~Section 2A.07~~ EPG 903.1.7 contains information regarding the applicability of the various columns in Table 2D-1.

Table 2D-1. Conventional Road Guide Sign and Plaque Sizes

Sign or Plaque	Sign Designation	EPG Article	Conventional Road (in. x in.)			Freeway/Expressway (in. x in.)
			Standard	Oversized	Special	Mainline & Ramps
Interstate Route (1 or 2 digits)	M1-1, M1-1a	903.4.11	Varies X 24	Varies X 24	-	Varies X 24
Interstate Route (3 digits)	M1-1, M1-1a	903.4.11	Varies X 30	Varies X 30	-	Varies X 30
Off-Interstate Route (1 or 2 digits)	M1-2	903.4.11	Varies X 24	Varies X 24	-	Varies X 24
Off-Interstate Route (3 digits)	M1-2	903.4.11	Varies X 30	Varies X 30	-	Varies X 30
U.S. Route (1 or 2 digits)	M1-4	903.4.11	Varies X 24	Varies X 24	-	Varies X 24
U.S. Route (3 digits)	M1-4	903.4.11	Varies X 30	Varies X 30	-	Varies X 30
State Route (1 or 2 digits)	M1-5	903.4.11	Varies X 24	Varies X 24	-	Varies X 24
State Route (3 digits)	M1-5	903.4.11	Varies X 30	Varies X 30	-	Varies X 30
State Route (Letter)	M1-5a	903.4.11	Varies X 24	Varies X 24	-	Varies X 24
Junction (plaque)	M2-1P	903.4.13	21 X 15	21 X 15	-	21 X 15
North (plaque)	M3-1P	903.4.14	24 X 12	24 X 12	-	24 X 12
East (plaque)	M3-2P	903.4.14	24 X 12	24 X 12	-	24 X 12
South (plaque)	M3-3P	903.4.14	24 X 12	24 X 12	-	24 X 12
West (plaque)	M3-4P	903.4.14	24 X 12	24 X 12	-	24 X 12
Alternate (plaque)	M4-1P	903.4.16	24 X 12	24 X 12	-	24 X 12
Spur (plaque)	M4-1bP	903.4.17	24 X 12	24 X 12	-	24 X 12
Business (plaque)	M4-3P	903.4.18	24 X 12	24 X 12	-	24 X 12
To (plaque)	M4-5P	903.4.19	24 X 12	24 X 12	-	24 X 12
End (plaque)	M4-6P	903.4.20	24 X 12	24 X 12	-	24 X 12
Advance Turn Arrow (90° Left/Right)	M5-1P	903.4.22	21 X 15	21 X 15	-	21 X 15
Advance Turn Arrow (45° Left/Right)	M5-2P	903.4.22	21 X 15	21 X 15	-	21 X 15
Advance Turn Arrow (Curved Stem)	M5-3P	903.4.22	21 X 15	21 X 15	-	21 X 15
Lane Designation (Left)	M5-4P	903.4.23	24 X 18	24 X 18	-	24 X 18
Lane Designation (Center)	M5-5P	903.4.23	24 X 18	24 X 18	-	24 X 18
Lane Designation (Right)	M5-6P	903.4.23	24 X 18	24 X 18	-	24 X 18
Directional Arrow (Left/Right)	M6-1P	903.4.24	21 X 15	21 X 15	-	21 X 15
Directional Arrow (45° Left/Right)	M6-2P	903.4.24	21 X 15	21 X 15	-	21 X 15
Directional Arrow (Straight)	M6-3P	903.4.24	21 X 15	21 X 15	-	21 X 15
Directional Arrow (Two-Way)	M6-4P	903.4.24	21 X 15	21 X 15	-	21 X 15
Directional Arrow (Two-Way 45° Left/Right)	M6-5P	903.4.24	21 X 15	21 X 15	-	21 X 15
Directional Arrow (Up & Left/Right)	M6-6P	903.4.24	21 X 15	21 X 15	-	21 X 15
Directional Arrow (Up & 45° Left/Right)	M6-7P	903.4.24	21 X 15	21 X 15	-	21 X 15
Auto Tour	M-17 Series	903.4.50	Varies	Varies	-	Varies
MoDOT Maintenance Ends	M19-2	903.4.52	18 X 12	-	-	-
Destination (1 line)	D1-1	903.4.32	Varies	Varies	-	Varies
Destination (2 lines)	D1-2	903.4.32	Varies	Varies	-	Varies
Destination (3 lines)	D1-3	903.4.32	Varies	Varies	-	Varies
Destination and Distance (1 line)	D1-1a	903.4.32	Varies	Varies	-	Varies
Destination and Distance (2 lines)	D1-2a	903.4.32	Varies	Varies	-	Varies
Destination and Distance (3 lines)	D1-3a	903.4.32	Varies	Varies	-	Varies
Circular Intersection Destination (1 line)	D1-1d	903.4.35	Varies	Varies	-	Varies
Circular Intersection Departure Guide	D1-1e	903.4.35	Varies	Varies	-	Varies
Circular Intersection Destination (2 lines)	D1-2d	903.4.35	Varies	Varies	-	Varies
Circular Intersection Destination (3 lines)	D1-3d	903.4.35	Varies	Varies	-	Varies
Distance (1 line)	D2-1	903.4.38	Varies	Varies	-	Varies
Distance (2 lines)	D2-2	903.4.38	Varies	Varies	-	Varies
Distance (3 lines)	D2-3	903.4.38	Varies	Varies	-	Varies
Street Name (1 line)	D3-1	903.4.40	Varies	Varies	-	-
Street Name (2 lines)	D3-1b	903.4.40	Varies X 18	Varies X 18	-	-
Advance Street Name	D3-2	903.4.41	Varies	Varies	-	Varies
Parking Area	D4-1	903.4.42	30 X 24	30 X 24	-	-
Commuter	D4-1P	903.4.42	30 X 6	30 X 6	-	-
Commuter Parking	D4-1a	903.4.42	60 X 36	60 X 36	-	-
Park - Ride	D4-2	903.4.43	30 X 36	30 X 36	-	-
Missouri Scenic Byway	D6-4b	903.4.50	Varies	Varies	-	Varies
Missouri Scenic Byway Confirmation	D6-4c	903.4.50	Varies	Varies	-	Varies
Point of Interest	D6-4d	903.4.50	Varies	Varies	-	Varies

Advance Weigh Station Distance	D8-1	903.4.45	48 X 48	48 X 48	-	108 X 84
Weigh Station Advance Direction	D8-2a	903.4.45				
Weigh Station Entrance Direction	D8-3	903.4.45	48 X 48	48 X 48	-	84 X 72
Combination Lane Use/Destination	D15-1	903.4.34	Varies X 96	Varies X 96	-	Varies X 96
Next Truck Lane	D17-1	903.4.46	42 X 48	42 X 48	-	60 X 66
Advance Truck Lane	D17-2	903.4.46	42 X 42	42 X 42	-	60 X 54
Next Passing Lane	D17-3	903.4.47	42 X 48	42 X 48	-	60 X 66
End Alternating Passing Lanes	D17-3b	903.4.47				
Advance Passing Lane	D17-4	903.4.47	42 X 42	42 X 42	-	60 X 54
Alternating Passing Lanes	D17-4a	903.4.47	84 X 36	84 X 36	-	-

Option:

03 Signs larger than those shown in Table 2D-1 may be used (see ~~Section 2A.07~~ EPG 903.1.7) for special applications where speed, volume or other factors result in conditions where increased emphasis, improved recognition or increased legibility would be desirable, with approval from the MoDOT Highway Safety and Traffic Division.

MoDOT requires approval for larger signs. Revised Dec. 2025

Support:

04 For other guide signs, the legends are so variable that a standardized design or size is not appropriate. The sign size is determined primarily by the length of the message, and the size of lettering and spacing necessary for proper legibility.

Option:

05 Reduced letter height, reduced interline spacing, and reduced edge spacing may be used on guide signs if sign size must be limited by factors such as lane width or vertical or lateral clearance.

Guidance:

06 Reduced spacing between the letters or words on a line of legend should not be used as a means of reducing the overall size of a guide sign, except where determined necessary by engineering judgment to meet unusual lateral-space constraints. In such cases, the legibility distance of the sign legend should be the primary consideration in determining whether to reduce the spacing between the letters or the words or between the words and the sign border, or to reduce the letter height.

07 When a reduction in the prescribed size is necessary, the design used should be as similar as possible to the design for the standard size.

Section 2D.04 Lettering Style

Standard:

01 The design of upper-case letters, lower-case letters, numerals, route shields, and spacing shall be as provided in the EPG articles and FHWA's "Standard Highway Signs" publication (see Section 1A.05).

02 The lettering for names of places, streets, and highways on conventional road guide signs shall be a combination of lower-case letters with initial upper-case letters (see ~~Section 2A.08~~ EPG 903.1.8). The nominal loop height of the lower-case letters shall be ¾ the height of the initial upper-case letter. When a mixed-case legend letter height is specified referring only to the initial upper-case letter, the height of the lower-case letters that follow shall be determined by this proportion. When the height of a lower-case letter is referenced, the reference is made to the nominal loop height. The height of the initial upper-case letter shall also be determined by this proportion.

03 All other word legends on conventional road guide signs shall be in upper-case letters.

04 The unique letter forms for each of the Standard Alphabet series shall not be stretched, compressed, warped, or otherwise manipulated. Modifications to the length of a word for a given letter height and series shall be accomplished only by the methods described in Section 2D.03 and shall be approved by the MoDOT Highway Safety and Traffic Division.

Section 2D.05 Size of Lettering

Support:

01 Sign legibility is a direct function of letter size and spacing. Legibility distance has to be sufficient to give road users enough time to read and comprehend the sign. Under optimum conditions, a guide sign message can be read and understood in a brief glance. The legibility distance takes into account factors such as inattention, blocking of view by other vehicles, unfavorable weather, inferior eyesight, or other causes for delayed or slow reading. Where conditions permit, repetition of guide information on successive signs gives the road user more than one opportunity to obtain the information needed.

Standard:

02 Design layouts for conventional road guide signs ~~showing interline spacing, edge spacing, and other specification details shall be as shown in the "Standard Highway Signs" publication (see Section 1A.05)~~ shall be provided by the MoDOT Highway Safety and Traffic Division.

MoDOT specific content from the EPG. Revised Dec. 2025

03 Except as otherwise provided in ~~this Manual~~ the EPG, the principal legend on post-mounted guide signs shall be in letters and numerals at least 6 inches in height for all upper-case letters, or a combination of 6 inches in height for upper-case letters and 4.5 inches in nominal loop height (see Section 2D.04) for lower-case letters. ~~On low-volume roads with speeds of 25 mph or less, and on urban streets with speeds of 25 mph or less, the principal legend on post-mounted guide signs shall be in letters at least 4 inches in height for all upper-case letters, or a combination of 4 inches in height for upper-case letters and 3 inches in nominal loop height for lower-case letters.~~

MoDOT does not consider any of its facilities to be low volume roads. Revised Dec. 2025

04 Except as otherwise provided in ~~this Manual~~ the EPG, the principal legend on overhead guide signs shall be in letters and numerals at least 6 inches in height for all upper-case letters, or a combination of 6 inches in height for upper-case letters and 4.5 inches in nominal loop height (see Section 2D.04) for lower-case letters.

Guidance:

05 Lettering sizes should be consistent on any particular class of highway.

06 The minimum lettering and numeral sizes provided in ~~this Manual~~ the EPG (see Table 2D-2) should be exceeded where conditions indicate a need for greater legibility.

Table 2D-2. ~~Recommended~~ Typical Minimum Letter and Numeral Sizes for Conventional Road Guide Signs ~~According to Speed*~~ ~~(Sheet 1 of 2)~~

Type of Sign	D1 & D2 Series 55 mph and less	D1 & D2 Series/D3-2 60 mph and greater	E8 Series	Multi-Lane: Less than 30 mph	Multi-Lane: 30-40 mph	E1-1 Series
A. Intersection or Interchange Advance Guide Signs and Entrance Direction Guide Signs						
Interstate or Off-Interstate Business Route Signs						
Numerals**	6	9	9 ~~14~~	9	9	14
1- or 2-Digit Shields	18 x 18	24 x 24	24 x 24 ~~36 x 36~~	24 x 24	24 x 24	36 x 36
3-Digit Shields	22.5 x 18	30 x 24	30 x 24 ~~45 x 36~~	30 x 24	30 x 24	45 x 36
U.S. or State Route Signs						
Numerals	9	12	12 ~~18~~	12	12	18
1- or 2-Digit Shields	18 x 18	24 x 24	24 x 24 ~~36 x 36~~	24 x 24	24 x 24	36 x 36
3-Digit Shields	22.5 x 18	30 x 24	30 x 24 ~~45 x 36~~	30 x 24	30 x 24	45 x 36
County Route Signs						
Numerals	6	8	8 ~~10~~	8	8	10
1-, 2-, or 3-Digit Shields	18 x 18	24 x 24	24 x 24 ~~36 x 36~~	24 x 24	24 x 24	36 x 36
U.S. or State Route Text Identification (Examples: U S 56, Md 2)						
Numerals & Letters	8	12	12 ~~15~~	10	12	15
Cardinal Directions (NORTH, SOUTH, EAST, WEST)						
First Letter - Upper-Case	6	8	10	8	8	10
Rest of Word - Upper-Case	5	6	8	6	6	8
Auxiliary and Alternative Route Legends (Examples: JCT, TO, ALT, BUSINESS)						
Words - Upper-Case	5	6	8	6	6	8
Names of Destinations or Roads (Examples: Springfield, Main St, 2nd Ave)						
Leading Upper-Case Letter or Numerals	6	8	10.67	8	10.67	13.33
Following Lower-Case Letters or Ordinals**	4.5	6	8	6	8	10
Distance or Action Messages (Examples: 2 MILES, 1/2 MILE, KEEP RIGHT)						
Distance Numerals	6	6	8	6	8	10
Distance Fraction Numerals	4.5	4.5	6	4.5	6	8
Distance Words - Upper-Case	4.5	4.5	6	4.5	6	8
Action Message Words - Upper-Case	6	6	8	6	8	10
B. Destination and Other Guide Signs						
Names of Destinations or Roads (Examples: Springfield, Main St, 2nd Ave)						
Leading Upper-Case Letter or Numerals	4	6	8	6	8	10.67
Following Lower-Case Letters or Ordinals***	3	4.5	6	4.5	6	8
Distance or Action Messages (Examples: 2 MILES, 1/2 MILE, KEEP RIGHT)						
Distance Numerals	5	6	8	5	6	8
Distance Fraction Numerals	4	4.5	6	4	4.5	6
Distance Words - Upper-Case	4	4.5	6	4	4.5	6
Action Message Words - Upper-Case	5	6	8	6	6	8

Table 2D-2. ~~Recommended Minimum Letter and Numeral Sizes for Conventional Road Guide Signs According to Speed*~~ Typical Overhead Letter and Number Sizes for Conventional Overhead Road Guide Signs for complex intersections (Multi-Lane Roundabouts, DDIs, Ramp Terminals, etc.) ~~(Sheet 2 of 2)~~

known error

Type of Sign	Less than 35 mph	~~35-55 mph~~	Greater than55 mph
A. Intersection or Interchan Advance Guide Signs ar Entrance Direction Guide Sig			
Interstate, ~~U.S., State,~~ or Off-Inter e Business Route Signs			
Numerals**	6	9	14
1- or 2-Digit Shields	18 x 18	24 x 24	36 x 36
3-Digit Shields	22.5 x 18	30 x 24	45 x 36
U.S. or State Route Signs			
Numerals	9	12	18
1- or 2-Digit Shields	18 x 18	24 x 24	36 x 36
3-Digit Shields	22.5 x 18	30 x 24	45 x 36
County Route Signs			
Numerals	6	8	10
1-, 2-, or 3-Digit Shields	18 x 18	24 x 24	36 x 36
U.S. or State Route Text Identifica on (Exam es: U S 56, d 2)			
Numerals & Letters	8	12	15
Cardinal Directions (NORTH, SOU H, EAST, W ST)			
First Letter - Upper-Case	6	~~8~~ 10	12
Rest of Word - Upper-Case	5	~~6~~ 8	10
Auxiliary and Alternative Route Le ends (Exampl s: J T, TO, ALT, BU SINESS)			
Words - Upper-Case	5	~~6~~ 8	10
Names of Destinations or Roads (E amples: Sprin ld, Main St, 2nd Ave)			
Leading Upper-Case Letter or Numerals		~~8 (min.)~~ 10.67 (des.)	13.33 min.) 16 s.)
Following Lower-Case Letters or Ordinals**	4	~~6 (min.)~~ 8 (des.)	10 ri.) 12 s.)
Distance or Action Messages (Exa ples: 2 MILES, 1/2 MILE, KEEP R GHT)			
Distance Numerals	6	~~6 (min.)~~ 8 (des.)	2 (min 5 (des
Distance Fraction Numerals	4.5	~~4.5 (min.)~~ 6 (des.)	10 (min. 12 (des.
Distance Words - Upper-Case	4.5	~~4.5 (min.)~~ 6 (des.)	10 (min.) 12 (des.)
Action Message Words - Upper-Case	6	~~6 (min.)~~ 8 (des.)	12 (min.) 15 (des.)
B. Destination and Other Gu de Sig s			
Names of Destinations or Roads (E ampl Springfield, Mai St, 2nd Ave)			
Leading Upper-Case Letter or Numerals	6	~~8 (min.)~~ 10.67 (des.)	13.33 (min.) 16 (des.)
Following Lower-Case Letters or Ordinals**	4.5	~~6 (min.)~~ 8 (des.)	10 (min.) 12 (des.)
Distance or Action Messages (Exa ple 2 MILES, 1/2 MILE, KE P R GHT)			
Distance Numerals	6	~~6 (min.)~~ 8 (des.)	12 (min.) 15 (des.)
Distance Fraction Numerals	4.5	~~4.5 (min.)~~ 6 (des.)	10 (min.) 12 (des.)
Distance Words - Upper-Case	4.5	~~4.5 (min.)~~ 6 (des.)	10 (min.) 12 (des.)
Action Message Words - Upper-Case	6	~~6 (min.)~~ 8 (des.)	12 (min.) 15 (des.)

* Except as provided otherwise in ~~this Manual~~ the EPG

** Minimum size listed for 3-digit shields. Larger numeral sizes used for 1-digit, some 2-digit, and some 3-digit shields. See the Standard Highways Signs publication for more information on Route Sign numeral heights and Standard Alphabet series.

*** Lower-case letter height (loop height) is determined by the initial upper-case letter height (see ~~Sec. 2A.06~~) EPG 903.1.8

Notes: 1. Sizes are shown in inches and where applicable are shown as width x height

2. For Street Name (D3-1 Series) signs, see Table 2D-6

3. The 18-inch route shield size is not for independent use, such as in Directional or Confirmation Assemblies.

MUTCD

Section 2D.06 Amount of Legend

Support:

01 The longer the legend on a guide sign, the longer it will take road users to recognize and comprehend it, regardless of letter size.

Guidance:

02 Except where otherwise provided in ~~this Manual~~ the EPG, guide signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions. Where two or more signs are included in the same overhead display, the amount of legend should be further minimized. Where appropriate, a distance message or action information, such as an exit number, NEXT RIGHT, or directional arrows, should be provided on guide signs in addition to the destinations.

Section 2D.07 Abbreviations

Support:

01 The use of commonly recognized abbreviations for certain words can be useful in reducing the reading time and improve quicker comprehension of a sign message. Descriptors and directional or quadrant orientations for street names and destinations, such as Boulevard (Blvd), North (N), and Southwest (SW), are some examples of commonly recognized abbreviations. Examples of the use of some guide sign abbreviations are shown in Figure 2D-2.

Standard:

02 The words NORTH, SOUTH, EAST, and WEST shall not be abbreviated when used to indicate cardinal directions of numbered or named highways on guide signs.

Guidance:

03 Abbreviations should be kept to a minimum; however, they are useful when complete destination messages produce excessively long signs. If used, abbreviations should be unmistakably recognized by road users (see Section 1D.08). Longer commonly used words that are not part of a proper name and are readily recognizable, such as street name descriptors (such as Street, Boulevard, or Avenue), should be abbreviated as provided in Table 2D-3 to expedite recognition of the sign legend by reducing the amount and complexity of the legend. Shorter street name descriptors, such as those shown in Table 2D-4, should not be abbreviated.

04 Periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens should not be used in abbreviations, unless necessary to avoid confusion.

05 The solidus is intended to be used for fractions only and should not be used to separate words on the same line of legend. Instead, a hyphen should be used for this purpose, such as "TRUCKS – BUSES."

Figure 2D-2. Examples of Uses of Abbreviations on Guide Signs

A – Cardinal directions and orientations



"South" is the street name and shall not be abbreviated.

"EAST" is the cardinal direction of travel and shall not be abbreviated.

"Avenue" is the street name descriptor with a recognizable abbreviation* and should be abbreviated.



"South" is a ~~cardinal direction~~ and may be abbreviated.

pre-directional designation

"EAST" is the cardinal direction of travel and shall not be abbreviated.

"Road" is the street name descriptor with a recognizable abbreviation* and should be abbreviated.

B – Quadrant and cardinal directions



"Southeast" is a quadrant cardinal orientation and should be abbreviated.

"Boulevard" is the street name and shall not be abbreviated.



"Southeast" is the street name and shall not be abbreviated.

"Boulevard" is the street name descriptor with a recognizable abbreviation* and should be abbreviated.

C – Other descriptors within proper names



"Peak" is a geographical feature as a descriptor within a proper name. When a geographical feature descriptor does not have a recognizable abbreviation, it shall not be abbreviated.



OR



"Mount" is a geographical feature as a descriptor within a proper name. When a geographical feature descriptor has a recognizable abbreviation, it may be abbreviated.

* See Tables 1D-1 and 2D-3 for the abbreviations that are acceptable for use on signs

Table 2D-3. Acceptable Abbreviations for Street Name Descriptors

Descriptor	Standard Abbreviation
Avenue	Ave
Boulevard	Blvd
Bypass	Byp
Causeway	Cswy
Circle	Cir
Corner	Cor
Court	Ct
Crescent	Cres
Drive	Dr
East	E*
Expressway	Expwy
Extension	Ext
Freeway	Fwy
Highway	Hwy
Lane	La, Ln
Landing	Lndg
North	N*
Northeast	NE*

Descriptor	Standard Abbreviation
Northwest	NW*
Parkway	Pkwy
Place	Pl
Plaza	Plz
Road	Rd
Route	Rte
South	S*
Southeast	SE*
Southwest	SW*
Square	Sq
Street	St
Terrace	Ter
Thruway	Thwy
Trafficway	Trfwy
Trail	Tr
Turnpike	Tpk
West	W*

* For pre-directional or post-directional designations or cardinal orientations, such as E Main St or 3rd St SW

Table 2D-4. Street Name Descriptors Not Acceptable for Abbreviation

Descriptor
Alley
Belt
Beltway
Close
Cove
Edge
Gate
Green
Grove
Hill
Loop
Mews

Descriptor
Oval
Pass
Passage
Path
Ridge
Row
Run
Trace
Turn
View
Vista
Walk

Section 2D.08 Arrows

Support:

01 Arrows are used for lane assignment and to indicate the direction toward designated routes or destinations. Figure 2D-3 shows the various standard arrow designs that have been approved for use on guide signs. Detailed drawings ~~are shown~~ for these arrows ~~in the "Standard Highway Signs" publication (see Section 1A.05)~~ will be provided by the MoDOT Highway Safety and Traffic Division.

Standard:

02 Except for Overhead Arrow-per-Lane signs (see Section 2D.37), on overhead signs where it is desirable to indicate a lane to be followed, a down arrow shall be positioned over the approximate center of the lane and shall point vertically downward toward the approximate center of that lane. Down arrows shall be used only on overhead guide signs that restrict the use of specific lanes to traffic bound for the destination(s) and/or route(s) indicated by these arrows. Down arrows shall not be used unless an arrow can be located over and pointed to the approximate center of each lane that can be used to reach the destination displayed on the sign.

03 If down arrows are used, having more than one down arrow pointing to the same lane on a single overhead sign (or on multiple signs on the same overhead sign structure) shall not be permitted.

04 Where a roadway is leaving the through lanes, a directional arrow shall point upward at an angle that approximates the alignment of the exit roadway in the vicinity of the point of departure.

05 The Type E directional arrow for circular intersections shall not be used on any sign that is not associated with a circular intersection.

Guidance:

06 The Type A directional arrow should be used on guide signs on freeways, expressways, and conventional roads to indicate the direction to a specific destination or group of destinations, except as otherwise provided in this Section and in Section 2E.18.

07 When a directional arrow in a vertical, upward-pointing orientation is placed to the side of a group of destinations to indicate a through movement, the Type A directional arrow should be used. When a directional arrow in a vertical, upward-pointing orientation is placed to the side of a single destination or under a destination or group of destinations, the Type B directional arrow should be used.

08 The Type B directional arrow should be used on guide signs on conventional roads when placed at any angle to the side of a single destination or when placed in a horizontal orientation to the side of a group of destinations.

09 The Type C advance turn directional arrow should be used on conventional road guide signs placed in advance of an intersection where a turn must be made to reach a posted destination or group of destinations.

10 The Type D directional arrow should be used primarily for sign applications other than guide signs, except as provided in ~~Paragraph 15 of this Section~~ the fourth Option paragraph below.

11 If the Type E directional arrow is used, the principles set forth in Sections 2D.26 through 2D.29 should be followed.

Option:

12 The Type A-Extended directional arrow may be used on guide signs where additional emphasis regarding the direction is needed relative to the amount of legend on the sign.

13 The Type C directional arrow may be used to the side of the legend of an overhead guide sign to accentuate a sharp turn exit maneuver from a mainline roadway (see Section 2E.25 for additional information regarding Exit Direction signs for low advisory ramp speeds).

14 On conventional roads on the approach to an intersection where the Combination Lane-Use/Destination overhead guide sign (see Section 2D.38) is not used, the Type C advance turn directional arrow may be used beneath the legend of an overhead guide sign to indicate the fact that a turn must be made from a mandatory movement lane over which the sign is placed to reach the destination or destinations displayed on the sign.

15 The Type D directional arrow may be used on post-mounted guide signs on conventional roads with lower operating speeds if the height of the text on the sign is 8 inches or less. Type D arrows may be

used on a Street Name (D3-1 only) sign displaying two street names to indicate the different direction of travel for each street.

16 The Type E directional arrow may be used on guide signs on approaches to circular intersections to represent the intended driver paths to destinations involving left-turn movements around the circulatory island.

17 The directional and down arrows shown in Figure 2D-3 may be used on signs other than guide signs for the purposes of providing directional guidance and lane assignment.

Guidance:

18 Arrows used on guide signs to indicate the directions toward designated routes or destinations should be pointed at the appropriate angle to clearly convey the direction to be taken. A horizontally-oriented directional arrow design should be used at right-angle intersections.

19 On a post-mounted guide sign, a directional arrow for a straight-through movement should point upward. ~~Except as provided in Section 2D.50, for a turn, t~~ The arrow on a guide sign should point horizontally or at an upward angle that approximates the sharpness of the turn.

20 At an exit, an arrow should be placed at the side of the sign that will reinforce the movement of exiting traffic. The directional arrow design should be used.

Standard:

21 If used, the Type C advance turn directional arrow shall display a right or left arrow, the shaft of which is bent at a 90-degree or oblique angle.

Option:

22 Arrows may be placed below the principal sign legend or on the appropriate side of the legend that is consistent with the direction of the movement.

23 On a post-mounted sign at an exit where placement of the arrow to the side of the legend farthest from the roadway would create an unusually wide sign that limits the road user's view of the arrow, the directional arrow may be placed at the bottom portion of the sign, centered under the legend.

Guidance:

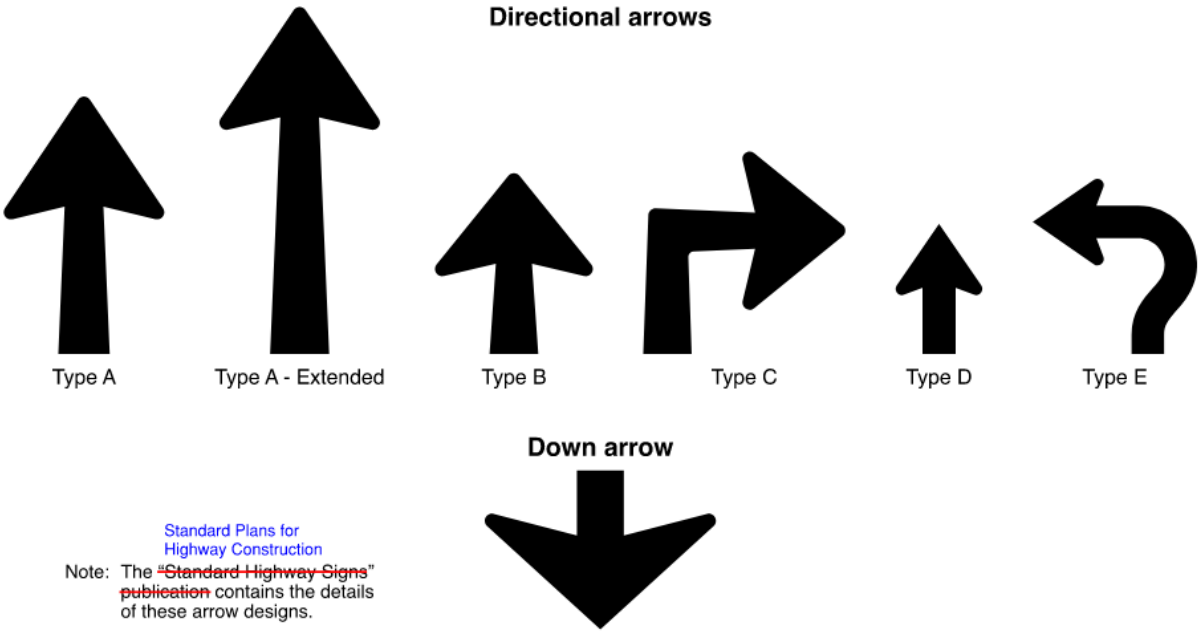
24 The width across the arrowhead for the Types A, B, and C directional arrows should be between 1.5 and 1.75 times the height of the upper-case letters of the principal legend on the sign. The width across the arrowhead for the Type D directional arrow should be at least equal to the height of the upper-case letters of the principal legend on the sign. For down arrows used on overhead signs, the width across the arrowhead should be approximately 2 times the height of the upper-case letters of the principal legend on the sign.

Support:

25 Section 2D.37 contains the provisions for arrows used in Overhead Arrow-per-Lane signs on approaches to conventional road intersections. Section 2E~~D~~.41 contains the provisions for arrows used in Diagrammatic Advance guide signing on approaches to conventional road intersections other than circular intersections. Section 2D.39 contains the provisions for diagrammatic arrows used in Destination signs on the approaches to circular intersections ~~(see Figure 2D-11)~~.

26 The FHWA's "Standard Highway Signs" publication (see Section 1A.05) and Standard Plan 903.01 contains design details and standardized sizes of the various arrows based on ranges of letter heights of principal legends.

Figure 2D-3. Arrows for Use on Guide Signs



Standard Plans for Highway Construction

Note: The ~~"Standard Highway Signs"~~ ~~publication~~ contains the details of these arrow designs.

Section 2D.09 Numbered Highway Systems

Support:

01 The purpose of numbering and signing highway systems is to identify routes and facilitate travel.

02 The Interstate and United States (U.S.) highway systems are numbered by the American Association of State Highway and Transportation Officials (AASHTO) upon recommendations of the State highway organizations because the respective States own these systems. State and county road systems are numbered by the appropriate authorities.

03 The basic policy for numbering the Interstate and U.S. highway systems is contained in the following Purpose and Policy statements published by AASHTO:

A. "Establishment and Development of United States Numbered Highways," and

B. "Establishment of a Marking System of the Routes Comprising the National System of Interstate and Defense Highways."

Guidance:

04 The principles of these policies should be followed in establishing the highway systems described in ~~Paragraph 3 of this Section~~ the preceding paragraph and any other systems, with effective coordination between adjacent jurisdictions. Care should be taken to avoid the use of numbers or other designations that have been assigned to Interstate, U.S., or State routes in the same geographic area. Overlapping numbered routes should be kept to a minimum.

Standard:

05 Route systems shall be given preference in this order: Interstate, United States, State, and county. The preference shall be given by installing the highest-priority route number on the top or the left of the sign, except as provided in ~~Paragraph 6 of this Section~~ the Option paragraph below.

06 Interstate route numbering shall be approved by the FHWA.

Option:

07 The prioritization of route systems may be modified when a different prioritization would better accommodate the expectancy of the road user and provide more effective direction, such as for separate decision points for routes that are encountered in a particular order.

~~Support:~~

~~08 Section 2D.56 contains information regarding the signing of unnumbered highways to enhance route guidance and facilitate travel.~~

Section 2D.10 Route Signs and Auxiliary Plaques

Standard:

01 Except as provided in ~~Paragraph 9~~ the third Option paragraph of Section 2D.29, all numbered highway routes shall be identified by route signs and auxiliary plaques.

02 The signs for each system of numbered highways, which are distinctive in shape and color, shall be used only on that system and the approaches thereto.

Option:

03 Route signs and auxiliary plaques may be proportionally enlarged where greater conspicuity or legibility is needed.

Support:

04 Route signs are typically mounted in assemblies with auxiliary plaques.

05 Section 2D.57 contains information regarding the signing for National Scenic Byways.

06 Section 2D.58 contains information regarding the signing for ~~State-designated~~ Missouri ~~s~~Scenic ~~b~~Byways, historic trails, and auto tour routes.

Section 2D.11 Design of Route Signs

Standard:

01 The design of standard route signs shall conform to the designs provided in the FHWA's "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 FHWA's "Standard Highway Signs" publication.

02 The Interstate Route (M1-1 ~~and M1-1a~~) sign~~s (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~~ the EPG, 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.**~~

MoDOT does not use M1-1a signs. Revised Dec. 2025

06 The Off-Interstate Business Route (M1-2 ~~and M1-3~~) sign~~s (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.

MoDOT does not use M1-3 signs. Revised Dec. 2025

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.**~~

M10A State Numbered Route (M1-5) signs shall consist of black numerals on a white representation of the State of Missouri surrounded by a rectangular black background without a border. This sign shall be used on all state numbered routes and in connection with route sign assemblies on intersecting highways.

M10B A 24 in. x 24-inch minimum sign size shall be used for state numbered route numbers with one or two digits, and a 30 in. x 24 in. minimum sign size shall be used for state numbers having three digits.

MoDOT specific content from the EPG replaces Paragraphs 10 and 12. Revised Dec. 2025

11 The legend on State Route signs shall conform to the Standard Alphabets contained in the FHWA's "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~~ EPG 903.4 shall be interpreted to also include lettered routes.

M15A State Lettered Route (M1-5a) signs shall be rectangular with the route letter in the center. The legend and border shall be black on a white background.

M15B A 24 in. x 24-inch minimum sign size shall be used for state lettered routes with one letter and a 30 in. x 24-inch minimum sign size shall be used for state lettered routes having two letters.

Guidance:

M15C The letters G, I, L, Q and S should not be used on State Lettered Route signs. The letter R should be used on supplemental routes connecting state parks or other recreational facilities.

MoDOT specific content from the EPG. Revised Dec. 2025

~~*16 If used with other route signs in common assemblies, the County 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.**~~

MoDOT does not use M1-6 or M1-7 signs. Revised Dec. 2025

Support:

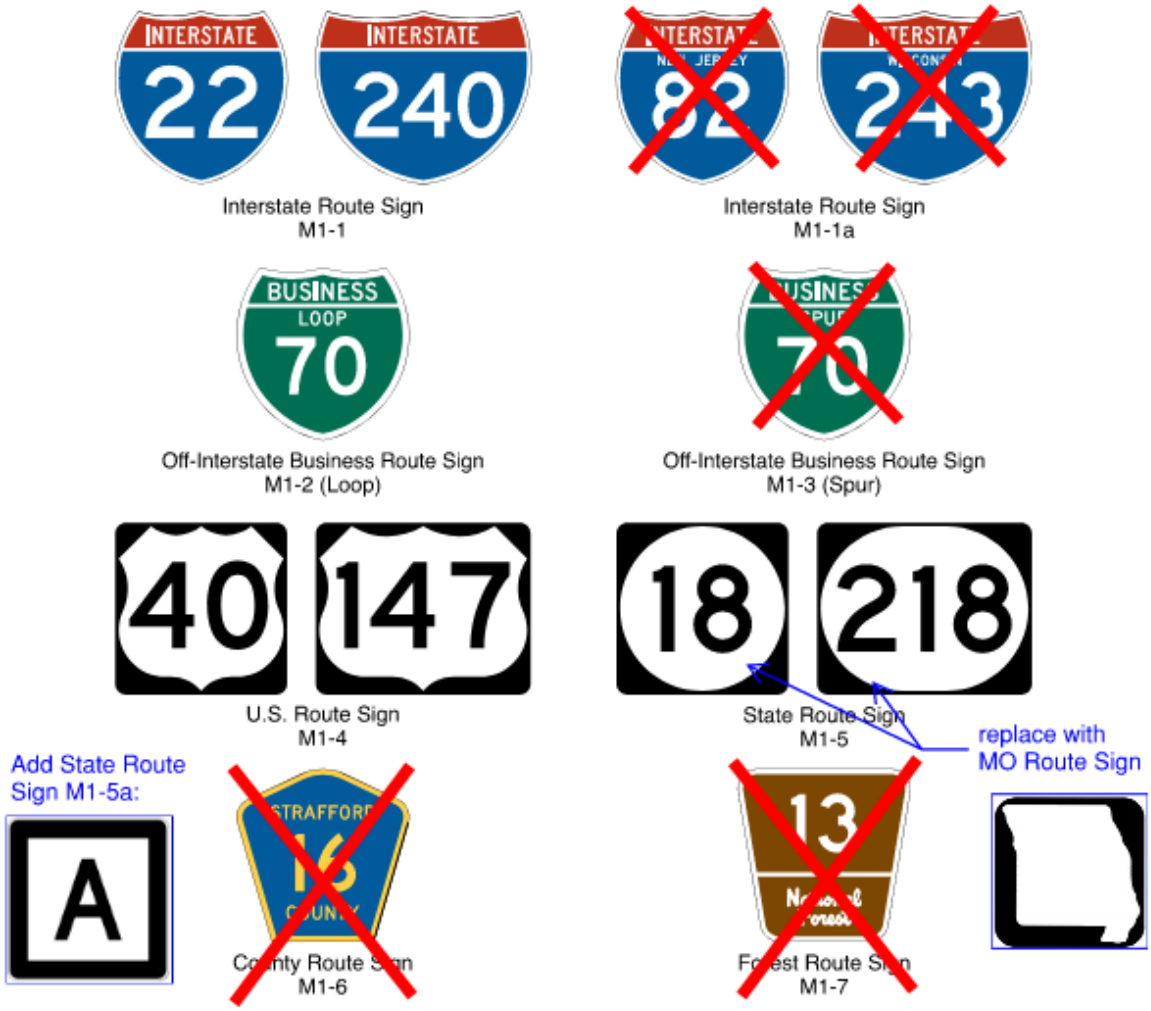
M18 Usually, but not always, double letter routes are farm to market roads that end at county roads or are former alignments of other highways.

M19 Missouri is the only state to extensively use lettering on its highway system. The 1952 Missouri 10-Year Highway Modernization and Expansion Program (the "Takeover Program") upgraded 12,000 miles of county roads. The roads became known as supplemental routes. The program provided a state-

maintained road within 2 miles of 95% of all rural units, such as farm homes, churches, schools, stores, etc. Missouri opted to use letters to label these routes to avoid confusion with the existing numbered routes.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2D-4. Route Signs



Section 2D.12 Design of Route Sign Auxiliary Plaques

Standard:

01 Route sign auxiliary plaques displaying word legends, except the Junction (M2-1P) auxiliary plaque, shall have a minimum standard size of 24 x 12 inches. The Junction auxiliary plaque and those auxiliary plaques displaying arrows shall have a minimum standard size of 21 x 15 inches. All route sign auxiliary plaques shall match the color combination of the route sign that they supplement.

Guidance:

02 The background, legend, and border of a route sign auxiliary plaque should have the same colors as those of the route sign with which the auxiliary plaque is mounted in a route sign assembly (see Section 2D.29). For a route sign design that uses multiple background colors, such as the Interstate Route sign, the background color of the corresponding auxiliary plaque should be that of the background area on which the route number is placed on the route sign.

Option:

03 A route sign and any auxiliary plaques used with it may be combined on a single sign as a guide sign.

Standard:

04 If a route sign and its auxiliary plaques are combined to form a single guide sign, the background color of the sign shall be green and the design shall comply with the basic principles for the design of guide signs. The auxiliary messages shall be white legends placed directly on the green background. Auxiliary plaques shall not be mounted directly to a guide sign or other type of sign.

~~Support:~~

~~05 Chapter 2F contains information regarding auxiliary plaques for toll highways.~~

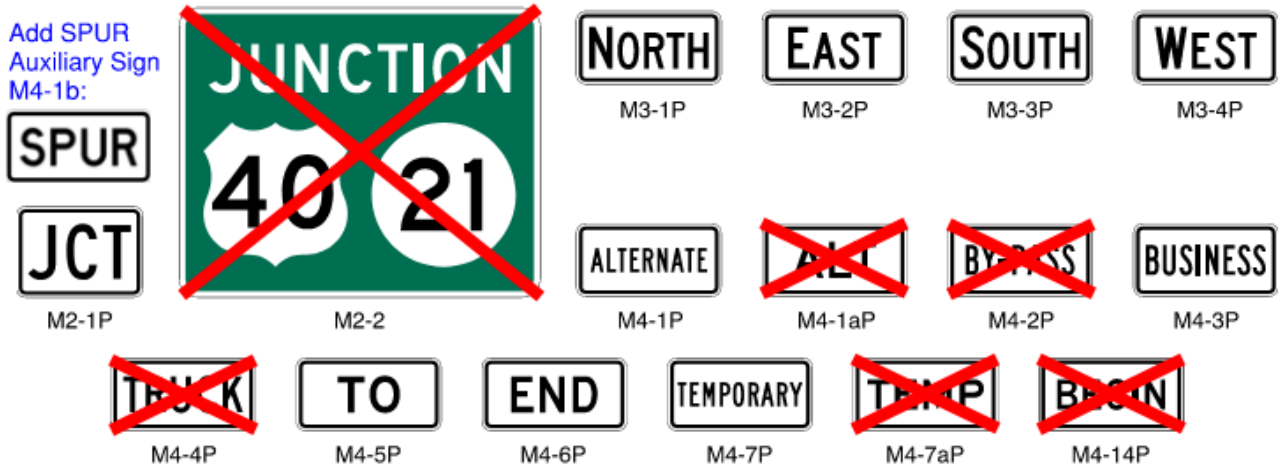
There are no toll facilities on the state highway system. Revised Dec. 2025

Section 2D.13 Junction Auxiliary Plaque (M2-1P)

Standard:

01 The Junction (M2-1P) auxiliary plaque ~~(see Figure 2D-5)~~ shall display the abbreviated legend JCT and shall be mounted at the top of an assembly (see Section 2D.30) directly above the route sign, the sign for an alternative route (see Section 2D.17) that is part of the route designation, or the Cardinal Direction auxiliary plaque where access is available only to one direction of the intersected route. The minimum size of the Junction auxiliary plaque shall be 21 x 15 inches for compatibility with auxiliary plaques displaying arrow symbols.

Figure 2D-5. Route Sign Auxiliary Plaques and Combination Junction Sign



~~**Section 2D.14 Combination Junction Sign (M2-2)**~~

~~Option:~~

~~01 As an alternative to the standard Junction assembly where more than one route is to be intersected or joined, a rectangular guide sign may be used displaying the word JUNCTION above the route numbers.~~

~~**Standard:**~~

~~**02 The Combination Junction (M2-2) sign (see Figure 2D-5) shall have a green background with white border and lettering for the word JUNCTION.**~~

~~*Guidance:*~~

~~*03 The Combination Junction sign should comply with the specific provisions of Section 2D.11 regarding the incorporation of the route signs as components of guide signs.*~~

~~*04 Although the size of the Combination Junction sign will depend on the number of routes involved, the numerals should be large enough for clear legibility and should be of a size comparable with those in the individual route signs.*~~

MoDOT does not use M2-2 Signs. Revised Dec. 2025

Section 2D.15 Cardinal Direction Auxiliary Plaques (M3-1P through M3-4P)

Guidance:

01 Cardinal Direction auxiliary plaques ~~(see Figure 2D-5)~~ displaying the legend NORTH, EAST, SOUTH, or WEST should be used to indicate the general direction of the entire route.

Standard:

M01A Cardinal Directions shall not be used with an Off-Interstate Business Route (M1-2) sign or State Letter Route (M1-5a) sign.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

02 To improve the readability and recognition of the cardinal directions, the first letter of the cardinal direction words shall be ten percent larger, rounded up to the nearest whole number size.

03 If used, the Cardinal Direction auxiliary plaque shall be mounted directly above a route sign or, if used, an auxiliary plaque for an alternative route.

Support:

M04 Odd-numbered routes typically run north-south, and even-numbered routes typically run east-west.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2D.16 Alternative Route Auxiliary Plaques - General ~~(M4-1P through M4-4P)~~

Option:

01 Alternative Route auxiliary plaques ~~(see Figure 2D-5)~~ displaying legends such as ALTERNATE, ~~BY-PASS,~~ SPUR, or BUSINESS, ~~or TRUCK,~~ may be used to indicate an alternate route of the same number between two points on that route.

MoDOT does not use the BY-PASS or TRUCK plaques, but does use the SPUR plaque. Revised Dec. 2025

Standard:

02 If used, the Alternative Route auxiliary plaques shall be mounted directly above a route sign.

Section 2D.17 ALTERNATE Auxiliary Plaque~~s~~ (M4-1P ~~and M4-1aP~~)

Support:

M00 An alternate route branches from the numbered route, follows a separate alignment, and rejoins the numbered route downstream.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

01 The ALTERNATE (M4-1P) ~~or the ALT (M4-1aP)~~ auxiliary plaque ~~(see Figure 2D-5)~~ may be used to indicate an officially designated alternate routing of a numbered route between two points on that route.

Standard:

02 If used, the ALTERNATE ~~or ALT~~ auxiliary plaque shall be mounted directly above a route sign.

03 The M4-1P ~~series~~ plaque~~s~~ shall not be used to sign an alternative routing that is not officially designated and incorporated into the numbered highway system, such as alternative routings for incident management or emergency detours.

MoDOT does not use the M4-1aP plaque. Revised Dec. 2025

Guidance:

04 The shorter (time or distance) or better-constructed route should retain the regular route number, and the longer or worse-constructed route should be designated as the alternate route.

Section 2D.17A SPUR Auxiliary Plaque (M4-1bP)

Support:

M01 A spur route is a highway that branches from a state numbered route or state letter route to serve a specific area or connect to another highway.

Option:

M02 The SPUR (M4-1bP) auxiliary plaque may be used to indicate an officially designated alternate route that branches from a numbered route and does not rejoin the same route.

Standard:

M03 If used, the SPUR auxiliary plaque shall be mounted directly above a route sign.

M04 The SPUR auxiliary plaque shall only be used in conjunction with state numbered routes or state letter routes. The SPUR auxiliary plaque shall not be used in conjunction with Interstate or U.S. routes.

MoDOT specific content from the EPG. Revised Dec. 2025

~~**Section 2D.18 BY-PASS Auxiliary Plaque (M4-2P)**~~

~~Option:~~

~~01 The BY-PASS (M4-2P) auxiliary plaque (see Figure 2D-5) may be used to designate a route that branches from the numbered route through a city, bypasses a part of the city or congested area, and rejoins the numbered route beyond the city.~~

~~**Standard:**~~

~~**02 If used, the BY-PASS auxiliary plaque shall be mounted directly above a route sign.**~~

MoDOT does not use the M4-2P plaque. Revised Dec. 2025

Section 2D.19 BUSINESS Auxiliary Plaque (M4-3P)

Option:

01 The BUSINESS (M4-3P) auxiliary plaque ~~(see Figure 2D-5~~) may be used to designate an alternate route that branches from a numbered route, passes through the business portion of a city, and rejoins the numbered route beyond that area.

Standard:

02 If used, the BUSINESS auxiliary plaque shall be mounted directly above a route sign.

M03 Cardinal direction auxiliary plaques shall not be used on a sign assembly with a BUSINESS auxiliary plaque.

MoDOT specific content from the EPG. Revised Dec. 2025

~~**Section 2D.20 TRUCK Auxiliary Plaque (M4-4P)**~~

~~Option:~~

~~01 The TRUCK (M4-4P) auxiliary plaque (see Figure 2D-5) may be used to designate an alternate route that branches from a numbered route, when it is desirable to encourage or require commercial vehicles to use the alternate route.~~

~~**Standard:**~~

~~**02 If used, the TRUCK auxiliary plaque shall be mounted directly above a route sign.**~~

MoDOT does not use M4-4P signs. Revised Dec. 2025

Section 2D.21 TO Auxiliary Plaque (M4-5P)

Option:

01 The TO (M4-5P) auxiliary plaque ~~(see Figure 2D-5)~~ may be used to provide directional guidance to a particular road facility from other highways in the vicinity (see Section 2D.34).

Standard:

02 If used, the TO auxiliary plaque shall be mounted directly above a route sign or an auxiliary plaque for an alternative route. If a Cardinal Direction auxiliary plaque is also included in the assembly, the TO auxiliary plaque shall be mounted directly above the Cardinal Direction auxiliary plaque.

Section 2D.22 END Auxiliary Plaque (M4-6P)

Guidance:

01 The END (M4-6P) auxiliary plaque ~~(see Figure 2D-5)~~ should be used where the route being traveled ends, usually at a junction with another route.

M01A The END auxiliary plaque should not be used to indicate the end of a lettered route.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

02 If used, the END auxiliary plaque shall be mounted either directly above a route sign or above a sign for an alternative route that is part of the designation of the route being terminated.

~~**Section 2D.23 BEGIN Auxiliary Plaque (M4-14P)**~~

~~Option:~~

~~01 The BEGIN (M4-14P) auxiliary plaque (see Figure 2D-5) may be used where a route begins, usually at a junction with another route.~~

~~**Standard:**~~

~~**02 If used, the BEGIN auxiliary plaque shall be mounted at the top of the first Confirming assembly (see Section 2D.33) for the route that is beginning.**~~

~~*Guidance:*~~

~~*03 If a BEGIN auxiliary plaque is included in the first Confirming assembly, a Cardinal Direction auxiliary plaque should also be included in the assembly.*~~

~~**Standard:**~~

~~**04 If a Cardinal Direction auxiliary plaque is also included in the assembly, the BEGIN auxiliary plaque shall be mounted directly above the Cardinal Direction auxiliary plaque.**~~

MoDOT does not use the M4-14P plaque. Revised Dec. 2025

~~**Section 2D.24 TEMPORARY Auxiliary Plaques (M4-7P and M4-7aP)**~~

~~Option:~~

~~01 The TEMPORARY (M4-7P) or the TEMP (M4-7aP) auxiliary plaque (see Figure 2D-5) may be used for an interim period to designate a section of highway that is not planned as a permanent part of a numbered route, but that connects completed portions of that route.~~

~~**Standard:**~~

~~02 If used, the TEMPORARY or TEMP auxiliary plaque shall be mounted directly above the route sign, above a Cardinal Direction auxiliary plaque, or above an auxiliary plaque for an alternate route that is a part of the route designation.~~

~~03 TEMPORARY or TEMP auxiliary plaques shall be promptly removed when the temporary route is abandoned.~~

MoDOT does not use M4-7 or M4-7aP plaques. Revised Dec. 2025

Section 2D.25 Temporary Detour Signs and Auxiliary Plaques

Support:

01 Chapter 6~~F~~I contains information regarding Temporary Detour signs and auxiliary plaques.

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

Standard:

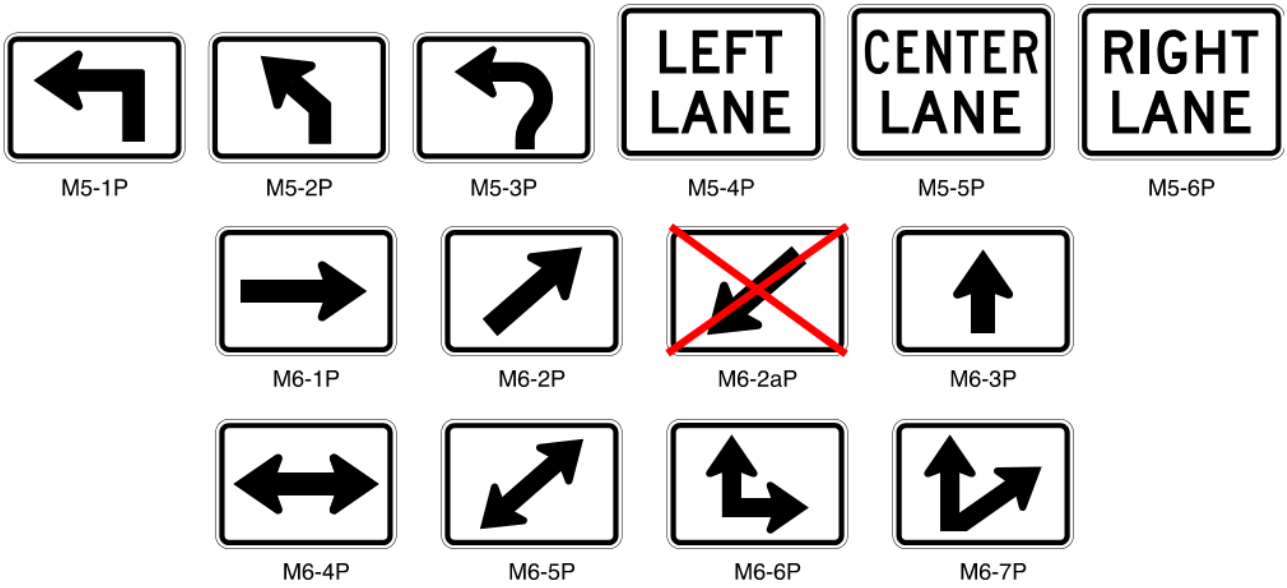
01 If used, the Advance Turn Arrow auxiliary plaque ~~(see Figure 2D-6)~~ shall be mounted directly below the route sign in Advance Route Turn assemblies, and shall display a right or left arrow, the shaft of which is bent at a 90-degree angle (M5-1P) or at an oblique angle (M5-2P).

02 If used, the Circular Intersection Advance Turn Arrow (M5-3P) auxiliary plaque ~~(see Figure 2D-6)~~ shall be used only on the approach to a circular intersection to depict a movement along the circulatory roadway around the central island and to the left, relative to the approach roadway and entry into the intersection.

Guidance:

03 If the M5-3P plaque is used, then this arrow type should also be used consistently on any regulatory lane-use signs (see ~~Chapter 2B~~EPG 903.2), Destination signs (see Section 2D.36), and pavement markings (see Part 3) for a particular destination or movement.

Figure 2D-6. Advance Turn and Directional Arrow Auxiliary Plaques



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

Option:

01 A Lane Designation (M5-4P, M5-5P, or M5-6P) auxiliary plaque ~~(see Figure 2D-6)~~ may be mounted directly below the route sign in an Advance Route Turn assembly on multi-lane roadways to allow road users to move into the appropriate lane prior to reaching the intersection or interchange.

Standard:

02 If used, the Lane Designation auxiliary plaques shall be used only where the designated lane is a mandatory movement lane and shall be located adjacent to the full-width portion of the mandatory movement lane. The Lane Designation auxiliary plaques shall not be installed adjacent to a through lane in advance of a lane that is being added or along the taper for a lane that is being added.

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

Standard:

01 If used, the Directional Arrow auxiliary plaque ~~(see Figure 2D-6)~~ shall be mounted below the route sign and any other auxiliary plaques in Directional assemblies (see Section 2D.32), and shall display a single-headed or double-headed arrow pointing in the general direction that the route follows.

02 A Directional Arrow auxiliary plaque that displays a double-headed arrow shall not be mounted in any Directional assembly in advance of or at a circular intersection.

~~Option:~~

~~03 The diagonal downward pointing arrow auxiliary (M6-2aP) plaque may be used in a Directional assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or expressway entrance ramp (see Section 2D.50).~~

~~**Standard:**~~

~~**04 The M6-2aP plaque shall not be used on the approach to or on the near side of an intersection, such as to designate an approach lane.**~~

MoDOT does not use the M6-2aP plaque. Revised Dec. 2025

Option:

M05 The Straight Arrows (M6 Series) may be substituted for the Advance Turn arrows (M5-1 and M5-2) when used near the "on" ramps of tight diamond interchanges to reduce the possibility of motorist confusion about which ramp to enter.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2D.29 Route Sign Assemblies

Standard:

01 A Route Sign assembly shall consist of a route sign and auxiliary plaques that further identify the route and indicate the direction. ~~Except as provided in Paragraph 9 of this Section,~~ Route Sign assemblies shall be installed on all approaches to numbered routes that intersect with other numbered routes.

02 Where two or more routes follow the same section of highway, the route signs for Interstate, U.S., and State~~, and county~~ routes shall be mounted in that order from the left in horizontal arrangements and from the top in vertical arrangements. Subject to this order of precedence, route signs for lower-numbered routes shall be placed at the left or top.

03 Within groups of assemblies, information for routes intersecting from the left shall be mounted at the left in horizontal arrangements and at the top or center of vertical arrangements. Similarly, information for routes intersecting from the right shall be at the right or bottom, and for straight-through routes at the center in horizontal arrangements or top in vertical arrangements.

04 Route Sign assemblies shall be mounted in accordance with the general specifications for signs (~~Chapter 2A~~ EPG 903.1), with the lowest sign in the assembly at the height prescribed for single signs.

Guidance:

05 Assemblies for two or more routes, or for different directions on the same route, should be mounted in groups on a common support.

~~06 Where more than four route signs would be needed in a single Advance Route Turn or Directional assembly, the route signs should instead be mounted in a guide sign to minimize the need for repetition of the same information on multiple Cardinal Direction and Directional Arrow auxiliary plaques (see Figure 2D-7).~~

MoDOT does not use a guide sign for this application. Revised Dec. 2025

Option:

07 Route Sign assemblies may be installed on the approaches to numbered routes on unnumbered roads and streets that carry an appreciable amount of traffic destined for the numbered route.

08 If engineering judgment indicates that groups of assemblies that include overlapping routes or multiple turns might be confusing, route signs or auxiliary signs may be omitted or combined, provided that clear directions are given to road users.

~~09 Route Sign assemblies may be omitted for routes that are part of an agency's internal numbering system, such as for maintenance or other purposes, and are not publicly mapped or intended to be used for navigational purposes by the general public. Similarly, numbered routes that are not maintained during certain times of year, such as not being plowed during winter months, may be omitted from Route Sign assemblies.~~

MoDOT includes route sign assemblies on all numbered and lettered routes. Revised Dec. 2025

Support:

10 Figure 2D-8 shows typical placements of route signs.

M11 Route sign assemblies are flat Sheet signs. For interstate route signs, payment is the same, but these contain blue sheeting. For cardinal directions placed above interstate route signs, a note is placed on Form D-30 to indicate the number of cardinal directions which are interstate design (white on blue), and which are the black on white type. This is also indicated for arrow signs placed below the interstate route signs. For overlapping routes with an interstate and any other type of roadway containing the same

cardinal direction, only one cardinal direction is required, and one arrow sign, with the interstate design being used.

MoDOT specific content from the EPG. Revised Dec. 2025

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 or letter of the intersected or joined route.

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

Lettered routes added to the standard paragraphs. Revised Dec. 2025

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.

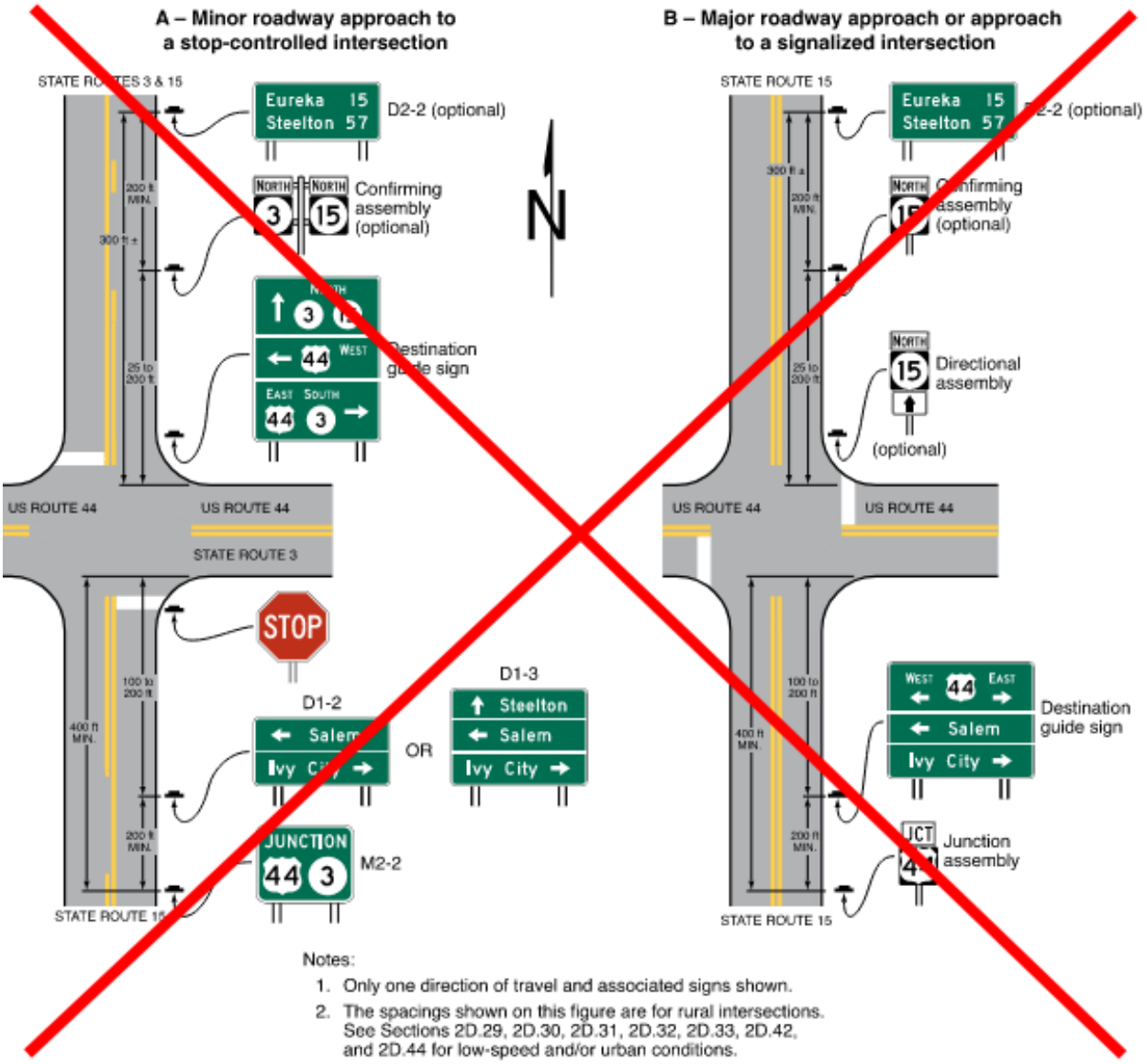
05 Where speeds are high, greater spacings should be used.

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~~.

MoDOT does not use M2-2 signs. Revised Dec. 2025

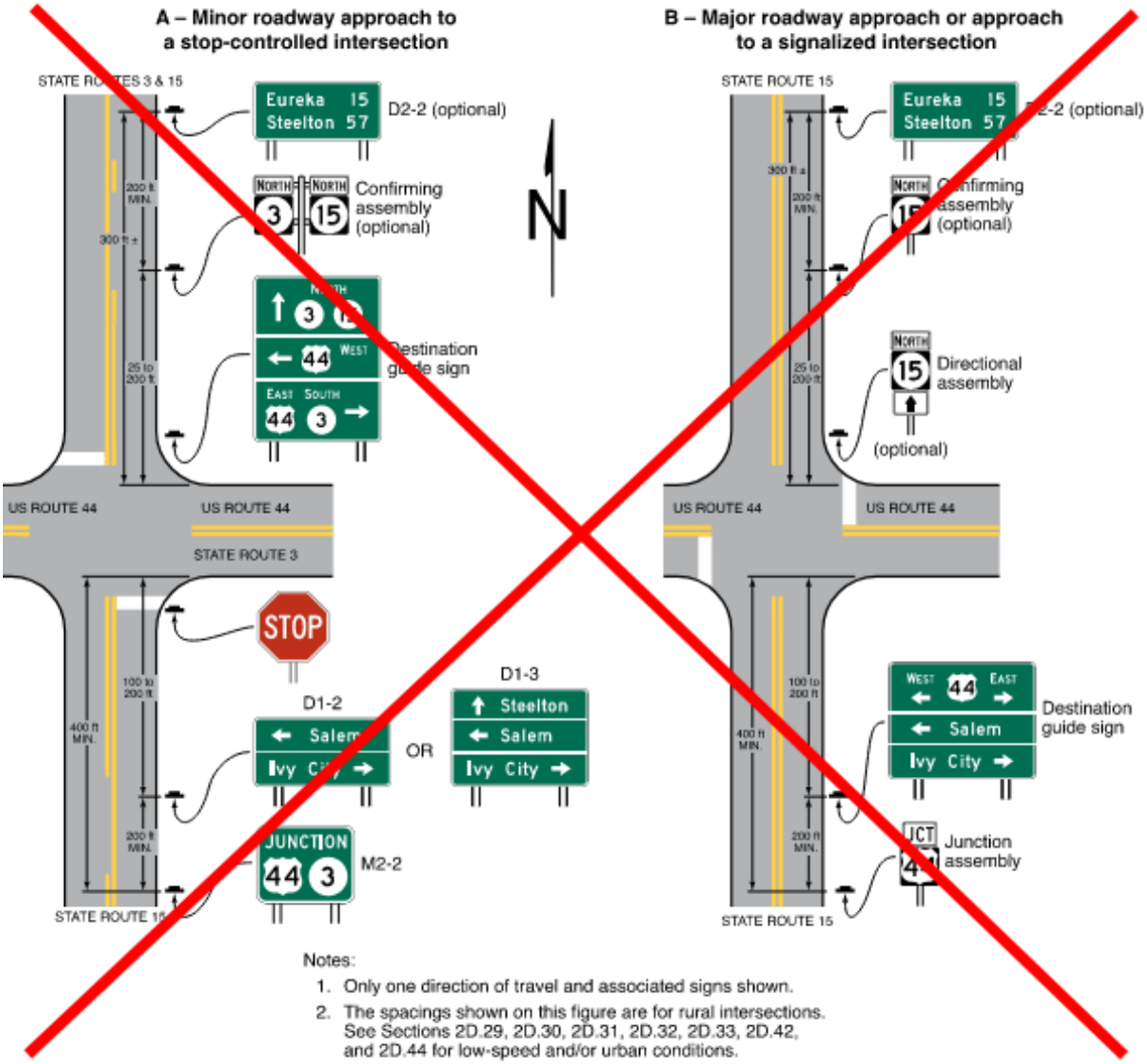
Figure 2D-7. Examples of Consolidation of Route Sign Assemblies into Guide Signs
(Sheet 1 of 2)



Notes:

1. Only one direction of travel and associated signs shown.
2. 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.

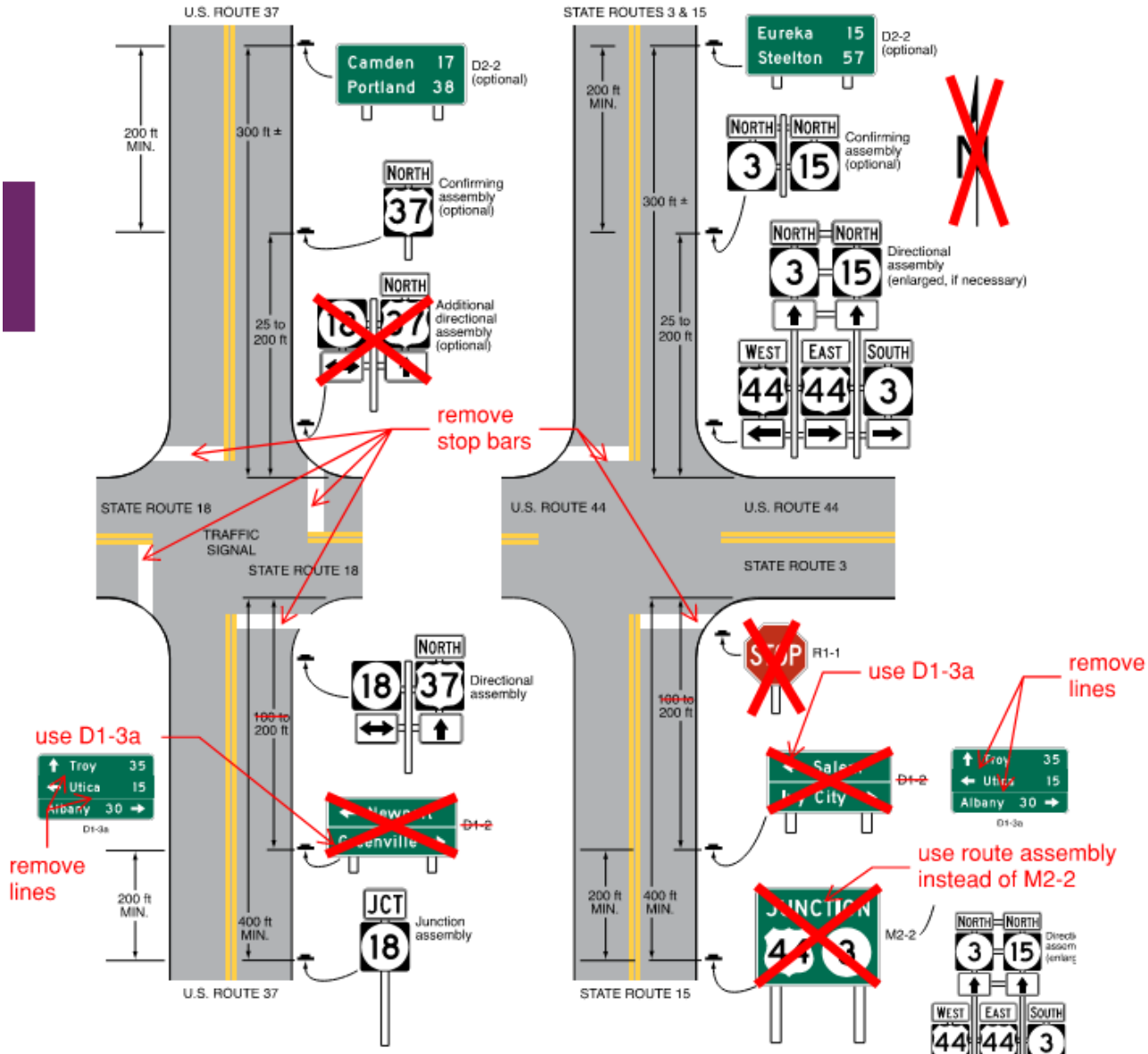
Figure 2D-7. Examples of Consolidation of Route Sign Assemblies into Guide Signs
(Sheet 2 of 2)



Notes:

1. Only one direction of travel and associated signs shown.
2. 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.

Figure 2D-8. Illustration of Directional Assemblies and Other Route Signs
(Sheet 1 of 4)

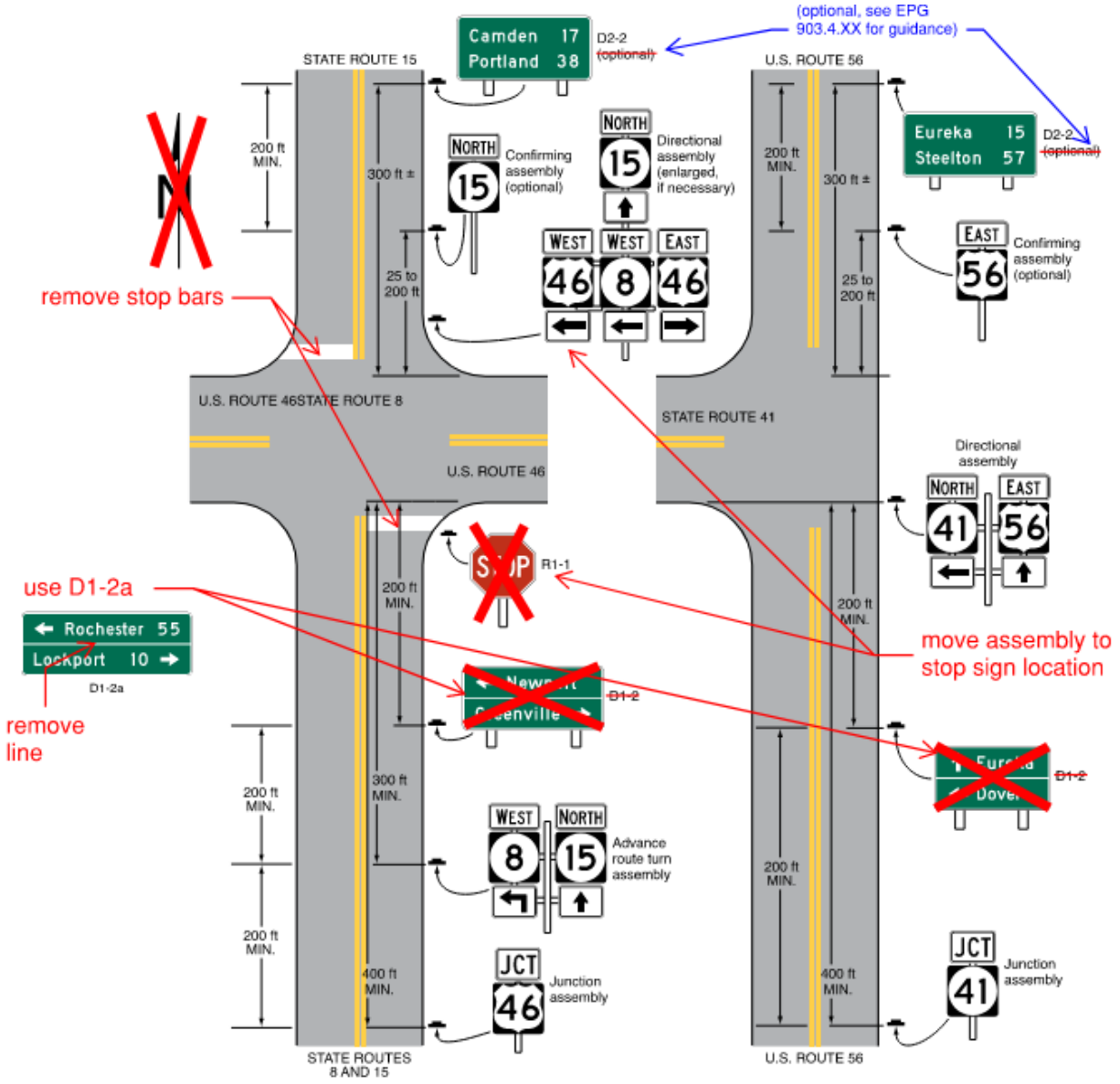


Notes:

1. Only the signs associated with the northbound direction of travel are shown on this figure.
2. 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.

replace state route signs with MO route sign

Figure 2D-8. Illustration of Directional Assemblies and Other Route Signs
(Sheet 2 of 4)

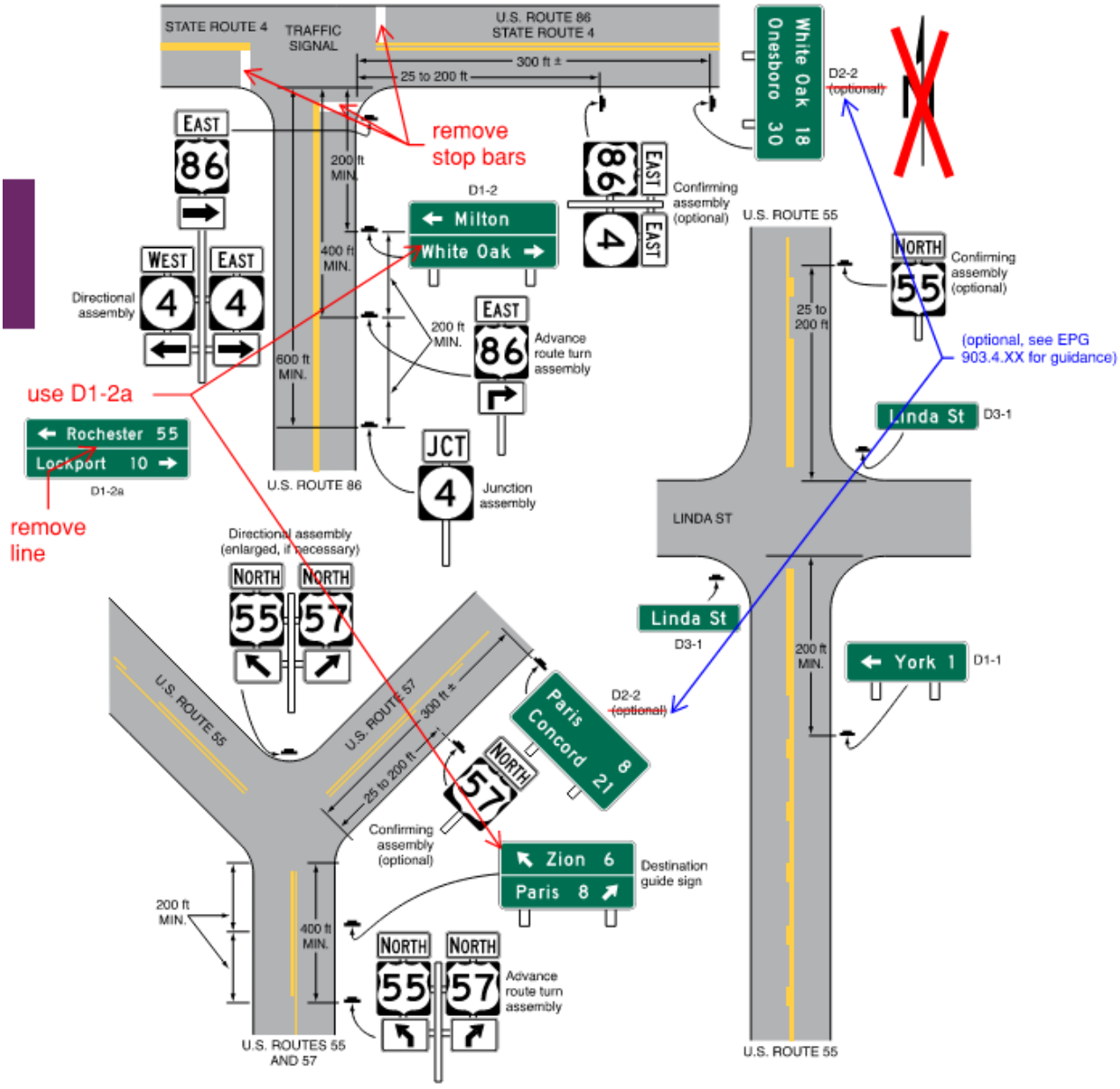


Notes:

1. Only the signs associated with the northbound direction of travel are shown on this figure.
2. 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.
3. Directional assembly may be located on far side of intersection if needed.

replace state route signs with MO route sign

Figure 2D-8. Illustration of Directional Assemblies and Other Route Signs (Sheet 3 of 4)

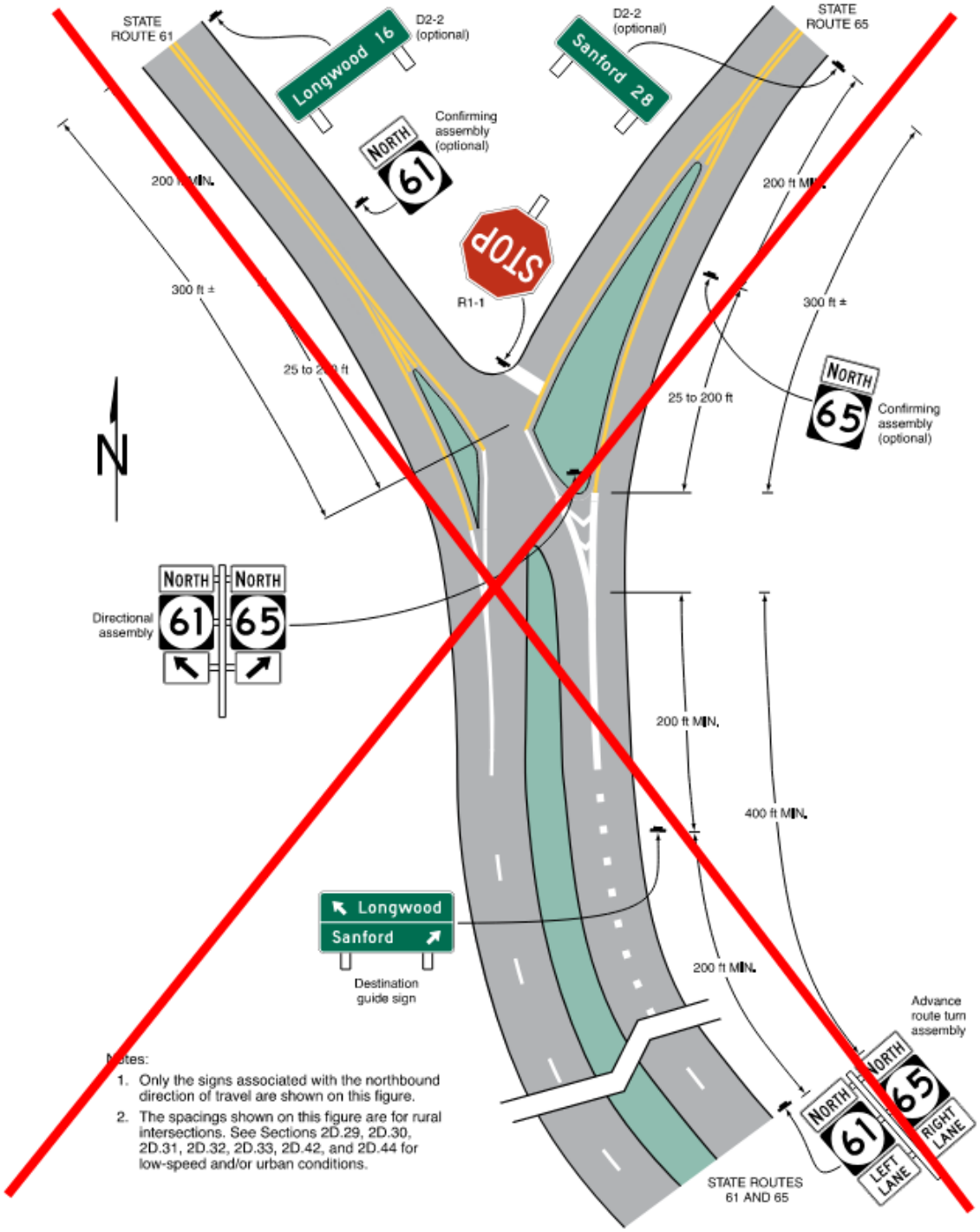


Notes:

1. Only the signs associated with the northbound direction of travel are shown on this figure.
2. 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.

replace state route signs with MO route sign

Figure 2D-8. Illustration of Directional Assemblies and Other Route Signs (Sheet 4 of 4)



Section 2D.31 Advance Route Turn Assembly

Standard:

01 An Advance Route Turn assembly shall consist of a route sign, an Advance Turn Arrow or word message auxiliary plaque, and a Cardinal Direction auxiliary plaque, if needed. It shall be installed in advance of an intersection where a turn must be made to remain on the indicated route.

Option:

02 The Advance Route Turn assembly may be used to supplement the required Junction assembly in advance of intersecting routes.

Guidance:

03 Where a multi-lane highway approaches an interchange or intersection with a numbered route, the Advance Route Turn assembly should be used to provide advance notice so that road users know the correct lane(s) from which to make their turn.

Option:

04 Lane Designation auxiliary plaques (see Section 2D.27) may be used in Advance Route Turn Assemblies in place of the Advance Turn Arrow auxiliary plaques where engineering judgment indicates that specific lane information associated with each route is needed and overhead signing is impracticable and the designated lane is a mandatory movement lane. An assembly with the Lane Designation auxiliary plaques may supplement or substitute for an assembly with Advance Turn Arrow auxiliary plaques.

Guidance:

05 In low-speed areas, the Advance Route Turn assembly should be installed not less than 200 feet in advance of the turn. In high-speed areas, the Advance Route Turn assembly should be installed not less than 300 feet in advance of the turn. In rural areas, the minimum distance between an Advance Route Turn assembly and either a Destination sign or a Junction assembly should be 200 feet.

Standard:

06 An assembly that includes an Advance Turn Arrow auxiliary plaque shall not be placed where there is an intersection between it and the designated turn.

Guidance:

07 Sufficient distance should be allowed between the assembly and any preceding intersection that could be mistaken for the indicated turn.

Section 2D.32 Directional Assembly

Standard:

01 A Directional assembly shall consist of a Cardinal Direction auxiliary plaque, if needed; a route sign; and a Directional Arrow auxiliary plaque. The uses of Directional assemblies shall comply with the following:

- **A. Turn movements (indicated in advance by an Advance Route Turn assembly) shall be marked by a Directional assembly with a route sign displaying the number of the turning route and a single-headed arrow pointing in the direction of the turn.**
- **B. The beginning of a route (indicated in advance by a Junction assembly) shall be marked by a Directional assembly with a route sign displaying the number of that route and a single-headed arrow pointing in the direction of the route.**
- **C. An intersected route (indicated in advance by a Junction assembly) on a crossroad where the route is designated on both legs shall be designated by:**
  1. **Two Directional assemblies, each with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary plaque, and a single-headed arrow pointing in the direction of movement on that route; or**

2. **A Directional assembly with a route sign displaying the number of the intersected route and a double-headed arrow, pointing at appropriate angles to the left, right, or ahead.**

D. An intersected route (indicated in advance by a Junction assembly) on a side road or on a crossroad where the route is designated only on one of the legs shall be designated by a Directional assembly with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary plaque, and a single-headed arrow pointing in the direction of movement on that route.

Guidance:

02 Straight-through movements should be indicated by a Directional assembly with a route sign displaying the number of the continuing route and a vertical arrow. A Directional assembly should not be used for a straight-through movement in the absence of other assemblies indicating right or left turns, as the Confirming assembly sign beyond the intersection normally provides adequate guidance.

03 Directional assemblies should be located on the near right corner of the intersection. At major intersections and at Y or offset intersections, additional Directional assemblies should be installed on the far right or left corner to confirm the near-side assemblies. When the near-corner position is impractical for Directional assemblies, the far right corner should be the preferred alternative, with oversized signs, if necessary, for legibility. Where unusual conditions exist, the location of a Directional assembly should be determined by engineering judgment with the goal being to provide the best possible combination of view and safety.

Support:

04 It is more important that guide signs be readable, and that the information and direction displayed thereon be readily understood, at the appropriate time and place than to be located with absolute uniformity.

05 Figure 2D-8 shows typical placements of Directional assemblies.

Section 2D.33 Confirming or Reassurance Assemblies

Standard:

01 If used, Confirming or Reassurance assemblies shall consist of a Cardinal Direction auxiliary plaque and a route sign, except as provided in the following paragraph. Where the Confirming or Reassurance assembly is for an alternative route, the appropriate auxiliary plaque for an alternative route (see Section 2D.16) shall also be included in the assembly.

M01A Cardinal Direction auxiliary signs shall not be used on Confirming or Reassurance assemblies for lettered routes, off-interstate business routes (business loops), business routes, and spur routes.

M01B A Confirming assembly shall be installed just beyond intersections of state numbered and lettered routes.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

02 ~~A Confirming assembly should be installed just beyond intersections of numbered routes.~~ Confirmation assemblies should be placed 25 to 200 feet beyond the far shoulder or curb line of the intersected highway.

MoDOT upgrades the first sentence of MUTCD Paragraph 2 to a Standard. Revised Dec. 2025

~~03 If used, Reassurance assemblies should be installed between intersections in urban areas as needed, and beyond the built-up area of any incorporated city or town.~~

MUTCD Paragraph 3 is replaced by MoDOT Paragraph M06.

~~04 Route signs for either confirming or reassurance purposes should be spaced at such intervals as necessary to keep road users informed of their routes.~~

MUTCD Paragraph 4 is replaced by MoDOT Paragraph M08.

M05 A Confirming assembly should be placed 500 feet beyond the downstream end of interchange acceleration lanes confirming the route(s) the driver is entering onto.

Option:

M06 Confirmation assemblies may be installed downstream of non-state routes based on engineering judgement. Examples of such application may include non-state routes which carry a significant volume of non-local traffic, or where the intersection with the non-state route may be confusing to the motorist as to which direction the state route departs from the intersection.

M07 On freeways with emergency reference markers the confirming route assembly may be omitted only if there is no overlapping route on that portion of the freeway, as the emergency reference marker serves as the confirmation.

M08 Reassurance assemblies may be installed on a route if the distance between state-to-state intersections is 20 miles or greater, with the route markers being installed at the approximate midpoint between the state intersections.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2D.34 Trailblazer Assembly

Support:

01 Trailblazer assemblies provide directional guidance to a particular road facility from other highways in the vicinity. This guidance is accomplished by installing Trailblazer assemblies at strategic locations to indicate the direction to the nearest or most convenient point of access. The use of the word TO indicates that the road or street where the sign is posted is not a part of the indicated route, and that a road user is merely being directed progressively to the route.

Standard:

02 A Trailblazer assembly shall consist of a TO auxiliary plaque (see Section 2D.21)~~, a route sign for a numbered or named highway (see Section 2D.56)~~ or an identification sign for a byway, historic trail, or auto tour route sign (see Sections 2D.57 and 2D.58), and a single-headed Directional Arrow auxiliary plaque pointing in the direction leading to the route. Where the Trailblazer assembly is for an alternative route, the appropriate auxiliary plaque for an alternative route (see Section 2D.16) shall also be included in the assembly.

Option:

03 A Cardinal Direction auxiliary plaque (see Section 2D.15) may be used in a Trailblazer assembly where the direction leading to the route provides access only to one direction of travel for that route.

Guidance:

04 The TO auxiliary plaque, Cardinal Direction auxiliary plaque, and Directional Arrow auxiliary plaque should be of the standard size provided for auxiliary plaques of their respective type. The route sign should be the size provided in Section 2D.11.

Option:

05 Trailblazer assemblies may be installed with other Route Sign assemblies, or alone, in the immediate vicinity of the designated facilities.

Section 2D.35 Destination and Distance Signs

Support:

01 In addition to guidance by route numbers, it is desirable to supply the road user information concerning the destinations that can be reached by way of numbered or unnumbered routes. This is done by means of Destination signs and Distance signs.

M01A State abbreviations are not routinely listed in conjunction with the control city of destination, unless the need is determined by the MoDOT Highway Safety and Traffic Division.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

02 Route shields and cardinal directions may be included on the Destination sign with the destinations and arrows.

Guidance:

03 If Route shields and cardinal directions are included on a Destination sign, the height of the Route shields should be at least two times the height of the upper-case letters of the principal legend and not less than 18 inches (15 inches for lettered routes), and the letter height of cardinal directions should be at least the minimum letter height specified for these signs.

~~*04 If used, destination names on low-volume rural roads should be as specific and descriptive as possible. Destinations such as campgrounds, ranger stations, and recreational areas should be clearly indicated so that they are not interpreted to be communities or locations with road user services.*~~

MoDOT does not consider any of its facilities to be low volume rural roads. Revised Dec. 2025

Standard:

M05 When a route designation is displayed on a destination sign with legends 8 inches or greater, route shields shall be used to display route names. When the destination has 6-inch legend or less, the route name shall be spelled out with text. State routes, both state numbered and state lettered routes, shall be listed simply as ROUTE XX. The letters "MO" shall not be used for state route designations, however, the letter "I" for interstate routes and "US" for United States routes will be shown.

Support:

M06 Control cities are defined for the interstate system in the AASHTO List of Control Cities for Use in Guide Signs on Interstate Highways and Table 903.8.11, Interstate Sign Control Cities. Control cities on other systems are determined as the next community located where the route intersects with a U.S. numbered route. A list of routes eligible for distance signing and the appropriate control points is available. The MoDOT Highway Safety and Traffic Division determines the control cities for non-interstate state-maintained routes.

Standard:

M07 The distances displayed on destination signs shall be based on the control point of the destination. Control points are typically the intersection of two major routes within the destination, these control points are determined by the MoDOT Highway Safety and Traffic Division. Distances displayed on destination signs are not measured to the jurisdictional boundary of the destination as boundaries change over time.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2D.36 Destination Signs (D1 Series)

Standard:

01 Except on approaches to interchanges (see Section 2D.49), the Destination (D1-1 through D1-3) signs ~~(see Figure 2D-9)~~, if used, shall be a horizontal rectangle displaying the name of a city~~, town, village, or other traffic generator,~~ or unincorporated community and a directional arrow.

M01A Destinations shall not include traffic generators such as universities, stadiums, amusement parks, or other publicly or privately owned attractions.

MoDOT limits guidance to incorporated cities and unincorporated communities and does not display traffic generator information on destination signs. Revised Dec. 2025

Option:

02 The distance (see Section 2D.43) to the place named may also be displayed on the Destination (D1-1a through D1-3a) signs ~~(see Figure 2D-9)~~. If several destinations are to be displayed at a single point, the several names may be placed on a single sign with an arrow (and the distance, if desired) for each name. ~~If more than one destination lies in the same direction, a single arrow may be used for such a group of destinations.~~

Guidance:

03 Adequate separation should be made between any destinations or group of destinations in one direction and those in other directions by suitable design of the arrow, spacing of lines of legend~~, heavy lines entirely across the sign,~~ or separate signs.

~~Support:~~

~~04 Separation of destinations by direction by the use of a horizontal separator line can enhance the readability of a Destination sign by relating an arrow and its corresponding destination(s) and by eliminating the need for multiple arrows that point in the same direction and excessive space between lines of legend.~~

Paragraphs modified for MoDOT preferences. Revised Dec. 2025

Standard:

05 Except as otherwise provided in ~~this Manual~~ the EPG, an arrow pointing to the right shall be at the extreme right of the sign, and an arrow pointing left or up shall be at the extreme left. The distance numerals, if used, shall be placed to the right of the destination names.

~~Option:~~

~~06 An arrow pointing up may be placed at the extreme right of the sign when the sign is mounted to the left of the traffic to which it applies.~~

Paragraph deleted to reflect MoDOT preference. Revised Dec. 2025

Guidance:

07 Unless a sloping arrow will convey a clearer indication of the direction to be followed, the directional arrows should be horizontal or vertical.

08 If several individual name signs are assembled into a group, all signs in the assembly should be of the same horizontal width.

09 Destination signs should be used:

A. At the intersections of U.S. or State numbered routes with Interstate, U.S., or State numbered routes; and

B. At points where they serve to direct traffic from U.S. or State numbered routes to the business section of towns, or to other destinations reached by unnumbered routes.

Standard:

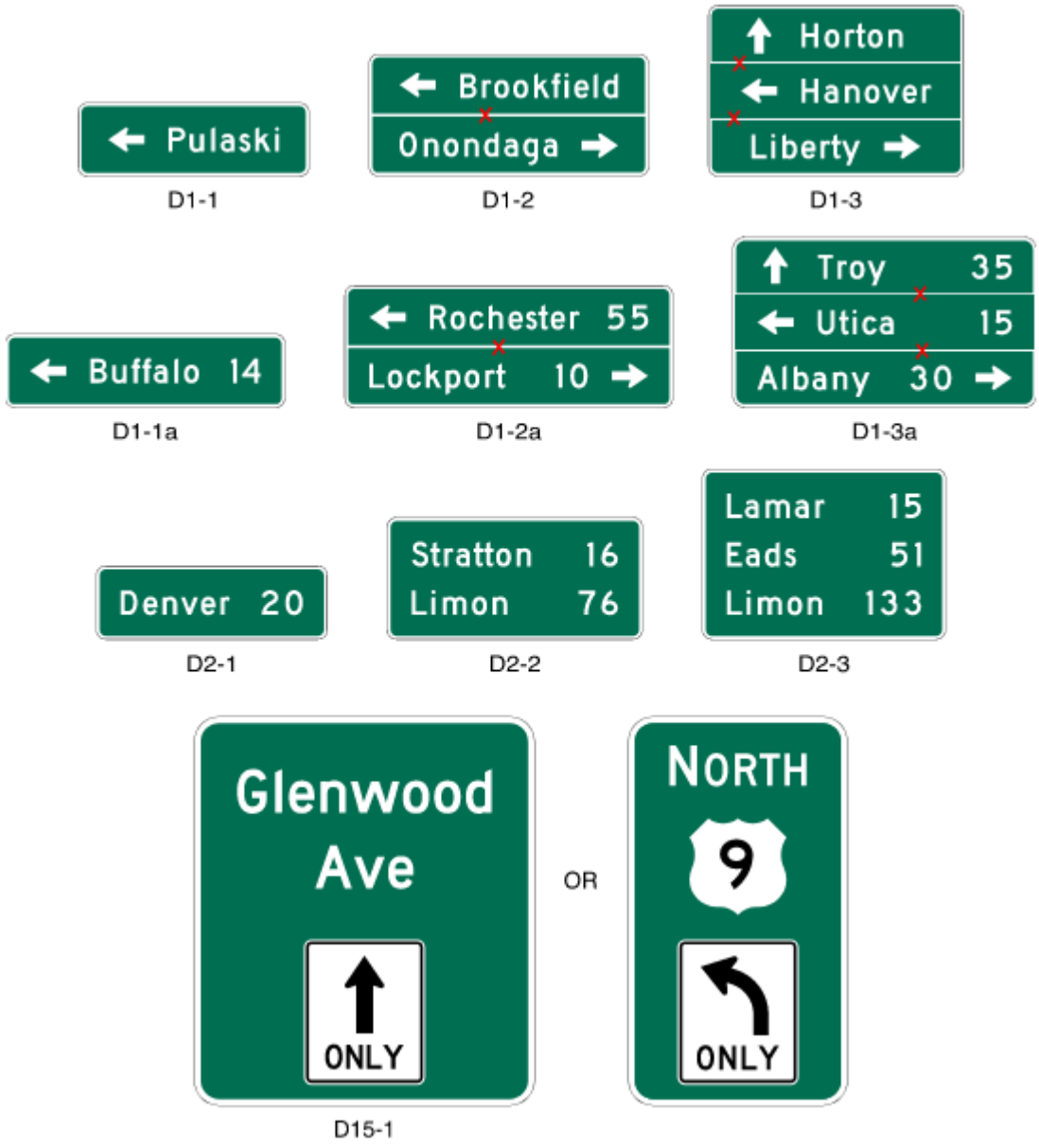
10 Where a total of three or fewer destinations are displayed on the Advance guide (see Section 2E.23) and Supplemental guide (see Section 2E.51) signs, no more than three destination names shall be displayed on a Destination sign. Where four destinations are displayed on the Advance guide and Supplemental guide signs, no more than four destination names shall be displayed on a Destination sign.

Option:

M10A Unincorporated communities may be displayed on Destination signs at junction of state routes where it is more appropriate than using incorporated communities if that destination meets the qualifications for Unincorporated Community (I5-1) Signs (see EPG 903.9.9 City/County Limit Signs).

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2D-9. Destination and Distance Signs



Guidance:

11 If space permits, four destinations should be displayed on two separate signs at two separate locations.

Option:

12 Where space does not permit, or where all four destinations are in one direction, a single sign may be used. Where a single sign is used and all destinations are in the same direction, the arrow may be placed below the destinations for the purpose of enhancing the conspicuity of the arrow.

Standard:

13 Where a single four-name sign assembly is used, a heavy line approximating the width of the sign border entirely across the sign or separate signs shall be used to separate destinations by direction.

Guidance:

14 The closest destination lying straight ahead should be at the top of the sign or assembly, and below it the closest destinations to the left and to the right, in that order. The destination displayed for each direction should ordinarily be the next county seat or the next principal city, rather than a more distant destination. In the case of overlapping routes, only one destination should be displayed in each direction for each route.

Standard:

15 If more than one destination is displayed in the same direction, the name of a nearer destination shall be displayed above the name of a destination that is farther away.

Support:

16 Overhead destination guide signs are sometimes helpful on multi-lane conventional roadways with complex or unusual roadway alignments or geometrics at intersecting highways to provide positive direction to destinations and to assign lanes to be used for destinations.

Option:

17 Overhead Destination signs may be used to provide lane assignment and destination information for some or all of the lanes on the approach to a multi-lane intersection. Destination information may include cardinal directions, route numbers, street names, and/or place names.

18 Overhead signs using the Arrow-per-Lane sign design configuration ~~(see Figure 2D-10)~~ may be used to provide lane assignments for some or all lane destinations at the approach to a multi-lane intersection (see Section 2D.37).

Section 2D.37 Overhead Arrow-per-Lane Destination Guide Signs

Support:

01 Overhead Arrow-per-Lane destination guide signs are sometimes used on multi-lane conventional roadways to provide positive direction to destinations and to indicate lanes to be used for those destinations. These locations typically include complex or unusual roadway alignments or geometrics. Overhead Arrow-per-Lane signs on conventional roads do not always have arrows for every lane~~. Sheet 2 of Figure 2A-4 and Sheet 1 of Figure 2D-10 show examples of the use of an Overhead Arrow-per-Lane Guide sign on a conventional road.~~ Unlike the Combined Lane-Use/Destination (D15-1) sign (see Section 2D.38), Overhead Arrow-per-Lane signs can be used to provide lane assignments where the designated lane is not a mandatory movement lane.

Guidance:

M01A Overhead Arrow-per-Lane destination guide signs are not typically used by MoDOT. When used, Overhead Arrow-per-Lane signs should comply with the provisions in this Section.

Option:

02 At complex intersection approaches involving multiple lanes and destinations, an Overhead Arrow-per-Lane destination guide sign may be used to provide destination information for some or all lanes. Destination information may include cardinal direction, route numbers, street names, and/or place names.

Standard:

03 Overhead Arrow-per-Lane signs for conventional roads shall only be used for multi-lane approaches to intersections that have an option lane.

04 Overhead Arrow-per-Lane guide signs used on conventional roads shall include as a minimum one arrow above each mandatory turn lane and a bifurcated arrow for the option lane from which both the through and turning movements are allowed.

Guidance:

05 Displaying an arrow over each through movement lane that does not allow turning should be considered for providing additional positive guidance.

Standard:

06 Overhead Arrow-per-Lane signs for conventional roads shall be designed in accordance with the following criteria:

- **A. The shaft of each arrow shall be located over the approximate center of the lane to which it applies.**
- **B. Arrows for continuing through lanes shall be vertically upward-pointing ~~(see Figure 2D-10)~~.**
- **C. The arrow for a lane that must turn shall be curved in the direction of the turn and shall be accompanied by a black-on-yellow ONLY (E11-1b) sign panel (see Figure 2E-17) adjacent to the lower end of the arrow shaft.**
- **D. The arrow for an optional exit lane that also carries the through route shall have a single shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow corresponding to the configuration of the through and turn lanes.**
- **E. A vertical white line shall be used to separate the route shields and destinations for the two diverging movements from each other.**
- **F. The number of lanes displayed on a sign shall correspond to the number of lanes being signed for at the location of that sign. An advance sign shall not depict lanes that are added downstream of a sign location.**

Guidance:

07 Overhead Arrow-per-Lane guide signs used on conventional roads should be designed in accordance with the following additional criteria:

- *A. No more than one destination should be displayed for each movement, and no more than three destinations should be displayed per sign.*
- *B. The arrowhead(s) for the diverging movement should be positioned lower on the sign than the arrowhead(s) for the movement that continues straight ahead.*
- *C. Route shields, cardinal directions, and destinations should be positioned on the sign such that they are clearly related to the arrowhead(s) for the movement to which they apply.*
- *E. The vertical white line that is used to separate the route shields and destinations for the two diverging movements from each other should not descend below the top of the arrowheads for the through lanes, and should be positioned approximately halfway between the diverging arrowheads for the optional movement lane.*

08 Destination information should be kept to a minimum necessary to provide positive guidance without overloading the road user.

Standard:

09 The minimum height of arrows on an Overhead Arrow-per-Lane sign used on a conventional road shall be as shown in Table 2D-5.

Guidance:

10 When letter heights and other sign legend elements are enlarged there should be an corresponding increase in the arrow size used.

Option:

11 Curved-stem arrows may be substituted on Overhead Arrow-per-Lane Signs on multi-lane approaches to a circular intersection with an option lane (see Section 2D.39).

Table 2D-5. Overhead Arrow-per-Lane Arrow Height Based on Principal Legend Letter Height

Principal Legend Letter Height	Straight Arrow	Turn Arrow
10.67 ~~13.33~~	~~32~~ 25.5	~~24~~ 20.188
~~8~~	~~24~~	~~18~~

Note: Letter and arrow heights are shown in inches.

known error

Figure 2D-10. Examples of Overhead Signs at an Intersection (Sheet 1 of 3)

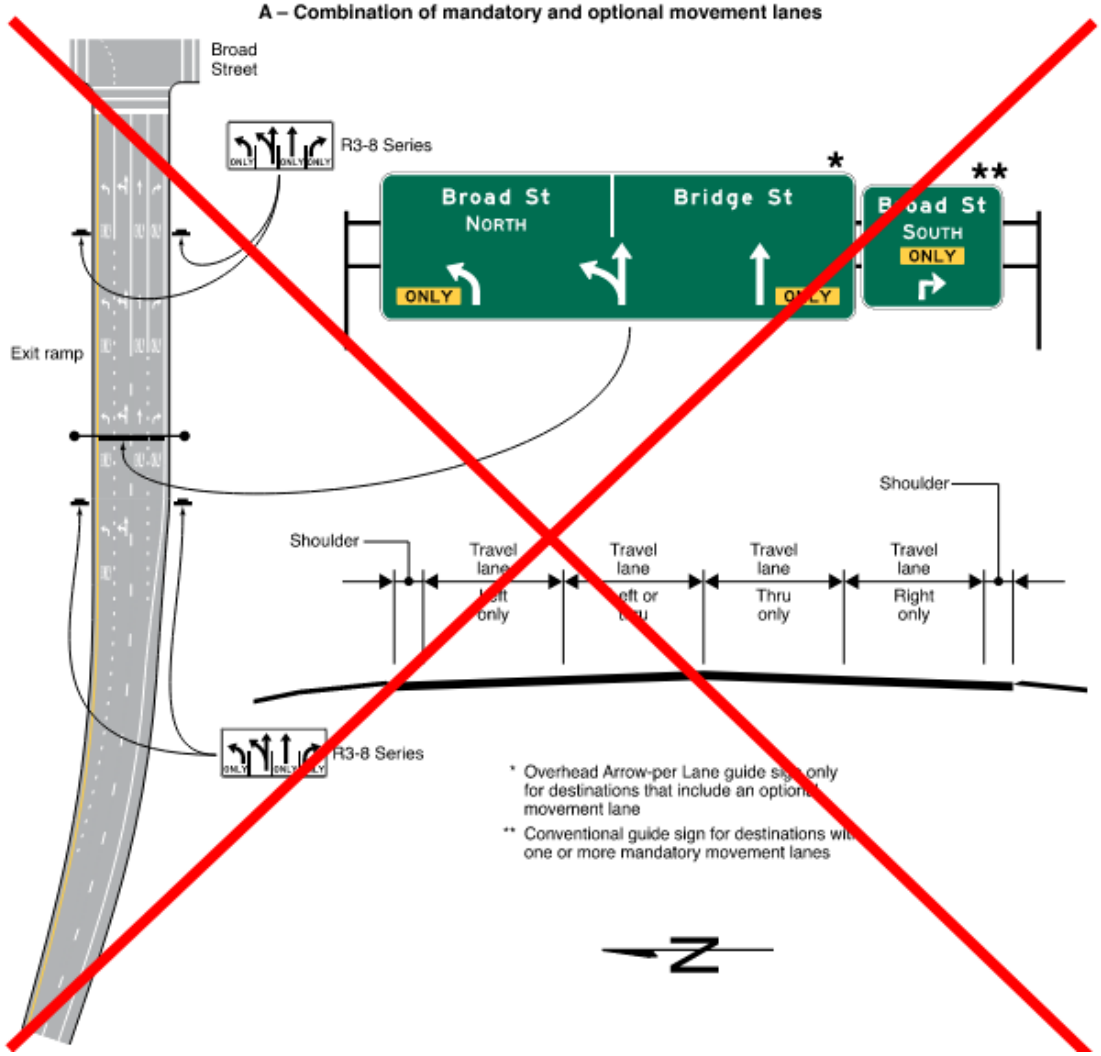


Figure 2D-10. Examples of Overhead Signs at an Intersection (Sheet 2 of 3)

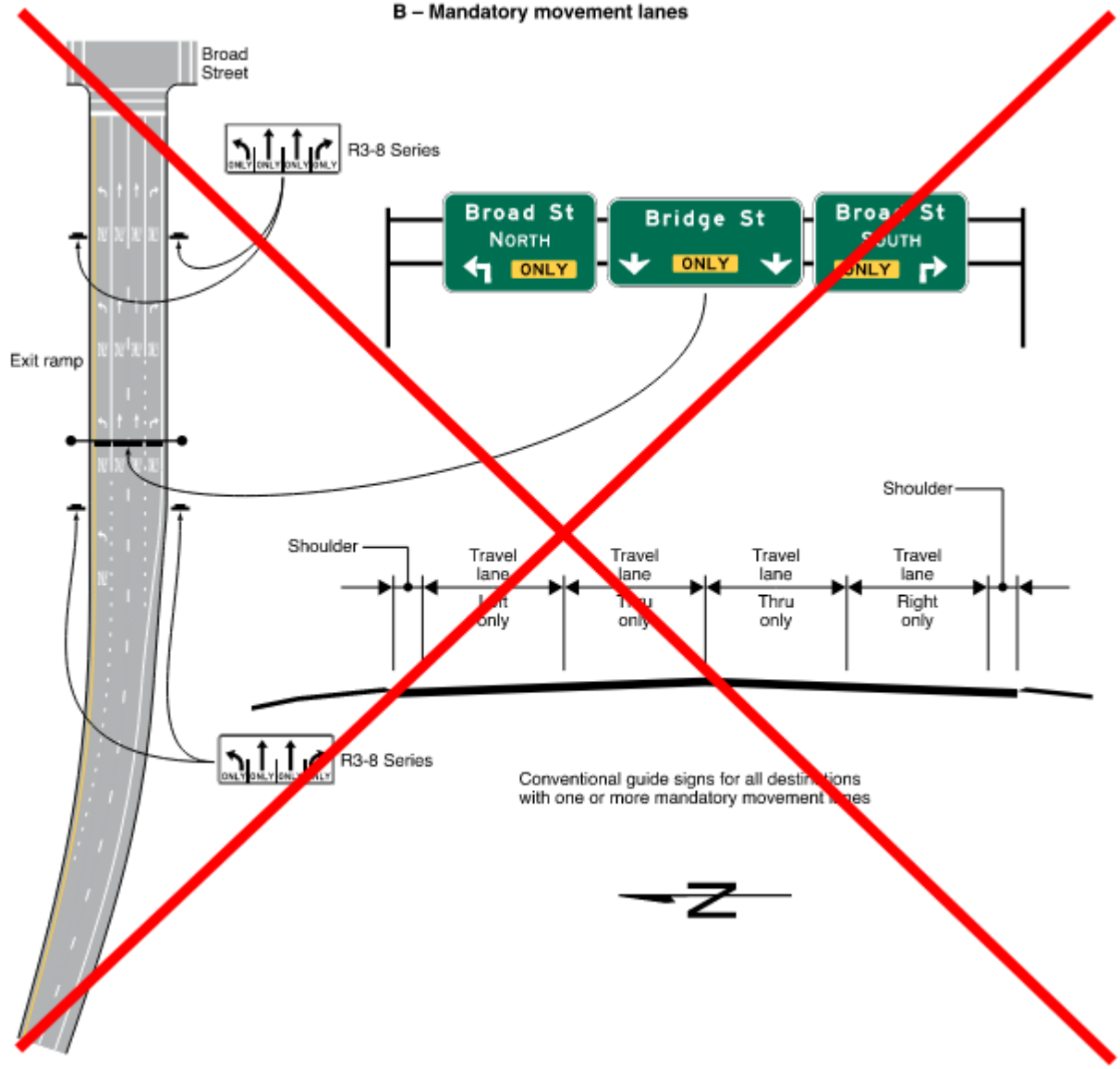
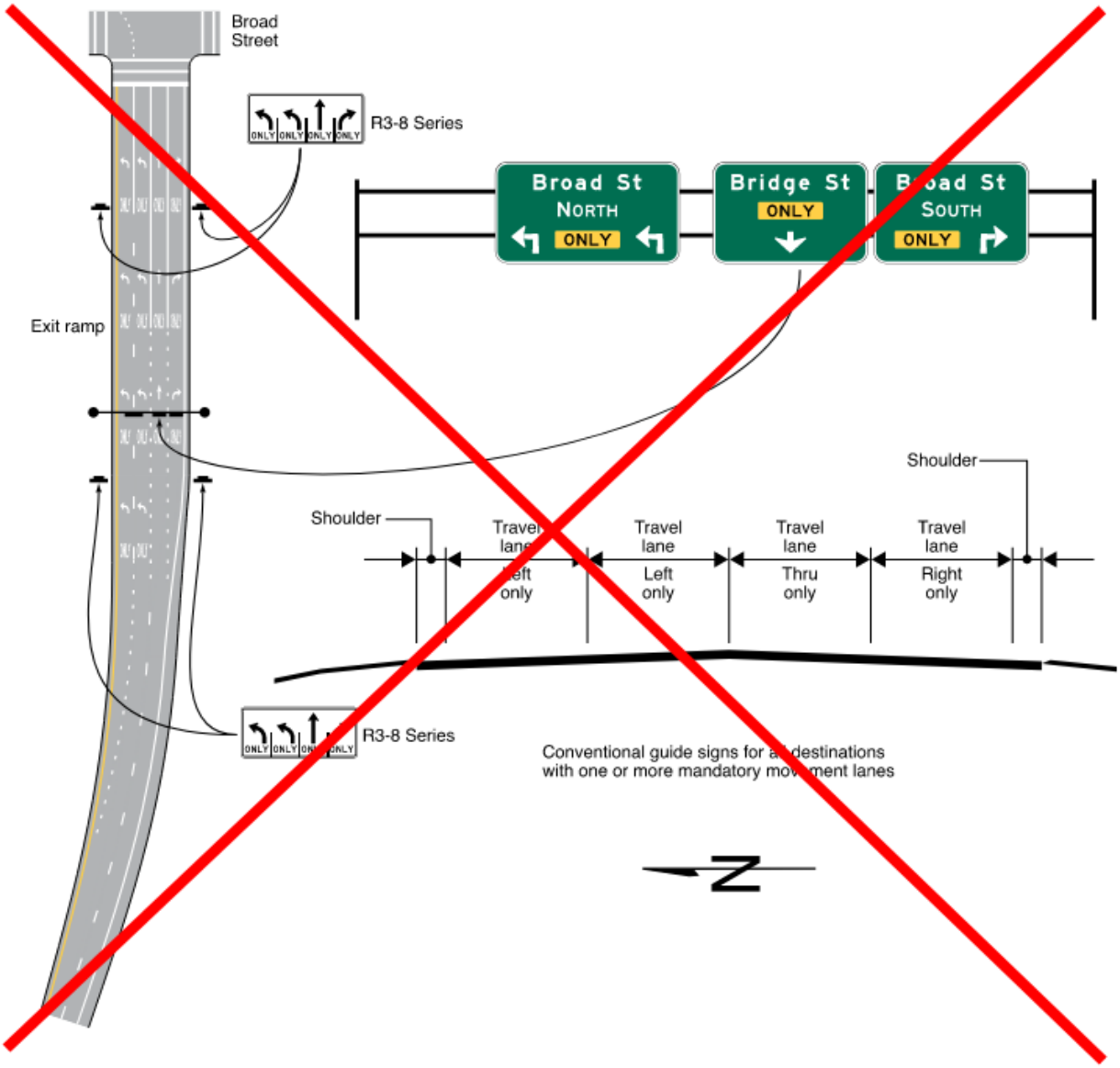


Figure 2D-10. Examples of Overhead Signs at an Intersection (Sheet 3 of 3)



Section 2D.38 Combination Lane-Use/Destination Overhead Guide Sign (D15-1)

Option:

01 At intersection approaches involving multiple turn lanes and destinations, a Combination Lane-Use/Destination (D15-1) overhead guide sign ~~(see Figure 2D-9)~~ that combines a lane-use regulatory sign with destination information such as a cardinal direction, a route number, a street name, and/or a place name may be used.

Support:

02 At such locations, the combined information on the D15-1 signs can be even more effective than separate lane-use and guide signs for conveying to unfamiliar drivers which lane or lanes to use for a particular destination.

~~03 Figure 2D-9 shows an example of a D15-1 sign that combines lane-use and street name information and an example of a D15-1 sign that combines lane-use, cardinal direction, and route number information.~~

Standard:

04 The Combination Lane-Use/Destination (D15-1) overhead guide sign shall be used only where the designated lane is a mandatory movement lane. The D15-1 sign shall not be used for lanes with optional movements.

05 The D15-1 sign shall have a green background with a white border. ~~As shown in Figure 2D-9,~~ the lane-use sign (see ~~Chapter 2B~~EPG 903.2) shall be placed near the bottom of the sign and the destination information shall be placed near the top of the sign. The D15-1 sign shall be located over the approximate center of the lane to which it applies.

Section 2D.39 Destination Signs at Circular Intersections

Standard:

01 Destination signs that are used at circular intersections shall comply with the provisions of Section 2D.36, except as provided in this Section.

Option:

02 Exit Destination (D1-1d and D1-1e) signs ~~(see Figure 2D-11)~~ with diagonal upward-pointing arrows or Directional assemblies (see Section 2D.32) may be used to designate a particular exit from a circular intersection.

03 Destination (D1-2d and D1-3d) signs ~~(see Figure 2D-11)~~ with curved-stem arrows may be used on approaches to circular intersections to represent the left-turn movements.

04 Curved-stem arrows on circular intersection destination signs may point in diagonal directions to depict the location of an exit relative to the approach roadway and entry into the intersection.

05 An Overhead Arrow-per-Lane Destination sign (see Section 2D.37) with curved-stem arrows may be used on multi-lane approaches to circular intersections that have an option lane.

~~06 A Destination (D1-5 or D1-5a) sign (see Figure 2D-11) with a diagram of the circular intersection may be used on approaches to circular intersections.~~

Guidance:

07 If curved-stem arrows are used on destination signs, then this arrow type should also be used consistently on any regulatory lane-use signs (see ~~Chapter 2B~~EPG 903.2), Directional assemblies (see Section 2D.32), and pavement markings (see Part 3) for a particular destination or movement.

Support:

08 Figure 2D-12 shows examples of guide signing for circular intersections.

~~09 Circular Intersection Diagrammatic (D1-5 or D1-5a) signs might be preferable where space is available and where the geometry of the circular intersection is non-typical, such as where more than four legs are present or where the legs are not at approximately 90-degree angles to each other. In such cases, minimizing the amount of legend for each destination and designing the sign so that the arrows for each destination clearly align with the roadway geometry will aid road user understanding of the sign and navigation through the area.~~

Standard:

~~10 If used, the Circular Intersection Diagrammatic signs shall not depict the number of lanes within the circulatory roadway of the intersection, or on its approaches or exits, through the use of lane lines, multiple arrow shafts for the same movement, or other methods.~~

M10A Diagrammatic guide signs for circular intersections shall not be used.

MoDOT does not use diagrammatic signs for circular intersections. Revised Dec. 2025

Support:

11 ~~Chapter 2B~~EPG 903.2 contains information regarding regulatory signs at circular intersections, Chapter 2C contains information regarding warning signs at circular intersections, and ~~Chapter 3D~~EPG 620.4 contains information regarding pavement markings at circular intersections.

Figure 2D-11. Destination Signs for Circular Intersections

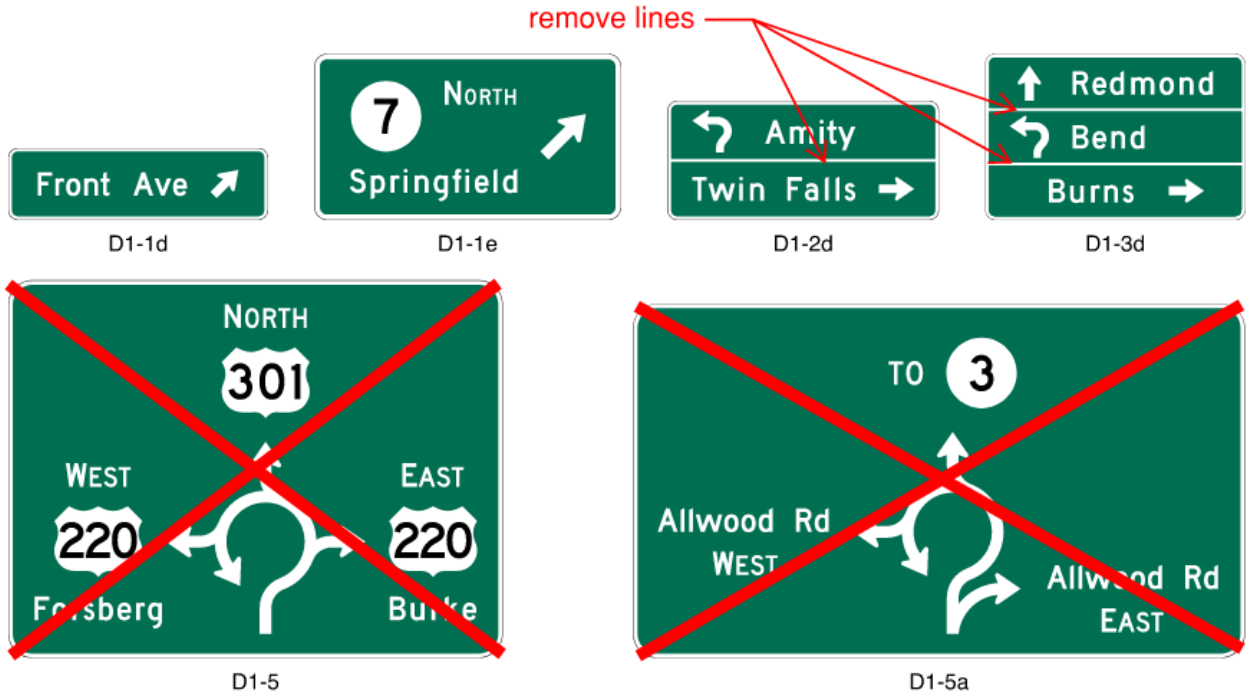


Figure 2D-12. Examples of Guide Signs for Circular Intersections (Sheet 1 of 4)

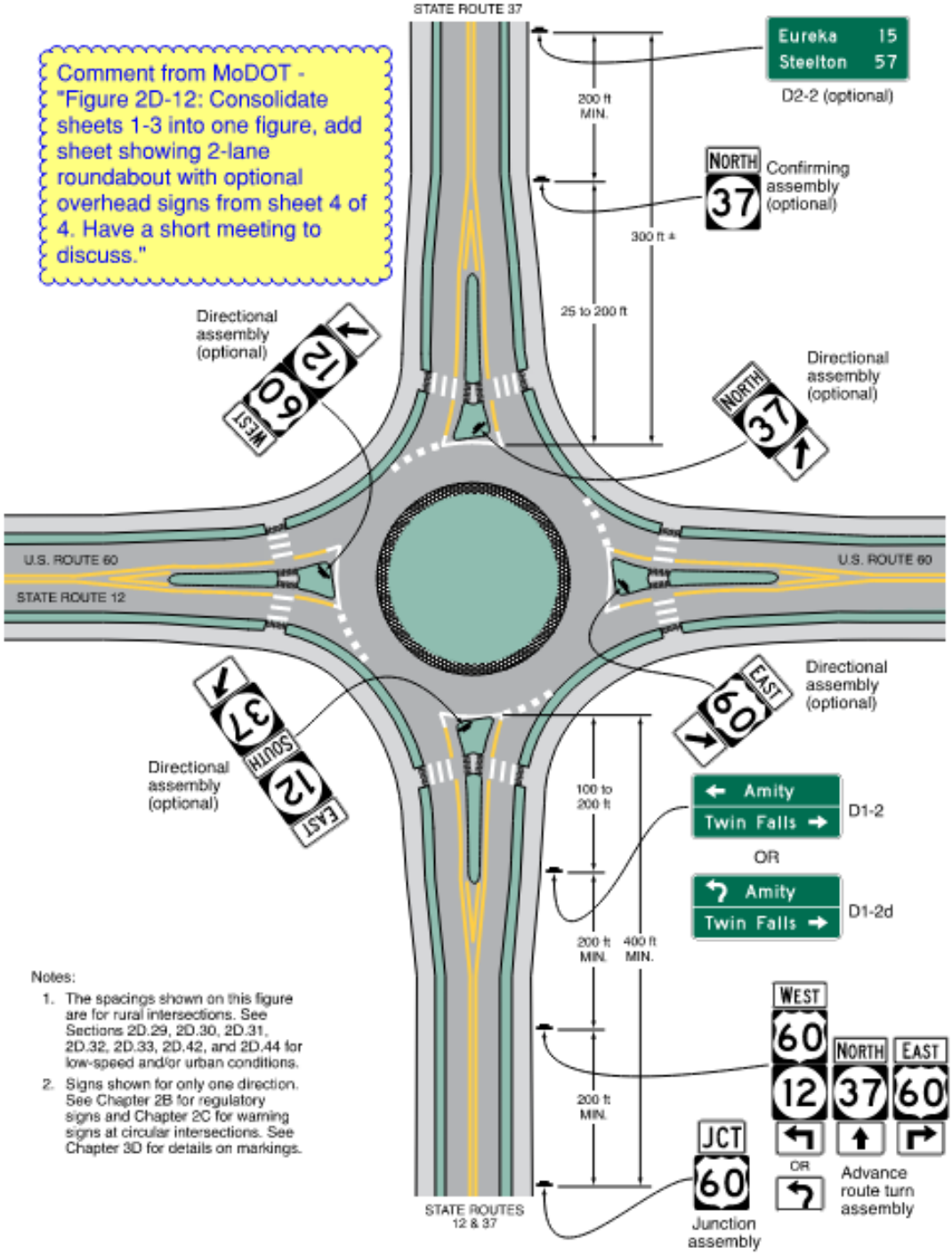


Figure 2D-12. Examples of Guide Signs for Circular Intersections (Sheet 2 of 4)

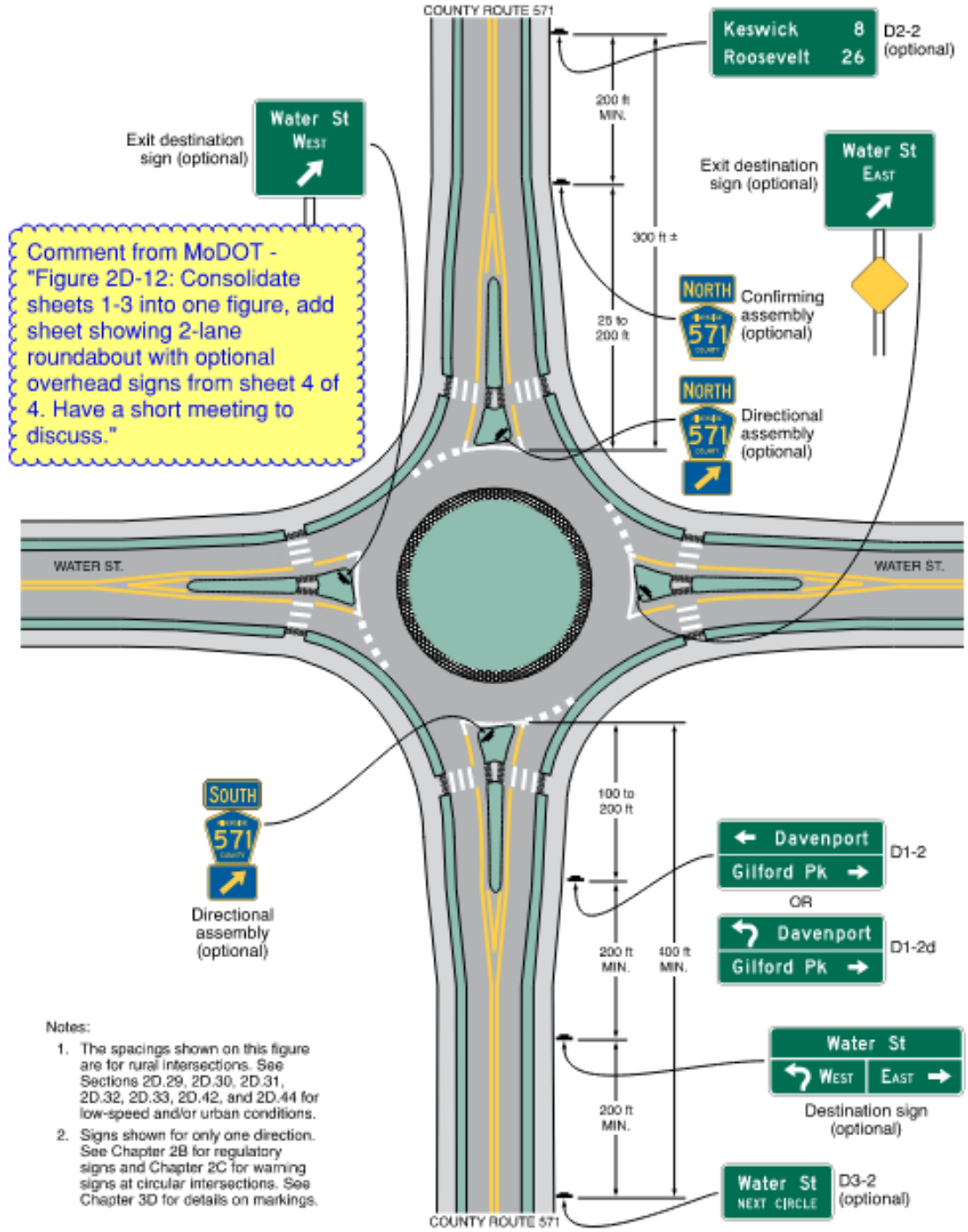
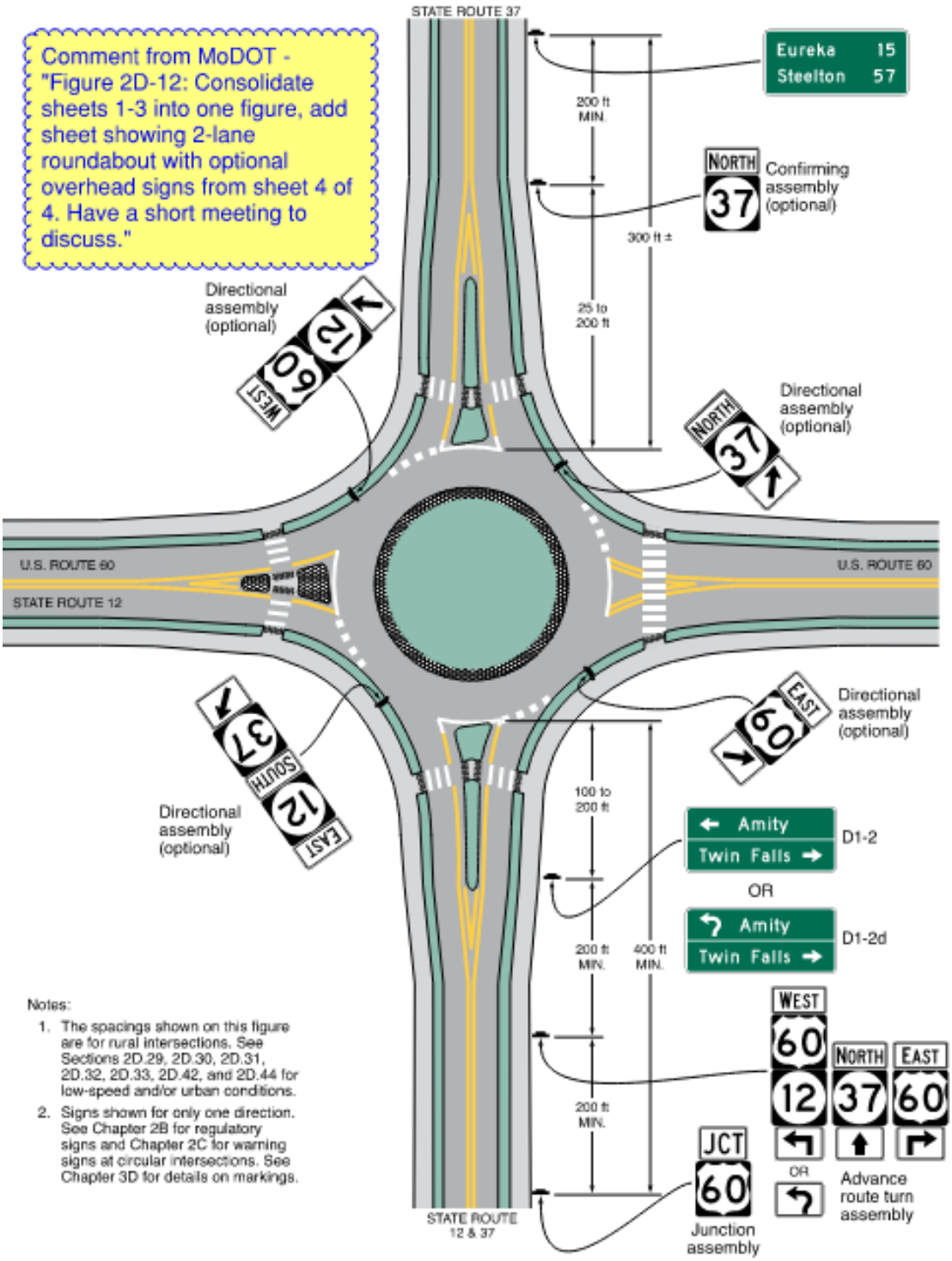


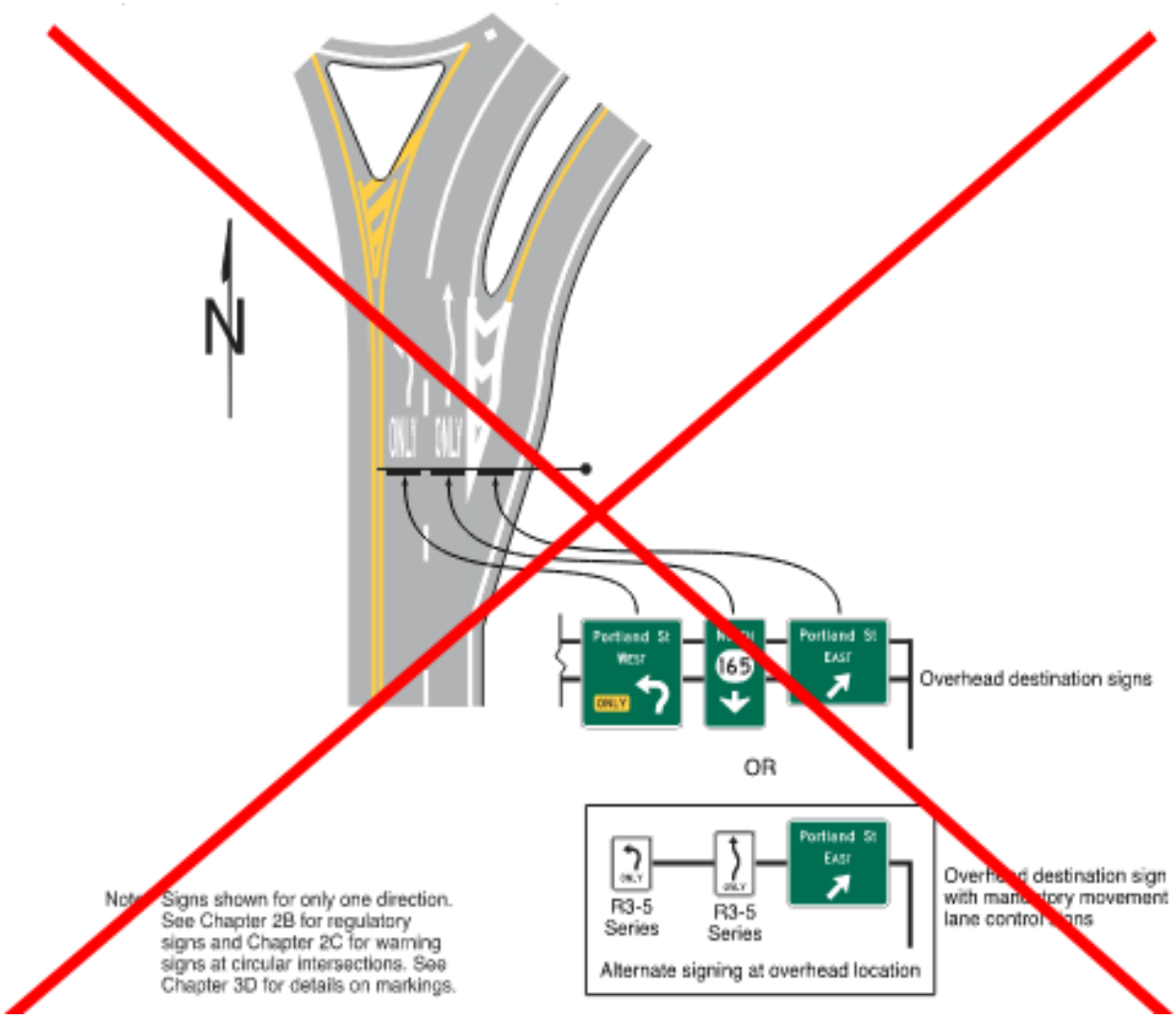
Figure 2D-12. Examples of Guide Signs for Circular Intersections (Sheet 3 of 4)



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 4 of 4)



~~**Section 2D.40 Destination Signs at Jughandles**~~

~~**Standard:**~~

~~**01 Destination signs that are used at jughandles shall comply with the provisions of Section 2D.36.**~~

~~Support:~~

~~02 Section 2B.35 contains information regarding regulatory signs for jughandle turns. Figure 2B-9 shows examples of regulatory and destination guide signing for various types of jughandle turns.~~

MUTCD Section 2D.40 is not adopted. There are very limited cases where these signs are applicable to the MoDOT system. Revised Dec. 2025

Section 2D.41 Destination Signs at Intersections with Indirect Turning Movements

Guidance:

01 A system of guide signs along with associated lane markings should be used to direct traffic through intersections with indirect turning movements.

~~Support:~~

~~02 Figure 2D-13 shows examples of destination guide signing for intersections with indirect turning movements.~~

Figure 2D-13. Examples of Signing for Intersections with Indirect Left Turns (Sheet 1 of 3)

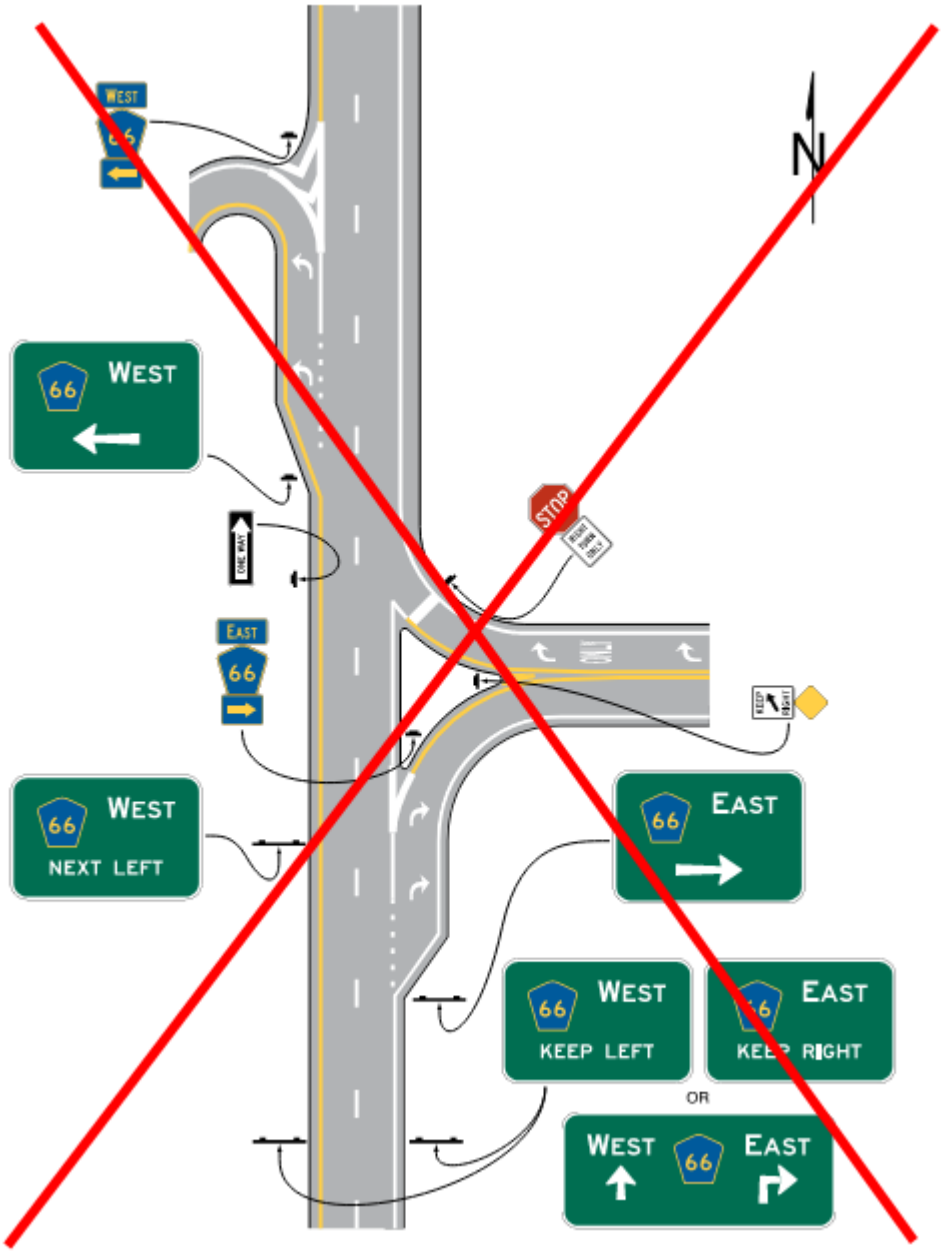


Figure 2D-13. Examples of Signing for Intersections with Indirect Left Turns (Sheet 2 of 3)

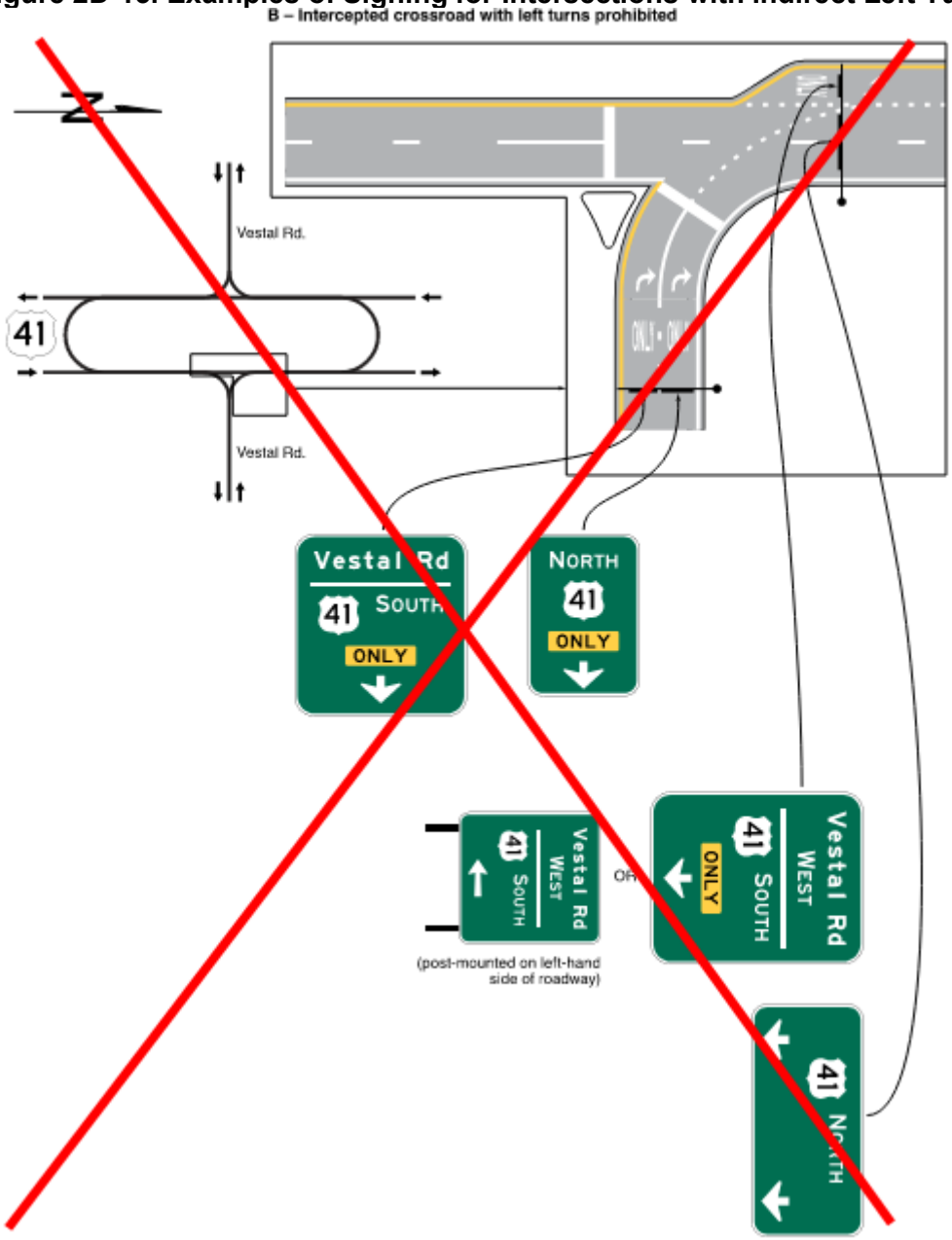


Figure 2D-13. Examples of Signing for Intersections with Indirect Left Turns (Sheet 3 of 3)



Section 2D.42 Location of Destination Signs

Guidance:

01 When used in ~~high-speed~~ urban areas or on exit ramps, Destination signs should be located 200 feet or more in advance of the intersection, and following any Junction or Advance Route Turn assemblies that might be required. In rural areas, Destination signs should be located 400 feet or more in advance of the intersection. ~~t~~The minimum distance between a Destination sign and either an Advance Route Turn assembly or a Junction assembly should be 200 feet.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

~~02 In urban areas, advance distances shorter than those specified in Paragraph 1 of this Section may be used.~~

03 Because the Destination sign is of lesser importance than the Junction, Advance Route Turn, or Directional assemblies, the Destination sign may be eliminated where the distance in which to provide adequate sign spacing is limited.

Support:

04 Figure 2D-8 shows typical placements of Destination signs.

Section 2D.43 Distance Signs (D2 Series)

Standard:

01 If used, the Distance (D2-1 through D2-3) signs ~~(see Figure 2D-9)~~ shall be a horizontal rectangle of a size appropriate for the required legend, displaying the names of no more than three cities, towns, or junctions, ~~or other traffic generators,~~ and the distance (to the nearest mile) to those places.

MoDOT does not allow traffic generators on distance signs. Revised Dec. 2025

02 The distance numerals shall be placed to the right of the destination names ~~as shown in Figure 2D-9~~.

Guidance:

03 The distance displayed should be ~~selected on a case-by-case basis by the jurisdiction that owns the road or by statewide policy~~ determined on a case-by-case basis by the MoDOT Highway Safety and Traffic Division when signs are being detailed for fabrication. ~~A well-defined central area or central business district should be used where one exists. In other cases, the layout of the community should be considered in relation to the highway being signed and the decision based on where it appears that most drivers would feel that they are in the center of the community in question.~~

04 The top ~~name~~ destination displayed on the Distance sign should be that of the next ~~place~~ city or interchange which will be reached while traveling on the route. ~~having a post office or a railroad station, a route number or name of an intersected highway, or any other significant geographical identity.~~ The second destination displayed on the Distance sign should be the next control city, or significant destination, encountered while traveling on the route. This control city should be displayed on all subsequent destination signs along the route until that city is reached and then replaced with the next control city along the route. The bottom ~~name~~ destination displayed on the Distance sign should be that of the significant anchor city ~~next major destination~~ or control city for that route. The anchor city should be displayed on all destination signs along the route as a consistent reference of distance traveled. ~~If three destinations are displayed, the middle line should be used to indicate communities of general interest along the route or important route junctions.~~

~~Option:~~

~~05 The choice of names for the middle line may be varied on successive Distance signs to give road users additional information concerning communities served by the route.~~

~~*Guidance:*~~

~~*06 The control city should remain the same on all successive Distance signs throughout the length of the route until that city is reached.*~~

Option:

~~07 If more than one distant point may properly be designated, such as where the route divides at some distance ahead to serve two destinations of similar importance, and if these two destinations cannot appear on the same sign, the two names may be alternated on successive signs.~~

08 On a route continuing into another State, destinations in the adjacent State may be displayed.

Paragraphs modified for MoDOT preferences. Revised Dec. 2025

Section 2D.44 Location of Distance Signs

Guidance:

01 ~~If used,~~ Distance signs should be installed on ~~important~~ all state routes leaving municipalities and just beyond intersections of ~~numbered~~ other state routes in rural areas. If used, they should be placed just outside the municipal limits or at the edge of the built-up area if it extends beyond the limits. If a distance sign cannot be installed leaving the intersection, a destination sign with distances should be installed in advance of the intersection providing a destination for each departing leg of the intersection and the distance to the destination.

Paragraph modified for MoDOT preferences. Revised Dec. 2025

02 Where overlapping routes separate a short distance from the municipal limits, the Distance sign at the municipal limits should be omitted. The Distance sign should be installed approximately 300 feet beyond the separation of the two routes.

03 Where, just outside of an incorporated municipality, two routes are concurrent and continue concurrently to the next incorporated municipality, the top name on the Distance sign should be that of the place where the routes separate; the bottom name should be that of the city to which the greater part of the through traffic is destined.

Support:

04 Figure~~s 2D-7 and~~ 2D-8 show~~s~~ typical placements of Distance signs.

Section 2D.45 Street Name Signs (D3-1 ~~and D3-1a~~)

Support:

01 Street Name signs at intersections and along roadways provide road users with important navigation information. Section 2H.10 contains information about signs used to identify the names of grade-separated streets, railways, bikeways, or other transportation facilities.

M01A MoDOT does not install street name signs at non-signalized intersections, if installed, this signing is installed and maintained by the local jurisdiction who owns the roadway intersecting the state route, or who has established a street name on an intersecting state route.

MoDOT policy for street name signs. Revised Dec. 2025

Guidance:

02 Street Name (D3-1 ~~or D3-1a~~) signs (see Figure 2D-14) should be installed at all signalized intersections in both urban and rural areas ~~at all street intersections regardless of other route signs that might be present and should be installed in rural areas to identify important roads that are not otherwise signed.~~ except as noted in the first Standard paragraph below.

03 To minimize wrong-way movements onto freeway or expressway exit ramps, Street Name signs should not be used at the intersection of a freeway or expressway exit ramp with the crossroad to display the name of the freeway or expressway to traffic on the crossroad.

Standard:

M03A Street Name signs shall not be installed for approaches to fire stations, commercial entrances, schools, or driveways without an official street name.

M30B When used, Street Name signs shall be mounted on a mast arm or between the carrier and tether wires for span wire signals, and shall be mounted a maximum of 12 inches from the center of the upright support (see Standard Plan 902.40).

M03C Street name signs shall not be installed between signal heads as the signal structures are not designed for the additional wind load at these locations.

Option:

M03D For signals with insufficient space to install a street name sign between the upright support and the first signal indication, a D3-1 sign, 12 inches tall and not to exceed 4 feet in width, may be mounted on vertical signal support.

M03E For span wire signals, the maximum distance from the center of the upright support to the street name sign as indicated in the preceding Standard paragraph may be increased if the upright support isn't adjacent to the roadway (see Standard Plan 902.40).

MoDOT specific content from the EPG. Revised Dec. 2025

~~Option:~~

~~04 For streets that are part of a U.S., State, or county numbered route, a D3-1a Street Name sign (see Figure 2D-14) that incorporates a route shield may be used to assist road users who might not otherwise be able to associate the name of the street with the route number.~~

MoDOT does not use D3-1a signs. Revised Dec. 2025

Standard:

05 The lettering for names of streets and highways on Street Name signs shall be composed of a combination of lower-case letters with initial upper-case letters (see ~~Section 2A.08~~ EPG 903.1.8).

Guidance:

~~06 The determination of letter heights to be used on Street Name signs should be based on, but not limited to, the following considerations:~~

~~*A. Use of Advance Street Name signs (see Section 2D.46);*~~

~~*B. Number of lanes on the intersection approach;*~~

~~*C. Length of turn lanes;*~~

~~*D. Distance the Street Name sign is located across the intersection (if a sign is not provided on the near side of the intersection).*~~

MoDOT does not base letter heights on the above criteria. Revised Dec. 2025

07 Letter heights on street name signs should be as shown in Table 2D-6. Table 2D-6 should be used by local jurisdictions when fabricating and installing street name sign at state route intersections. MoDOT uses the largest font possible on street name signs at signalized intersections, with the legend size/sign size being controlled by the capacity of the signal structure.

~~Option:~~

~~08 For two-lane local roadways with speed limits of 25 mph or less, the lettering on post-mounted Street Name signs may be composed of initial upper-case letters at least 4 inches in height and lower-case letters at least 3 inches in nominal loop height.~~

The Option statement is not applicable as MoDOT only installs street name signs on signals. Revised Dec. 2025

Support:

09 The recommended minimum letter heights for Street Name signs are summarized in Table 2D-6. The speed limits specified and the recommended minimum letter heights provided in this Section apply to the roadway that each Street Name sign faces rather than to the street that has its name displayed on the Street Name sign. The letter heights specified in Table 2D-6 are the combination of lower-case letters with the initial upper-case letter of a mixed-case legend.

10 A minimum upper-case letter height of ~~12~~10 inches with a lower-case nominal loop height of ~~9~~8 inches is recommended for all overhead Street Name signs regardless of posted speed limit as Street Name signs generally require greater legibility distances for road users to properly react.

Letter heights modified for MoDOT street name sign size. Revised Dec. 2025

~~Option:~~

~~11 Each Street Name sign in a sign assembly may use different letter heights determined by the speed limit of the street that each sign faces.~~

MoDOT does not use speed to determine legend size. Revised Dec. 2025

12 The letter height of the street name descriptor (such as St, Ave, or Rd), the directional legend (such as NW), or any other supplemental legend (such as block or house numbers) on the D3-1 ~~and D3-1a~~ signs may be smaller than that of the street name itself.

Guidance:

13 The letter height of the street name descriptor, the directional legend, or any other supplemental legend on the D3-1 ~~and D3-1a~~ signs should be at least two-thirds of the letter height of the street name itself, but not less than 3 *inches for the initial upper-case letters and not less than* 2.25 *inches for the nominal loop height of the lower-case letters.*

14 Conventional abbreviations (see Section 1D.08) should be used except for the street name itself. Acceptable abbreviations for street name descriptors such as "Ave" for Avenue and "Blvd" for Boulevard should be as provided in Table 2D-3 (see Section 2D.07). The street name descriptors that are provided in Table 2D-4 should not be abbreviated (see Section 2D.07).

Option:

15 MoDOT does not display ~~B~~block ~~or house~~ numbers on street name signs. However, local jurisdictions who elect to install and maintain internally illuminated street name signs on MoDOT signals,

under an agreement with MoDOT, may ~~be~~ display~~ed~~ ~~block numbers~~ as a supplemental legend on a Street Name sign to aid emergency responders and road users in locating addresses.

MoDOT policy for block numbering on D3-1 signs. Revised Dec. 2025

Guidance:

16 If block ~~or house~~ numbers are displayed on a Street Name sign where only a single Street Name sign is provided for the crossroad, the block or house numbers for the left and right blocks should be positioned at the left and right sides of the sign, respectively.

17 If block ~~or house~~ numbers are displayed on a Street Name sign where two Street Name signs are provided for the crossroad, such as on diagonally opposite corners of an intersection, each Street Name sign should display only the block or house numbers associated with that block of the crossroad.

Option:

18 MoDOT does not display ~~A~~ pictographs (see definition in Section 1C.02) on street name signs. However, local jurisdictions who elect to install and maintain internally illuminated street name signs on MoDOT signals, under an agreement with MoDOT, may display a pictograph representing the municipality, in accordance with the provisions of EPG 903.1.4 ~~Section 2A.04 may be used on a D3-1 sign~~. ~~For street networks under the primary jurisdiction of another governmental approved entity, such as within a college or university campus, within a military base, or within a transportation facility (such as an airport or port), a pictograph representing that entity, in accordance with the provisions of Section 2A.04, may be used on a D3-1 sign within the jurisdictional boundaries of that entity.~~

MoDOT policy for pictographs on D3-1 signs. Revised Dec. 2025

Standard:

19 Pictographs shall not be displayed on ~~D3-1a or~~ Advance Street Name (D3-2) signs (see Section 2D.46).

20 If a pictograph is used on a D3-1 sign, the height and width of the pictograph shall not exceed the upper-case letter height of the principal legend of the sign.

M20A The bicycle symbol shall not be used on a Street Name sign.

Standard statement relocated from Section 9D.03. Revised Dec. 2025

Guidance:

21 The pictograph should be positioned to the left of the street name.

22 Pictographs should not be used on a D3-1 sign that contains directional arrows.

Standard:

23 The Street Name sign shall be retroreflective or illuminated in accordance with the provisions of ~~Section 2A.21~~ EPG 903.1.21.

~~Option:~~

~~24 The border may be omitted from a post-mounted Street Name sign.~~

~~*Guidance:*~~

~~*25 The decision to omit the border from a post-mounted Street Name sign should be based on such factors as the visual complexity of the environment and the degree of conspicuity needed to provide for adequate recognition of the sign by the road user.*~~

MoDOT requires borders on Street Name signs. Revised Dec. 2025

Option:

26 MoDOT only utilizes green as the background color for street name signs. However, MoDOT will consider a city request to use ~~A~~an alternative background color (see ~~Paragraph 28 of this Section~~ the second standard paragraph below) other than the standard guide sign color of green ~~may be used~~ for MoDOT Street Name (D3-1 ~~or D3-1a~~) signs if the city agrees to fund the total cost of the sign

replacement project. ~~where the highway agency determines this is necessary to assist road users in determining jurisdictional authority for roads.~~

Standard:

27 Alternative background colors shall not be used for Advance Street Name (D3-2) signs (see Section 2D.46).

28 The only acceptable alternative background colors for Street Name (D3-1 ~~or D3-1a~~) signs shall be blue, brown, or white. Regardless of whether green, blue, or brown is used as the background color for Street Name (D3-1 ~~or D3-1a~~) signs, the legend (and border, if used) shall be white. For Street Name signs that use a white background, the legend (and border, if used) shall be black.

M28A If a city requests to fund changing the color of a MoDOT street name sign, the following conditions shall be met:

- **A. MoDOT must first agree to the request and reserves the right to refuse based on engineering judgement**
- **B. The city shall be responsible for all costs associated with the sign replacement project**
- **C. The street name signs shall be designed by MoDOT and meet all other MoDOT street name design aspects**
- **D. Block numbers, pictographs or any other added legend beyond what MoDOT would normally display on the street name shall not be displayed on these street name signs as MoDOT will assume maintenance of the new signs once they are installed.**
- **E. Only those street name signs within the city's jurisdictional boundaries will be permitted to be altered**
- **F. All street name signs along the state corridor within the city's jurisdiction shall all be upgraded to the alternate color at the same time, no partial upgrades will be permitted**

MoDOT policy for changing the background color of D3-1 signs. Revised Dec. 2025

~~*Guidance:*~~

~~*29 An alternative background color for Street Name signs, if used, should be applied to the Street Name (D3-1 or D3-1a) signs on all roadways under the jurisdiction of a particular highway agency.*~~

Paragraph 29 replaced by Item F of Paragraph 28A above. Revised Dec. 2025

~~*30 In business or commercial areas and on principal arterials, Street Name signs should be placed at least on diagonally opposite corners. In residential areas, at least one Street Name sign should be mounted at each intersection. Signs naming both streets should be installed at each intersection. They should be mounted with their faces parallel to the streets they name.*~~

~~*31 Where used, Street Name signs should display their legends on both the front and back sides of the sign to facilitate navigation for pedestrians.*~~

MoDOT only installs overhead D3-1 signs at signalized intersections. Revised Dec. 2025

Option:

32 ~~To optimize visibility, Street Name signs may be mounted overhead.~~ Cities and counties may install MUTCD compliant Street Name signs on MoDOT right of way at non-signalized intersections, either on an independent post adjacent to and to the right of the MoDOT ~~may also be placed above a regulatory or~~ STOP sign or installed on the MoDOT post above the STOP sign. ~~YIELD sign with no required vertical separation.~~

Standard:

M32A If a city or county elects to install as street name sign above the MoDOT STOP sign, they shall first contact the local district office to make the request and to have their proposed

attachment method approved, no contract or agreement is required. These installations shall meet the following criteria:

A. **The installation of street name signs on MoDOT STOP signs must be approved by the appropriate MoDOT district.**

B. **Street name signs shall have a vertical clearance between 1 inch and 4 inches measured from the bottom of the Street Name sign to the top of the STOP sign.**

C. **The Street Name sign shall be mounted independently of the STOP sign, attaching only to the sign post and in no way connected to the STOP sign**

D. **The installation shall not interfere with the maintenance of the STOP sign.**

E. **Only one Street Name sign shall be permitted for a side street, no street name sign is permitted for the state route, such installations shall be installed on a separate sign post.**

F. **Street name signs shall only be mounted above and not below the STOP sign.**

G. **The maintenance of the Street Name sign shall be the sole responsibility of the city or county, MoDOT will only maintain the sign post and the STOP sign.**

H. **The maximum width of a Street Name sign placed over a MoDOT STOP sign shall not exceed the width of the STOP sign, MoDOT will not upgrade existing STOP sign posts to allow for larger Street Name sign. Wider street name signs shall be installed on a separate sign post.**

I. **Attachments to MoDOT STOP sign posts shall be accomplished by use of a bracket, U-channel posts stub, or other methods pre-approved by MoDOT.**

J. **The Street Name sign representing the side street shall be mounted with its face parallel to the street it is naming.**

K. **If the Stop sign has a ONE WAY signs mounted above it, such as on expressways, a city or county shall install their Street Name sign on a separate sign post.**

M32B The installation and maintenance of all street name sign installed on MoDOT right of way by a city or county, either as an independent installation or a street name sign installed over a MoDOT STOP sign shall be the responsibility of the city or county.

M32C Street name signs are the only form of route designation a city or county may install on MoDOT right of way, no other form of route designation is permitted.

M32D Cities and counties are not permitted to install street name signs depicting anything other than the official street name of the roadway used by the US Postal service. Street name signs for alternate street names, such as, honorary, historic or memorial street names shall not be installed on MoDOT right of way.

M32E MoDOT reserves the right to remove and return any street names signs which are not installed correctly or interfere with the visibility of the STOP sign.

MoDOT policies for ground mounted D3-1 signs. Revised Dec. 2025

~~*Guidance:*~~

~~*33 In urban or suburban areas, especially where Advance Street Name signs for signalized and other major intersections are not used, the use of overhead Street Name signs should be strongly considered.*~~

MoDOT only installs overhead D3-1 signs at signalized intersections. Revised Dec. 2025

Option:

34 At intersection crossroads where the same road has two different street names for each direction of travel, both street names may be displayed on the same Street Name (D3-1) sign along with Type D directional arrows, except where one arrow would point in a direction opposing the flow of traffic on a one-way street or where a turn in the direction of the arrow is not allowed.

~~35 On lower-speed roadways, historic street name signs within locally identified historic districts that are consistent with the criteria contained in 36 CFR 60.4 for such structures and districts may remain in service without complying with the provisions of Paragraphs 3, 4, 6, 9, 12 through 14, and 18 through 20 of this Section.~~

~~*Guidance:*~~

~~*36 Streets or segments of a street that have been memorialized or dedicated should not use a second Street Name sign to display the memorial or dedication name (see Section 2D.56). When signed, the Memorial or Dedication sign should be located to minimize its conspicuity to and potential for confusion.*~~

Memorial or Dedication signs are not permitted on MoDOT right-of-way. Revised Dec. 2025

Support:

37 Information regarding the use of street names on supplemental plaques for use with intersection-related warning signs is contained in Section 2C.65.

38 Information regarding the identification of overcrossing and undercrossing roadways at grade separations is contained in Section 2H.10.

Figure 2D-14. Street Name and Parking Signs

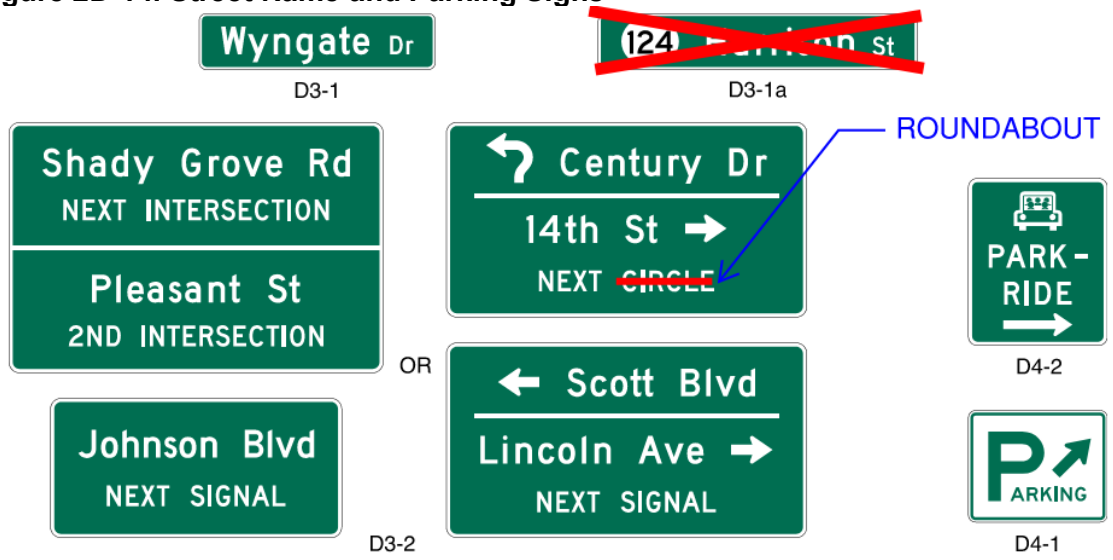


Table 2D-6. Minimum Letter Heights on Street Name Signs

Type of Mounting	Type of Street or Highway	Speed Limit	Recommended Minimum Letter Height *	
			Initial Upper-Case	Lower-Case
Overhead	All types	All speed limits	10 ~~12~~ inches	8 ~~9~~ inches
~~Post-mounted~~	~~Multi-lane~~	~~More than 40 mph~~	~~8 inches~~	~~6 inches~~
Overhead - Two Line	All types	All speed limits	6 inches	4.5 inches
Signal Column or Pedestal Base	All types	All speed limits	6 inches**	4.5 inches**

* Letter heights shown are for the street name. Descriptors or other supplementary legend may be displayed in smaller lettering of at least 3 inches.

~~** On two-lane local streets with speed limits of 25 mph or less, 4-inch initial upper-case letters with 3-inch lower-case letters may be used.~~

Notes:

1. MoDOT's overhead street name sign ledgend controlled by signal structure limitations
2. MoDOT only installs street name signs at signalized intersections

08 5 mph or less, the lettering on post-mounted Street Name

Section 2D.46 Advance Street Name Signs (D3-2 Series)

Support:

01 Advance Street Name (D3-2) signs ~~(see Figure 2D-14)~~ identify a downstream intersection. Although this is often the next intersection, it could also be several intersections away in cases where the next signalized intersection is referenced.

Standard:

02 Advance Street Name (D3-2) signs, if used, shall supplement rather than be used instead of the Street Name (D3-1 ~~or D3-1a~~) signs at the intersection.

Option:

03 Advance Street Name (D3-2) signs may be installed in advance of ~~signalized or~~ unsignalized intersections within a corridor of signalized intersections which has Advance Street Name signs to provide road users with advance information to identify the name(s) of the next intersecting street to prepare for crossing traffic and to facilitate timely deceleration and/or lane changing in preparation for a turn.

M03A Special consideration may be given to isolated unsignalized intersections where it can be established that safety problems exist, and installation of this type of signing would be beneficial.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

04 On arterial highways in rural areas, Advance Street Name signs should be used in advance of all signalized intersections and in advance of all intersections with mandatory turn lanes.

05 In urban areas, Advance Street Name signs should be used in advance of all signalized intersections on divided highways, major arterial streets, or other routes as determined by the district, except where signalized intersections are so closely spaced that advance placement of the signs is impracticable.

M05A If there is concern that the action message for Advance Street Name signs for unsignalized intersections could be misleading due to other entrances in the area or the sight distance to the intersection is limited, then the action message should be the distance shown to the nearest 100 ft.

M05B Advance Street Name sign placement should be one-half or one-quarter mile in advance of the signal or intersection. In the event of closely spaced signals, this sign should be located immediately beyond the adjacent signalized or unsignalized intersection.

MoDOT specific content from the EPG. Revised Dec. 2025

06 The heights of the letters on Advance Street Name signs should comply with the provisions of Section 2D.05.

Standard:

07 If used, Advance Street Name signs shall have a white legend and border on a green background. Alternative background colors shall not be used on Advance Street Name signs.

~~**08 If used, Advance Street Name signs shall provide the name(s) of the intersecting street(s) on the top line(s) of the legend and the distance to the intersecting streets or messages such as NEXT SIGNAL, NEXT INTERSECTION, NEXT CIRCLE, or directional arrow(s) on the bottom line of the legend.**~~

M08A If used for signalized intersections, Advance Street Name signs shall provide the name(s) of the intersecting street(s) on the top line(s) of the legend and messages such as the abbreviation for junction (JCT) and a route shield if the cross street is a state highway and (or) NEXT SIGNAL.

M08B If used for unsignalized intersections, Advance Street Name signs shall provide the name(s) of the intersecting street(s) on the top lines(s) of the legend and messages such as the abbreviation for junction (JCT) and a route shield if the cross street is a state highway and an action message.

The recommended action message for these signs is NEXT INTERSECTION or NEXT ROUNDABOUT. When the Advance Street Name sign is provided for at the junction of a state highway, the Advance Street Name sign shall replace the existing junction assembly.

M08C The installation of an Advance Street Name sign for an unsignalized intersection shall be a supplement to any Street Name signing provided by others.

MoDOT specific content from the EPG. Revised Dec. 2025

09 Pictographs shall not be displayed on Advance Street Name signs.

Option:

10 Directional arrow(s) may be placed to the right or left of the street name or message such as NEXT SIGNAL, as appropriate, rather than on the bottom line of the legend. Curved-stem arrows may be used on Advance Street Name signs on approaches to circular intersections.

11 For intersecting crossroads where the same road has a different street name for each direction of travel, the different street names may be displayed on the same Advance Street Name sign along with directional arrows.

12 In advance of two closely-spaced intersections where it is impracticable to install separate Advance Street Name signs, the Advance Street Name sign may include the street names for both intersections along with appropriate supplemental legends for both street names, such as NEXT INTERSECTION, 2ND INTERSECTION, or NEXT LEFT and NEXT RIGHT, or directional arrows.

Guidance:

13 If two street names are used on the Advance Street Name sign, the street names should be displayed in the following order:

A. *For a single intersection where the same road has a different street name for each direction of travel, the name of the street to the left should be displayed above the name of the street to the right; or*
B. *For two closely-spaced intersections, the name of the first street encountered should be displayed above the name of the second street encountered, and the arrow associated with the second street encountered should be an advance arrow, such as the arrow shown on the W16-6P arrow plaque (see Figure 2C-16).*

Option:

14 An Advance Street Name (W16-8P or W16-8aP) plaque (see Section 2C.65) with black legend on a yellow background, installed to supplement an Intersection (W2 series) or Advance Traffic Control (W3 series) warning sign may be used instead of an Advance Street Name guide sign.

Section 2D.47 Parking Area Guide Sign (D4-1, D4-1P, and D4-1a)

Option:

01 The Parking Area (D4-1) guide sign ~~(see Figure 2D-14)~~ may be used to show the direction to a nearby public parking area or parking facility.

M01A The sign may also be used in all MoDOT commuter parking lots.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

~~**02 The smaller size of 18 x 15 inches for the Parking Area guide sign shall be limited to minor, low-speed streets.**~~

M02A The parking area shall be owned or operated by a public agency in order to be signed.

M02B The COMMUTER (D4-1P) plaque shall be mounted above the Parking Area sign at commuter parking lots. If used, the sign shall be a horizontal rectangle. The legend and border shall be green on a retroreflectorized white background.

M02C COMMUTER PARKING (D4-1a) signs shall be utilized in each commuter parking area mounted back-to-back. One sign shall face the Interstate and the other will face the parking lot such that the maximum number of motorists on either side of the assembly can read the legend.

M02D In addition, Commuter Parking Lot Restriction signs shall be erected at or near each entrance to the commuter parking lot.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

~~*03 If used, the Parking Area guide sign should be installed on major thoroughfares at the nearest point of access to the parking facility and where it can advise drivers of a place to park. The sign should not be used more than four blocks from the parking area.*~~

M03A If used, the Parking Area (D4-1) guide sign should be installed as 1st order signing to the parking facility and where it can advise drivers of a place to park. The sign should not be used more than four blocks from the parking area.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2D.48 PARK - RIDE Sign (D4-2)

Option:

01 A PARK - RIDE (D4-2) sign (see Figure 2D-14) may be used to direct road users to park-and-ride facilities.

M02 The PARK - RIDE signs may be used in lieu of the Parking sign when a public transit stop is located within the commuter parking lot.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

02 The signs shall display the word message PARK - RIDE and direction information (arrow or word message).

Option:

03 PARK - RIDE signs may display the local transit pictograph and/or carpool symbol.

Standard:

04 If used, the local transit pictograph and/or carpool symbol shall be located in the top part of the sign above the message PARK - RIDE. In no case shall the vertical dimension of the local transit pictograph and/or carpool symbol exceed 18 inches.

Guidance:

05 If the function of the parking facility is to provide parking for persons using public transportation, the local transit pictograph should be used on the guide sign. If the function of the parking facility is to serve carpool riders, the carpool symbol should be used on the guide sign. If the parking facility serves both functions, both the pictograph and carpool symbol should be used. If used, the public transit pictograph should be of the same design as the local transit authority, however, the local transit authority name should not be a part of this sign.

M05A The COMMUTER (D4-1P) plaque should be mounted below this sign.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

06 These signs shall have a white legend and border on a rectangular green background. The carpool symbol shall be as shown for the D4-2 sign. The color of the local transit pictograph shall be selected by the local transit authority.

Option:

07 To increase the target value and contrast of the local transit pictograph, and to allow the local transit pictograph to retain its distinctive color and shape, the pictograph may be included within a white border or placed on a white background.

Section 2D.49 Signing on Conventional Roads on Approaches to Interchanges

Support:

01 Because there are a number of different ramp configurations that are commonly used at interchanges with conventional roads, drivers on the conventional road cannot reliably predict whether they will be required to turn left or right in order to enter the correct ramp to access the freeway or expressway in the desired direction of travel. Consistently applied signing for conventional road approaches to freeway or expressway interchanges is highly desirable.

Standard:

02 On multi-lane conventional roads approaching an interchange, guide signs shall be provided to identify which direction of turn is to be made and/or which specific lane to use for ramp access to each direction of the freeway or expressway.

Guidance:

03 The signing of conventional roads with one lane of traffic approaching an interchange should consist of a sequence containing the following signs (see Figure 2D-15):

A. Junction Assembly
B. Destination sign
C. Directional Assembly or Entrance Direction sign for the first ramp
D. Advance Route Turn Assembly or Advance Entrance Direction sign with an advance turn arrow
E. Directional Assembly or Entrance Direction sign for the second ramp

Standard:

04 If used, the Entrance Direction sign shall consist of a white legend and border on a green background. It shall contain the freeway or expressway route shield(s), cardinal direction, and directional arrow(s).

Option:

05 The Entrance Direction sign may contain a destination(s) and/or an action message such as NEXT RIGHT.

06 At ~~minor~~ interchanges ~~(see Section 2E.30)~~ where right-of-way is restricted, the following alternate sequence of signs may be used (see Figure 2D-16):

A. Junction Assembly
B. Directional Assembly for the first ramp
C. Directional Assembly for the second ramp

Guidance:

07 On multi-lane conventional roads approaching an interchange, the sign sequence should contain the following signs (see Figures 2D-17 through 2D-19):

A. Junction Assembly
B. Advance Entrance Direction sign(s) for both directions (if applicable) of travel on the freeway or expressway
C. Entrance Direction sign for first ramp
D. Advance Turn Assembly
E. Entrance Direction sign for the second ramp

Support:

08 Advance Entrance Direction signs are used to direct road users to the appropriate lane(s).

Standard:

09 The Advance Entrance Direction sign shall consist of a white legend and border on a green background. It shall contain the freeway or expressway route shield(s) and cardinal direction(s).

Option:

10 The Advance Entrance Direction sign may have destinations, directional arrows, and/or an action message such as KEEP LEFT, NEXT LEFT, or SECOND RIGHT. Signs in this sequence may be mounted overhead to improve visibility as shown in Figures 2D-17 through 2D-19.

Support:

11 A post-mounted Advance Entrance Direction diagrammatic sign (see Figure 2D-20), within the sequence of approach guide signing described in ~~Paragraphs 3, 6, and 7 of this Section~~ the first and second guidance paragraphs of this Article, might be helpful in depicting the location of a freeway or expressway entrance ramp that is in close proximity to an intervening intersection on the same side of the approach roadway and where signing for only the ramp might cause confusion to road users.

Standard:

12 If used, the post-mounted Advance Entrance Direction diagrammatic sign shall display only the two successive turns from the same side of the roadway, one of which shall be the entrance ramp. The post-mounted Advance Entrance Direction sign shall depict only the successive turns and shall not depict lane use with lane lines, multiple arrow shafts for the approach roadway, action messages, or other representations.

Support:

13 Example guide signing for transposed-alignment crossroad at a diverging diamond interchange is shown in Figure 2D-21. Example guide signing for a single-point urban intersection at a diamond interchange is shown in Figure 2D-22.

~~14 Section 2D.50 contains information regarding the use of a Directional assembly or a FREEWAY ENTRANCE sign to mark the entrance to a freeway or expressway at the far corner of an intersection.~~

MoDOT does not use Freeway Entrance signs. Revised Dec. 2025

Figure 2D-15. Example of Interchange Crossroad Guide Signing for a One-Lane Approach

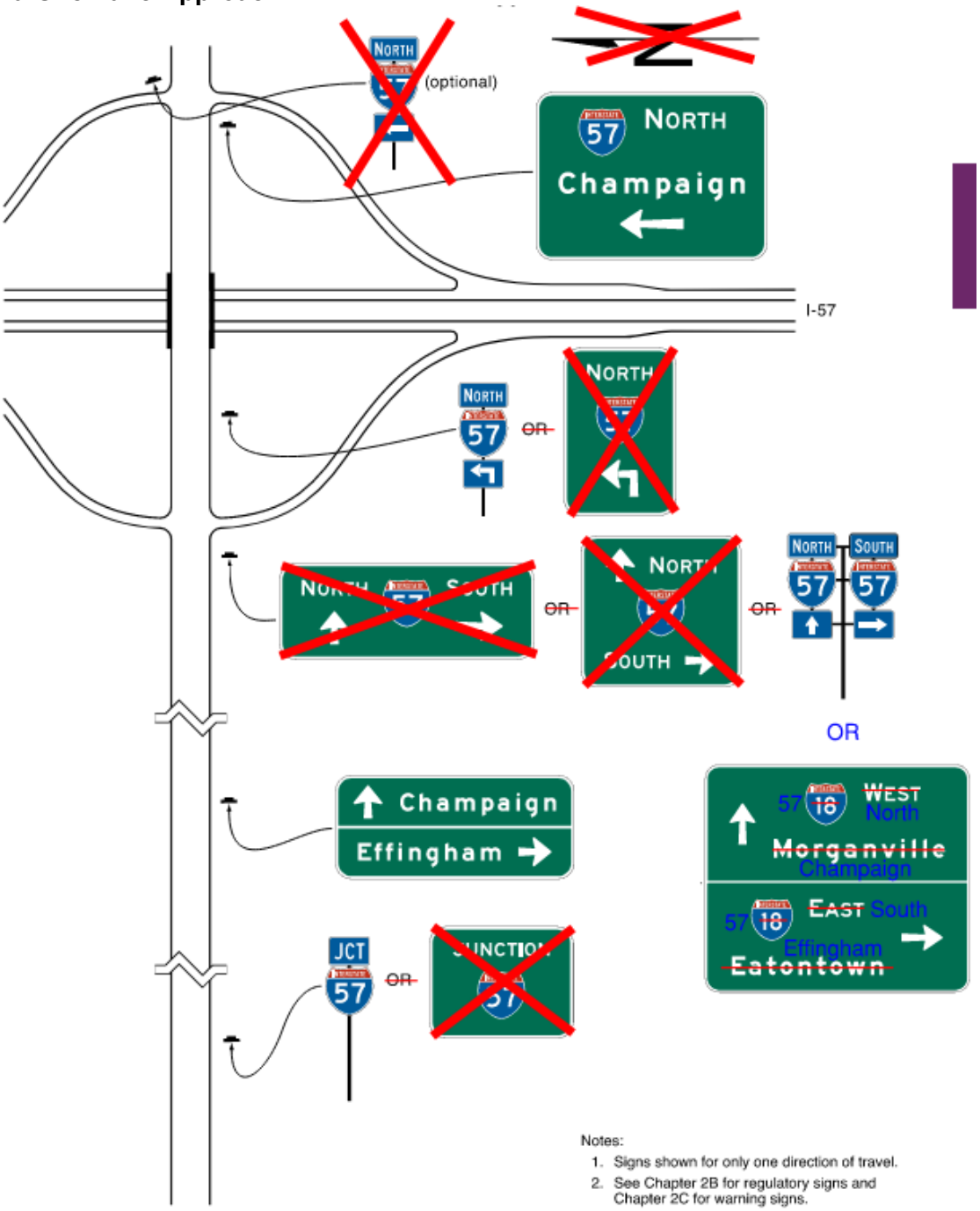


Figure 2D-16. Example of ~~Minor~~ Alternate Interchange Crossroad Guide Signing in Areas with Restricted Right-of-Way

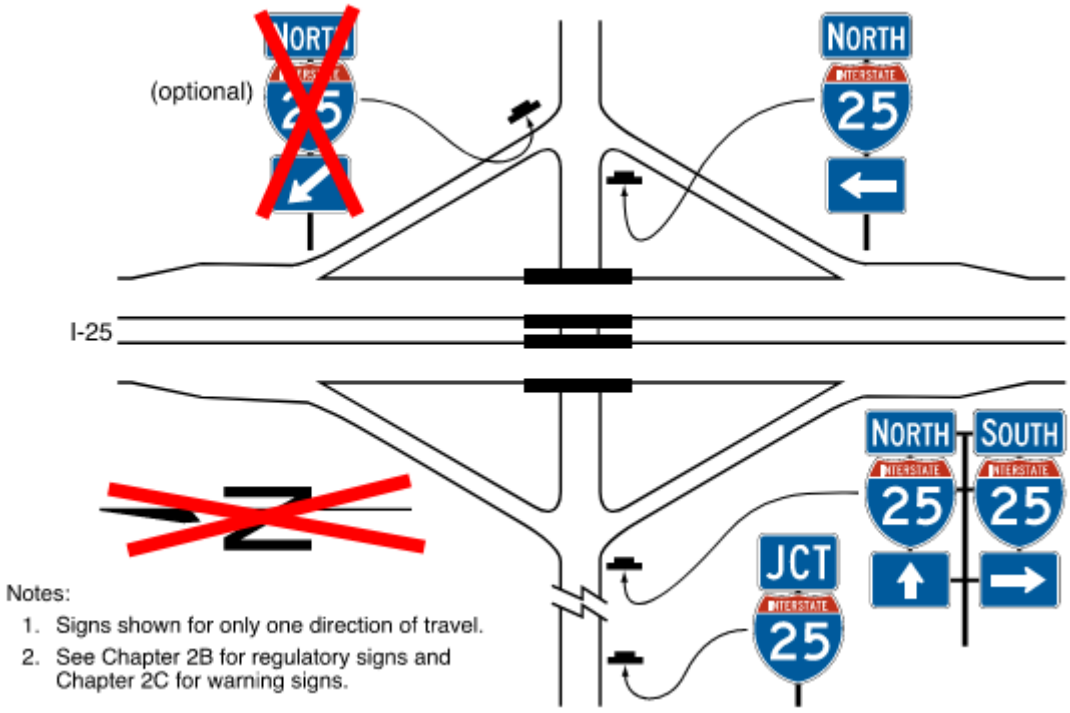


Figure 2D-17. Examples of Multi-Lane Crossroad Guide Signing for a Diamond Interchange

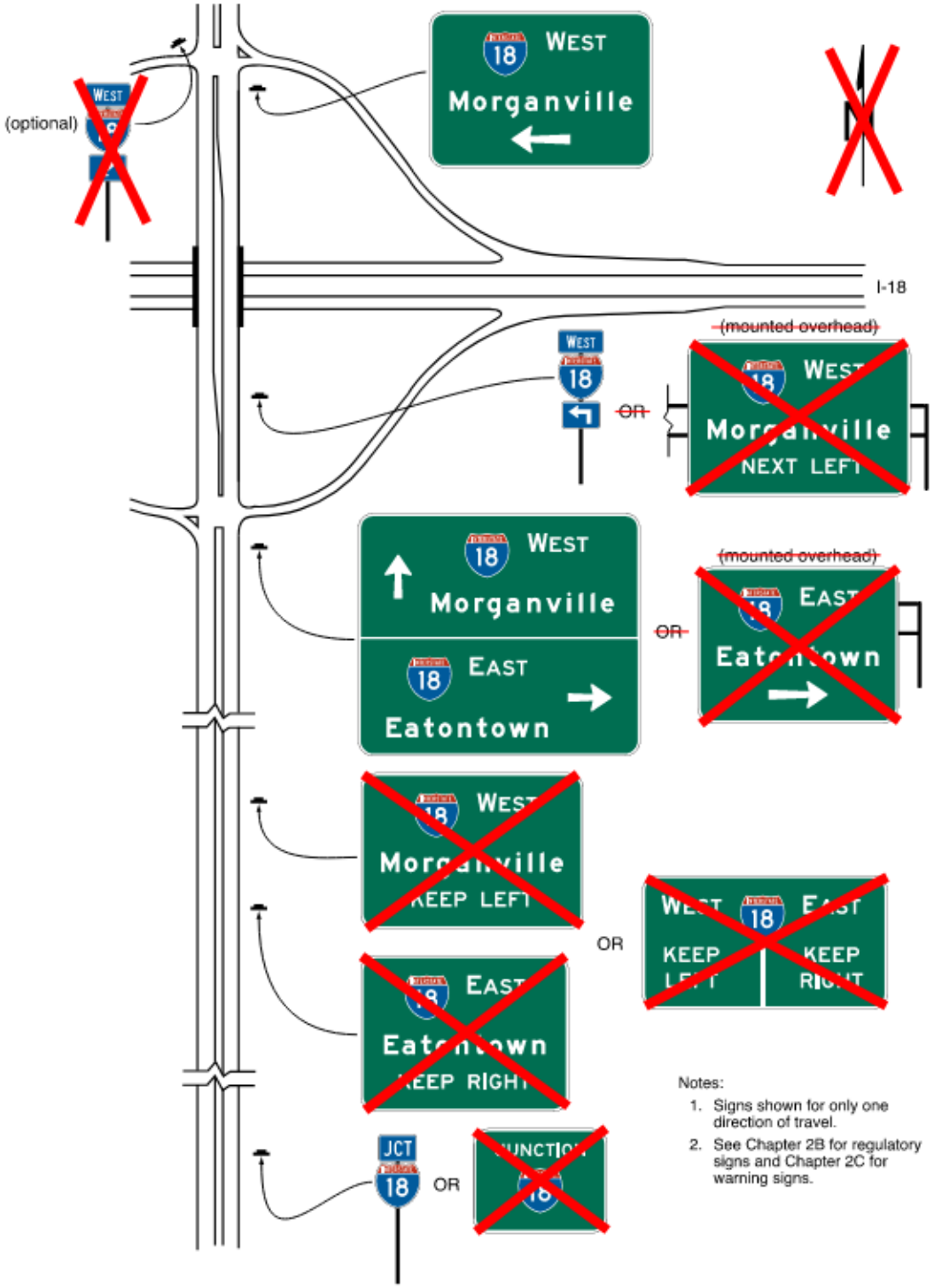
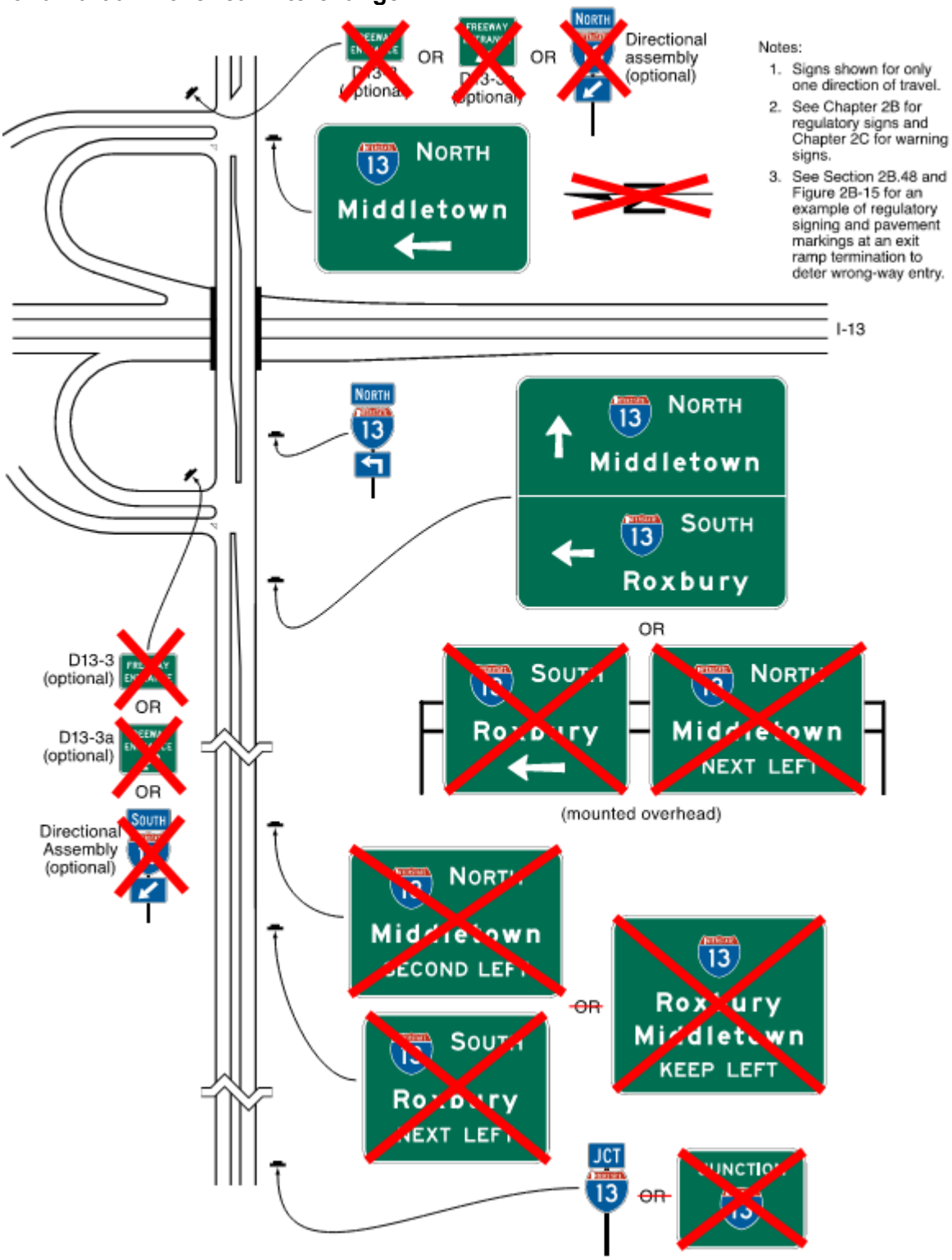


Figure 2D-18. Examples of Multi-Lane Crossroad Guide Signing for a Partial Cloverleaf Interchange



Notes:

1. Signs shown for only one direction of travel.
2. See Chapter 2B for regulatory signs and Chapter 2C for warning signs.
3. See Section 2B.48 and Figure 2B-15 for an example of regulatory signing and pavement markings at an exit ramp termination to deter wrong-way entry.

Figure 2D-19. Examples of Multi-Lane Crossroad Signing for a Cloverleaf Interchange

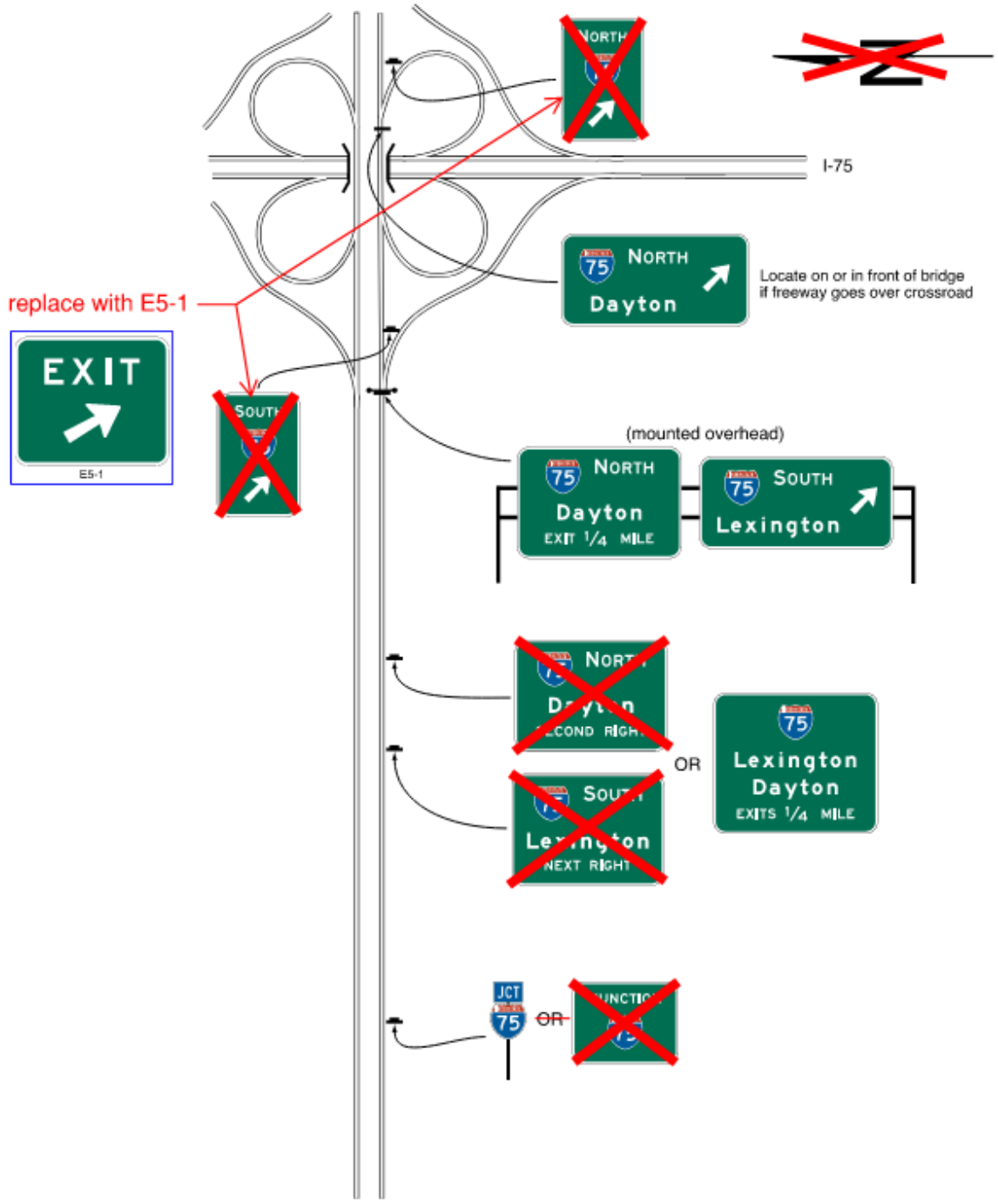


Figure 2D-20. Example of Crossroad Guide Signing for an Entrance Ramp with a Nearby Frontage Road

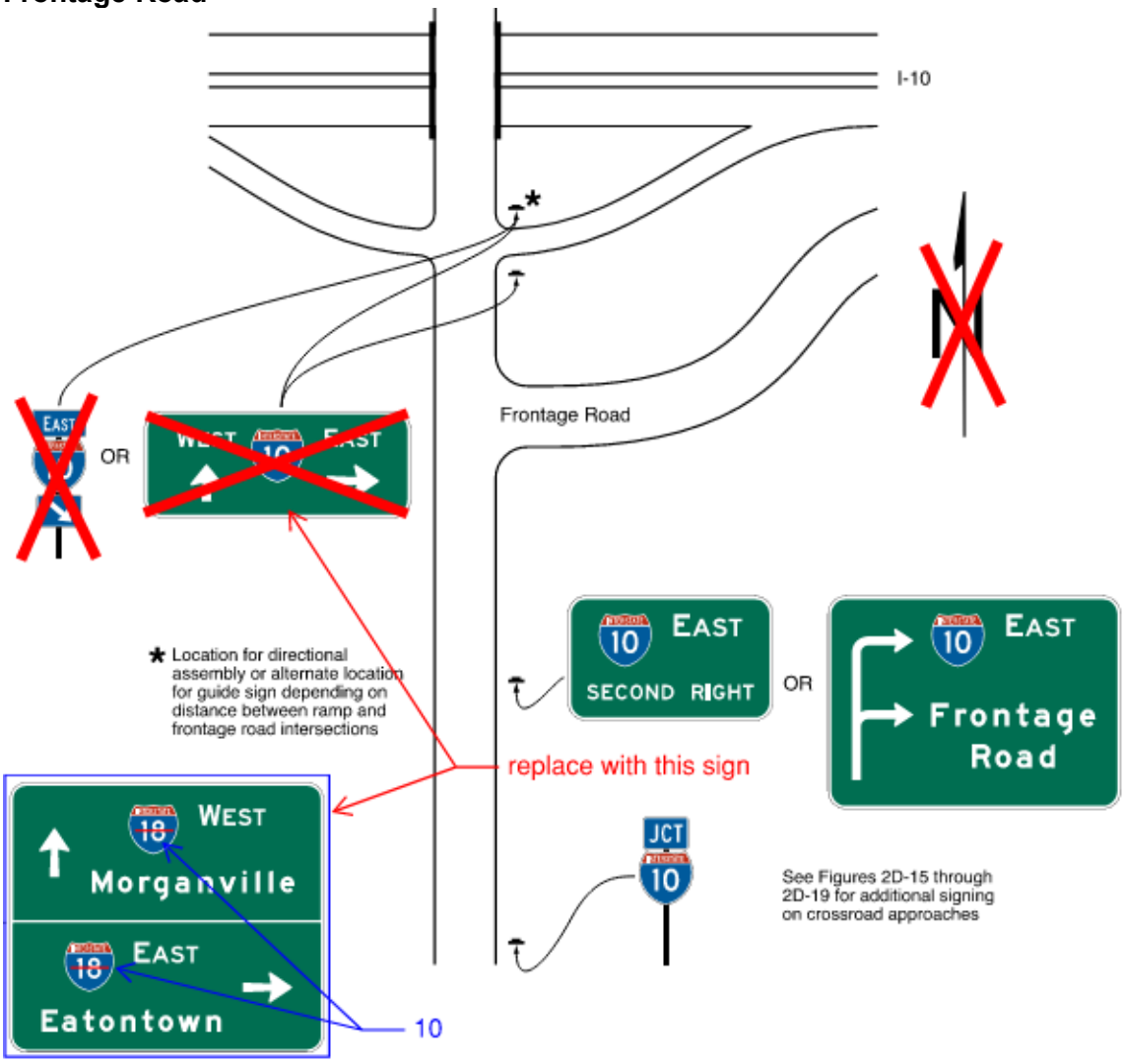


Figure 2D-21. Example of Transposed Alignment Crossroad Guide Signing at a (Diverging) Diamond Interchange

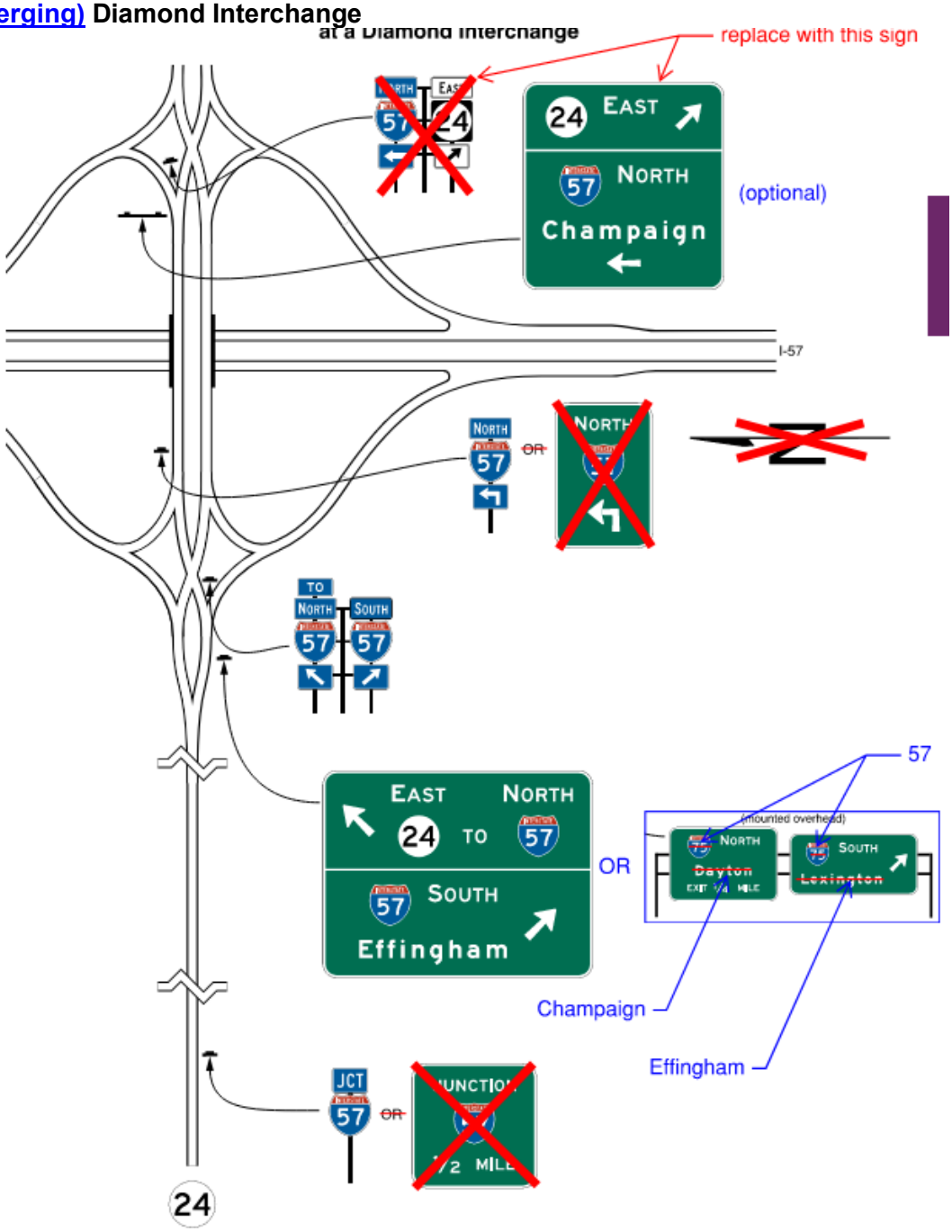
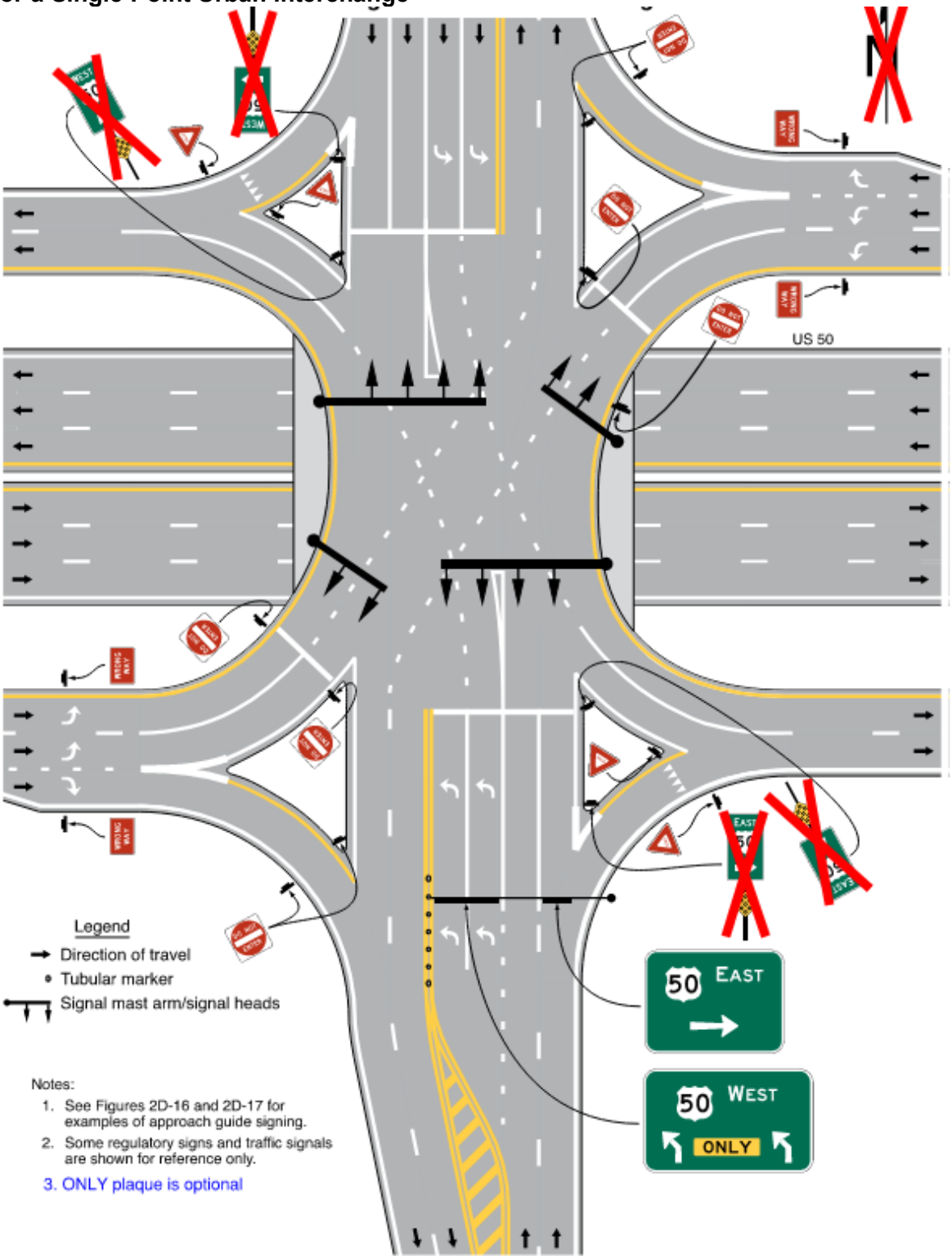


Figure 2D-22. Example of Crossroad Intersection Guide Signs for a Single-Point Urban Interchange



~~Section 2D.50 Freeway Entrance Signs (D13-3 and D13-3a)~~

~~Option:~~

~~01 FREEWAY ENTRANCE (D13-3) signs or FREEWAY ENTRANCE with diagonal downward-pointing arrow (D13-3a) signs (see Figure 2D-18) may be used on entrance ramps near the crossroad to inform road users of the freeway or expressway entrance, as appropriate.~~

~~02 The D13-3 and D13-3a signs may display an alternate legend in place of FREEWAY, such as EXPRESSWAY or PARKWAY, as appropriate, or may display the name of an unnumbered highway.~~

~~03 A Directional assembly (see Section 2D.32) with a diagonal downward-pointing arrow (M6-2aP) auxiliary plaque (see Section 2D.28) may be used at the far left-hand corner of an intersection with a freeway or expressway entrance ramp as an alternative to the D13-3a sign, facing left-turning traffic on the conventional road approach to indicate the immediate point of entry to the freeway or expressway and distinguish the entrance ramp from an adjoining exit ramp terminal at the same intersection with the conventional road (see Figure 2D-18). A similar Directional assembly may be used at the far right-hand corner of an intersection with a freeway or expressway entrance ramp where the entrance ramp and a crossroad or side road follow one another in close succession on the conventional road approach and the point of entry to the freeway or expressway might be difficult for the road user to distinguish from the crossroad or side road on the conventional road approach (see Figure 2D-20).~~

~~Support:~~

~~04 Section 2B.48 contains information regarding the use of regulatory signs to deter wrong-way movements at intersections of freeway or expressway ramps with conventional roads, and in the area where entrance ramps intersect with the mainline lanes.~~

MoDOT does not use D13-3 and D13-3a signs. Revised Dec. 2025

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) 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.**

M03A If the weigh station uses a preclearance system, a WEIGH STATION PRECLEARANCE – ALL TRUCKS RIGHT LANE sign shall be used.

MoDOT sign for weigh stations. Revised Dec. 2025

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 to enter the Weigh Station, a Weigh Station (R13-1) 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.~~

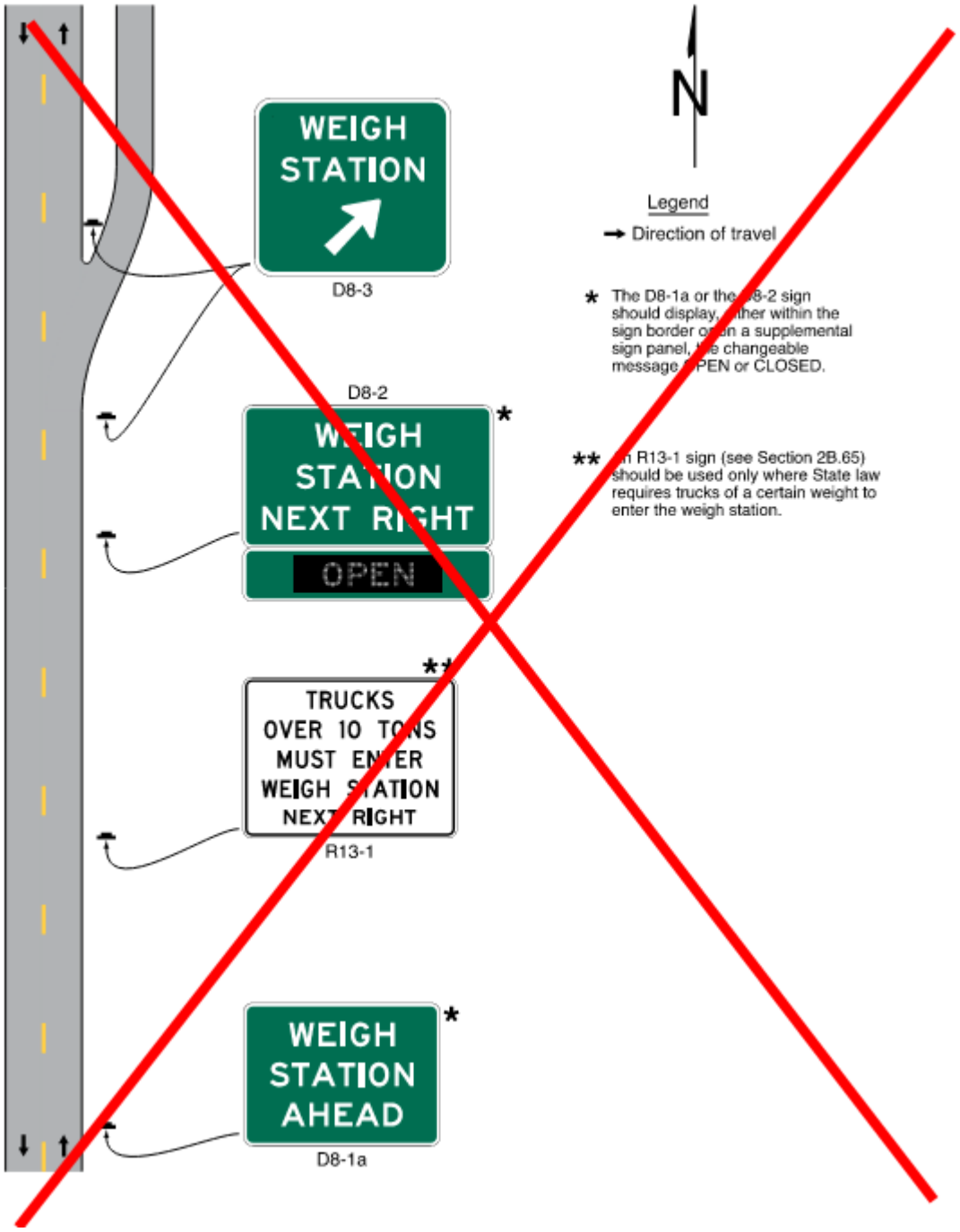
Guidance:

07 The Weigh Station Advance Direction (D8-2) Sign or the ~~Weigh Station Advance~~ Advance Weigh Station Distance (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 R13-1 sign shall likewise be replaced with the alternate legend.**~~

Figure 2D-23. Example of Weigh Station Signing – Conventional Road



Section 2D.52 Crossover Signs (D13-1 and D13-2)

Option:

01 Crossover signs may be installed on divided highways to identify median openings not otherwise identified by warning or other guide signs.

Standard:

02 A Crossover (D13-1) sign (see Figure 2D-24) shall not be used to identify a median opening that is permitted to be used only by official or authorized vehicles.

Guidance:

03 If used, the Crossover sign should be installed immediately beyond the median opening, either on the right-hand side of the roadway or in the median.

Option:

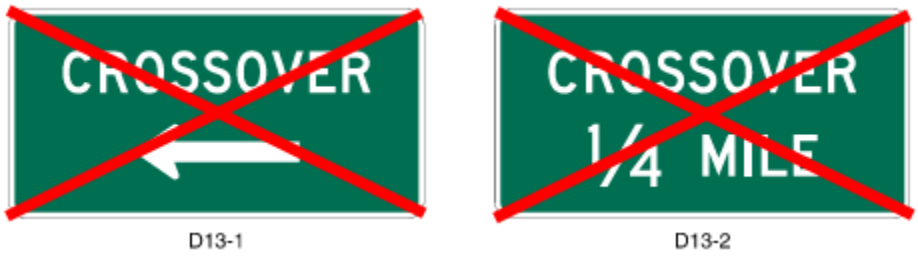
04 The Advance Crossover (D13-2) sign (see Figure 2D-24) may be installed in advance of the Crossover sign to provide advance notice of the crossover.

Guidance:

05 The distance displayed on the Advance Crossover sign should be 1 MILE, ½ MILE, or ¼ MILE, unless unusual conditions require some other distance. If used, the sign should be installed either on the right-hand side of the roadway or in the median at approximately the distance displayed on the sign.

MoDOT does not use D13-1 and D13-2 signs. Revised Dec. 2025

Figure 2D-24. Crossover Signs



D13-1 D13-2

Section 2D.53 Truck and Passing Lane Signs (D17-1 through D17-4)

Guidance:

01 If an extra lane has been provided to the right-hand side of the travel lane for use by trucks and other slow-moving traffic, an Advance Truck Lane (D17-2) sign (see Figure 2D-25) should be installed in advance of the lane.

02 If a series of truck lanes is provided along a highway, a Next Truck Lane (D17-1) sign (see Figure 2D-25) should be installed after each truck lane segment.

03 If an extra lane has been provided to the left-hand side of the travel lane for passing slower moving vehicles in the travel lane, an Advance Passing Lane Advance (D17-4) sign (see Figure 2D-25) should be installed in advance of the lane.

04 If a series of passing lanes are provided along a highway, a Next Passing Lane (D17-3) sign (see Figure 2D-25) should be installed after each passing lane segment.

Support:

05 An example of signing for a truck lane is shown in Figure 2D-26. An example of signing for an intermittent passing lane is shown in Figure 2D-27.

06 Section 2B.38 contains information regarding regulatory signs for these types of lanes.

Section 2D.53A Truck and Climbing Lane Signs (D17-2 and D17-2)

Support:

M01 A truck lane, commonly referred to as a climbing lane, is an additional lane added to the right of the travel lane. This added lane gives slow moving trucks and other slow-moving vehicles a dedicated lane to use to climb a steep grade at slower speeds if they are unable to climb the hill at the posted speed limit. At the end of the truck lane, the vehicles in the right lane that is ending must merge back into the normal travel lane. This helps reduce congestion by allowing normal traffic the ability to proceed up the grade unimpeded, in the normal travel lane, at the posted speed limit.

M01A Truck lanes are typically installed at specific segments of roadway where vehicles commonly have difficulty maintaining the speed limit along an uphill grade and are not are typically not constructed as a series of continuous truck lanes along a corridor. Truck lanes utilize a unique set of regulatory and warnings signs as well as pavement markings to denote the availability of this added lane.

Guidance:

02 If a series of truck lanes is provided along a highway, a Next Truck Lane (D17-1) sign ~~(see Figure 2D-25)~~ should be installed after each truck lane segment.

Option:

M03 Most truck lanes are obvious to drivers and do not require advance notification. If a need to provide advance notification of the upcoming truck lane has been determined based on engineering judgement, one TRUCK LANE MILE (D17-2) sign may be installed in advance of the truck lane. The TRUCK LANE MILE (D17-2) sign, if used, is typically placed no more than ½ mile in advance of the beginning of the truck lane.

Support:

M04 See Section 2C.47 for Lane Ends Signs and Section 3B.12 for Lane-Reduction Transition pavement markings and see EPG 903.16 Typical Applications for the typical application for all traffic control devices as they are applied to a truck lane.

Section 2D.53B Passing Lane / Alternating Passing Lane Signs (D17-3, D17-4, and D17-4a)

Support:

M01 A passing lane is lane added to the left of the normal travel lane. This lane gives drivers the ability to pass slower moving traffic without the need to use the opposing lane of traffic for passing maneuvers. At the end of the passing lane, vehicles in the left lane that is ending must merge back into the normal traffic lane.

M02 In most cases, passing lanes are constructed as a series of passing lane segments in both directions of travel, alternating in availability from one direction of travel to the other along the corridor segment. This application is referred to as alternating passing lanes. This system of passing lanes can provide some of the benefits of a four-lane divided roadway within the right-of-way footprint of a conventional two-lane roadway. Passing lanes utilize a unique set of regulatory, warning and guide signs, as well as pavement markings, to denote the availability of the passing lane.

Guidance:

M03 On corridors where alternating passing lanes have been constructed, the ALTERNATING PASSING LANE NEXT XX MILES (D17-4a) sign should be installed in advance of the first passing lane at each end of the alternating passing lane along the corridor. This sign notifies the driver that there will be a series of passing lane opportunities over the given distance displayed on the sign.

Option:

M04 Advanced notification of single passing lane opportunities is not typically required. If a need to provide advance notification of an upcoming passing lane has been determined to be needed based on engineering judgement, one PASSING LANE (D17-4) sign may be installed in advance of the passing lane. PASSING LANE (D17-4) sign, if used, is typically placed no more than ½ mile in advance of the beginning of the passing lane.

Standard:

M05 Each passing lane within an alternating passing lane corridor shall include a NEXT PASSING LANE X MILES (D17-3) sign at the end of passing lane.

Support:

M06 See Section 2C.47 for Lane Ends Signs and Section 3B.12 for Lane-Reduction Transition pavement markings and see EPG 903.16 Typical Applications for the typical application for all traffic control devices as they are applied to a passing lane.

Figure 2D-25. Truck and Passing Lane Signs



Figure 2D-26. Example of Signing for a Truck Lane

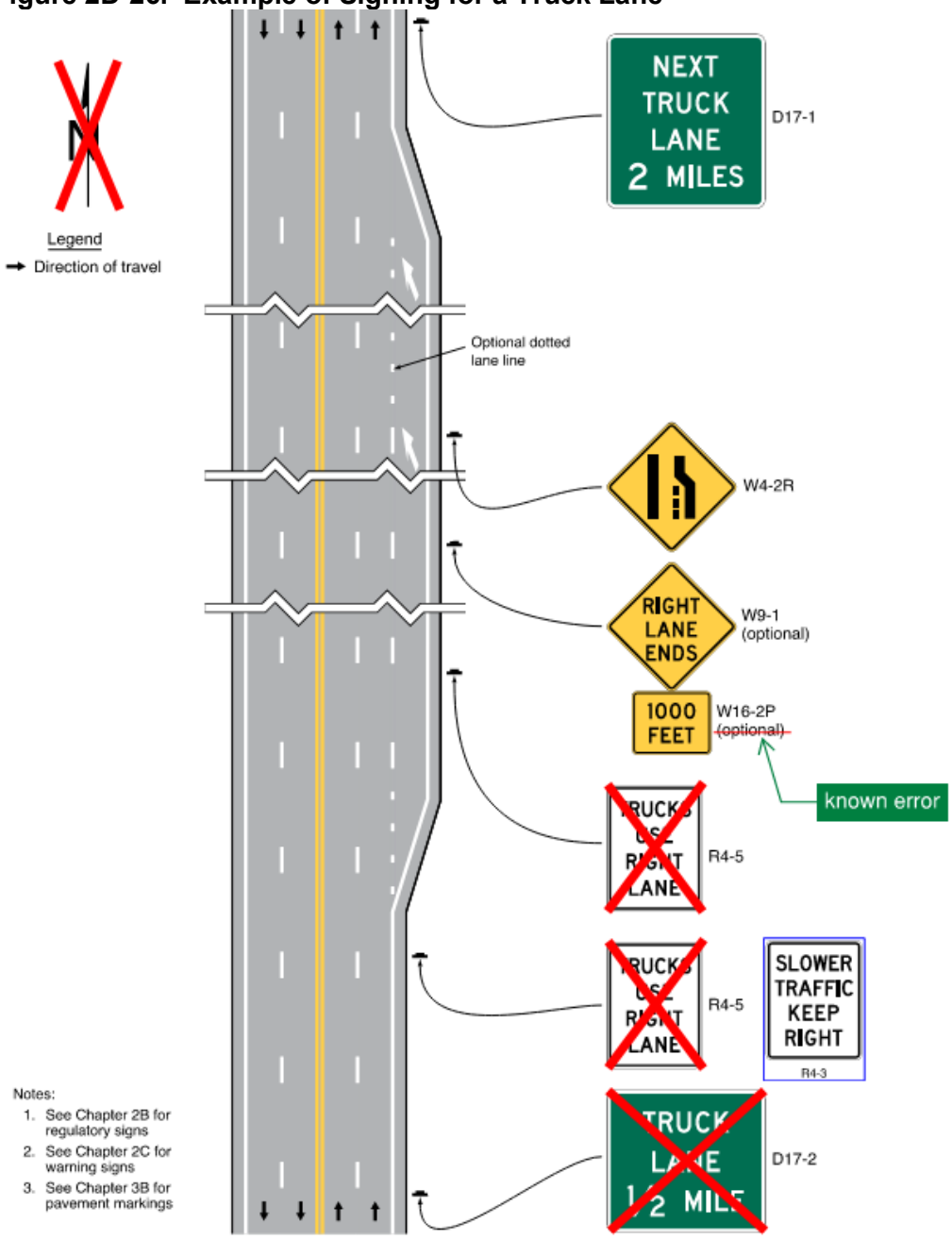
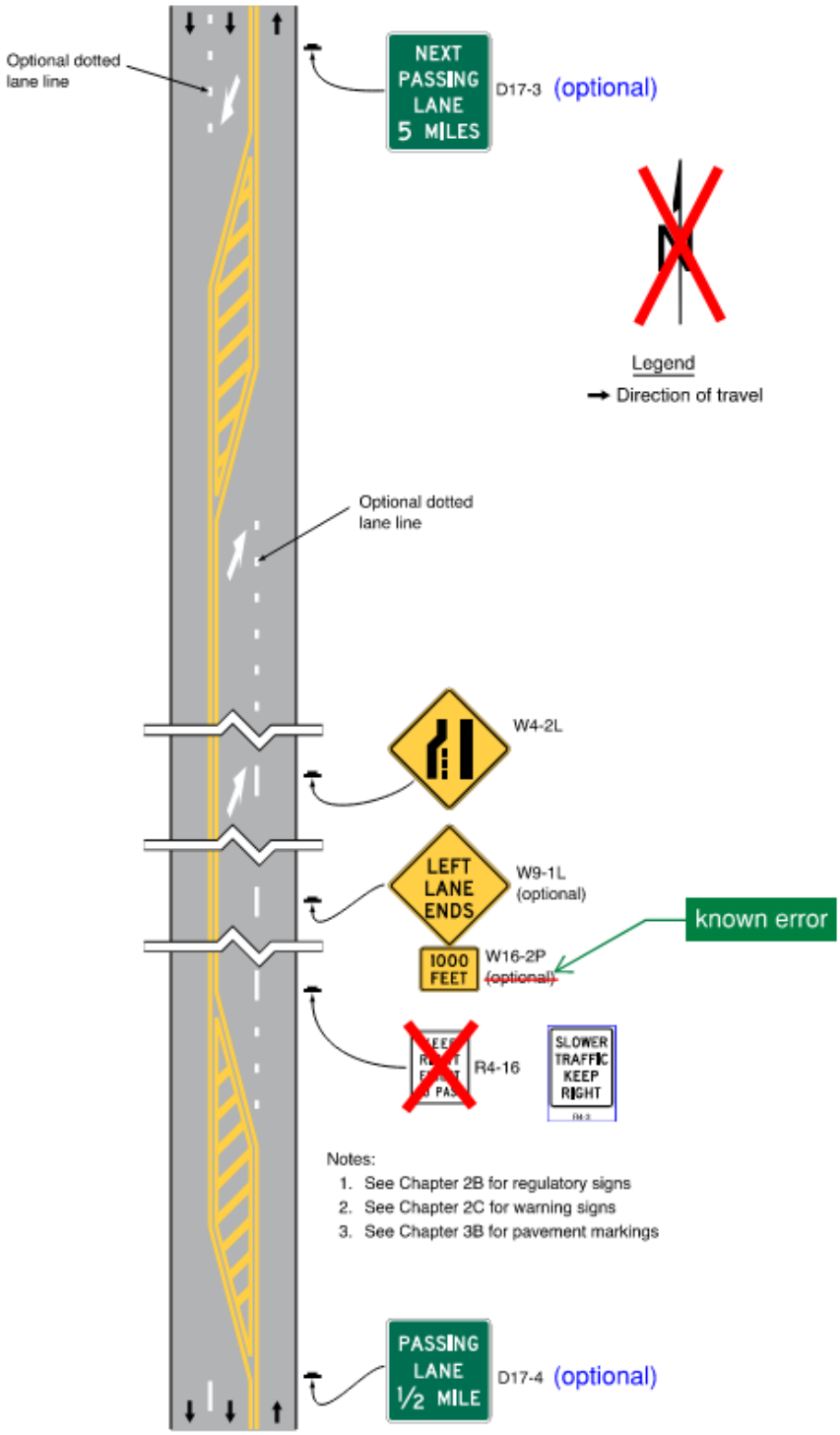


Figure 2D-27. Example of Signing for an Intermittent Passing Lane



~~**Section 2D.54 Emergency and Slow Vehicle Turn-Out Signs (D17-5 through D17-7)**~~

~~*Guidance:*~~

~~*01 If an emergency turn-out area has been provided where a shoulder is not available for emergency stopping or where there is part-time shoulder use by traffic (see Section 2G.23), Emergency Turn-Out signs should be installed. The Advance Emergency Turn-Out Advance (D17-5) sign (see Figure 2D-28) should be installed between ¼ mile and 500 feet in advance of the turn-out area. The Emergency Turn-Out Directional (D17-6) sign (see Figure 2D-28) should be installed near the beginning of the turn-out area.*~~

~~*02 If a slow vehicle turn-out area has been provided for slow-moving traffic, an Advance Slow Vehicle Turn-Out (D17-7) sign (see Figure 2D-28) should be installed in advance of the turn-out area.*~~

~~Support:~~

~~03 An example of signing for an emergency turn-out is shown in Figure 2D-29.~~

~~04 Section 2B.42 contains information regarding regulatory signs for slow vehicle turn-out areas.~~

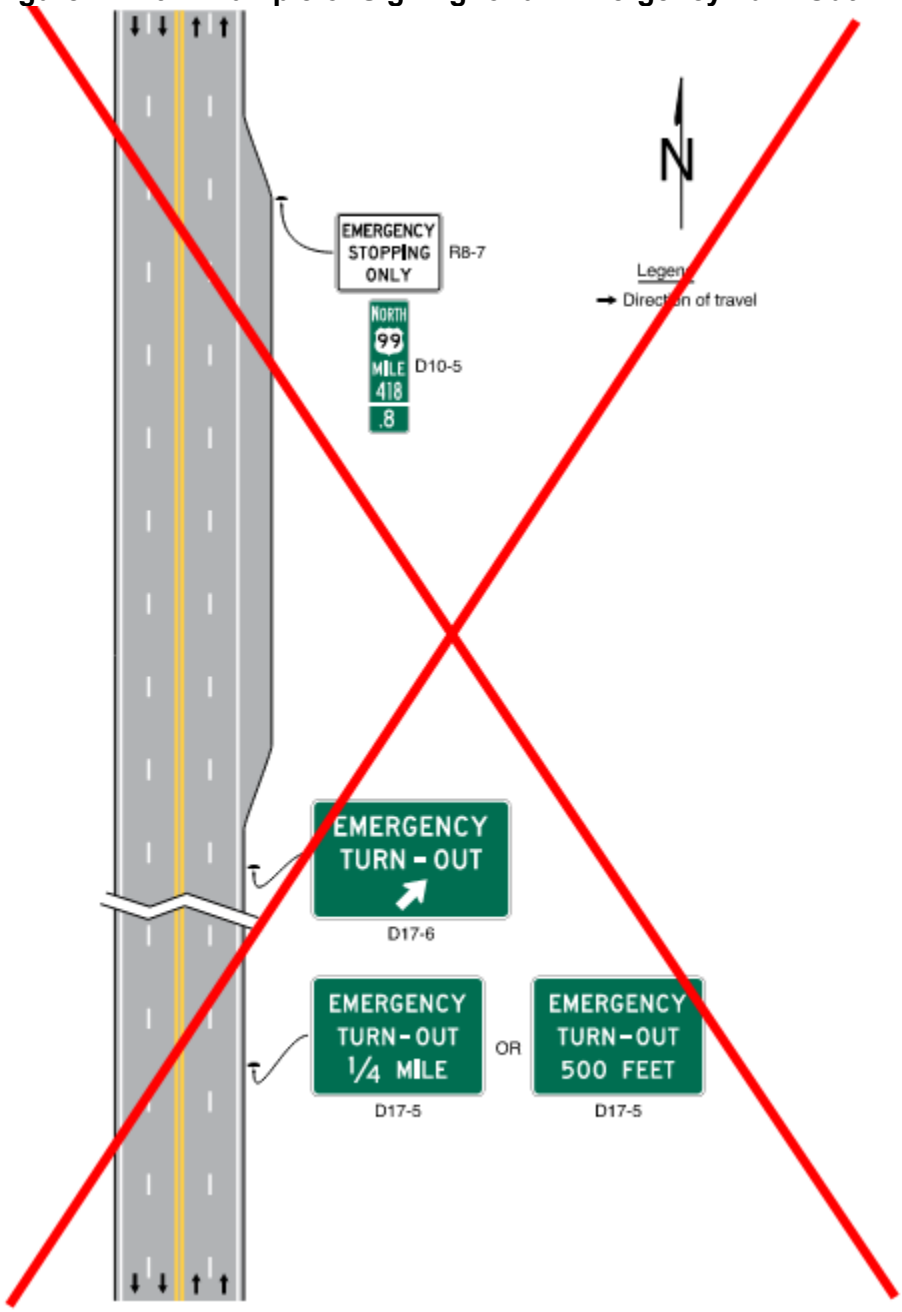
MoDOT does not use D17-5 through D17-7 signs. Revised Dec. 2025

Figure 2D-28. Emergency and Slow Vehicle Turn-Out Signs



D17-5 D17-6 D17-7

Figure 2D-29. Example of Signing for an Emergency Turn-Out



Section 2D.55 Community Wayfinding Signs

Support:

01 Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other road users to key civic, cultural, visitor, and recreational attractions and other similar secondary destinations within a city or a local urbanized or downtown area.

M01A Community Wayfinding is a city installed and maintained signing program allowed on MoDOT right of way per this policy. Wayfinding signs are installed as MoDOT permit projects and require a TR47 agreement. MoDOT's only role is to ensure the city program signs meet the requirements of the wayfinding policies and do not interfere with safe operation of the state highway system.

02 Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/or identification marker for destinations within an overall wayfinding guide sign plan for an area.

03 Figure~~s~~ 2D-30 ~~through 2D-32~~ illustrate~~s~~ various examples of the design ~~and application~~ of community wayfinding guide signs.

Figures 2D-31 and 2D-32 are not included in the EPG. Revised Dec. 2025

Standard:

04 The use of community wayfinding guide signs shall be limited to conventional roads. Community wayfinding guide signs shall not be installed on freeway or expressway mainlines or ramps. Direction to community wayfinding destinations from a freeway or expressway shall be limited to the use of a Supplemental guide sign (see Section 2E.51) on the mainline and a Destination sign (see Section 2D.36) on the ramp to direct road users to the area or areas within which community wayfinding guide signs are used. A community wayfinding program shall have a minimum of three well defined districts before freeway/expressway signing will be permitted. A well-defined district shall represent a region or area with multiple sites or destinations within it. The individual wayfinding destinations shall not be displayed on the Supplemental guide and Destination signs except where the destinations are in accordance with ~~the State or agency~~ this policy ~~on Supplemental guide signs~~.

MoDOT specific content from the EPG. Revised Dec. 2025

05 Community wayfinding guide signs shall not be used to provide direction to primary destinations or highway routes or streets. Destination or other guide signs shall be used for this purpose as described elsewhere in this ~~Chapter~~EPG 903.4 and shall have priority over any community wayfinding sign in placement, prominence, and conspicuity.

06 Because regulatory, warning, and other guide signs have a higher priority, community wayfinding guide signs shall not be installed where adequate spacing cannot be provided between the community wayfinding guide sign and other higher-priority signs. Community wayfinding guide signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

07 Community wayfinding guide signs shall not be mounted overhead.

Support:

M07A Community wayfinding guide signs include boundary markers, welcome to messages or the simple display of a city name on a structure or sign. Refer to EPG 903.17 Overhead Sign Mounting.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

08 If used, a community wayfinding guide sign system should be established on a local municipal or equivalent jurisdictional level or for an urbanized area of adjoining municipalities or equivalent that form an identifiable geographic entity that is conducive to a cohesive and continuous system of signs. Community wayfinding guide signs should not be used on a regional or statewide basis where infrequent

or sparse placement does not contribute to a continuous or coordinated system of signing that is readily identifiable as such to the road user. In such cases, Destination or other guide signs detailed in ~~this Chapter~~ EPG 903.4 should be used to direct road users to an identifiable area in which the type of eligible destination described in ~~Paragraph 1 of this Section~~ first Support paragraph of this Article is located.

09 When a system of community wayfinding guide signs is being considered, the system of existing guide signs should be evaluated for applicability and general compliance with the provisions of ~~this Manual~~ the EPG to ensure road user directional guidance is adequately being addressed.

Support:

10 The specific provisions of this Section regarding the design of community wayfinding sign legends apply to vehicular community wayfinding signs and do not apply to those signs that are intended only to provide information or direction to pedestrians or other users of a sidewalk or roadside area.

Guidance:

11 Because pedestrian wayfinding signs typically use smaller legends that are inadequately sized for viewing by vehicular traffic and because they can provide direction to pedestrians that might conflict with that appropriate for vehicular traffic, wayfinding signs designed for and intended to provide direction to pedestrians or other users of a sidewalk or other roadside area should be located to minimize their conspicuity to vehicular traffic. Such signs should be located as far as practicable from the street, such as at the far edge of the sidewalk. Where locating such signs farther from the roadway is impracticable, the pedestrian wayfinding signs should have their conspicuity to vehicular traffic minimized by employing one or a combination of the following methods:

A. Locating signs away from intersections where high-priority traffic control devices are present.

B. Facing the pedestrian message toward the sidewalk and away from the street.

C. Cantilevering the sign over the sidewalk if the pedestrian wayfinding sign is mounted at a height consistent with vehicular traffic signs, removing the pedestrian wayfinding signs from the line of sight in a sequence of vehicular signs.

12 To further minimize their conspicuity to vehicular traffic during nighttime conditions, pedestrian wayfinding signs should not be retroreflective.

Support:

13 Color coding is sometimes used on community wayfinding guide signs to help road users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area.

Option:

14 At the boundaries of the geographical area within which community wayfinding guide signing is used, an informational guide sign may be posted to inform road users about the presence of wayfinding signing and to identify the meanings of the various color codes or pictographs that are being used.

Standard:

15 These informational guide signs shall have a white legend and border on a green background and shall have a design similar to that illustrated in Figure 2D-1 and shall be consistent with the basic design principles for guide signs. These informational guide signs shall not be installed on freeway or expressway mainlines or ramps.

16 The color coding or a pictograph of the identification markers of the community wayfinding guide signing system shall be included on the informational guide sign posted at the boundary of the community wayfinding guide signing area. The color coding or pictographs shall apply to a specific, identifiable neighborhood or geographical subarea within the overall area covered by the community wayfinding guide signing. Color coding or pictographs shall not be used to distinguish between different types of destinations that are within the same designated neighborhood or subarea. The color coding shall be accomplished by the use of different colored square or rectangular panels on the face of the informational guide sign, each positioned to the left of the

neighborhood or named geographic area to which the color-coding panel applies. The height of the colored square or rectangular panels shall not exceed 2 times the height of the upper-case letters of the principal legend on the sign.

Option:

17 The different colored square or rectangular panels may include either a black or a white (whichever provides the better contrast with the color of the panel) letter, numeral, or other appropriate designation to identify the destination.

18 Except for the informational guide sign posted at the boundary of the wayfinding guide sign area, community wayfinding guide signs may use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system. Color-coded community wayfinding guide signs may be used with or without the boundary informational guide sign displaying corresponding color-coding panels described in ~~Paragraphs 13 through 16 of this Section~~ the sixth Support paragraph (beginning with "Color coding is sometimes…") through the sixth Standard paragraph (beginning with "The color coding or a pictograph…") of this Article. Except as provided in ~~Paragraph 19 of this Section~~ the following Standard paragraph, in addition to the colors that are approved in ~~this Manual~~ the EPG for use on official traffic control signs (see ~~Section 2A.06~~ EPG 903.1.6), other background colors may also be used for the color coding of community wayfinding guide signs.

Standard:

19 The standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink shall not be used as background colors for community wayfinding guide signs, in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users.

20 The minimum contrast value of legend color to background color for community wayfinding guide signs shall be at least 0.70 (or 70%).

21 All messages, borders, legends, and backgrounds of community wayfinding guide signs and any identification markers shall be retroreflective (see ~~Sections 2A.21 and 2A.22~~ EPG 903.1.21 and 903.1.22).

22 Community wayfinding guide signs, exclusive of any identification marker used, shall be rectangular in shape.

Guidance:

23 Simplicity and uniformity in design, position, and application as described in Section 2A.04 are important and should be incorporated into the community wayfinding guide sign design and location plans for the area.

24 Community wayfinding guide signs should be limited to three destinations per sign (see Section 2D.06).

25 Abbreviations (see Section 1D.08) should be kept to a minimum, and should include only those that are commonly recognized and understood.

26 Horizontal lines of a color that contrasts with the sign background color should be used to separate groups of destinations by direction from each other.

Support:

27 The basic requirement for all highway signs, including community wayfinding signs, is that they be legible to those for whom they are intended and that they be understandable in time to permit a proper response. ~~Section 2A.04~~ EPG 903.1.4 contains additional information on the design of signs, including desirable attributes of effective designs.

Guidance:

28 Word messages should be as brief as practical and the lettering should be large enough to provide the necessary legibility distance.

Standard:

29 The minimum specific ratio of letter height to legibility distance shall comply with the provisions of ~~Section 2A.08~~ EPG 903.1.8. The size of lettering used for destination and directional legends on community wayfinding signs shall comply with the provisions of minimum letter heights as provided in Section 2D.05.

30 Interline and edge spacing shall comply with the provisions of Section 2D.05.

31 Except as provided in ~~Paragraph 34 of this Section~~ the Option paragraph below, the lettering style used for destination and directional legends on community wayfinding guide signs shall comply with the provisions of Section 2D.04.

32 The lettering for destinations on community wayfinding guide signs shall be a combination of lower-case letters with initial upper-case letters (see Section 2D.04). All other word messages on community wayfinding guide signs shall be in all upper-case letters.

Guidance:

33 Except as provided in ~~Paragraphs 34 and 35 of this Section~~ the Option and Standard paragraphs below, letters, numerals, and other characters should be composed of the Standard Alphabets as detailed in the "Standard Highway Signs" publication (see Section 1~~C~~A.05).

Option:

34 A lettering style other than the Standard Alphabets provided in the "Standard Highway Signs" publication (see Section 1~~C~~A.05) may be used on community wayfinding guide signs if an engineering study determines that the legibility and recognition values for the chosen lettering style meet or exceed the values for the Standard Alphabets for the same legend height and stroke width.

Standard:

35 If a lettering style other than the Standard Alphabets is used, the alternative lettering style shall be conventional in form. The letters, numerals, and other characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

36 In accordance with ~~Section 2A.04~~ EPG 903.1.4, except for signs that are designed and located with the intent to be viewed only by pedestrians, bicyclists stopped out of the flow of traffic, or occupants of parked vehicles, Internet and e-mail addresses, including domain names and uniform resource locators (URL), and scanning graphics for the purpose of obtaining information (see ~~Section 2A.04~~ EPG 903.1.4), shall not be displayed on any community wayfinding guide sign or sign assembly.

37 The arrow location and priority order of destinations shall follow the provisions described in Sections 2D.08 and 2D.36. Arrows shall be of the designs provided in Section 2D.08.

Option:

38 Pictographs (see definition in Section 1C.02) may be used on community wayfinding guide signs.

Standard:

39 If a pictograph is used, its height shall not exceed 2 times the height of the upper-case letters of the principal legend on the sign.

40 Except for pictographs, symbols that are not approved in ~~this Manual~~ the EPG for use on guide signs shall not be used on community wayfinding guide signs.

41 Business logos, commercial graphics, or other forms of advertising (see Section 1D.07) shall not be used on community wayfinding guide signs or sign assemblies.

Option:

42 Other graphics that specifically identify the wayfinding system, including identification markers, may be used on the overall sign assembly and sign supports.

Support:

43 An identification marker consists of a shape, color, and/or pictograph that is used as a visual identifier for the community wayfinding guide signing system for an area. Figure 2D-30 shows examples of identification marker designs that can be used with community wayfinding guide signs.

Option:

44 An identification marker may be used in a community wayfinding guide sign assembly, or may be incorporated into the overall design of a community wayfinding guide sign, as a means of visually identifying the sign as part of an overall system of community wayfinding signs and destinations.

Standard:

45 The sizes and shapes of identification markers shall be smaller than the community wayfinding guide signs themselves. Identification markers shall not be designed to have an appearance that could be mistaken by road users as being a traffic control device.

Guidance:

46 The area of the identification marker should not exceed ⅕ of the area of the community wayfinding guide sign with which it is mounted in the same sign assembly.

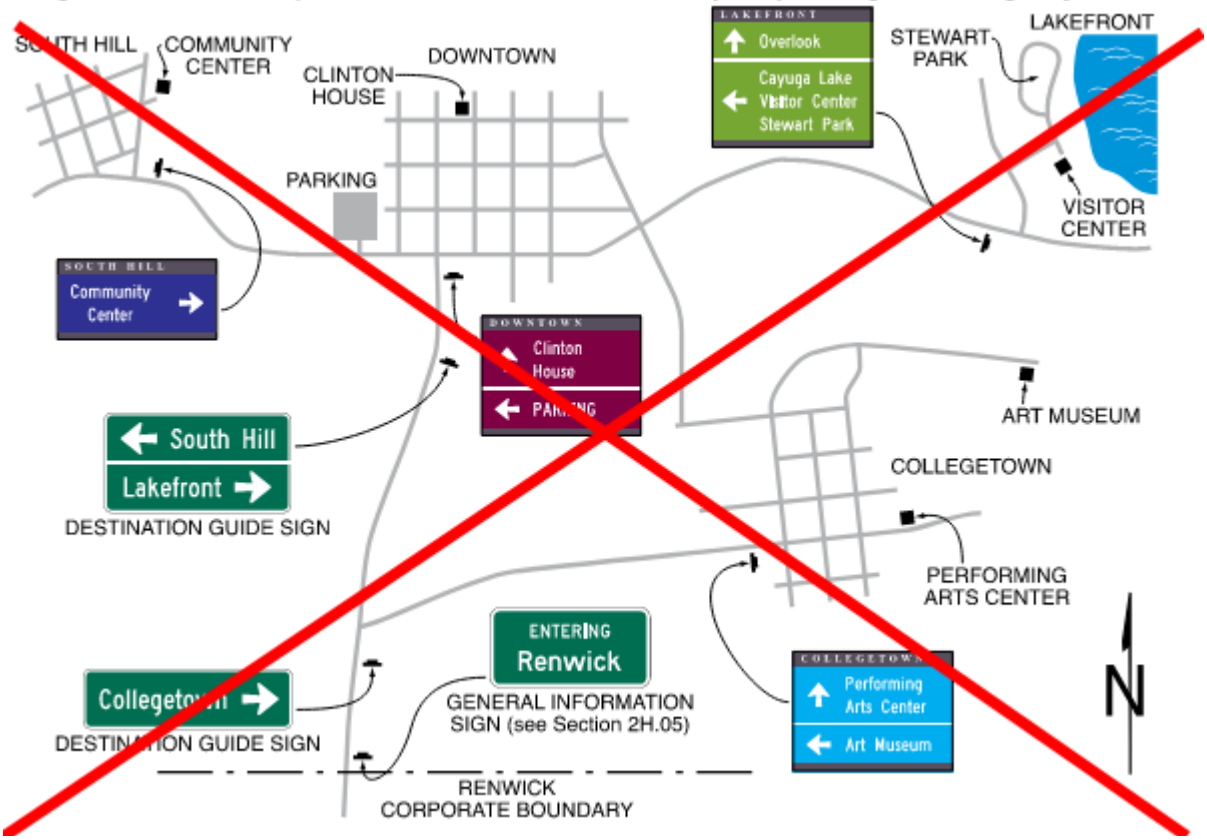
Figure 2D-30. Examples of Community Wayfinding Guide Signs



Figure 2D-31. Example of a Community Wayfinding Guide Sign System Showing Direction from a Freeway or Expressway



Figure 2D-32. Example of a Color-Coded Community Wayfinding Guide Sign System



~~Section 2D.56 Signing of Named Highways for Mapping and Address Purposes~~

~~Support:~~

~~01 A highway name is the officially designated name of a freeway, expressway, or conventional road for navigational, official mapping, and address purposes. Some highways are named in addition to or in lieu of being assigned a highway route number. Memorial, honorary, ceremonial, or other secondary names, such as touring route and byway names, are not considered to be highway names.~~

~~Option:~~

~~02 Guide signs may contain street or highway names if the purpose is to enhance driver communication and guidance; however, they are to be considered as supplemental information to route numbers.~~

~~**Standard:**~~

~~**03 Highway names shall not replace official numeral designations.**~~

~~**04 Memorial, honorary, or other secondary names (see Section 2M.10) shall not appear on supplemental signs or on any other information sign on or along the highway or its intersecting routes.**~~

~~**05 The use of route signs shall be restricted to signs officially used for guidance of traffic in accordance with this Manual and the "Purpose and Policy" statement of the American Association of State Highway and Transportation Officials that applies to Interstate and U.S. numbered routes.**~~

~~Option:~~

~~06 Unnumbered routes having major importance to proper guidance of traffic may be signed if carried out in accordance with the aforementioned policies. For unnumbered highways, a name to enhance route guidance may be used where the name is applied consistently throughout its length.~~

~~*Guidance:*~~

~~*07 Only one name should be used to identify any highway, whether numbered or unnumbered.*~~

MoDOT does not use named highways. Revised Dec. 2025

Section 2D.57 National Scenic Byways Sign and Plaque (M10-1 and M10-1aP)

Support:

01 Certain roads have been designated by the U.S. Secretary of Transportation as National Scenic Byways or All-American Roads based on their archeological, cultural, historic, natural, recreational, or scenic qualities.

M01A Table 903.4.49 lists the approved National Scenic Byways that follow state-maintained routes.

Table 903.4.49. Approved National Scenic Byways in Missouri

National Scenic Byways in Missouri
Crowley's Ridge Parkway
Little Dixie Highway of the Great River Road

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

02 ~~State and local highway agencies~~ MoDOT may install the National Scenic Byways (M10-1) sign or (M10-1aP) plaque (see Figure 2D-33) at entrance points to a route that has been recognized by the U.S. Secretary of Transportation as a National Scenic Byway or an All-American Road. The M10-1 sign may be installed as independent Directional (see Section 2D.32) or Confirming (see Section 2D.33) assemblies at periodic intervals along the designated route and near intersections where the designated route turns or follows a different numbered highway. The M10-1aP plaque may be installed below a route sign in a Confirming assembly. At locations where roadside features have been developed to enhance the traveler's experience such as rest areas, historic sites, interpretive facilities, or scenic overlooks, the National Scenic Byways sign or plaque may be placed on the associated sign assembly to inform travelers that the site contributes to the byway travel experience.

Guidance:

03 Where the byway is identified only by the National Scenic Byways sign, the Directional assembly should consist of the M10-1 sign and an M5 series or M6 series auxiliary plaque when indication of a turn is necessary to remain on the byway route.

04 Where the name of the byway is to be displayed on identification signs or plaques along the byway route, the name should be displayed in a Directional or Confirming assembly ~~as follows (see Figure 2D-34):~~

~~*A. On a Byway Identification (M10-2aP) plaque (see Section 2D.58) mounted below the M10-1 sign; or*~~

~~*B. On a Byway Identification (M10-2) sign (see Section 2D.58) with the M10-1aP plaque mounted below the sign.*~~

05 ~~In either case,~~ the size of the National Scenic Byways (M10-1) sign~~,~~ and (M10-1aP) plaque~~, Byway Identification (M10-2) sign, and Byway Identification (M10-2aP) plaque~~ should be consistent with that specified for route signs (see Section 2D.10) for the roadway classification.

MoDOT does not use M10-2 or M10-2aP signs. Revised Dec. 2025

06 Where the name of the byway is to be displayed along the byway route as provided in Paragraph 4 of this Section, the byway Directional or Confirming assemblies should be located separately from any route Sign assemblies or Destination guide signs.

Standard:

07 When a National Scenic Byways sign is installed on a National Scenic Byway or an All-American Road, the design shown for the M10-1 sign or M10-1aP plaque in Figure 2D-33 shall be

used. Use of this design shall be limited to routes that have been designated as a National Scenic Byway or All-American Road by the U.S. Secretary of Transportation.

08 If used, the M10-1 sign or M10-1aP plaque shall be placed such that the highway route signs have primary visibility for the road user.

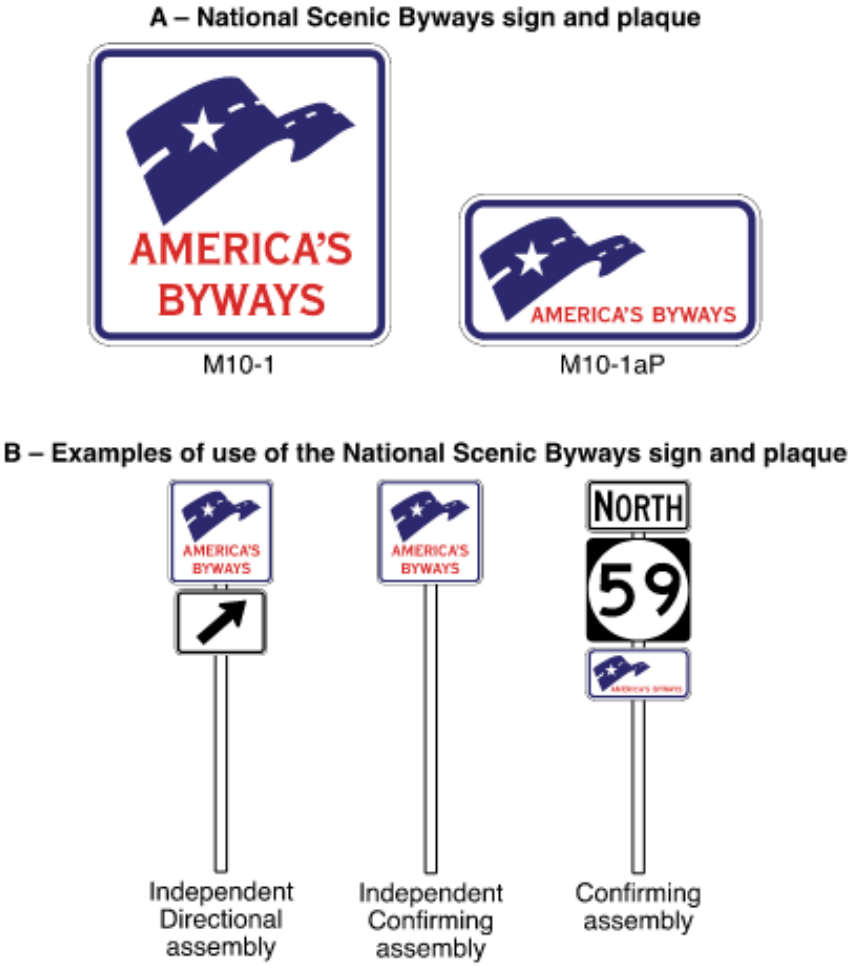
09 The M10-1 sign or the M10-1aP plaque shall not be installed as sign panels on a guide sign or as part of a guide sign assembly.

M10 The National Scenic Byway signs shall be paid for by the group or association responsible for byway.

M11 Any additional signing, other than that provided by MoDOT, shall be located off of state maintained right of way.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2D-33. National Scenic Byways Sign and Plaque, and Examples of Use



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.

M01A Table 903.4.50 lists the approved Missouri Scenic Byways that follow state-maintained routes.

Table 903.4.50. Approved Missouri Scenic Byways

Missouri Scenic Byway
Cliff Drive
Crowley's Ridge Parkway
Historic Route 66 Byway
Little Dixie Highway of the Great River Road
Old Trails Road
Ozark Mountain High Road
Ozark Mountain Parkway
Sho-Me Santa Fe Trail
Spirit of Kansas City
Stars and Stripes Historical/Cultural Byway

MoDOT specific content from the EPG. Revised Dec. 2025

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 EPG 911 (MUTCD Section 1D.09) provides information on the authority for placement of traffic control devices within the highway right-of-way.

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 be installed along conventional roads that have been designated as 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.~~

Standard:

M05A When a Missouri Scenic Byways sign is installed on state-maintained routes, the design shown for the D6-4b or D6-4c sign shall be used. Use of this design shall be limited to routes that have been designated as a Missouri Scenic Byway by the Commission.

M05B The Missouri Scenic Byway (D6-4b) signs shall be installed at the beginning of the byway and shall include the byway name at the bottom of the sign.

M05C Missouri Scenic Byways (D6-4c) Confirmation signs shall be installed above route turn assemblies and at intersections where the designated route turns or follows a different numbered highway.

M05D If used, the D6-4b or D6-4c sign shall be placed such that the roadway signs have primary visibility for the road user.

M05E Any additional signing, other than that provided by MoDOT, shall be located off state maintained right of way.

Option:

M05F The end of the byway may be marked with the Missouri Scenic Byways (D6-4c) Confirmation sign with the END (M4-6) auxiliary sign mounted below.

M05G At locations where roadside features have been developed to enhance the traveler's experience, the Missouri Scenic Byways Point of Interest (D6-4d) plaque may be placed below the Missouri Scenic Byway (D6-4b) sign to inform travelers that the site contributes to the byway travel experience.

MoDOT specific content from the EPG. Revised Dec. 2025

~~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) sign 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.~~

Support:

M08A In some instances, a Missouri Scenic Byway will receive National Scenic Byway status in which case the byway is eligible for additional signing to denote this designation and is eligible for first order signing.

Standard:

M08B If a Missouri Scenic Byway receives National Scenic Byway status, the National Scenic Byways (M10-1) sign shall be mounted below the Missouri Scenic Byway (D6-4b) sign or the Missouri Scenic Byways (D6-4c) Confirmation sign.

Support:

M08C If a Missouri Scenic Byway receives National Scenic Byway status it is eligible for first order signing.

Standard:

M08D First order signing for at grade intersections shall consist of a Public Use Area (D7-10) sign containing the byway name, the National Scenic Byway logo and a directional arrow and a distance, if applicable, to the beginning of the byway if less than one mile.

Option:

M08E For grade-separated interchanges, supplement guide signs and ramp signing may be installed to direct traffic to the byway.

Standard:

M08F The mainline signs shall be white on brown and contain the America's Byway logo, the name of the byway and NEXT RIGHT. The ramp sign will be of the same design as the first order at grade signing.

M08G The location of these signs shall be identical to that found on a normal Missouri Scenic Byway. The costs associated with the National Scenic Byways designation shall be the responsibility of the group or association responsible for byway.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Option:~~

~~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:

12 Where used, historic trail and State scenic byway identification signs 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.

Support:

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.~~

Support:

M18 An auto tour route is a path along a historic route or a historic trail with the auto tour route traversing existing roadways. The roadway the auto tour route traverses may be the actual historic road or represent the exact location of a historic trail, however, it is more common the auto tour route traverses existing roadways which represent the closest approximation of where the historic route or trail originally existed.

M19 MoDOT does not typically initiate auto tour routes, this action is typically initiated by historical organizations like the National Park Service or private organizations like the Historic Route 66 Association of Missouri who have an interest in preserving the history of a historic route or trail. These organizations are the technical experts on the history of the historic route or trail.

M20 Auto tour signing is expensive to install and maintain and these costs are generally borne by the sponsoring organization requesting the signing. One of the primary issues with auto tour routes is they traditionally rely on signs to guide motorists along the path. If just one sign is stolen or damaged and taken out of service, the path is broken, and motorists can lose their way. In today's technology and GPS guidance, there may be better more cost-effective ways of guiding motorists along an auto tour route. A sponsoring organization may want to consider instead of signing, such as a navigational map app for smart phone or GPS system. These types of apps are cheaper, can be easily updated, and are not as susceptible to failures like physical signs.

Standard:

M21 The Commission will consider marking an auto tour trail if the historic route or historic trail meets these minimum qualifications:

A. The road has been designated historic in one of the following ways:

1. The route is listed on the National Park Service's National Register of Historic Places.

2. The route is a National Park Service National Historic Trail

3. The route has been designated as historic through state legislation or congressional action.

B. An organization shall exist who sponsors the historic route and who shall be responsible for determining the exact path of the historical road.

C. The historic route shall be a minimum of 50 miles long and contiguous in length.

M22 Once a historic route or trail has been determined to qualify for auto tour signing, there are additional conditions and terms which must be met before signs can be installed on Commission right of way:

A. There shall be an agreement between the sponsoring organization and the Commission to define the responsibilities of each party. The agreement will have a 10-year term with options to renew the agreement. A new agreement will be executed as part of the renewal period. Any changes to the agreement during the 10-year period will void the agreement.

B. The sponsoring organization shall be responsible for paying a fee for the auto tour trail signing placed on Commission right of way. The fee shall be determined by the Commission and will cover the cost for initial sign installations as well as the estimated maintenance costs for the life of the 10-year agreement. If at the end of the 10-year term the sponsoring organization wishes to renew the agreement, the organization will be responsible for paying a renewal fee to cover the estimated maintenance costs for the subsequent 10 years. If a renewal is not executed with the Commission following the end date of the previous agreement the auto tour trail signing will no longer be maintained and will be removed from Commission right of way.

C. Historic route signs located on MoDOT right of way shall be installed and maintained by MoDOT per the agreement. These signs will always remain the property of the Commission and at the end of their life span will be disposed of as scrap material.

D. The Commission shall approve the path of the historic route prior to execution of the agreement.

E. The design of the sign used to mark the historic route shall be approved by the Commission as well as the Federal Highway Administration. The size of the sign shall not be larger than 24" x 30".

F. The Commission shall coordinate the fabrication of the approved historic route signs for both state route and non-state route portions of the historic route or path to assure uniformity in signing.

G. The installation of signs on Commission right of way shall be in accordance with MoDOT standards and specifications and approved by MoDOT prior to the execution of an agreement. The sign installations on routes outside of the Commission's current right of way shall match the sign design and sign placement established for the state right of way, with the post selection meeting the approval of the local jurisdiction who owns the right of way the signs are being installed on.

H. If the path of the historic route travels on roadways outside of the Commission's current highway system, the sponsoring organization shall acquire written commitments from local jurisdictions to allow the historic route's path to traverse the local jurisdiction's routes prior to the execution of the agreement with the Commission. These written commitments must also address how the signs will be initially installed along the local jurisdiction's route as well as the commitments for the long-term maintenance of the signs. If these commitments cannot be obtained the historic route signing cannot be installed.

I. The auto tour path for the historic route shall be installed in a single phase within a year or less.

J. Any part of the Commission-maintained system shall be limited to a maximum of three concurrent historic route and/or trail designations.

K. The approved auto tour path shall be marked using trailblazer assemblies and confirmation assemblies installed on their own independent sign supports. The trailblazing assemblies shall comprise of one approved auto tour sign and the appropriate directional arrow. The confirmation assembly shall be comprised of only the approved auto tour sign. The confirmation assemblies shall be placed in advance of an intersection where the auto tour route makes a directional change, the confirmation assembly shall be installed downstream of the intersection where the auto tour route made the directional change. No other signs shall be installed along the route unless approved by the Commission. The Commission will work with the sponsoring organization to establish the sign installation plan identifying sign installation locations.

L. Cardinal Direction plaques shall not be used with auto tour route signing.

M. The AUTO TOUR (M17-1) auxiliary sign was an educational plaque, it is no longer used. All existing signs shall be removed from assemblies at the end of their life cycle.

M23 The TR15 agreement for the auto tour route signing for sponsoring organizations who are not state or federal agencies shall contain the following provisions:

A. The sponsoring organization for the historic route shall provide a detailed map and description for the path of the historic route to be included in the agreement between the sponsoring organization and the Commission.

B. The sponsoring organization shall have the funding for the installation and 10 years of maintenance in place before the agreement will be executed.

C. If the historic road crosses a state line, there must be agreement with the adjoining state or states on the signing and the routing of the historic route. If agreements with the other states cannot be reached the historic signing shall end at the last intersection in Missouri.

D. If approved, Auto Tour Route signs shall not be installed on freeways or expressways, except as necessary to provide continuity between disconnected segments of conventional roadways that are designated as auto tour routes, for which the freeway or expressway provides the only connection between the segments. If installed on freeways or expressways, Auto Tour Route signs shall be installed as independent trailblazer assemblies and shall not be installed with other Route signs or confirmation assemblies or on guide signs. If installed on freeways or expressways, Auto Tour

Route trailblazer assemblies shall be installed at less frequent intervals than route confirmation assemblies.

Support:

M24 Historic trail signing with state or federal sponsorship are typically installed under a memorandum of understanding (MOU), that is drafted specifically for each trail.

M25 The Mississippi River Trail (MRT), while listed here, is a US Bike route which was established through the AASHTO Route Marking process. The MRT Trail is a designated bicycle and pedestrian trail that traverses the shores of the Mississippi River in the United States. The trail extends from the headwaters at Lake Itasca in Minnesota to near the mouth of the river in Venice, Louisiana. Much of the trail's 3,000 miles (4,800 km) follows roadways used by motor vehicles, although some of the route is on multi-use trails.

M26 There are several approved historic routes and trails that follow state-maintained routes which include:

A. Lewis and Clark Trail (M17-2)

B. Historic 66 (M17-8, M17-8a)

C. Santa Fe Trail (M17-4)

D. Oregon Trail (M17-3)

E. Trail of Tears (M17-5)

F. Pony Express (M17-10)

G. California Trail (M17-11)

H. Mississippi River Trail (MRT) bike trail / US Bike Route 45 (M17-7)

Option:

M27 Exclusive to the Lewis and Clark Trail (M17-2) marker, signing may be placed on the Guide Signs to provide guidance along the approved path on freeways and expressways. If there is insufficient space on the guide sign to display the Lewis and Clark Trail, the trail sign may be hung below the guide sign in accordance with MoDOT Standards and Specifications.

MoDOT specific content from the EPG. Revised Dec. 2025

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



Figure 2D-34A. Examples of the Use of Missouri Scenic Byways Sign

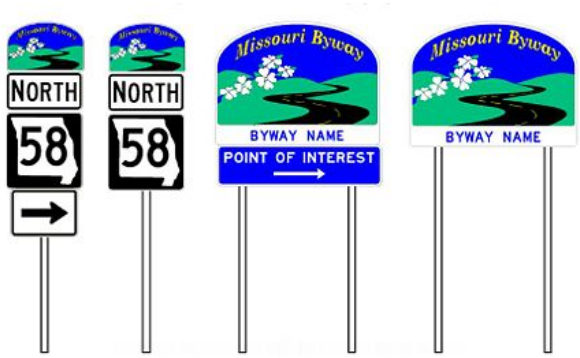
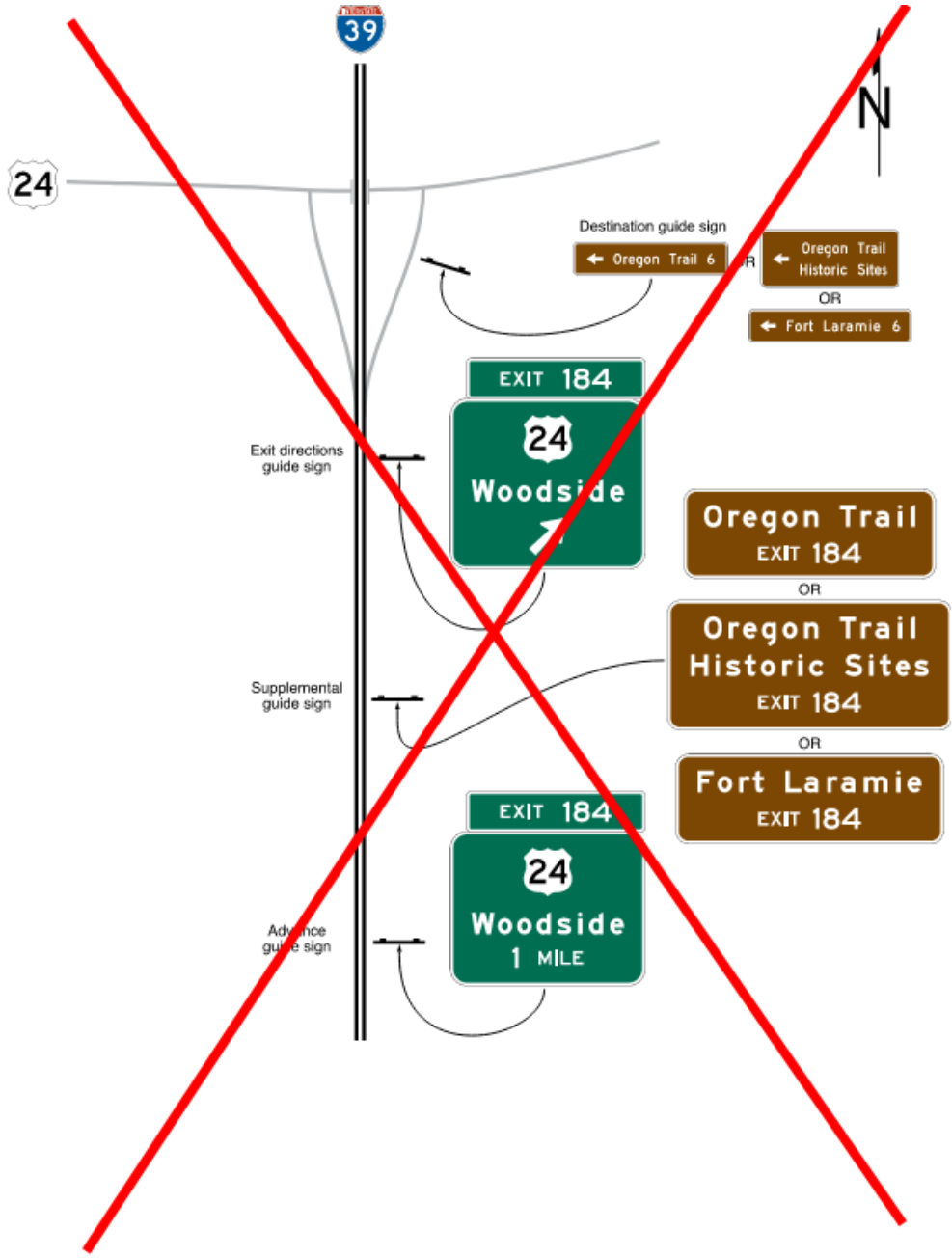


Figure 2D-35. Examples of Guide and Directional Signing for a National Historic Trail



Figure 2D-36. Example of Historic Trails Signing from an Expressway or Freeway



Section 2D.59 Emergency Routing Signs and Plaques (M4-11 and M4-12 Series)

Support:

01 As part of an agency's transportation incident management plan it is sometimes desirable to permanently sign routes that provide rerouting of traffic around highway segments susceptible to traffic incidents. Permanently-installed Emergency Routing signs and plaques (see Figure 2D-37) provide direction on conventional roads from an exit located upstream of an area that can be susceptible to traffic incidents back to the original route at a point downstream of the incident-susceptible area.

Option:

02 EMERGENCY ROUTE (M4-11 and M4-11a) signs and EMERGENCY ROUTE TO (M4-11bP and M4-11cP) plaques mounted on a directional assembly may be permanently installed on conventional roadways to provide trailblazing along a designated diversionary route to bypass a traffic incident.

Support:

03 The purpose of Emergency Routing signs and plaques is for corridor management along routes that have recurring incidents and have reasonable rerouting paths available. These signs are intended to be permanently installed to provide instant rerouting guidance to road users when traffic congestion or backups first begin even before emergency responders could provide temporary traffic control for rerouting traffic. These signs can be used as a stand-alone system or be a part of a larger system which might also incorporate other devices such as changeable message signs. These signs provide road users assurance that a diversionary route will lead them back to their original route of travel.

Standard:

04 Emergency Routing signs and plaques shall only be installed at departure points and along diversion routes for directing road users around highway segments in areas that are more susceptible to traffic incidents (see Figure 2D-38). EMERGENCY ROUTE and EMERGENCY ROUTE TO signs shall be placed at each turning decision point along the designated route until it rejoins the original route or until other directional signs leading back to the original route are provided.

05 Emergency Routing signs shall have a white legend and border on a green background.

Option:

06 For additional emphasis the legend EMERGENCY ROUTE or EMERGENCY ROUTE TO may be displayed in a yellow panel with black letters near the top of the sign (see Figure 2D-37).

Standard:

07 Orange or pink shall not be used as alternate colors on permanently-installed signs or plaques for rerouting traffic during an incident or other event. If a route shield is displayed as part of the message, the wording of the sign or plaque shall be EMERGENCY ROUTE TO as shown in Figure 2D-37.

Option:

08 An EMERGENCY ROUTE TO plaque with either a white legend and border on a green background (M4-11bP) or black legend and border on a yellow background (M4-11cP) may be added to the top of a conventional Route assembly on a diversion route to provide direction back to the original route downstream of the incident (see Figures 2D-37 and 2D-38).

09 A combination warning and regulatory message sign with flashing beacons mounted above and the legend, WHEN FLASHING [ROUTE] CLOSED AHEAD/ USE EMERGENCY ROUTE [NEXT RIGHT or EXIT XX] may be used in advance of the emergency route entrance to inform road users of the closure and require exiting the primary route and use of the emergency route (see Figures 2D-37 and 2D-38).

10 The End Emergency Route (M4-12) sign may be used at a point along the emergency route just prior to the junction where traffic is to reenter the primary route past the closed section of roadway (see Figures 2D-37 and 2D-38).

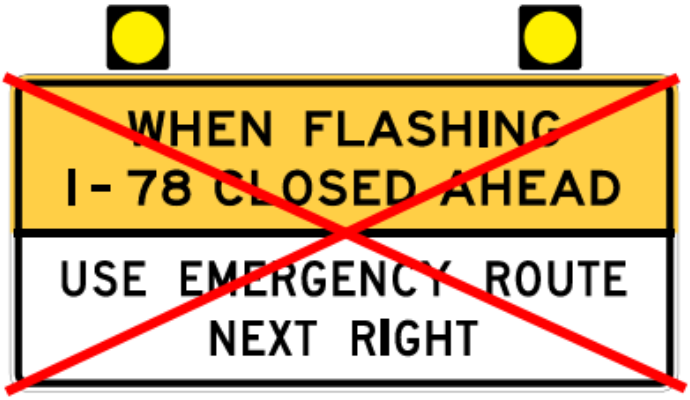
MoDOT does not use emergency routing signs or plaques. Revised Dec. 2025

Figure 2D-37. Signs and Plaques for Rerouting Because of Traffic Incidents



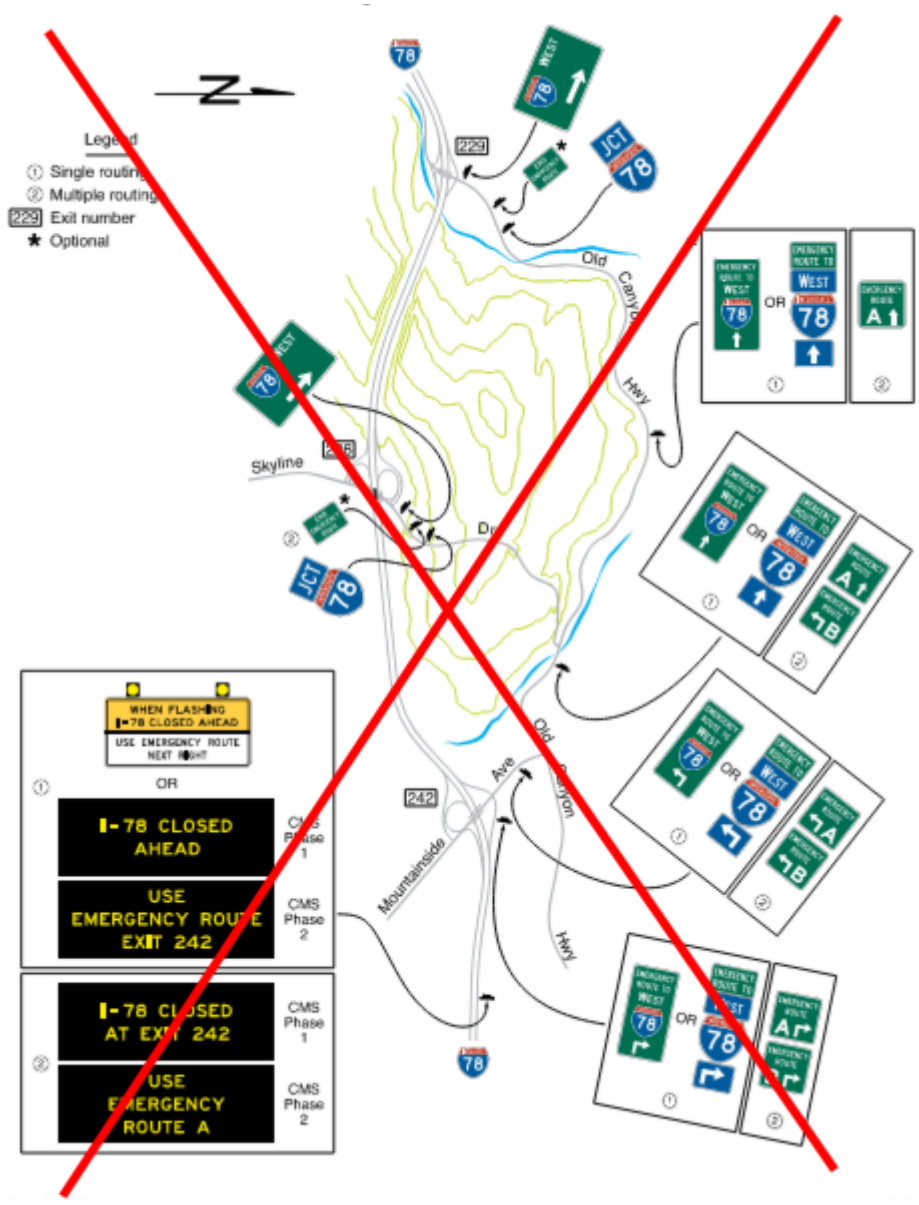


Examples of guide signs for rerouting



Example of advance sign for rerouting

Figure 2D-38. Example of Permanent Guide Signing for Rerouting Because of Traffic Incidents



Section 2D.59A Corridor Designations

Support:

M01 Corridor designations are typically multi-state route names established and/or implemented by neighboring state DOTs. In Missouri, the adoption of corridor designations was accomplished through Commission action.

M02 There are two approved corridor designations currently in the state:

M03 Avenue of the Saints (M17-9) - The Avenue of the Saints was the concept of businessman Ernest Hayes of Mount Pleasant, Iowa who in the 1980s envisioned a four-lane highway between St. Paul and St. Louis. It was named by Gary Smith, who at the time was Executive Director of the Southeast Iowa Regional Planning Commission. Smith and Hayes convened a group of area business and political leaders, who organized an effort to convince the Iowa Department of Transportation to study the idea, which they did in 1988.

M04 In 1990 the FHWA chose its route for the Avenue of the Saints: the signed highway would follow the existing Interstate 35 from St. Paul to a point south of Clear Lake, Iowa; U.S. Route 18 to Charles City, Iowa; U.S. Route 218 to Cedar Falls, Iowa; U.S. Route 20 and Iowa Highway 58 around Cedar Falls and Waterloo, Iowa; Interstate 380 from Waterloo through Cedar Rapids to Interstate 80 near Coralville, Iowa and Iowa City, Iowa; U.S. Route 218 to Donnellson, Iowa; Iowa Highway 394 and Route B to Wayland, Missouri; and Interstate 64 and U.S. Route 61 from Wayland to St. Louis. The Intermodal Surface Transportation Efficiency Act of 1991 made the Avenue of the Saints an official "high-priority corridor," and signs were put along the route by the end of the year.

M05 On July 25, 2008, the final nine miles (14 km) of highway between the Lewis—Clark county line and Wayland, Missouri, was open to four-lane traffic. A ceremony was held at the intersection of US 61 and Route 27 to commemorate the completion of the four-lane highway in Missouri. The Avenue of the Saints is now complete from St. Paul to suburban St. Louis.

M06 Chicago - Kansas City Expressway (CKC) – The Chicago–Kansas City Expressway is a highway that runs between Chicago, Illinois, and Claycomo, Missouri. The road is known as Route 110 in Missouri and Illinois Route 110 (IL 110) in Illinois. The Illinois Route 110 was created through legislation on May 27, 2010, as the designated route for the Illinois portion of the Chicago–Kansas City Expressway.

M07 Missouri Route 110 and the Chicago-Kansas City Expressway designations were established through the actions of the Missouri Highways and Transportation Commission on January 4, 2012.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2D.59B MoDOT Maintenance Signs (M19-2)

Standard:

M01 The MAINTENANCE ENDS (M19-2) sign shall be erected at the end of MoDOT maintenance on all marked highways except at a state line.

M02 The MAINTENANCE BEGINS (M19-1) sign has been discontinued for normal use. MoDOT shall no longer provide MAINTENANCE BEGINS signs. Existing MAINTENANCE BEGINS signs shall be left in place until they reach the end of their service life.

Option:

M03 When state maintenance begins and ends at multiple locations along a route's length as it enters and exits various municipalities, a MAINTENANCE BEGINS (M19-1) sign may be used to mark the boundaries of MoDOT maintenance responsibilities.

Guidance:

M04 The MAINTENANCE ENDS signs are not to be placed to mark the maintenance responsibilities for crossroads, such as within interchange limits unless there is a specific problem.

MoDOT specific content from the EPG. Revised Dec. 2025

SIGNING AT AIRPORTS

Section 2D.60 Signing at Airports

Support:

01 Many roadways within airport facilities (including terminal curbside roadways) are considered to be conventional roads because they typically have frequent driveways and at-grade intersections and might have pedestrian activity along and/or across them.

02 Some airport roadways have full or partial control of access and operating speeds higher than 45 mph and thus would be classified as freeways or expressways for signing purposes (see Chapter 2E). Freeway or expressway conditions typically exist on the approaches to the airport from other highways; on the approaches to access points to terminals, parking, and other patron facilities; and on roadways that provide exits from the airport facility to connect with the local or regional highway network.

03 Roadways within airports and other similarly contained roadway networks with multiple closely-spaced access points to multiple destinations (such as terminals, parking facilities, rental car facilities, and other airport services) often present challenges for the application of guide signing. Closely-spaced signs, excessive sign messaging either co-located or in succession, and the resulting excessive informational load imposed on the road user are of particular concern for such roadways. The Transportation Research Board's Airport Cooperative Research Program Report 52, "Wayfinding and Signing Guidelines for Airport Terminal and Landside," contains additional information on the application of traffic control devices to the unique geometrics and roadway environment that are typical of airports.

04 An example of major guide signing on the approaches to and within an airport facility roadway network is shown in Figure 2D-39.

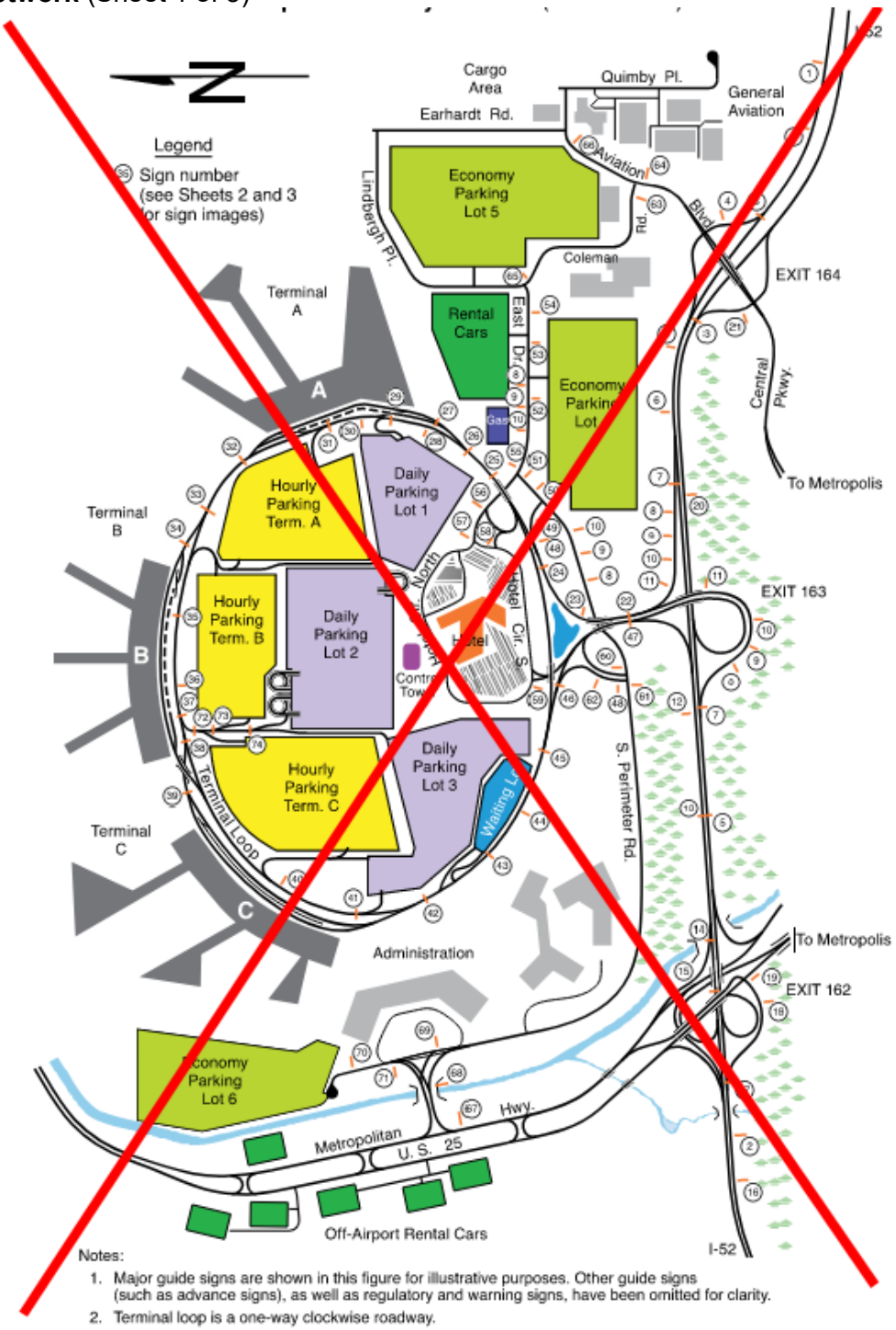
Guidance:

05 If adequate sign spacing cannot be provided due to the site and roadway characteristics of an airport or similar facility, then measures should be taken to reduce the speeds of vehicles on the roadway to provide road users with adequate time to comprehend and respond to the sign messages. Consideration should also be given to increasing the sign letter heights to provide greater viewing distances and decision times. Where a single terminal serves a large number of airlines, the airline information should be displayed on separate signs that appear in sequence to limit the number of airlines displayed on a single sign or at a single location. Changeable message signs (see Chapter 2L) should not be used to rotate the display of airlines to an approaching road user.

Support:

06 There are various methods that can be used to help reduce vehicle speeds, including roadway geometric changes, implementing traffic calming measures, and increased enforcement. Provisions on setting speed limits are found in Section 2B.21.

Figure 2D-39. Example of a System of Major Guide Signs for an Airport Roadway Network (Sheet 1 of 3)



Notes:

1. Major guide signs are shown in this figure for illustrative purposes. Other guide signs (such as advance signs), as well as regulatory and warning signs, have been omitted for clarity.
2. Terminal loop is a one-way clockwise roadway.

Figure 2D-39. Example of a System of Major Guide Signs for an Airport Roadway Network (Sheet 2 of 3)

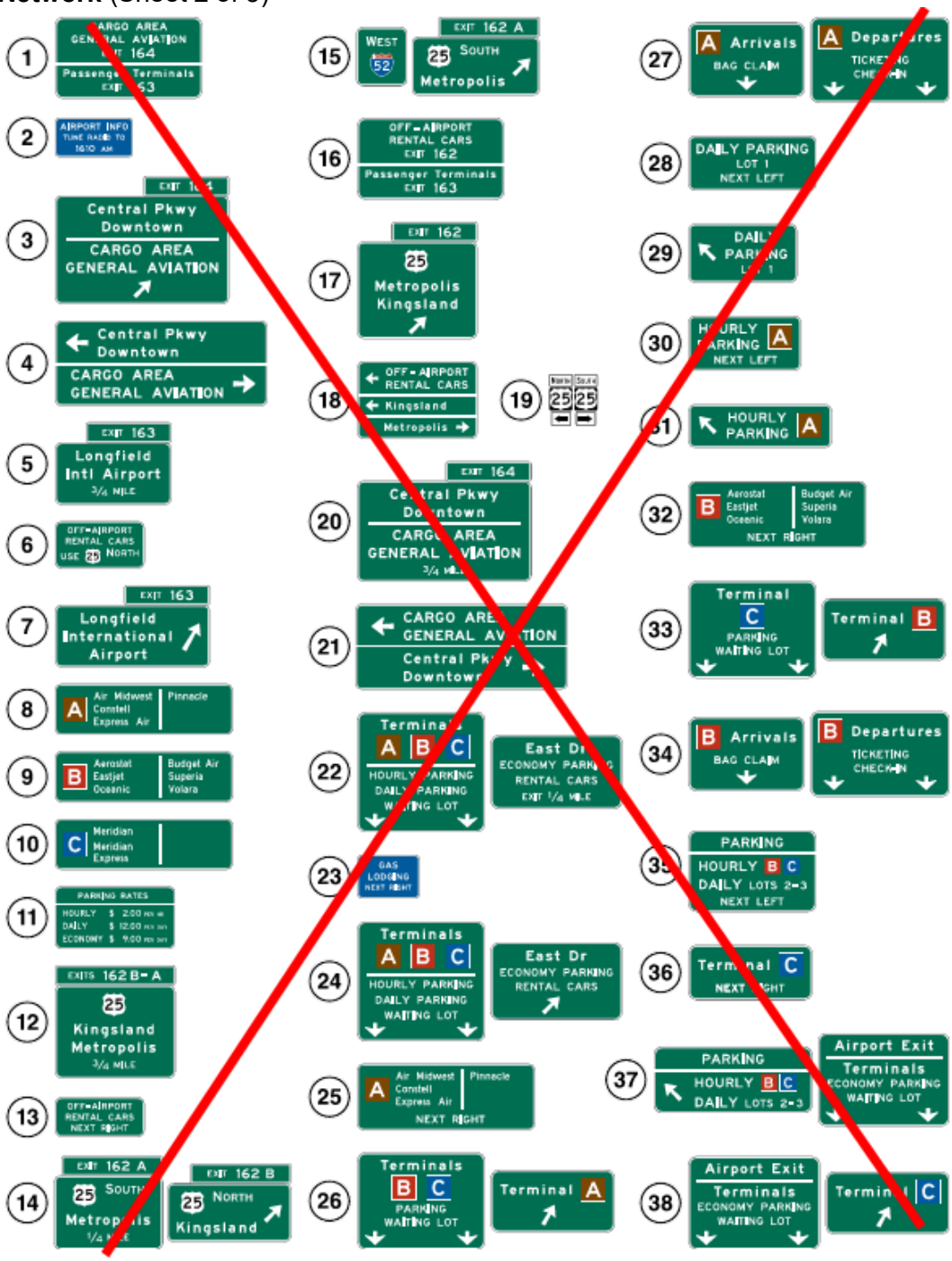


Figure 2D-39. Example of a System of Major Guide Signs for an Airport Roadway Network (Sheet 3 of 3)



CHAPTER 2E. [EPG 903.5]
GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS
GENERAL

Section 2E.01 Scope of Freeway and Expressway Guide Sign Standards

Support:

01 The provisions of ~~this Chapter~~ EPG 903.5 provide a uniform and effective system of signing for high-volume, high-speed motor vehicle traffic on freeways and expressways. The requirements and specifications for expressway signing exceed those for conventional roads (see ~~Chapter 2D~~ EPG 903.4), but are less than those for freeway signing. Since there are many geometric design variables to be found in existing roads, a signing concept commensurate with prevailing conditions is the primary consideration. Section 1C.02 includes definitions of freeway and expressway.

02 Guide signs for freeways and expressways are primarily identified by the name of the sign rather than by an assigned sign designation. Guidelines for the design of guide signs for freeways and expressways are provided in the FHWA's "Standard Highway Signs" publication (see EPG 911 (MUTCD Section 1A.05)).

Standard:

03 The provisions of ~~this Chapter~~ EPG 903.5 shall apply to any highway that meets the definition of freeway or expressway facilities.

Section 2E.02 Freeway and Expressway Signing Principles

Support:

01 The development of a signing system for freeways and expressways is approached on the premise that the signing is primarily for the benefit and direction of road users who are unfamiliar with the route or area. The signing furnishes road users with clear instructions for orderly progress to their destinations. Sign installations are an integral part of the facility and, as such, are best planned concurrently with the development of highway location and geometric design. For optimal results, plans for signing are analyzed during the earliest stages of preliminary design, and details are correlated as final design is developed. The excessive signing found on many major highways usually is the result of using a multitude of signs that are too small and that are poorly designed and placed to accomplish the intended purpose.

02 Freeway and expressway signing is to be considered and developed as a planned system of installations. An engineering study is sometimes necessary for proper solution of the problems of many individual locations, but, in addition, consideration of an entire route is necessary.

Guidance:

03 Road users should be guided with consistent signing on the approaches to interchanges, when they drive from one State to another, and when driving through rural or urban areas. Because geographical, geometric, and operating factors regularly create significant differences between urban and rural conditions, the signing should take these conditions into account.

04 Guide signs on freeways and expressways should serve distinct functions as follows:

- *A. Give directions to destinations, or to streets or highway routes, at intersections or interchanges;*
- *B. Furnish advance notice of the approach to intersections or interchanges;*
- *C. Direct road users into appropriate lanes in advance of diverging or merging movements;*
- *D. Identify routes and directions on those routes;*
- *E. Show distances to destinations;*
- *F. Indicate access to general motorist services, rest, scenic, and recreational areas; and*
- *G. Provide other information of navigational value to the road user.*

Section 2E.03 Guide Sign Classification

Support:

01 Freeway and expressway guide signs are classified and addressed as follows:

A. Interchange signs (see Sections 2E.21 through 2E.23 and 2E.25 through 2E.44);
B. Interchange Sequence signs (see Section 2E.24);
C. Post-Interchange signs (see Sections 2E.47 through 2E.49);
D. Community Interchanges Identification signs (see Section 2E.52);
E. Next Exits signs (see Section 2E.53);
F. Weigh Station signs (see Section 2E.54);
G. Route signs and Trailblazer Assemblies (see Section 2E.55);
~~H. At-Grade Intersection signs (see Section 2E.58);~~
~~I~~H. General Information signs (see Chapter 2H);
~~J~~I. ~~Reference Location signs (see Sections 2H.11 and 2H.12);~~ Emergency Reference Markers (see EPG 903.8.11)
~~K~~J. General Service signs (see Chapter 2I);
~~L~~K. Rest and Scenic Area signs (see Section 2I.05);
~~M~~L. Tourist Information and Welcome Center signs (see Section 2I.08);
~~N. Radio Information, Travel Information, and Roadside Assistance signs (see Sections 2I.09 through 2I.13);~~
~~O~~M. Carpool and Ridesharing signs (see Section 2I.14);
~~P~~N. Specific Service signs (see Chapter 2J); and
~~Q~~O. Recreational and Cultural Interest Area signs (see Chapter 2M).

Section 2E.04 Characteristics of Urban Signing

Support:

01 Urban conditions are characterized not so much by city limits or other arbitrary boundaries as by the following features:

A. Mainline roadways with more than two lanes in each direction;
B. High traffic volumes on the through roadways;
C. High volumes of traffic entering and leaving interchanges;
D. Interchanges that are closely spaced;
E. Roadway and interchange lighting;
F. Three or more interchanges serving the major city;
G. A loop, circumferential, or spur route serving a sizable portion of the urban population; and
H. Visual clutter from roadside development.

02 Operating conditions and road geometrics on urban freeways and expressways usually make special sign treatments desirable, including:

A. Use of Interchange Sequence signs (see Section 2E.24);
B. Use of sign spreading to the maximum extent possible (see Section 2E.43);
~~C. Elimination of General Service or Specific Service signing (see Chapters 2I and 2J);~~
D. Reduction to a minimum of post-interchange signs (see Section 2E.47);
E. Display of advance signs at distances closer to the interchange, with appropriate adjustments in the legend (see Section 2E.23);
F. Use of overhead signs on roadway structures and independent sign supports (see Section 2E.19);
G. Use of Overhead Arrow-per-Lane guide signs in advance of interchanges with option lanes (see Section 2E.40), ~~or Diagrammatic Advance guide signs in advance of interchanges with complex geometric configurations of ramp departures (see Section 2E.41)~~; and
H. Frequent use of street names as the principal message in guide signs.

03 Lower speeds, which are often characteristic of urban operations, do not justify lower signing standards. Typical traffic patterns are more complex for the road user to negotiate, and large, easy-to-read legends are, therefore, just as necessary as on rural highways.

Section 2E.05 Characteristics of Rural Signing

Support:

01 Rural areas ordinarily have greater distances between interchanges, which permits adequate spacing for the sequences of signs on the approach to and departure from each interchange. However, the absence of traffic in adjoining lanes and on entering or exiting ramps often adds monotony or inattention to rural driving. This increases the importance of signs that call for decisions or actions.

Guidance:

02 Where there are long distances between interchanges and the alignment is relatively unchanging, signs should be positioned for their best effect on road users. The tendency to group all signing in the immediate vicinity of rural interchanges should be avoided by considering the entire route in the development of signing plans. Extra effort should be given to the placement of signs at natural target locations to command the attention of the road user, particularly when the message requires an action by the road user.

~~Section 2E.06 Signing of Named Highways~~

~~*Guidance:*~~

~~*01 Signing of named highways on freeways and expressways should comply with the provisions of Section 2D.56.*~~

MoDOT does not use named highways. Revised Dec. 2025

~~Support:~~

~~02 Section 2M.10 contains information regarding memorial or dedication signing of routes, bridges, or highway components.~~

Section 2E.07 Designation of Destinations

Standard:

01 The direction of a freeway and the major destinations or control cities along it shall be clearly identified through the use of appropriate destination legends (see Section 2D.35). Successive freeway guide signs shall provide continuity in destination names and consistency with available map information. At any decision point, a given destination shall be indicated by way of only one route ~~(see Figure 2E-1)~~.

Guidance:

02 Control city legends should be used in the following situations along a freeway:

- *A. At interchanges between freeways;*
- *B. At separation points of overlapping freeway routes;*
- *C. On directional signs on intersecting routes, to guide traffic entering the freeway;*
- *D. On Pull-Through signs; and*
- *E. On the bottom line of post-interchange distance signs.*

M02A In a limited number of locations, the use of the name of a neighboring state or adjacent county might be more relevant than the control city. These identifiers should be used sparingly and only if such a designation is in the best interest of the motorists in that region.

MoDOT specific content and table from the EPG. Revised Dec. 2025

Support:

03 Continuity of destination names is also useful on expressways serving long-distance or intrastate travel.

04 The determination of major destinations or control cities is important to the quality of service provided by the freeway. Control cities on freeway guide signs are selected by the States and are contained in

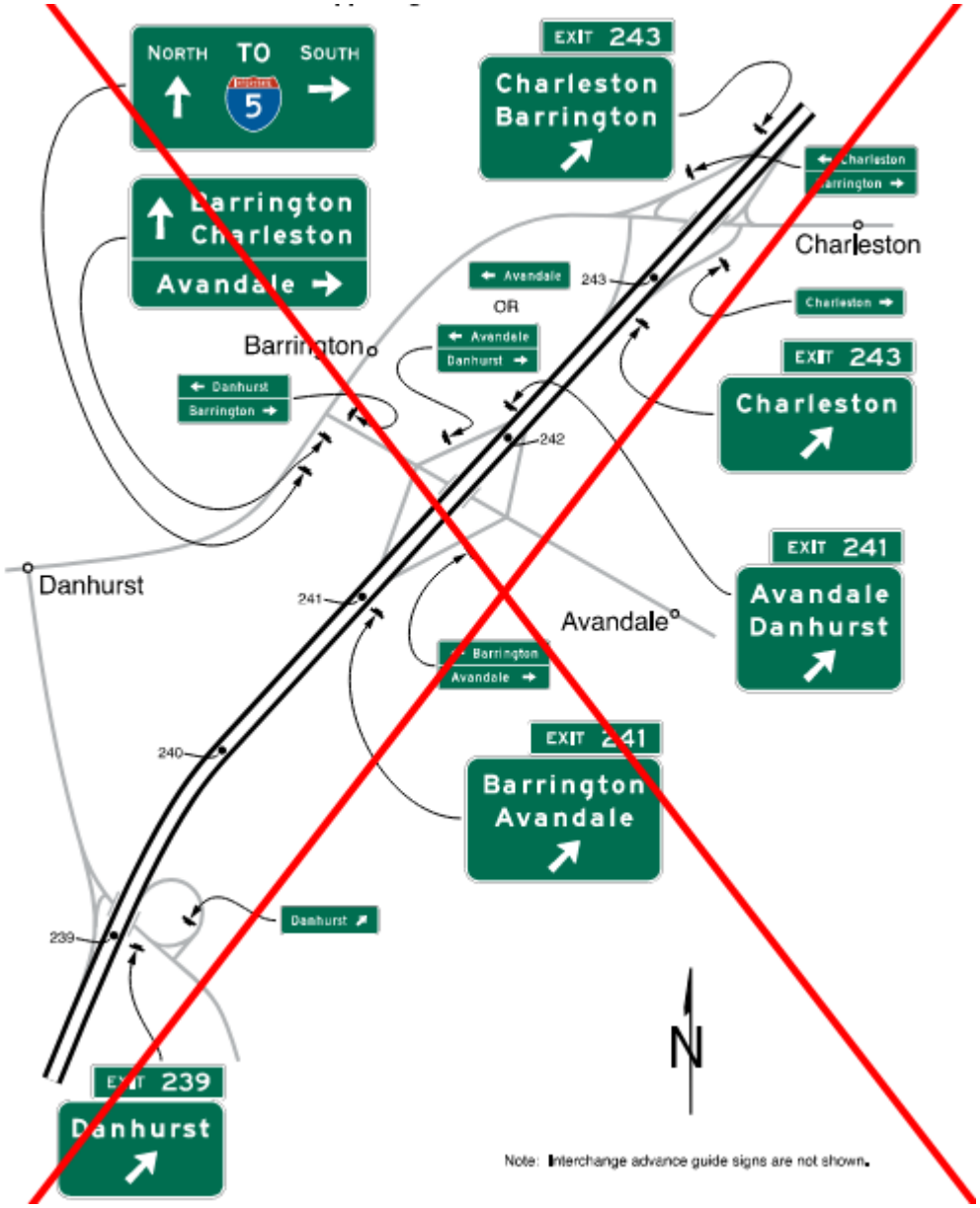
the “Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways, 45th Edition/Guide Signs, Part II: Guidelines for Airport Guide Signing/Guide Signs, Part III: List of Control Cities for Use in Guide Signs on Interstate Highways,” published by and available from the American Association of State and Highway Transportation Officials. Central Office Highway Safety and Traffic Division selects and maintains control cities for each route to maintain consistency in signing across the state, see Table 903.5.7.

Table 903.5.7. Interstate Sign Control Cities

Interstate	Cities
29	Kansas City, St. Joseph, ~~Mound City~~, Council Bluffs, Sioux City, Fargo, Grand Forks, Winnipeg
35 NB	Laredo, San Antonio, Austin, Waco, Dallas*Fort Worth, Oklahoma City, Wichita, Kansas City, Des Moines, Ames, Mason City, Albert Lea, St. Paul*Minneapolis, Duluth
35 SB	Duluth, St. Paul*Minneapolis, Albert Lea, Mason City, Ames, Des Moines, Kansas City, Oklahoma City, Dallas*Fort Worth, Waco, Austin, San Antonio, Laredo
44	Wichita Falls, Lawton, Oklahoma City, Tulsa, Joplin, Springfield, Rolla, St. Louis
49	Joplin, Kansas City
55	New Orleans, Hammond, McComb, Jackson, Grenada, Memphis, Blytheville, Sikeston, Cape Girardeau, St. Louis, Chicago
57 NB	Sikeston, Charleston, Cairo, Chicago
57 SB	Chicago, Cairo, Charleston, Sikeston, Memphis
64 EB	St. Louis, Louisville, Lexington, Ashland, Huntington, Charleston, Beckley, Lewisburg, Lexington, Staunton, Richmond, Norfolk, Chesapeake
64 WB	Richmond, Staunton, Lexington, Lewisburg, Beckley, Charleston, Huntington, Ashland, Lexington, Louisville, St. Louis, Wentzville
70 EB	I-15, Grand Junction, Denver, Limon, Hays Salina, Topeka, Kansas City, Columbia, Wentzville, St. Louis, Indianapolis, Columbus, Wheeling, Washington (PA), New Stanton, Breezewood, Hancock, Hagerstown, Washington D.C.*Baltimore
70 WB	Baltimore*Washington D.C., Frederick, Hagerstown, Breezewood, Wheeling, Columbus, Indianapolis, St. Louis, Wentzville, Columbia, Kansas City, Topeka, Salina, Hays, Limon, Denver, Grand Junction, I-15

MoDOT specific content and table from the EPG. Revised Dec. 2025

Figure 2E-1. Designation of Destinations for Interchanges in Opposing Directions of Travel



Section 2E.08 General

Support:

01 Effective signs are legible to road users approaching them, and are readable and comprehensible in the viewing time provided to permit proper responses. Desired design characteristics include: (a) long visibility distances; (b) large lettering, symbols, and arrows; and (c) short legends.

Section 2E.09 Color of Guide Signs

Standard:

01 Guide signs on freeways and expressways, except as otherwise provided in ~~this~~ ~~Manual~~ the EPG, shall have white letters, symbols, arrows, and borders on a green background.

M01A In the case of "EXIT ONLY" sign panels or other legends that require extra emphasis, the legend shall be black on fluorescent-yellow background.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

02 Color requirements for route signs and trailblazers; for signs with blank-out or changeable messages; for signs for services, rest areas, park and recreational areas; and for certain miscellaneous signs are provided in the individual Sections dealing with the particular sign or sign group.

Section 2E.10 Retroreflection or Illumination

Standard:

01 Letters, numerals, symbols, arrows, and borders of all guide signs shall be retroreflective. The background of all guide signs that are not independently illuminated shall be retroreflective.

Support:

02 Where there is no serious interference from extraneous light sources, retroreflective post-mounted signs usually provide adequate nighttime visibility.

03 On freeways and expressways where much driving at night is done with low-beam headlights, the amount of headlight illumination incident to an overhead sign display is relatively small.

~~*Guidance:*~~

~~*04 Overhead sign installations should be illuminated (see Section 2A.21) unless an engineering study shows that retroreflection alone will perform effectively. The type of illumination chosen should provide effective and reasonably uniform illumination of the sign face and message.*~~

Option:

M05 Overhead sign lighting may be installed based on engineering judgement.

Guidance:

M06 Overhead sign lighting should be limited to signs located in tunnels or under structures.

MoDOT uses Type XI sheeting on all overhead signs to provide nighttime visibility. Revised Dec. 2025

Section 2E.11 Interchange Classification

Support:

01 For signing purposes, ~~interchanges are classified as major, intermediate, and minor. Minimum letter and numeral sizes based on interchange classification are contained in Tables 2E-2 and 2E-4. Descriptions of these classifications are as follows:~~ MoDOT does not classify interchanges as major, intermediate, or minor with regard to signage.

~~A. Major interchanges are subdivided into two categories: (a) interchanges with other expressways or freeways, or (b) interchanges with high-volume multi-lane highways, principal urban arterials, or major rural routes where the volume of interchanging traffic is heavy or includes many road users unfamiliar with the area.~~

B. Intermediate interchanges are those with urban and rural routes not in the category of major or minor interchanges.

C. Minor interchanges include those where traffic is local and very light, such as interchanges with land service access roads. Where the sum of exit volumes is estimated to be lower than 100 vehicles per day in the design year, the interchange is classified as minor.

Section 2E.12 Size of Signs and Letters

Standard:

01 Except as provided in Section 2A.07 EPG 903.1.7, the sizes of freeway and expressway guide signs that have standardized designs shall be as shown in Table 2E-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2E-1.

Option:

03 Signs larger than those shown in Table 2E-1 may be used (see Section 2A.07).

Standard:

04 The nominal loop height of the lower-case letters shall be ¾ of the height of the initial upper-case letter (see Paragraph 3 the second Standard paragraph of Section 2D.05 for additional information on the specification of letter heights). Other word legends such as cardinal directions, action messages, and special characters shall be composed of all upper-case letters with a minimum letter height of 8 inches. Interline and edge spacing shall be as provided in Section 2E.13.

05 For all freeway and expressway signs that do not have a standardized design, the message dimensions shall be determined first, and the outside sign dimensions secondarily. Minimum numeral and letter sizes for expressway guide signs according to interchange classification, type of sign, and component of sign legend shall be as shown in Tables 2E-2 and 2E-3. Minimum numeral and letter sizes for freeway guide signs according to interchange classification, type of sign, and component of sign legend shall be as shown in Tables 2E-4 and 2E-5. The minimum numeral and letter sizes for overhead-mounted expressway and freeway guide signs shall be those shown in the "Overhead" columns of Tables 2E-2 and 2E-4, respectively, except where a larger minimum numeral or letter height is provided in the columns for the applicable type of interchange (major, intermediate, or minor).

MoDOT does not classify interchanges with regard to signage. MoDOT uses the major interchange letter and numeral sizes for all guide signs. Revised Dec. 2025

06 All names of places, streets, and highways on freeway and expressway guide signs shall be composed of lower-case letters with initial upper-case letters. The letters and the numerals used shall be FHWA Standard Alphabet Series E (modified) as provided in the FHWA's "Standard Highway Signs" publication (see EPG 911 (Section 1A.05)).

07 Lettering size on freeway and expressway signs shall be the same for both rural and urban conditions.

Support:

08 Sign size is determined primarily in terms of the length of the message and the size of the lettering necessary for proper legibility. Letter style and height, and arrow design have been standardized for freeway and expressway signs to assure uniform and effective application.

09 Designs for upper-case and lower-case FHWA Standard Alphabets, together with tables of recommended letter spacing, are shown in the FHWA's "Standard Highway Signs" publication (see Section 1A.05).

Table 2E-1. Freeway or Expressway Guide Sign and Plaque Sizes

Sign or Plaque	MoDOT Sign Designation	MUTCD Sign Designation	EPG Article	Conventional Road			Freeway /Expressway
				Standard	Oversized	Special	(in. x in.)
Interchange Advance Guide	E1-1	E1-1 - E1-3	903.8.34	-	-	-	Varies
Exit Direction	E1-1	E4-1 - E4-3		-	-	-	Varies
Pull-Through	E1-1	E6-1 - E6-2a	903.8.10	-	-	-	Varies
Exit Number (plaque)	E1-5P	E1-5P - E1-5eP	903.8.34	-	-	-	Var X 30
Left (plaque)	E1-5aP	E1-5mP	903.8.25	-	-	-	72 X 30
Left Exit Number (plaque)	E1-5bP	E1-5fP - E1-5kP	903.8.25	-	-	-	Var X 54
Next Exits	E4-1	E9-3, E9-3a	903.8.45	-	-	-	Varies
Next Exit (plaque)	E4-2	E2-1P, E2-1aP	903.8.35	-	-	-	Var X 36
Supplemental	E4-3	E3-1, E3-2	903.8.36	-	-	-	Varies
Exit Gore	E5-1	E5-1	903.8.39	-	-	-	72 X 60
Exit Gore (with exit number)	E5-1a	E5-1a	903.8.39	-	-	-	72 X Var
Narrow Exit Gore	E5-1, E5-1a	E5-1c	903.8.39	-	-	-	Varies
Exit Gore Advisory Speed	E13-1P	W13-1aP	903.8.39	-	-	-	72 X 24
Interchange Sequence	E6-1	E9-1, E9-2	903.8.43	-	-	-	Varies
Community Interchanges	E7-1	E9-4, E9-5	903.8.44	-	-	-	Varies
Post-Interchange Distance (1 line)	D2-1	E7-1		-	-	-	Var X 24
Post-Interchange Distance (2 line)	D2-2	E7-2		-	-	-	Var X 48
Post-Interchange Distance (3 line)	D2-3	E7-3		-	-	-	Var X 60
Interstate Route (1, 2 digits)	M1-1	M1-1		-	-	-	24 X 24
Interstate Route (3 digits)	M1-1	M1-1		-	-	-	30 X 24
Interstate Loop (1, 2 digits)	M1-2	M1-2		-	-	-	24 X 24
Interstate Loop (3 digits)	M1-2	M1-2		-	-	-	30 X 24
U.S. Route (1, 2 digits)	M1-4	M1-4		-	-	-	24 X 24
U.S. Route (3 digits)	M1-4	M1-4		-	-	-	30 X 24
MO Numbered Route (1, 2 digits)	M1-5	M1-5		-	-	-	24 X 24
MO Numbered Route (3 digits)	M1-5	M1-5		-	-	-	30 X 24
MO Lettered Route (1 digit)	M1-5a	-		-	-	-	24 X 24
MO Lettered Route (2 digits)	M1-5a	-		-	-	-	30 X 24
Junction (plaque)	M2-1	M2-1P					21 X 15
NORTH Direction (plaque)	M3-1	M3-1P		-	-	-	24 X 12
EAST Direction (plaque)	M3-2	M3-2P		-	-	-	24 X 12
SOUTH Direction (plaque)	M3-3	M3-3P		-	-	-	24 X 12
WEST Direction (plaque)	M3-4	M3-4P		-	-	-	24 X 12
Alternate (plaque)	M4-1	M4-1P		-	-	-	24 X 12
Business (plaque)	M4-3	M4-3P		-	-	-	24 X 12
To (plaque)	M4-5	M4-5P		-	-	-	24 X 12
End (plaque)	M4-6	M4-6P		-	-	-	24 X 12
Advance Turn Arrow (90° Left/Right)	M5-1	M5-1P		-	-	-	21 X 15
Advance Turn Arrow (45° Left/Right)	M5-2	M5-2P		-	-	-	21 X 15
Advance Turn Arrow (Curved Stem)	M5-3	M5-3P		-	-	-	21 X 15
Directional Arrow (Left/Right)	M6-1	M6-1P		-	-	-	21 X 15
Directional Arrow (45° Left/Right)	M6-2	M6-2P		-	-	-	21 X 15
Directional Arrow (Straight)	M6-3	M6-3P		-	-	-	21 X 15
Directional Arrow (Two-Way)	M6-4	M6-4P		-	-	-	21 X 15
Directional Arrow (Two-Way 45° Left/Right)	M6-5	M6-5P		-	-	-	21 X 15
Directional Arrow (Up & Left/Right)	M6-6	M6-6P		-	-	-	21 X 15
Directional Arrow (Up & 45° Left/Right)	M6-7	M6-7P		-	-	-	21 X 15
Directional Arrow (J-Turn Gore)	M10-1	-		-	-	-	24 X 24
Destination (1 line)	D1-1	D1-1		-	-	-	Var X 24
Destination (2 lines)	D1-2	D1-2		-	-	-	Var X 48
Destination (3 lines)	D1-3	D1-3		-	-	-	Var X 60
Destination and Distance (1 line)	D1-1a	D1-1a		-	-	-	Var X 24
Destination and Distance (2 lines)	D1-2a	D1-2a		-	-	-	Var X 48
Destination and Distance (3 lines)	D1-3a	D1-3a		-	-	-	Var X 60
Distance (1 line)	D2-1	D2-1		-	-	-	Var X 24
Distance (2 lines)	D2-2	D2-2		-	-	-	Var X 48
Distance (3 lines)	D2-3	D2-3		-	-	-	Var X 60
Street Name (1 line)	D3-1	D3-1		-	-	-	Var X 12
Overhead Street Name (1 line)	D3-1	D3-1		-	-	-	Var X 18
Overhead Street Name (2 lines)	D3-1b	-		-	-	-	Var X 18
Advance Street Name	D3-2	D3-2		-	-	-	Varies
Parking Area	D4-1	D4-1		-	-	-	30 X 24
Commuter	D4-1P	-		-	-	-	30 X 6
Commuter Parking	D4-1a	-		-	-	-	60 X 36
Park - Ride	D4-2	D4-2		-	-	-	30 X 36
Advance Rest Area	D5-1	D5-1, D5-1a		-	-	-	132 X 60
Rest Area Exit Direction	D5-2a	D5-2		-	-	-	132 X 60
Rest Area Gore	D5-2b	D5-2a		-	-	-	72 X 84
Next Rest Area	D5-6	D5-6		-	-	-	132 X 36
Advance Welcome Center Rest Area	D5-9	-		-	-	-	180 X 120
Welcome Center Rest Area	D5-10	-		-	-	-	181 X 108
Advance Truck Parking	D5-15	-		-	-	-	Var X 84
Truck Parking Exit Direction	D5-16	-		-	-	-	108 X 84
Truck Parking Gore	D5-17	-		-	-	-	84 X 72
Truck Facilities (plaque)	D5-18P	-		-	-	-	Varies
Weigh Station _ Miles	D8-1	D8-1		-	-	-	108 X 84
Weigh Station Next Right	D8-2	-		-	-	-	120 X 72
Weigh Station (with arrow)	D8-3	D8-3		-	-	-	84 X 72
Weigh Station Preclearance	R13-12	-		-	-	-	144 X 96
Combination Lane Use/Destination	D15-1	D15-1		-	-	-	Varies
Advance Passing Lane	D17-4	D17-4		-	-	-	Varies

Table 2E-2. Minimum Letter and Numeral Sizes for Expressway Guide Signs

Type of Sign	Minimum Size
A. Pull-Through Signs	
Destinations — Upper-Case Letters	13.33
Destinations — Lower-Case Letters	10
Route Signs	
Numerals	14*
1- or 2-Digit Shields	36 x 36
3-Digit Shields	45 x 36
Cardinal Directions — First Letters	12
Cardinal Directions — Rest of Word	10
B. Supplemental Guide Signs	
Exit Number — Words	8
Exit Number — Numerals and Letters	12
Place Names — Upper-Case Letters	10.67
Place Names — Lower-Case Letters	8
Action Messages	8
Route Signs	
Numerals	9*
1- or 2-Digit Shield	24 x 24
3-Digit Shield	30 x 24
C. Interchange Sequence or Community Interchanges Identification Signs	
Words — Upper-Case Letters	10.67
Words — Lower-Case Letters	8
Numerals	10.67
Fraction Numerals	8
Route Signs	
Numerals	9*
1- or 2-Digit Shield	24 x 24
3-Digit Shield	30 x 24
D. Next XX Exits Sign	
Place Names — Upper-Case Letters	10.67
Place Names — Lower-Case Letters	8
NEXT XX EXITS — Words	8
NEXT XX EXITS — Number	12

Type of Sign	Minimum Size
E. Distance Signs	
Words — Upper-Case Letters	8
Words — Lower-Case Letters	6
Numerals	8
Route Signs	
Numerals	6*
1- or 2-Digit Shield	18 x 18
3-Digit Shield	22.5 x 18
F. General Service Signs (see Chapter 2I)	
Exit Number — Words	8
Exit Number — Numerals and Letters	12
Services	8
G. Rest Area, Scenic Area, and Roadside Area Signs (see Chapter 2I)	
Words	10
Distance Numerals	12
Distance Fraction Numerals	8
Distance Words	8
Action Message Words	10
H. Reference Location Signs (see Chapter 2H)	
Words	4
Numerals	10
I. Boundary and Orientation Signs (see Chapter 2H)	
Words — Upper-Case Letters	8
Words — Lower-Case Letters	6
J. Next Exit and Next Services Signs	
Words and Numerals	8
K. Exit Only Signs	
Words	12
L. Overhead Arrow-per-Lane and Diagrammatic Signs	
See Table 2E-5	

* Minimum size listed for 3-digit shields. Larger numeral sizes used for 1-digit, some 2-digit, and some 3-digit shields. See the Standard Highways Signs publication for more information on Route Sign numeral heights and Standard Alphabet series.

Note: Sizes are shown in inches and where applicable are shown as width x height

Combine Table 2E-2 and 2E-3 into one table for Expressway Guide Signs. Revised Dec. 2025

Guidance:

10 Freeway lettering sizes (see Table~~s~~ 2E-4 ~~and 2E-5~~) should be used when expressway geometric design is comparable to freeway standards.

11 Other sign letter size requirements not specifically identified elsewhere in ~~this Manual~~ the EPG should be guided by these specifications. Abbreviations should be kept to a minimum, except as provided in Section 2E.16.

Support:

12 A sign mounted over a particular roadway lane to which it applies might have to be limited in horizontal dimension to the width of the lane, so that another sign can be placed over an adjacent lane. The necessity to maintain proper vertical clearance might also place a further limitation on the size of the overhead sign and the legend that can be accommodated.

M13 Overhead signs are subject to truss capacity and spacing limitations. Using 20-inch legends increases panel width and can prevent the placement of multiple lane-specific signs within available structure limits.

MoDOT statement regarding the limitations of existing overhead sign structures. Revised Dec. 2025

Table 2E-4. Minimum Letter and Numeral Sizes for Freeway Guide Signs

Type of Sign	Minimum Size Category a
A. Advance Guide, Exit Direction, and C	
Exit Number Plaques	
Words	10
Numerals & Letters	15
Interstate Route Signs	
Numerals	18/14*
1- or 2-Digit Shields	48 x 48/ 36 x 36
3-Digit Shields	60 x 48/ 45 x 36
U.S. or State Route Signs	
Numerals	24/18
1- or 2-Digit Shields	48 x 48/ 36 x 36
3-Digit Shields	60 x 48/ 45 x 36
U.S. or State Route Text Identification (Example:	
Numerals & Letters	18
Cardinal Directions	
First Letters	18
Rest of Words	15
Auxiliary and Alternative Route Legends (Examp	
Words	15
Names of Destinations	
Upper-Case Letters	20
Lower-Case Letters	15
Distance Numbers	18
Distance Fraction Numerals	12
Distance Words	12
Action Message Words	12
B. Gore Signs	
Words	12
Numeral & Letters	18

Type of Sign	Minimum Size
A. Pull-Through Signs	
Destinations — Upper-Case Letters	16
Destinations — Lower-Case Letters	12
Route Signs	
Numerals	14*
1- or 2-Digit Shields	36 x 36
3-Digit Shields	45 x 36
Cardinal Directions — First Letter	15
Cardinal Directions — Rest of Word	12
B. Supplemental Guide Signs	
Exit Number Words	10
Exit Number Numerals and Letters	15
Place Names — Upper-Case Letters	13.33
Place Names — Lower-Case Letters	10
Action Messages	8
Route Signs	
Numerals	9*
1- or 2-Digit Shield	24 x 24
3-Digit Shield	30 x 24
C. Interchange Sequence or Community Interchanges Identification Signs	
Words — Upper-Case Letters	13.33
Words — Lower-Case Letters	10
Numerals	13.33
Fraction Numerals	10
Route Signs	
Numerals	9*
1- or 2-Digit Shield	24 x 24
3-Digit Shield	30 x 24
D. Next X Exits Sign	
Place Names — Upper-Case Letters	13.33
Place Names — Lower-Case Letters	10
NEXT X EXITS — Words	10
NEXT X EXITS — Number	15
E. Distance Signs	
Words — Upper-Case Letters	8
Words — Lower-Case Letters	6
Numerals	8
Route Signs	
Numerals	6*
1- or 2-Digit Shield	18 x 18
3-Digit Shield	22.5 x 18

Type of Sign	Minimum Size
F. General Service Signs (see Chapter 2I)	
Exit Number Words	10
Exit Number Numerals and Letters	15
Services	10
G. Rest Area, Scenic Area, and Roadside Area Signs (see Chapter 2I)	
Words	12
Distance Numerals	15
Distance Fraction Numerals	10
Distance Words	10
Action Message Words	12
H. Reference Location Signs (see Chapter 2H)	
Words	4
Numerals	10
I. Boundary and Orientation Signs (see Chapter 2H)	
Words — Upper-Case Letters	8
Words — Lower-Case Letters	6
J. Next Exit and Next Services Signs	
Words and Numerals	8
K. Exit Only Signs	
Words	12
L. Overhead Arrow-per-Lane Signs**	
Arrowhead (Type D Directional Arrow)	21
Arrow Shaft Width	7.75
Arrow Height	
Through	48/40
Left Only	36/30
Right Only	36/30
Optional-Diverge (Through with Left or Right)	48/40
Optional-Split (Left and Right)	44/33.33
Vertical Separator Width	2
Vertical Space between Vertical Separator and Top of Nearest Arrow	6.5/5.0
Horizontal Space between Vertical Separator and Top of Nearest Through Arrow	12/9
Horizontal Space between Arrow Shaft and EXIT and ONLY Panels	12
EXIT and ONLY Panels	54 x 18
M. Diagrammatic Signs	
Arrowhead (Type D Directional Arrow)	13.5
Stem Height to Upper Point of Departure	30
Horizontal Space between Arrowhead and Route Shield or Destination	12

* Minimum size listed for 3-digit shields. Larger numeral sizes used for 1-digit, some 2-digit, and some 3-digit shields. See the Standard Highways Signs publication for more information on Route Sign numeral heights and Standard Alphabet series.

** Overhead Arrow-per-Lane sign example layouts and design elements sizing are provided in the Standard Highway Sign publication. Sizes shown as XX/XX correspond to 20-inch/16-inch destination letter legend sizes respecitvely.

Note: Sizes are shown in inches and where applicable are shown as width x height.

Combine Table 2E-4 and 2E-5 into one table for Freeway Guide Signs. Revised Dec. 2025

Section 2E.13 Interline and Edge Spacing

Guidance:

M01 Horizontal spacing between words should be 1.5 times the lower-case letter height. For legends with only upper-case letters, the spacing should be 1.5 times the upper-case letter height.

M02 Horizontal and vertical spacing between the overall legend and the outside sign edge should be approximately equal to the largest upper-case letter height that appears on the sign. Odd amounts of space should be placed on the two outside spaces between the sign edge and the extreme limit of the legend.

M03 For upper-case letters that are 13.33 in. and taller, spacing around arrows and shields should be a minimum of 12 in. to words or any other arrow or shield.

M04 Vertical spacing between lines is equal to the larger of the lower-case letter height of the two lines. If all letters are upper-case, the spacing equals 3/4 of the larger upper-case letter height of the two lines.

Support:

M05 Odd spacing widths may occur due to rounding the overall sign width and height to even 12 in. increments. For other letter heights spacing around arrows and shields may be narrowed depending on the amount of legend, letter sizes and sign appearance.

~~*01 Interline spacing of upper-case letters should be approximately ¾ of the average of upper-case letter heights in adjacent lines of letters.*~~

~~*02 The spacings to the top and bottom borders should be 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.*~~

MoDOT specific content from the EPG replaces MUTCD content for this section. Revised Dec. 2025

Section 2E.14 Sign Borders

Guidance:

01 For guide signs larger than 120 x 72 inches, the border should have a width of 2 inches. For smaller guide signs, a border width of 1.25 inches should be used. On unusually large signs with oversized letter heights, route shields, or other legend elements, the border should be 2.5 inches wide and should not exceed 3 inches in width. In all cases, the width of the border should not exceed the stroke width of the lettering of the principal legend on the sign.

02 Corner radii of sign borders should be approximately ⅛ of the minimum sign dimension on guide signs, except that the radii should not exceed 12 inches on any sign.

Support:

03 The FHWA's "Standard Highway Signs" publication (see EPG 911 (MUTCD Section 1A.05)) contains detailed information on border widths and corner radii for ranges of sign sizes.

Option:

04 The sign material in the area outside of the corner radius may be trimmed.

Section 2E.15 Amount of Legend on Guide Signs

Guidance:

01 No more than two destination names or street names should be displayed on any Interchange Advance Guide sign or Exit Direction sign. A city name and street name on the same sign should be avoided. Where two or three signs are placed on the same supports, destinations or street names should be limited to one per sign, or to a total of three in the display. Sign legends should not exceed three lines of copy, exclusive of the exit number and action or distance information.

M01A For urban interchanges of freeways and conventional routes the address block number of the intersecting street should not be displayed unless multiple interchanges between the same two roadways exist.

M01B For isolated rural interchanges, each interchange should be identified by either the name of its community or by the nearest control communities on the intersecting route. If the interchange is the junction of a freeway with a state-maintained route outside of any community, it is possible to use only the intersecting route shields as the identifier.

Option:

M01C The public often reference MoDOT routes by street name instead of the official MoDOT route identification number or letter. If this is the case, the street name may be used in conjunction with the MoDOT route shield. The route shield and, if required, the cardinal direction appear on the first line of copy, and the second line indicates the street name. All street names include the appropriate designation such as street (St), boulevard (Blvd), road (Rd), avenue (Ave), or drive (Dr).

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

02 Where only one interchange serves a community, the intersecting street name is generally superfluous to the city name on the Interchange Advance guide and Exit Direction signs. Where a community is served by multiple interchanges, the city name is typically displayed on either a Community Interchanges Identification

sign (see Section 2E.52) or a Next Exits sign (see Section 2E.53). Each interchange is then identified by its intersecting roadway name on the Interchange Advance guide and Exit Direction signs rather than by the city name.

M03 Typically, interchanges between freeways and conventional routes within an urban area identify the exit by the intersecting street on the guide signing rather than using control points, control cities, or other community names.

MoDOT specific content from the EPG. Revised Dec. 2025

Street Names on Guide Signs

Guidance:

M04 Using a route shield, a control city and a route name on the same sign should be avoided whenever possible. Some situations require a route shield, a control city and a street name, with the street name being a separate roadway or exit than the MoDOT route. For this condition, the order should be route shield, control city (or major destination) and then the street name as the third line of copy, regardless of roadway geometrics.

Section 2E.16 Abbreviations

Standard:

01 The use of abbreviations on freeway and expressway guide signs shall comply with the provisions of Section 2D.07 of ~~this Manual~~ the EPG.

Section 2E.17 Symbols

Support:

01 Symbols are not normally displayed on freeway and expressway guide signs. One exception is the PARK - RIDE Supplemental guide sign (see Section 2E.51), which displays the Carpool symbol. In some cases, General Information symbols (see Chapter 2H) might be included in the legend of a guide sign to shorten an unusually lengthy legend on the sign.

Guidance:

02 When a General Information symbol is incorporated into the legend of a guide sign, all components of the legend should be balanced in size and arrangement for maximum legibility. The General Information (I series) sign, rather than the symbol alone, should be placed as a sign panel within the guide sign so that adequate recognition of the symbol is provided by the border. The General Information sign panel should be positioned to the left of the legend to which it applies. The size of the General Information sign panel should be similar in size to that specified for a route shield for the type of guide sign on which it is displayed.

Section 2E.18 Arrows for Interchange Guide Signs

Standard:

01 Arrows used on interchange guide signs shall be of the types shown in Figure 2D-3 and shall comply with the provisions of this Section and Section 2D.08.

02 Except on Overhead Arrow-per-Lane guide signs (see Section 2E.40) and on Exit Direction signs for lane drops (see Section 2E.28), and except as provided in ~~Paragraph 5 of this Section~~ the second Standard paragraph below, directional arrows on all overhead and post-mounted Exit Direction signs shall point diagonally upward at a 45-degree angle. Directional arrows on overhead Exit Direction signs shall be located on the side of the sign consistent with the direction of the exiting movement. Directional arrows on post-mounted Exit Direction signs shall be located at the bottom portion of the sign and centered under the legend.

Option:

03 On overhead Exit Direction signs that are located fully over the tapered portion of the exit ramp at the theoretical gore, and where a directional arrow to the side of the legend farthest from the roadway might create an unusually wide sign that limits the road user's view of the arrow, the directional arrow may be placed at the bottom portion of the sign, centered under the legend.

Standard:

04 Directional arrows on guide signs for multi-lane exits shall be positioned below the legend over the approximate center of each lane to which the arrow applies (see Figure 2E-38).

05 Down arrows shall only be used on overhead signs to indicate a lane to be followed and shall be positioned over the approximate center of each lane pointing vertically downward toward the approximate center of that lane. Down arrows shall be used only on overhead guide signs that restrict the use of specific lanes to traffic bound for the destination(s) and/or route(s) indicated by these arrows. Down arrows shall not be used unless an arrow can be located over and pointed to the approximate center of each lane that can be used to reach the destination displayed on the sign.

06 If down arrows are used, having more than one down arrow pointing to the same lane on a single overhead sign (or on multiple signs on the same overhead sign structure) shall not be permitted.

Support:

07 Directional and down arrows for use on guide signs are shown in Figure 2D-3. Detailed drawings and standardized sizes based on ranges of letter heights for these arrows are provided in the FHWA's "Standard Highway Signs" publication (see EPG 911 (MUTCD Section 1A.05)). Information on the dimensions for arrows used in Overhead Arrow-per-Lane ~~and Diagrammatic Advance guide~~ signing is ~~also~~ provided in the FHWA's "Standard Highway Signs" publication (see EPG 911 (MUTCD Section 1A.05)).

Section 2E.19 Cardinal Directions

Standard:

M01 Cardinal directions are the words NORTH, SOUTH, EAST and WEST. Cardinal directions shall be used on all guide signs when the ramp being signed does not provide access to both directions of travel on the intersecting route or cross street. In the case where both directions of travel on the cross-street are accessed directly by the same ramp, the cardinal directions for the intersecting route or cross street shall not be used. This does not apply if the words "north", "south", "east" or "west" are a part of the official name of the cross street.

M02 Cardinal directions shall be upper case with the first letter being the next letter size taller than the others.

Guidance:

M03 For cardinal directions, which modify route shields, the cardinal direction should be placed on the left side of the route shield for left exits and on the right side of the shield for right exits. The cardinal direction is not to appear on top of the shield, and the top of the first letter of the direction should vertically align with the top of the route shield. Similar placement should be used for guide signs on the intersecting route guiding motorists where to turn for entry to an expressway or freeway. Cardinal directions are not to be used next to shields for business routes.

M04 For the purpose of sign design, a shield/cardinal direction combination should be considered one "unit". For guide signs at the exit gore with a Type A arrow and destination line of copy, this "unit" should be centered over the destination line, not centered on the width of the sign. If the "unit" is wider than the destination, the destination should be centered under the "unit". This is also true for shields with no cardinal direction. See the example in the standard plans.

M05 No cardinal direction should be used for exits that access both directions of a route. The directions should be shown near the ramp terminal on a supplemental guide or route marker assembly. No cardinal direction is required on advance guide signs for routes that begin (or end) at an interchange, or for routes which are continued through an interchange ramp. For this condition, a control city (see Table 903.8.11) or major destination should accompany a route shield.

M06 Since lettered routes are not designated as being strictly North/South or East/West, the shield does not normally carry a cardinal direction with it. An exception is with a lettered route that has two exits, which would occur at a cloverleaf interchange. The cardinal direction used in this case should be the direction physically associated with the route.

M07 Multiple shields for overlapping roadways should be arranged in the following order of importance: interstate, interstate business, U.S. Routes, U.S. business, Missouri numbered and Missouri lettered. Multiple

shields for the same roadway type (i.e. I-35 and I-70, or U.S. 34 and U.S. 67) should be arranged in numerical order starting with the lowest numbered route. For lettered routes, the shields should be arranged in alphabetical order.

M08 When several routes end at a ramp terminal, all guide sign shields should be arranged as the traveler views the routes at the ramp terminal, from left to right. Cardinal directions are not required.

M09 Cardinal directions for two shields that designate the same roadway and have the same direction should be placed on the right or left hand side of the two shields. Only one direction is required.

M10 Cardinal directions for two and three shields that designate the same roadway, but have different directions, should be vertically stacked with the appropriate cardinal direction next to each shield or shields. The shields should be listed in the order previously noted. Also, multiple control cities are ordered respectively with shield order.

M11 For roads not on the state system, cardinal directions should follow the roadway name and appear on a line of copy by itself. A direction should be indicated only if the exit accesses one direction of the side road. Directions should be indicated only for a roadway with multiple exits from a state route.

Support:

M12 An example of proper cardinal direction letter size is 15 in./12 in. upper case for a sign with a 16 in./12 in. destination/name.

M13 An example of how to sign without the use of a cardinal direction for an interchange: Route 350 begins at the interchange and Route 50 follows the interchange off ramp. The advance guide sign for westbound Route I-470 shows the Route 50 shield first since this exit is first, and the first destination shown is for Route 50. The exit guide for Route 50 would show no cardinal direction and would only have the Route 50 shield, destination and appropriate arrow. The guide signs for Route 350 are similar to the Route 50 guide signs. Once the driver is on the route, route marker assemblies confirm the route with a cardinal direction.

M14 An example of how to sign without the use of a cardinal direction for multiple shields, at a directional ramp split: to the left is Route U and to the right are overlapping Routes A and U.S. Route 47. On the first line of copy, the guide sign shows the Route U shield first, then the U.S. Route 47 shield next to the Route A shield. This impresses upon the motorists to turn left for Route U. The space between the U.S. Route 47 and the Route A shields may be narrowed from the standard 12 in. to as low as 6 in. to give the impression of unity. The space between the Route U shield and the U.S. Route 47 shield is a minimum of 24 in. to give the impression of separation.

M15 An example of how to use a cardinal direction for multiple shields: an exit to the right for overlapping Routes I-64 and Route 40 is ordered as I-64, Route 40, with one cardinal direction "EAST" placed to the right of the Route 40 shield.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2E.19 Overhead Sign Installations

Support:

01 Specifications for the design and construction of structural supports for signs have been standardized by the American Association of State Highway and Transportation Officials (AASHTO). Overcrossing structures can often serve for the support of overhead signs, and might in some cases be the only practical location that will provide adequate viewing distance. Use of these structures as sign supports will eliminate the need for additional sign supports along the roadside. Conditions that might warrant the installation of overhead signs are given in ~~Section 2A.14~~ EPG 903.1.14 and throughout ~~this Chapter~~ EPG 903.5. Vertical clearance of overhead signs is discussed in ~~Section 2A.15~~ EPG 903.1.15.

Section 2E.20 Lateral Offset

Standard:

01 Except where shielded by a rigid traffic barrier, the minimum lateral offset outside the usable roadway shoulder for post-mounted freeway and expressway signs or for overhead sign supports, either to the right-hand or left-hand side of the roadway, shall be 6 feet. This minimum clearance shall also apply outside of a curb. All signs, regardless of location along right-of-way ~~If located within the clear zone, the signs~~ shall be mounted on crashworthy supports (see definition in EPG 911 (MUTCD Section 1C.02)) ~~or shielded by appropriate crashworthy barriers~~.

MoDOT requires all post-mounted signs in the right-of-way to be mounted on crashworthy supports. Revised Dec. 2025

Guidance:

02 Where practicable, a sign should not be less than 12~~0~~ feet from the edge of the nearest traffic lane. ~~Large guide signs especially should be farther removed, preferably 30 feet or more from the nearest traffic lane.~~

MoDOT requires all signs to be mounted on crashworthy supports. Revised Dec. 2025

03 Where an expressway median is 12 feet or less in width, consideration should be given to spanning both roadways without a center support.

~~04 Where an overhead sign support cannot be placed sufficiently far away from the line of traffic, it should either be designed to minimize the impact forces, or be adequately shielded by a traffic barrier of suitable design~~.

Standard:

M04A Overhead sign supports shall have a barrier or crash cushion to shield them if they are within the right-of-way.

MoDOT requires all overhead signs supports in the right-of-way to shielded. Revised Dec. 2025

05 Butterfly-type sign supports and other overhead non-crashworthy sign supports shall not be installed in gores or other unshielded locations within the clear zone.

Option:

06 Lesser clearances, but not generally less than 6 feet, may be used on connecting roadways or ramps at interchanges.

Section 2E.21 Interchange Guide Signs

~~Support:~~

~~01 For some applications, guide signing for interchanges depends upon the interchange classifications that are described in Section 2E.11. Provisions on guide signing for interchanges that are based on interchange classifications are found in Sections 2E.23 through 2E.26, 2E.46 through 2E.48, and 2E.51 through 2E.53.~~

MoDOT does not classify interchanges with regard to signage Revised Dec. 2025

Standard:

02 The signs at interchanges and on their approaches shall include Advance Interchange guide signs and Exit Direction signs. Consistent destination messages shall be displayed on these signs.

Guidance:

03 New destination information should not be introduced into the major sign sequence for one interchange, nor should destination information be dropped.

04 Guide signs placed in advance of an interchange deceleration lane should be spaced at least 800 feet apart.

05 Use of Supplemental guide signing should be minimized as provided in Section 2E.51.

Support:

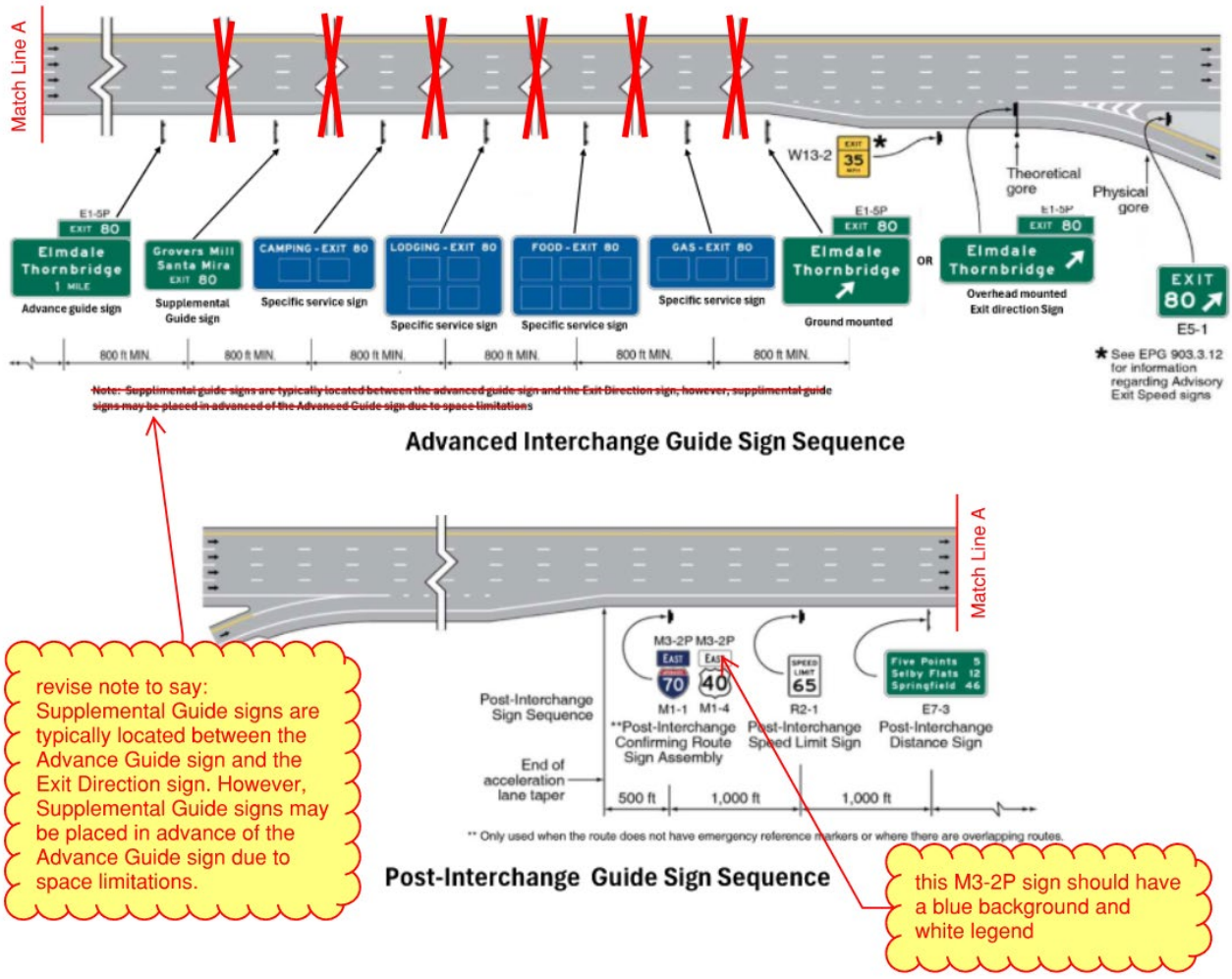
06 Figure 2E-2 shows a typical sequence of interchange guide signs.

07 In some instances the interchange that provides the most direct or preferred access to a destination might be different in opposing directions of travel due to circumstances such as the configuration of the crossroads, or the fact that an interchange is a partial interchange.

Guidance:

08 For each direction of travel, guide signing to a destination should be via the exit with the most direct or preferred access, even when this results in a destination being served by different interchanges for opposing directions of travel ~~(see Figure 2E-1)~~.

Figure 2E-2. Typical Sequence of Interchange Guide Signs



Section 2E.22 Interchange Exit Numbering

Standard:

01 Interchange exit numbering shall use the reference location sign exit numbering method. The consecutive exit numbering method shall not be used. The exit numbers shall correspond to the posted Reference Location or Enhanced Reference Location signs.

Support:

02 Reference location sign exit numbering assists road users in determining their destination distances and travel mileage, assists road users in reporting their location in the event of an incident or breakdown, assists responders in responding to incidents, and assists highway agencies because the exit numbering sequence does not have to be changed if new interchanges are added to a route.

03 Interchange exit numbering provides valuable orientation for the road user on a freeway ~~or expressway~~. The feasibility of numbering interchanges or exits on an expressway will depend largely on the extent to which grade separations are provided. ~~Where there is appreciable continuity of interchange facilities, interrupted only by an occasional intersection at grade, the numbering will be helpful to the expressway user.~~

MoDOT does not number expressway exits. Revised Dec. 2025

Standard:

04 Interchange exit numbering shall be used in signing each freeway interchange exit departure point. Exits are numbered for the interstate system only and coincide with mileposts. Interchange exit numbers shall be displayed with each Interchange Advance Guide sign, Exit Direction sign, and Exit Gore sign. The exit number shall be displayed on a separate plaque on top of the Interchange Advance Guide or Exit Direction sign. The Exit Number (E1-5P series) plaque (see Figure 2E-9) shall include the word EXIT(S) and the appropriate exit number(s) in a single-line format.

M04A Since exits are numbered on the interstate system, the terms NEXT LEFT, NEXT RIGHT, or SECOND LEFT, SECOND RIGHT and NEXT EXIT shall not be used, with the exception of supplemental signs. The exit number shall always be referred to on the exit number panel that is placed above the main guide sign. For interstate guide signs, the term EXIT XX MILES shall not be used.

M04B If a guide sign exit number panel refers to two exits, the exit number letters shall appear in the same order as the driver approaches them.

MoDOT specific content from the EPG. Revised Dec. 2025

05 Suffix letters shall only be used to supplement exit numbers where there is more than one exit associated with the reference mile points of the freeway. Suffix letters shall not be used for an exit ramp for the purpose of identifying a downstream ramp split providing access to multiple highways or different directions on the same highway. The suffix letter shall also be included on the Exit Number plaque and shall be separated from the exit number by a space having a width of between ½ and ¾ of the height of the suffix letter. The suffix letters assigned shall be in ascending alphabetical order starting with the letter A for ramps in the direction of travel with increasing exit numbers, and in descending alphabetical order ending in the letter A in the opposite direction of travel. Exit numbers shall not include the cardinal direction initials corresponding to the directions of the cross route. The minimum numeral and letter sizes shall be as given in Tables 2E-2 through 2E-5. ~~If used, the exit numbering system for expressways shall comply with the provisions prescribed for freeways.~~

MoDOT does not number expressway exits. Revised Dec. 2025

06 Where suffix letters are used for exit numbering, an exit of the same number without a suffix letter shall not be used on the same route in the same direction. For example, if an exit is designated as EXIT 256 A, then there shall not be an exit designated as EXIT 256 on the same route in the same direction.

Guidance:

07 To the extent practical, exit numbering should be determined based upon the location of the crossroad with respect to reference location signs as given in the following examples:

A. If a crossroad intersects the mainline approximately at or after Mile 15 and before Mile 16, the interchange should be designated as EXIT 15 (see Drawings A and B in Figure 2E-3).

B. If the interchange crossroad is split into two roadways by direction where one direction of the crossroad is downstream of Mile 18 and the other direction is upstream of Mile 18, the interchange exit number should be EXIT 18 (see Drawings A and B in Figure 2E-3).

C. If there are three closely-spaced interchanges, such as less than 1 mile apart, starting before Mile 16 and ending near or at Mile 17, the interchanges should be designated as EXIT 15, EXIT 16, and EXIT 17.

D. If there are multiple interchanges so closely spaced together that it is impracticable to designate the exit numbers by the freeway mainline reference mile numbers, suffix letters should be used as provided in this Section (see Drawings C and D in Figure 2E-3).

Option:

08 Exit numbers may also be used with Supplemental guide signs in compliance with the provisions of Section 2E.51, and Motorist Service signs in compliance with the provisions of Chapters 2I and 2J.

Standard:

09 Where exit suffix letters are used and the number of exits is not equal in both directions of travel, the exit suffix lettering for each direction shall be based on the number of exits in that direction. For example, if in the northbound direction of a freeway there are three exits for Mile 25 and two exits

in the southbound direction, the exit numbers northbound shall be EXIT 25 A, EXIT 25 B, and EXIT 25 C; and the exit numbers southbound shall be EXIT 25 B followed by EXIT 25 A (see Drawing D in Figure 2E-3).

10 Except as provided in Section 2E.36 for Collector-Distributor Roadways or as otherwise provided for in ~~this Chapter~~ EPG 903.5, exit numbers and suffix letters shall only be used to designate individual exit departure points directly from the freeway mainline. Exit numbers and suffix letters shall not be used for designating ramp splits into two ramps after leaving the mainline.

11 The Exit Number (E1-5P) plaque shall be positioned above the top right-hand edge of the sign for an exit to the right (see Figure 2E-9).

12 Because road users might not expect an exit to the left and might have difficulty in maneuvering to the left, a Left Exit Number (~~E1-5bP~~ E1-5fP through E1-5kP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign for all numbered left-hand exits (see Figures 2E-18 and 2E-34). The word LEFT on the Left Exit Number plaque shall be a black legend on a yellow rectangular sign panel and shall be centered above the word EXIT.

Support:

13 Example Exit Number plaque designs are shown in Figure 2E-9. The incorporation of Exit Number plaques on guide signs is illustrated in ~~Figures 2E-9, 2E-12, 2E-14, 2E-35, and 2E-41~~ Sections 2E.23, 2E.25, and 2E.40.

14 Figure 2E-4 provides an example of Interstate route loops and spurs around major metropolitan areas. The general plan for numbering interchange exits is shown in Figures 2E-5 through 2E-8. Figure 2E-5 shows a circumferential route, which is a route that makes a complete circle around a city or town and usually has two interchanges (one on each side of the city or town) with each of the mainline routes that travel through the city or town. Figure 2E-6 shows a loop route, which is a route that departs from a mainline route and then rejoins the same mainline route at a subsequent point downstream. For the purpose of Interstate route numbering, a three-digit Interstate route that provides connectivity between two different Interstate routes is also defined as a loop (see Figure 2E-4). Figure 2E-7 shows a spur route, which is a route that departs from a mainline route and never rejoins the same mainline route. Figure 2E-8 shows two mainline routes that overlap each other.

Standard:

15 Regardless of whether a mainline route originates within a State or crosses into the State from an adjacent State, the southernmost or westernmost terminus within that State shall be the beginning point for interchange exit numbering.

16 For circumferential routes, interchange exit numbering shall be in a clockwise direction. The numbering shall begin with the first interchange west of the south end of an imaginary north-south line bisecting the circumferential route, at a radial freeway or other Interstate route, or some other conspicuous landmark in the circumferential route near a south polar location (see Figure 2E-5).

17 The interchange exit numbers on loop routes shall begin at the loop interchange nearest the south or west junction and increase in magnitude toward the north or east junction (see Figure 2E-6).

18 Spur route interchanges shall be numbered in ascending order starting at the interchange where the spur leaves the mainline route (see Figure 2E-7).

19 If a circumferential, loop, or spur route crosses State boundaries, the numbering sequence shall be coordinated by the States to provide continuous interchange exit numbering.

20 Where numbered routes overlap, continuity of interchange exit numbering shall be established for only one of the routes (see Figure 2E-8). If one of the routes is an Interstate and the other route is not an Interstate, the Interstate route shall maintain continuity of exit interchange numbering.

Guidance:

21 The route chosen for continuity of interchange exit numbering should also have reference location sign continuity (see Figure 2E-8).

Figure 2E-3. Examples of Interchange Exit Numbering

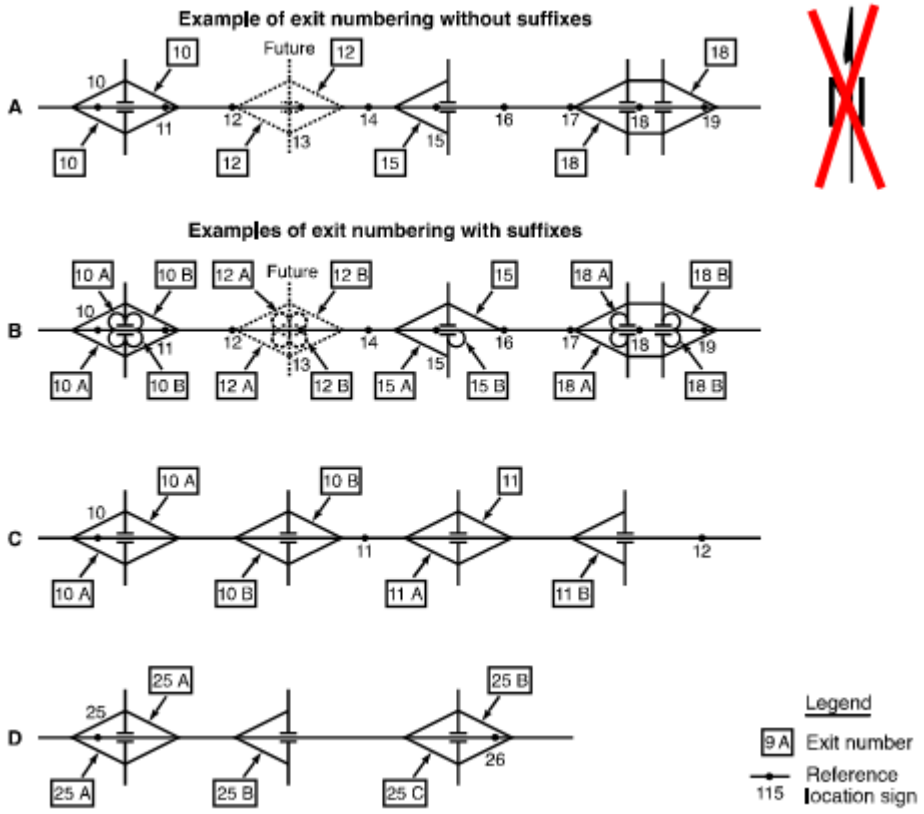


Figure 2E-4. Examples of Interstate Loops and Spurs

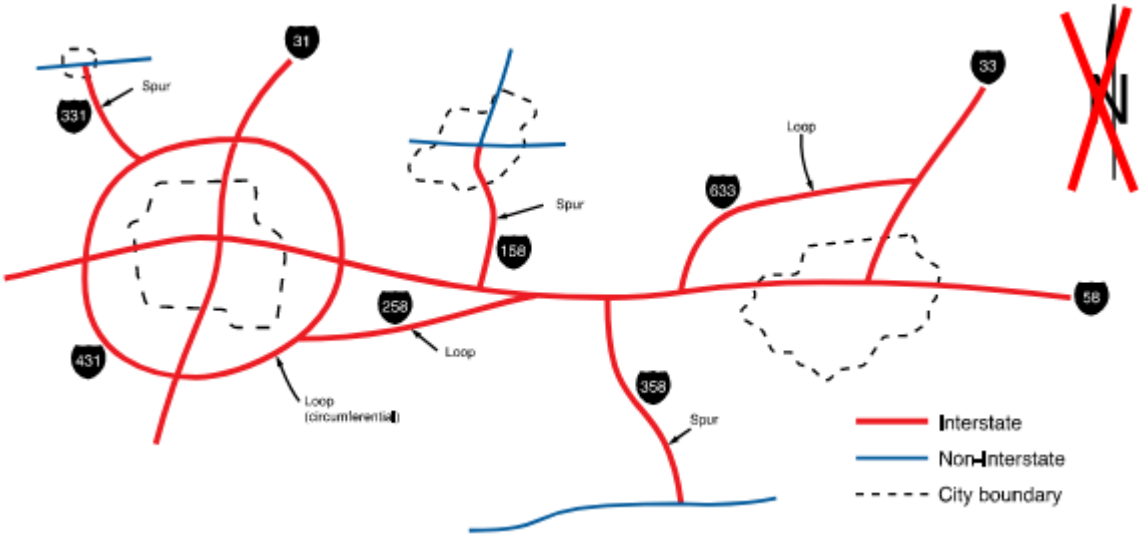


Figure 2E-5. Example of Interchange Exit Numbering for Mainline and Circumferential Routes

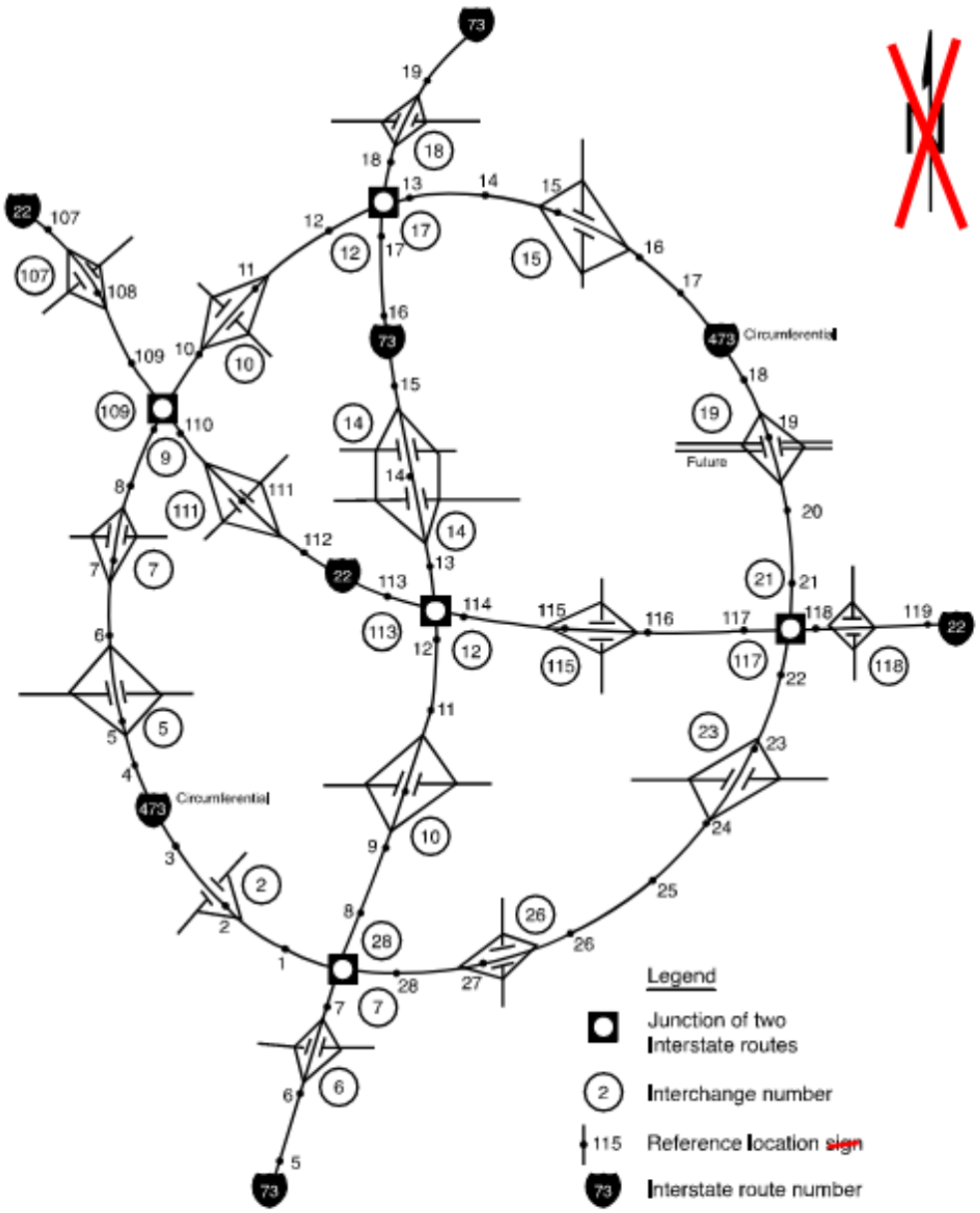
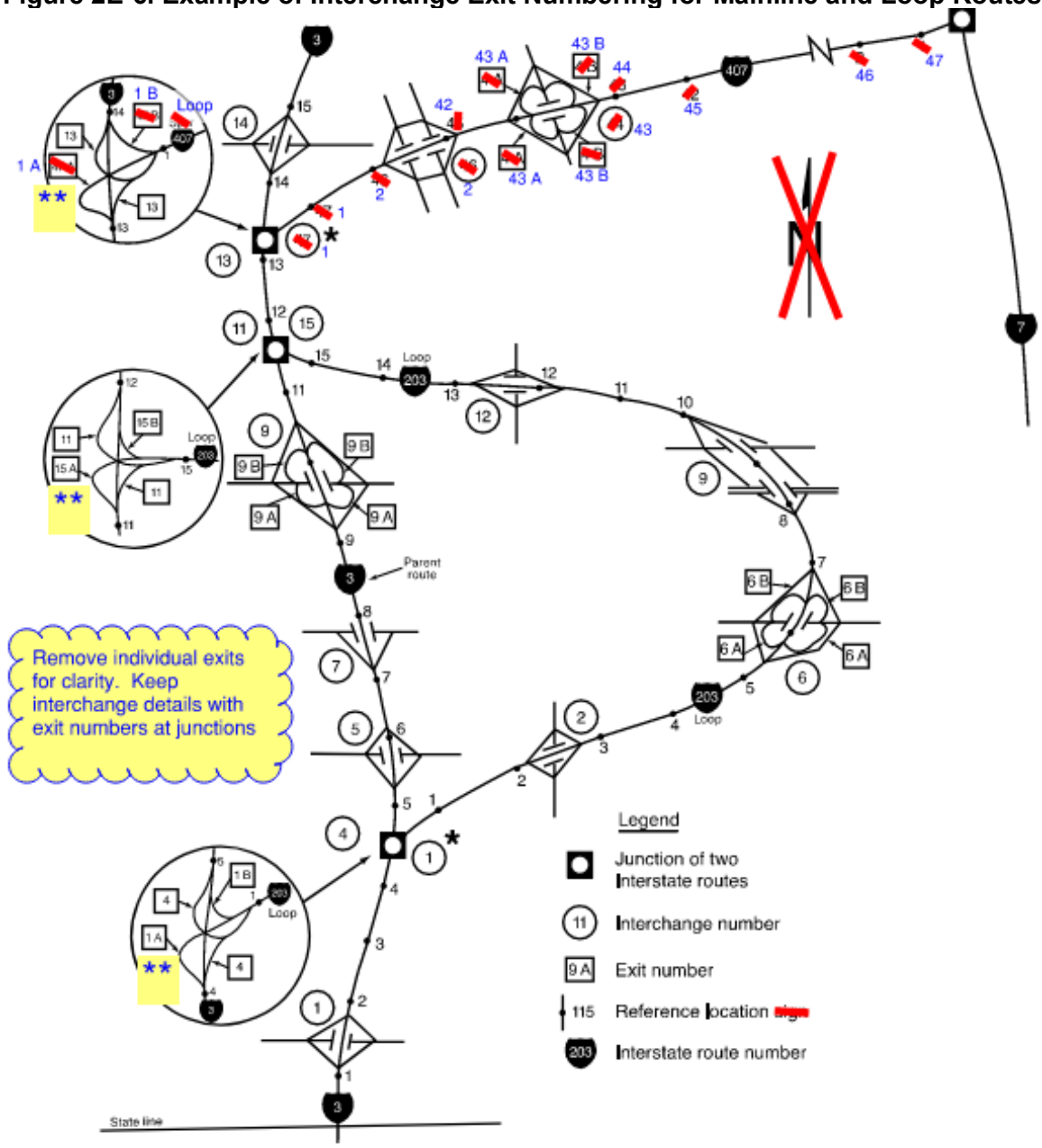


Figure 2E-6. Example of Interchange Exit Numbering for Mainline and Loop Routes



★ The freeway/freeway interchange where the beginning of the loop or spur route intersects with the mainline route may be called either Exit 1 or Exit 0 on the loop or spur route.

★★ Exit numbers and suffixes are used at the end of loop routes as these roadways physically end and all traffic must exit and continue on another route. The convention of the suffix "A" being used for the left exit and "B" being used for the right exit at a rout that terminates is similar to the convention of a left destination being listed first over a right destination on a guide sign.

Figure 2E-7. Example of Interchange Exit Numbering for Mainline and Spur Routes

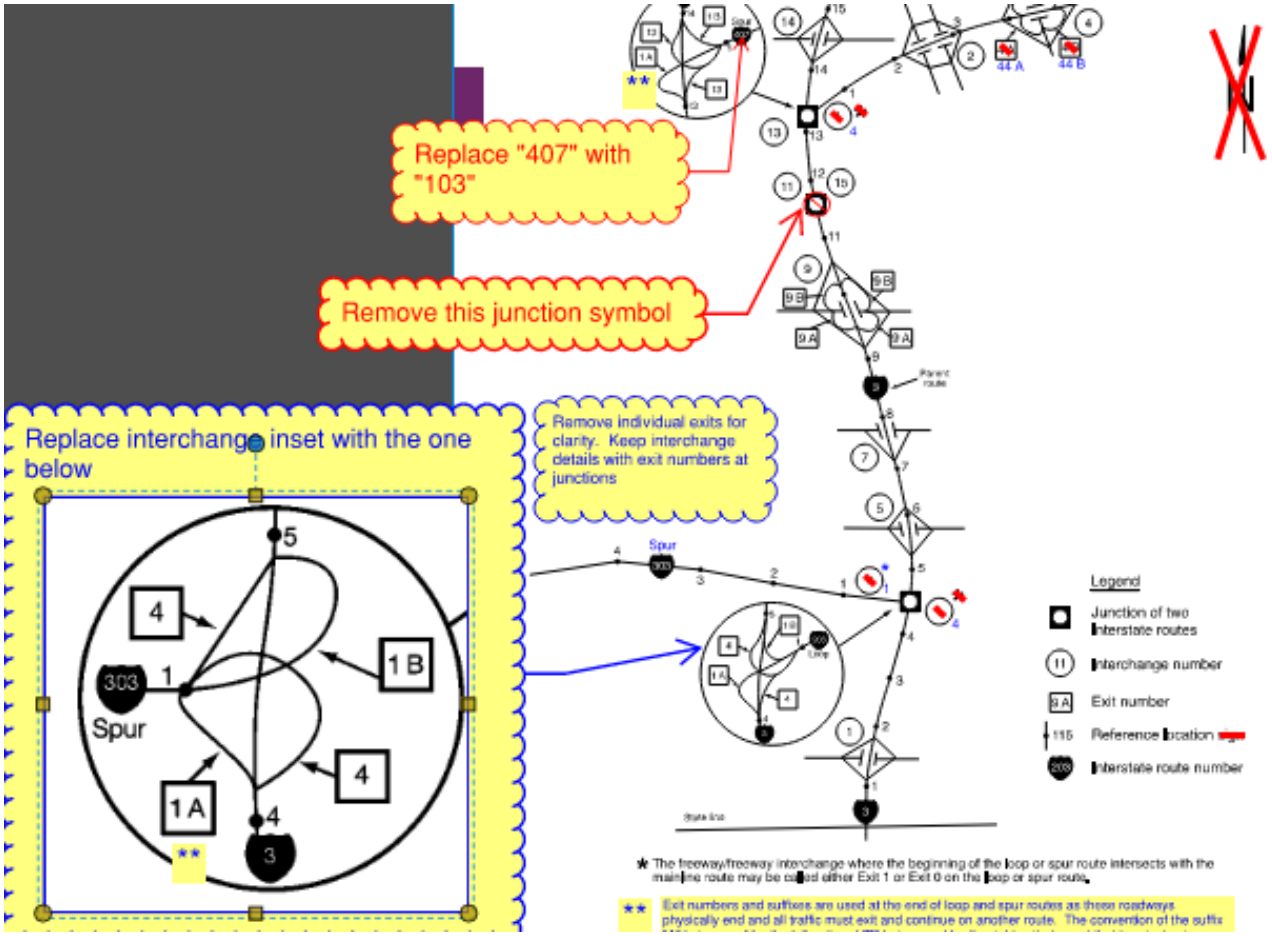
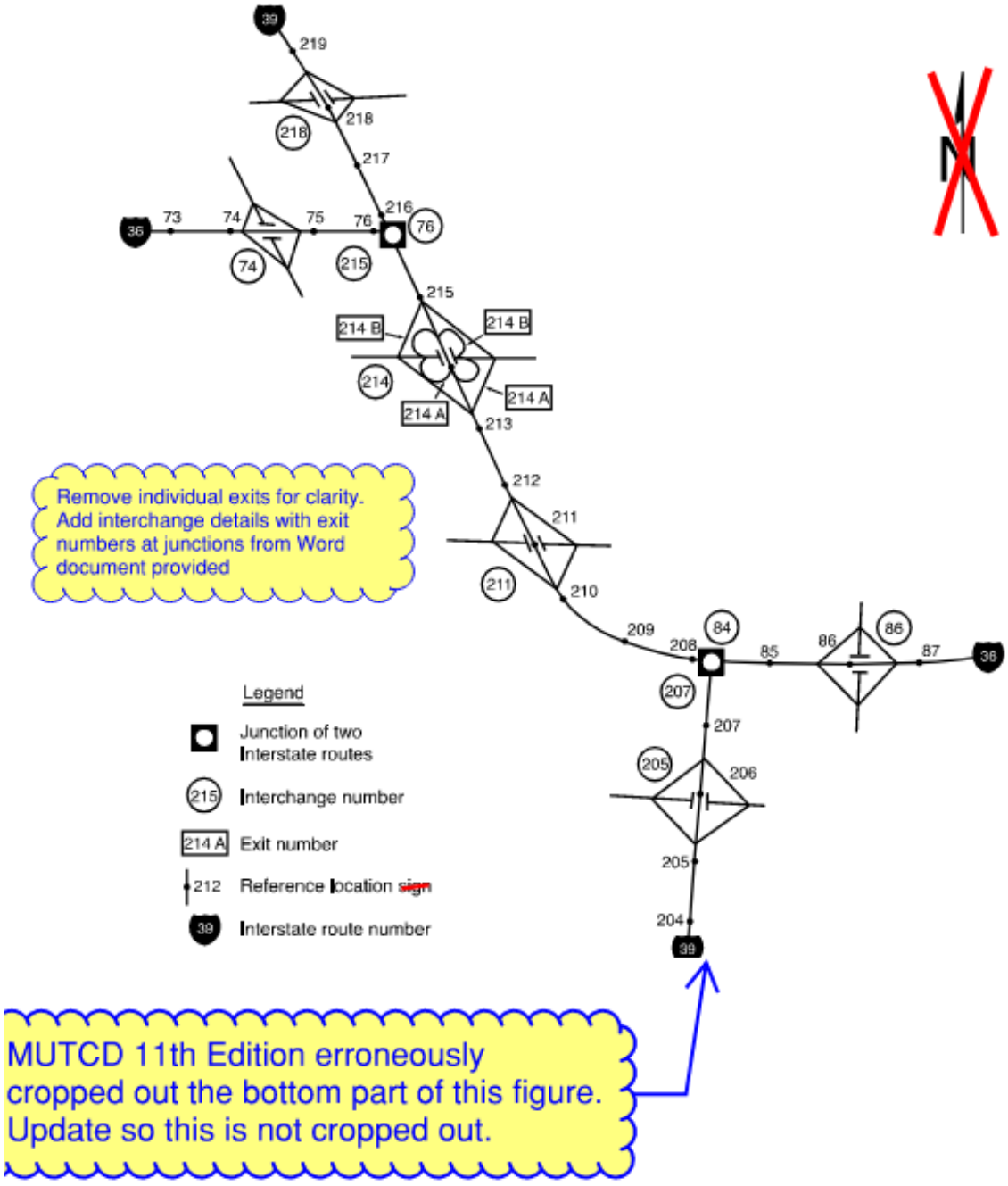


Figure 2E-8. Example of Interchange Exit Numbering for Overlapping Routes



Section 2E.23 Interchange Advance Guide Signs (E1-1 through E1-3)

Support:

01 An Interchange Advance guide sign (see Figure 2E-9) gives notice well in advance of the exit point of the principal destinations served by the next interchange and the distance to that interchange. In rural areas, this sign will typically be a ground-mount sign. In urban areas, this sign will usually be mounted overhead.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

02 Except as provided in ~~Paragraph 16~~ the fourth Guidance paragraph of this Section, and in ~~Paragraph 18~~ the second Option paragraph of Section 2E.25, at least one Interchange Advance guide sign shall be used for all interchanges ~~classifications~~.

M02A Freeway-to-freeway and directional interchanges shall use one additional Advance Guide sign in each direction.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

~~03 At major and intermediate interchanges (see Section 2E.11), at least two Interchange Advance guide signs should be used, placed at ½ mile and at 1 mile in advance of the exit. A third Interchange Advance guide sign should be placed at 2 miles in advance of the exit if spacing permits.~~

~~04 At minor interchanges, the Interchange Advance guide sign should be located ½ to 1 mile from the exit gore.~~

M04A Advance guide signs should be placed over the right lane for right hand exits and over the left lane for left hand exits. Two advance guide signs should not be placed side by side.

M04B For interchanges with adequate spacing, Advance Guide signs should be placed 1 mile in advance of the exit gore. When used at freeway-to-freeway or directional interchanges, the additional Advance Guide sign should be located at a distance of 2 miles in advance of the interchange.

MoDOT specific content from the EPG. In order to give motorists notice an additional distance in advance of interchanges, MoDOT uses a typical sign spacing of 1 mile and 2 miles. Revised Dec. 2025

Support:

05 Sections 2E.29 through 2E.44 contain additional provisions regarding the number, location, and mounting of Interchange Advance guide signs for certain interchange configurations.

Standard:

06 Except as provided in Section 2E.28, the legend on Interchange Advance guide signs shall contain the distance message. For each direction of travel, the legend on the Interchange Advance guide signs shall be the same as the legend on the Exit Direction sign, except that the last line shall be the distance message. The distance message shall read XX MILE(S) where exit numbers are used. Where exit numbers are not used, the distance message shall read EXIT XX MILE(S) for an interchange with one exit ramp, and EXITS XX MILE(S) for an interchange with two or more exit ramps.

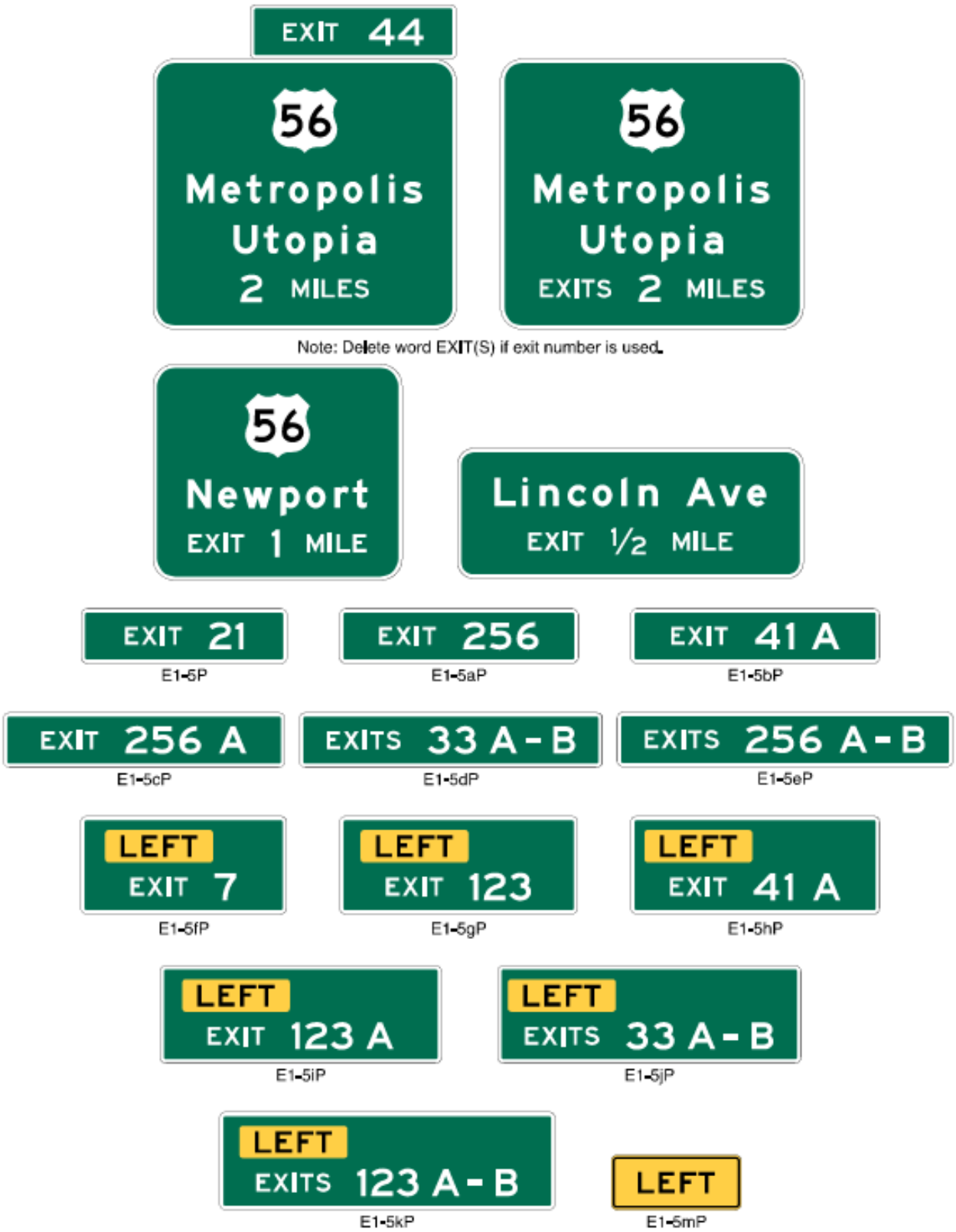
Guidance:

M06A All distances one mile or less should be treated as singular. For example, proper terminology is "1 MILE" and "1 ¼ MILES".

MoDOT specific content from the EPG. Revised Dec. 2025

07 Where an Interchange Advance guide sign is located more than 1,000 feet to ½ mile ~~but not more than 1 mile~~ from the exit, the distance displayed should be to the nearest ¼ mile. Where the distance to be displayed on an Interchange Advance guide sign is 1,000 feet or less, the distance should be displayed in feet, rather than miles, to the nearest 100 feet.

Figure 2E-9. Examples of Interchange Advance Guide Signs, Exit Number Plaques, and LEFT plaque



Standard:

08 When a distance is displayed in miles, fractions of a mile, rather than decimals, shall be displayed in all cases.

09 For numbered exits, the exit number used with the Interchange Advance guides signs shall be displayed using an Exit Number plaque above and abutting the Interchange Advance guide sign.

10 For numbered exits to the right, an Exit Number (E1-5P through E1-5eP) plaque (see Figure 2E-9) shall be added to the top right-hand edge of the sign.

11 For numbered exits to the left, a Left Exit Number (E1-5fP through E1-5kP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign (see Figures 2E-18 and 2E-34).

12 For unnumbered exits to the left, a LEFT (E1-5mP) plaque (see Figure 2E-9) shall be added to the top left-hand edge of the sign, abutting the sign.

Support:

13 Section 2E.22 contains additional information regarding exit numbering.

Standard:

14 Interchange Advance guide signs for multi-lane exits having an optional exit lane that also carries the through route at ~~major~~ interchanges (see Figures 2E-36~~,~~ and 2E-37~~, and 2E-42~~) and for splits with an option lane (see Figure~~s~~ 2E-38~~, and 2E-39~~) shall be Overhead Arrow-per-Lane signs designed in accordance with Sections 2E.39 and 2E.40.

Option:

15 Where the distance between interchanges is more than 1 mile, but less than 2 miles, the first Interchange Advance guide sign may be closer than 2 miles, but not placed so as to overlap the signing for the preceding exit. Duplicate Interchange Advance guide signs or Interchange Sequence Series signs may be placed in the median on the opposite side of the roadway and are not included in the minimum requirements of interchange signing.

Guidance:

16 Where there is less than 800 feet between the theoretical gores of successive interchange entrance or exit ramps, Interchange Sequence Series signs (see Section 2E.24) should be used instead of Interchange Advance guide signs for the affected interchanges.

~~*17 The Interchange Advance guide signs for the last exit from a highway before it becomes a facility on which toll payments are required should include the LAST EXIT BEFORE TOLL (W16-16P) plaque (see Section 2F.10 and Figure 2F-4). The plaque should be installed above the Interchange Advance guide signs, but below the Exit Number or LEFT plaque, if used.*~~

There are no toll facilities on the MoDOT system. Revised Dec. 2025

Section 2E.24 Interchange Sequence Signs (E9-1 and E9-2)

Support:

01 Interchanges are sometimes closely spaced, particularly through large urban areas, so that typical guide signs cannot be adequately spaced. In such cases, Interchange Sequence signs identifying the next two (E9-1) or three (E9-2) interchanges ~~(see Figure 2E-10)~~ can provide the necessary exit destination guidance.

Figure 2E-10. Example of an Interchange Sequence Sign



E9-2

Guidance:

02 Where there is less than 800 feet between the theoretical gores of successive interchange entrance or exit ramps, Interchange Sequence signs should be used instead of Interchange Advance guide signs for the affected interchanges.

03 If used, Interchange Sequence (E9-1 or E9-2) signs should be used over the entire length of a route in an urban area.

Support:

04 Interchange Sequence signs generally supplement Interchange Advance guide signs. Signing of this type is illustrated in Figure 2E-11, and is compatible with the sign spreading concept described in ~~Paragraph 3~~ the first Support paragraph of Section 2E.43.

Standard:

05 Interchange Sequence signs shall be installed in a series. Interchange Sequence signs shall display the next two or three interchanges by name or route number with distances to the nearest ¼ mile.

06 The first Interchange Sequence sign in the series shall be located in advance of the first Interchange Advance guide sign for the first interchange.

M06A An Interchange Sequence sign shall not be placed on a truss with any other guide sign, unless the sign faces the opposite direction of all other guide signs.

M06B All interchanges shall be listed using the same name that will appear on the Advance Guide and Exit Direction signing for the interchange.

MoDOT specific content from the EPG. Revised Dec. 2025

07 Where the exit direction is to the left, a LEFT (E11-2) sign panel (see Figure 2E-17) shall be displayed on the same line immediately to the right of the interchange name or route number.

08 Interchange Sequence signs shall not be substituted for Exit Direction signs.

Guidance:

M08A The verbiage on the Interchange Sequence sign should appear on the appropriate advance and exit guide signs for sign continuity.

M08B If the intersecting road of a freeway in an urban area is a state-maintained route, the appropriate route shield shall be used in addition to the street name or control communities displayed.

MoDOT specific content from the EPG. Revised Dec. 2025

09 Interchange Sequence signs should be located in the median or placed on a bridge whenever possible. After the first sign of the series, subsequent Interchange Sequence signs should be placed approximately midway between interchanges. This will allow two signs (one for each direction of traffic) to be placed back to back on the same truss. Since the signs are usually back-to-back, a butterfly truss should be installed in the median of divided highways. Barrier protection should be used according to EPG 617.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

10 Interchange Sequence signs located in the median shall be installed at overhead sign height (see Section 2A.14).

M10A Exit numbers shall not be displayed on Interchange Sequence signs.

MoDOT specific content from the EPG replaces Option paragraph 11 below. Revised Dec. 2025

Option:

~~11 Interchange numbers may be displayed to the left of the interchange name or route number.~~

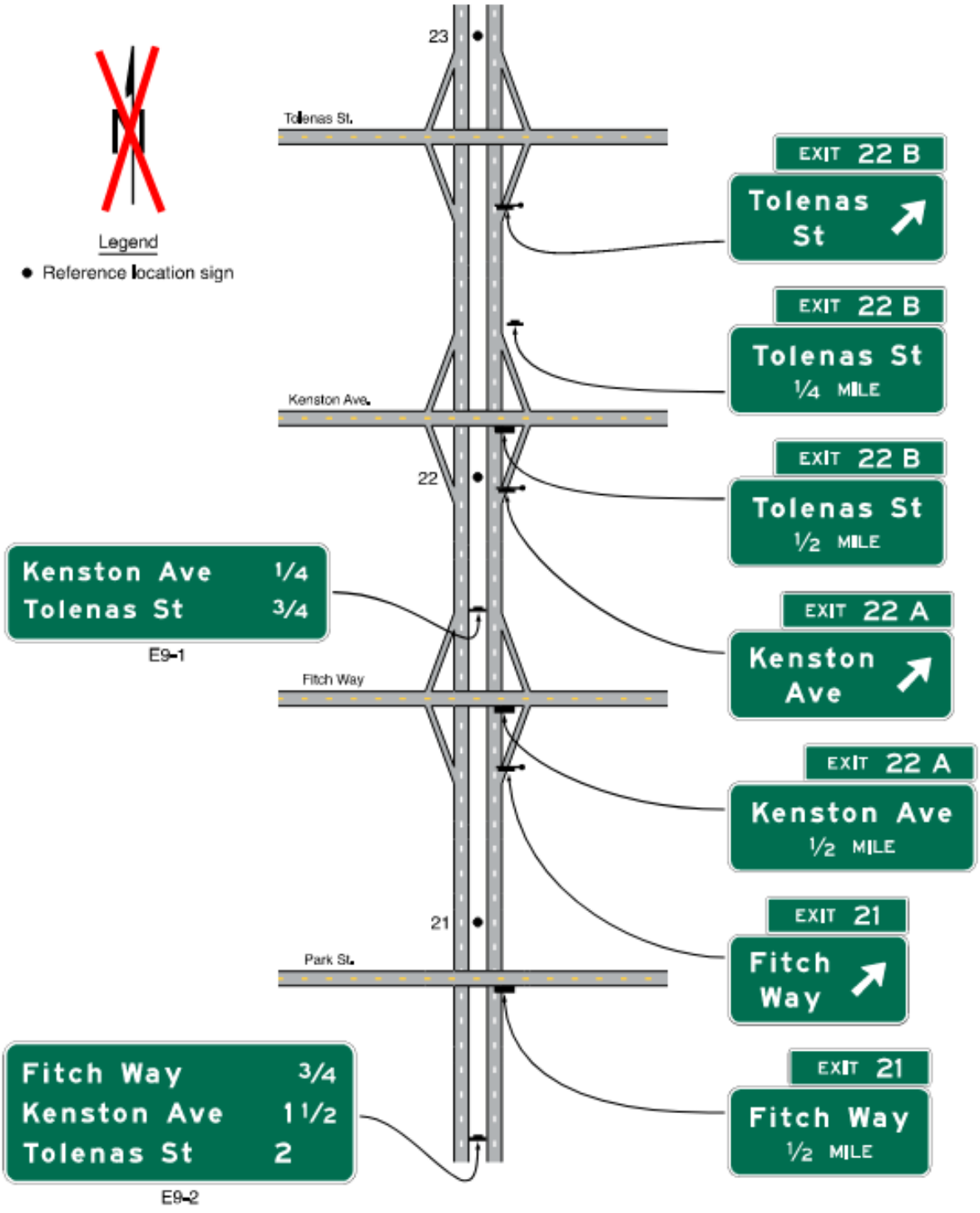
M12 When conditions arise where back-to-back sequence signs are not practical, an Interchange Sequence sign and truss may be placed on the right-hand side of traffic flow to avoid exposing opposite directions of traffic to a truss pedestal. If exposure to both directions of traffic is not a concern, this sign and truss may be placed at the standard location, on the left-hand side of the traffic flow.

Support:

M13 An example of how to use a common street name: Route 67 is commonly referred to as Lindbergh Boulevard. On the advance and exit guide signs, a U.S. Route 67 shield appears with the common name "Lindbergh Boulevard" underneath. The interchange sequence signs would show Lindbergh Blvd and/or shield.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2E-11. Example of Using a Series of Interchange Sequence Signs for Closely-Spaced Interchanges



Section 2E.25 Exit Direction Signs (E4 Series)

Support:

01 The Exit Direction sign ~~(see Figure 2E-12)~~ repeats the route and destination information that was displayed on the Interchange Advance guide sign(s) for the next exit, and thereby assures road users of the destination served and indicates whether they exit to the right or left for that destination.

Standard:

02 Exit Direction signs shall be used at ~~major and intermediate~~ all interchanges. Populations or other similar information shall not be displayed on Exit Direction signs.

MoDOT does not classify interchanges for signing purposes. Revised Dec. 2025

~~*Guidance:*~~

~~*03 Exit Direction signs should be used at minor interchanges (see Section 2E.30).*~~

Support:

04 Sections 2E.28, 2E.30, 2E.31, 2E.33 through 2E.35, 2E.38, and 2E.40 through 2E.42 illustrate the use, location, and mounting of Exit Direction signs for certain interchange configurations. The placement location of the Exit Direction sign at the interchange depends on the type of mounting, post-mounted or overhead, and whether there is a deceleration lane (see Figure 2E-13).

Guidance:

05 When post-mounted, the Exit Direction sign should be installed at the beginning of the deceleration lane taper. When mounted overhead, the Exit Direction sign should be installed over the exiting lane in the vicinity of the theoretical gore. If there is less than 300 feet from the beginning of the taper to the theoretical gore, the Exit Direction sign should be installed overhead (see Figure 2E-13).

Standard:

06 Except where Overhead Arrow-per-Lane guide signs are used (see Sections 2E.40 and 2E.42, and ~~Paragraph 7~~ the following paragraph of this Section), where a through lane is being terminated (dropped) at an exit, the Exit Direction sign shall be placed overhead at the theoretical gore (see Figures 2E-18, 2E-19, and 2E-33~~, 2E-42, and 2E-46~~).

07 Except as provided in ~~Paragraph 4~~ the second Standard paragraph of Section 2E.40, where Overhead Arrow-per-Lane guide signs are used for the Interchange Advance guide sign(s) for a multi-lane exit having an optional exit lane that also carries the through route or for a split with an option lane (see Section 2E.40), an Overhead Arrow-per-Lane guide sign shall also be used instead of the Exit Direction sign and located near, but not downstream from, the point where the outside edge of the dropped lane begins to diverge from the main roadway (see Figures 2E-36 through 2E-38). The Overhead Arrow-per-Lane guide sign shall be designed in accordance with the provisions of Section 2E.40.

08 The following provisions shall govern the design and application of overhead Exit Direction signs:

- **A. The sign shall display the Exit Number plaque (if exit numbering is used), the route number, cardinal direction, and destination, as applicable, with a diagonally upward-pointing directional arrow (see Figure 2E-12).**
- **B. The message EXIT ONLY in black on a fluorescent yellow sign panel (E11-1d or E11-1e) shall be used on the overhead Exit Direction sign to advise road users of a lane drop situation (see Figures 2E-18~~,~~ and 2E-19~~, 2E-42, and 2E-44~~). The sign shall comply with the provisions of Section 2E.28.**

09 For numbered exits to the right, an Exit Number (E1-5P through E1-5eP) plaque (see Figure 2E-9) shall be added above the top right-hand edge of the sign.

10 For numbered exits to the left, a Left Exit Number (E1-5fP through E1-5kP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign.

11 For unnumbered exits to the left, a LEFT (E1-5mP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign.

Figure 2E-12. Examples of Exit Direction Signs

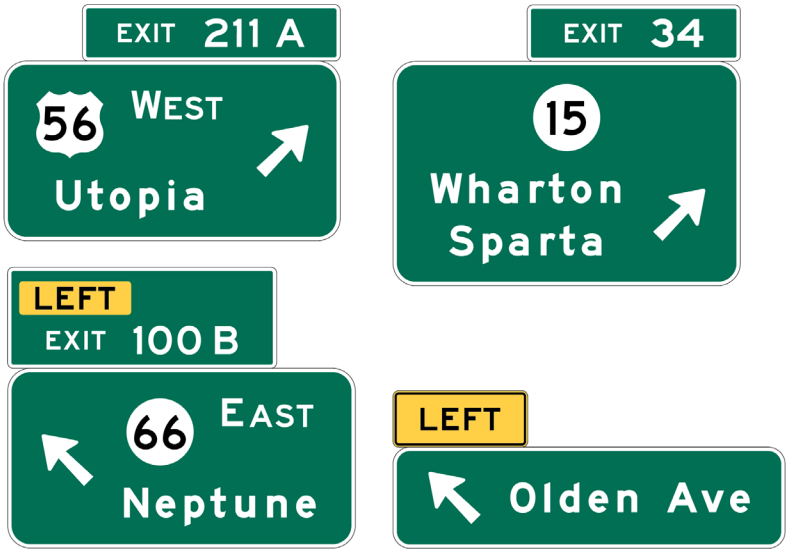
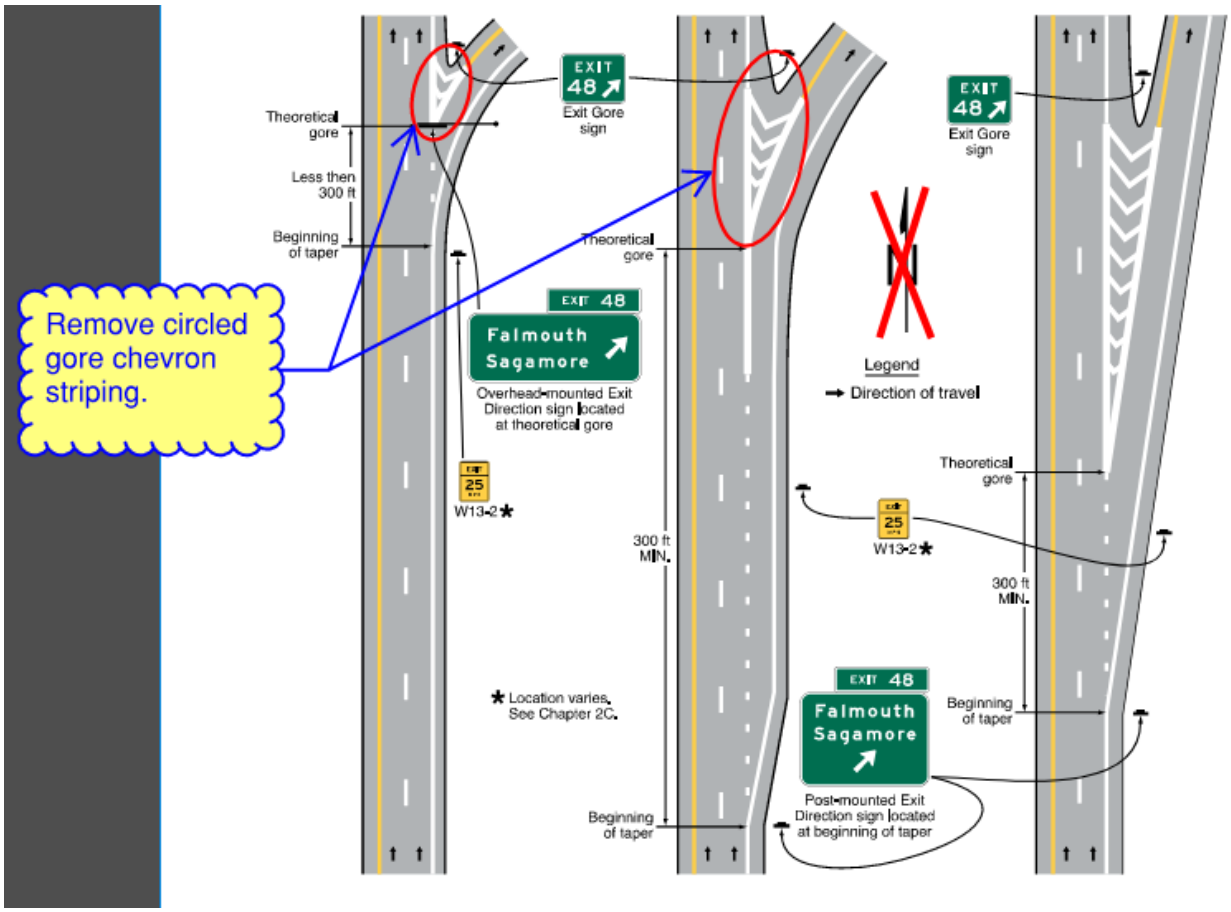


Figure 2E-13. Exit Direction Sign Placement



Support:

12 Section 2E.22 contains additional information regarding exit numbering.

Guidance:

13 At multi-exit interchanges, the Exit Direction sign should be located directly over the exiting lane for the first exit, in accordance with this Section. An Interchange Advance guide sign for the second exit should be installed at the same location, normally over the right-hand through lane. Only for those conditions where the through movement is not evident should a confirmatory message (a Pull-Through sign as shown in Figure 2E-16) be used over the left-hand lane(s) to guide road users traveling through an interchange (see Section 2E.43 for additional information on sign spreading).

14 Where the freeway or expressway is on an overpass, the Exit Direction sign for the second exit should be installed on an overhead support over the exit lane in advance of the gore point, as near as practicable to the theoretical gore. Where the freeway or expressway passes under the crossroad and the exit ramp is located beyond the overcrossing structure, the overhead Exit Direction sign for the second exit should be placed either on the overcrossing structure (see Figures 2E-29 through 2E-31) or on a separate structure located immediately in front of the overcrossing structure.

Option:

15 Where extra emphasis of an especially low advisory ramp speed is needed, an Exit Direction Advisory Speed (E13-2) sign panel (see Figure 2E-14) may be placed at the bottom of the Exit Direction sign to supplement, but not to replace, the exit or ramp advisory speed warning signs.

~~16 Warning Beacons in compliance with Paragraph 17 of this Section may be used with the E13-2 sign panel.~~

~~**Standard:**~~

~~**17 Where Warning Beacons are used in conjunction with the E13-2 sign panel within a guide sign (see Figure 2E-14), the nearest edges of the beacons shall be placed at least 12 inches from the edges of the E13-2 sign panel, from the edges of the guide sign, and from any other legend within the guide sign. The design and operation of Warning Beacons shall otherwise comply with the provisions of Chapter 4S of this Manual.**~~

MoDOT does not use Warning Beacons in conjunction with the E13-2 sign panel. Revised Dec. 2025

~~Option:~~

18 In cases, where sight distance is restricted because of structures or unusual alignment, principally in urban areas, making it impossible to locate the Exit Direction sign without violating the required minimum spacing between major guide signs (see Section 2E.23), Interchange Sequence signs (see Section 2E.24) may be substituted for an Interchange Advance guide sign.

~~*Guidance:*~~

~~*19 At the last exit from a highway before it becomes a facility on which toll payments are required, the LAST EXIT BEFORE TOLL (W16-16P) plaque (see Section 2F.10 and Figure 2F-4) should be installed above the Exit Direction sign, but below the Exit Number or LEFT plaque, if used.*~~

There are no toll facilities on the MoDOT system. Revised Dec. 2025

Figure 2E-14. Example~~s~~ of Exit Direction Sign~~s~~ with Advisory Speed Panel~~s and Flashing Yellow Beacons~~



Exit Direction sign with E13-2 sign panel

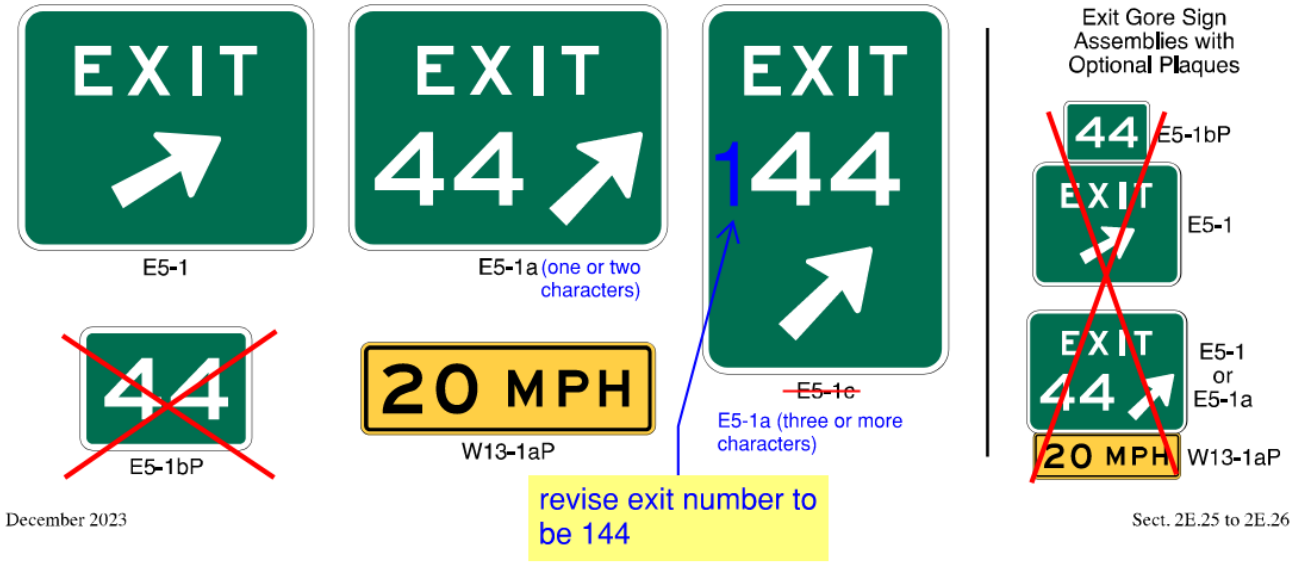
Exit Direction sign with E13-2 sign panel and flashing yellow beacons

Section 2E.26 Exit Gore Signs and Plaque (E5-1 Series)

Support:

01 The Exit Gore sign ~~(see Figure 2E-15)~~ in the gore indicates the exiting point or the place of departure from the main roadway. Consistent application of this sign at each exit is important to provide adequate visibility of the departure of the exit roadway from the main roadway.

Figure 2E-15. Exit Gore Signs and Plaques



December 2023

Sect. 2E.25 to 2E.26

Standard:

02 The gore shall be defined as the area located between the main roadway and the ramp just beyond where the ramp branches from the main roadway. An Exit Gore sign shall be located in the gore for each ramp that departs from the main roadway of a freeway or expressway, or departs from a collector-distributor roadway, and shall display the word EXIT (E5-1) if interchange exit numbering is not used or EXIT XX (E5-1a ~~or E5-1c~~) if interchange exit numbering is used (only on interstate routes), and an appropriate diagonally upward-pointing arrow. If suffix letters are used for exit numbering at a multi-exit interchange, the suffix letter shall also be included on the Exit Gore (E5-1a ~~or E5-1c~~) sign ~~or Exit Gore Number (E5-1bP) plaque~~ and shall be separated from the exit number by a space having a width of between ½ and ¾ of the height of the suffix letter. Breakaway or yielding supports shall be used.

MoDOT does not use E5-1bP. Revised Dec. 2025

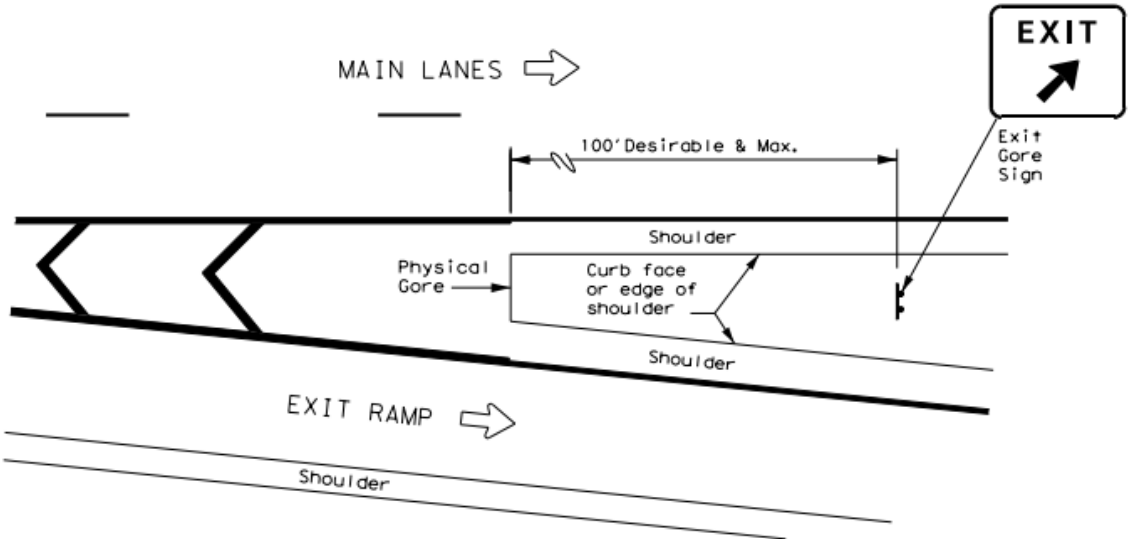
M02A The Exit Gore sign shall be placed within the gore area at a location no more than 100 feet beyond the upstream end of the physical gore (See Figure 2E-15A).

Option:

M02B A placement distance of approximately 100 feet beyond the beginning of the physical gore is desirable. However, the sign may be placed closer than 100 feet beyond the physical gore, as determined by engineering judgement.

MoDOT policy for exit gore sign location. Revised Dec. 2025

Figure 2E-15A. Example of Exit Gore Sign Location



Guidance:

03 The arrow should be aligned to approximate the angle of departure. Each gore should be treated similarly, whether the interchange has one exit roadway or multiple exits.

~~Option:~~

~~04 The Narrow Exit Gore (E5-1c) sign (see Figure 2E-15) may be used in gore areas of limited width where the width of the Exit Gore (E5-1a) sign would not permit sufficient lateral offset (see Section 2A.16), such as for ramp departures that are nearly parallel to the main roadway where the Exit Gore sign would be mounted on a narrow island or barrier. Where the E5-1c sign is mounted at a height of 14 feet or more from the roadway, the directional arrow may point diagonally downward.~~

~~*Guidance:*~~

~~*05 The E5-1c sign should not be used in gore areas where an E5-1a sign could be installed with sufficient lateral offset.*~~

MoDOT will use E5-1a with the arrow to the right for all one and two character exit number signs. For all three character or more signs, the sign designation will still be E5-1a, but the arrow will be below. The E5-1c designation will not be used. Revised Dec. 2025

Option:

06 Where extra emphasis of an especially low advisory ramp speed is needed, the Confirmation Advisory Speed (W13-1aP) plaque (see Section 2C.59) indicating the advisory speed may be mounted below the Exit Gore sign ~~(see Figure 2E-15)~~ to supplement, but not to replace, the exit or ramp advisory speed warning signs.

07 To improve the visibility of the gore for exiting drivers, a Type 1 object marker (see ~~Chapter 2C~~ EPG 903.3) may be installed 4 feet above the ground line on each sign support below the Exit Gore sign.

~~08 An Exit Gore Number (E5-1bP) plaque (see Figure 2E-15) may be installed above an existing Exit Gore (E5-1) sign when an unnumbered exit is converted to a numbered exit until such time as an E5-1 sign is being replaced for other reasons (see Paragraph 9 of this Section).~~

~~**Standard:**~~

~~**09 An Exit Gore (E5-1a) sign shall be used when the replacement of an existing assembly of an E5-1 sign and E5-1bP plaque becomes necessary.**~~

MoDOT does not use E5-1bP. Revised Dec. 2025

Section 2E.27 Pull-Through Signs (E6-1 Series and E6-2 Series)

Support:

01 Pull-Through (E6-1 series and E6-2 series) signs ~~(see Figure 2E-16)~~ are overhead guide signs intended for through traffic.

Figure 2E-16. Examples of Pull-Through Signs



Guidance:

02 Pull-Through signs should be used where the geometrics of a given interchange are such that it is not clear to the road user as to which is the through roadway, or where additional route guidance is desired. Pull-Through signs with down arrows should be used where the alignment of the through lanes is curved and the exit direction is straight ahead, where the number of through lanes is not readily evident, and at multi-lane exits where there is a reduction in the number of through lanes. Pull-Through signs should not be used at exits with option lanes where full-width Overhead Arrow-per-Lane signs are being used.

Standard:

03 When used, Pull-Through signs shall display the route shield and the cardinal direction for the through route.

Option:

04 Pull-Through signs may display the control city and down arrows (see ~~Figure 2E-16 and~~ Section 2E.18).

Support:

05 Sections 2E.28, 2E.39, and 2E.40 contain information regarding the use of Overhead Arrow-per-Lane guide signs at multi-lane exits where there is a reduction in the number of through lanes and a through lane becomes an interior option lane for through or exiting traffic.

Section 2E.28 Signing for Interchange Lane Drops Without an Optional Exit Lane

Standard:

01 The provisions of this Section shall only apply to lane drops at exits that do not have an optional exit lane. At exits that have an optional exit lane in addition to the dropped lane, the provisions of Sections 2E.39 ~~through~~, 2E.40, and 2E.42 shall apply.

02 Except as provided in ~~Paragraph 15~~ the fourth Guidance paragraph of this Section, major guide signs for all lane drops at interchanges shall be mounted overhead. An EXIT ONLY sign panel shall be used for all interchange lane drops at which the through route is carried on the mainline ~~roadway~~ and when any lane being dropped is a minimum of 1,000 feet in length from full lane width to the theoretical gore.

Option:

M02A An EXIT ONLY sign panel may also be used in a situation where the lane being dropped is less than 1,000 feet in length where the terminus of the lane is not visible to the driver.

MoDOT specific content from the EPG. Revised Dec. 2025

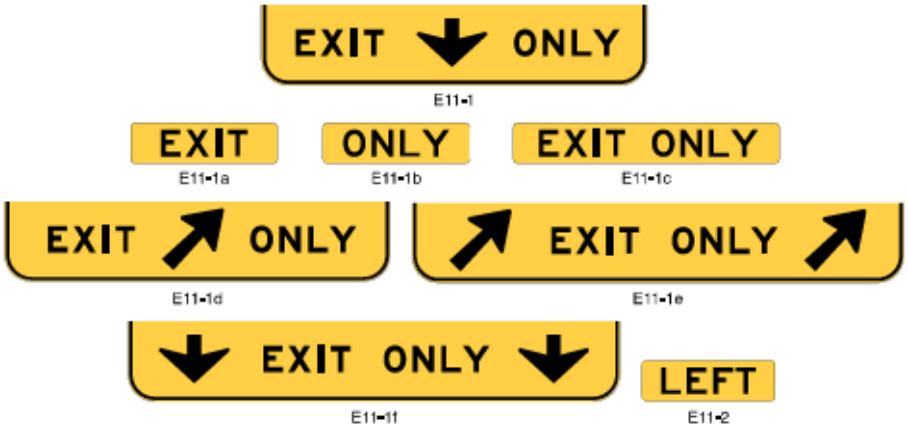
Standard:

03 Except on Overhead Arrow-per-Lane and Diagrammatic Advance guide signs (see Sections 2E.39 through 2E.41), the EXIT ONLY (down arrow) (E11-1 or E11-1f) sign panel (see Figure 2E-17) shall be used on all overhead Advance guide signs of lane drops (see Figures 2E-18, 2E-19, and 2E-34).

The number of arrows on each sign shall correspond to the number of dropped lanes at the location of each sign. Placement of the down arrow shall comply with the provisions of Section 2E.18.

04 For lane drops, the bottom portion of the overhead Exit Direction sign shall be fluorescent yellow with a black border and shall include a diagonally upward-pointing black directional arrow (left or right, as appropriate) for each lane dropped at the exit (see Figures 2E-18 and 2E-19). The sign shall be designed and placed so that each arrow is located over the approximate center of each lane being dropped. Except as provided in ~~Paragraph 5 of this Section~~ the following paragraph, the words EXIT and ONLY shall be positioned to the left and right, respectively, of the arrow on the E11-1d sign panel (see Figure 2E-17) for a single-lane drop. For a two-lane drop, the words EXIT ONLY shall be located between the two arrows on the E11-1e sign panel (see Figure 2E-17). The number of arrows on the sign shall correspond to the number of dropped lanes at the location of the sign.

Figure 2E-17. EXIT ONLY and LEFT Sign Panels



Option:

05 Where an existing sign structure length or adjacent signs constrain the width or placement of the Interchange Advance guide sign on that structure, the down arrow may be positioned to the right or left of the words EXIT ONLY, instead of between the words, to allow for the positioning of the arrow over the approximate center of the lane. Where the width of the Exit Direction sign extends over the adjacent lane, the directional arrow may be placed to the right of the words EXIT ONLY for an exit to the right, or to the left of the words EXIT ONLY for an exit to the left, to allow for the positioning of the arrow over the dropped lane.

06 EXIT ONLY messages of either the combination of E11-1a and E11-1b, or the E11-1c sign panels (see Figure 2E-17) may be used to retrofit existing signing to warn of a lane drop situation ahead.

Standard:

07 If used to retrofit an existing guide sign, the E11-1a and E11-1b sign panels (see Figure 2E-17) shall be placed on either side of a white down arrow on an Interchange Advance guide sign and on either side of a white directional arrow on an Exit Direction sign. The E11-1c sign panel (see Figure 2E-17), if used to retrofit an existing Interchange Advance guide sign, shall be placed between the lower destination message and the white down arrow.

Guidance:

M07A Some single exit only lanes develop into dual exit only lanes. An advance EXIT ONLY guide sign should be placed over the single lane before it develops into two, then a second advance EXIT ONLY guide sign should be placed after both lanes are fully developed.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2E-18. Guide Signs for a Single-Lane Exit to the Left with a Dropped Lane

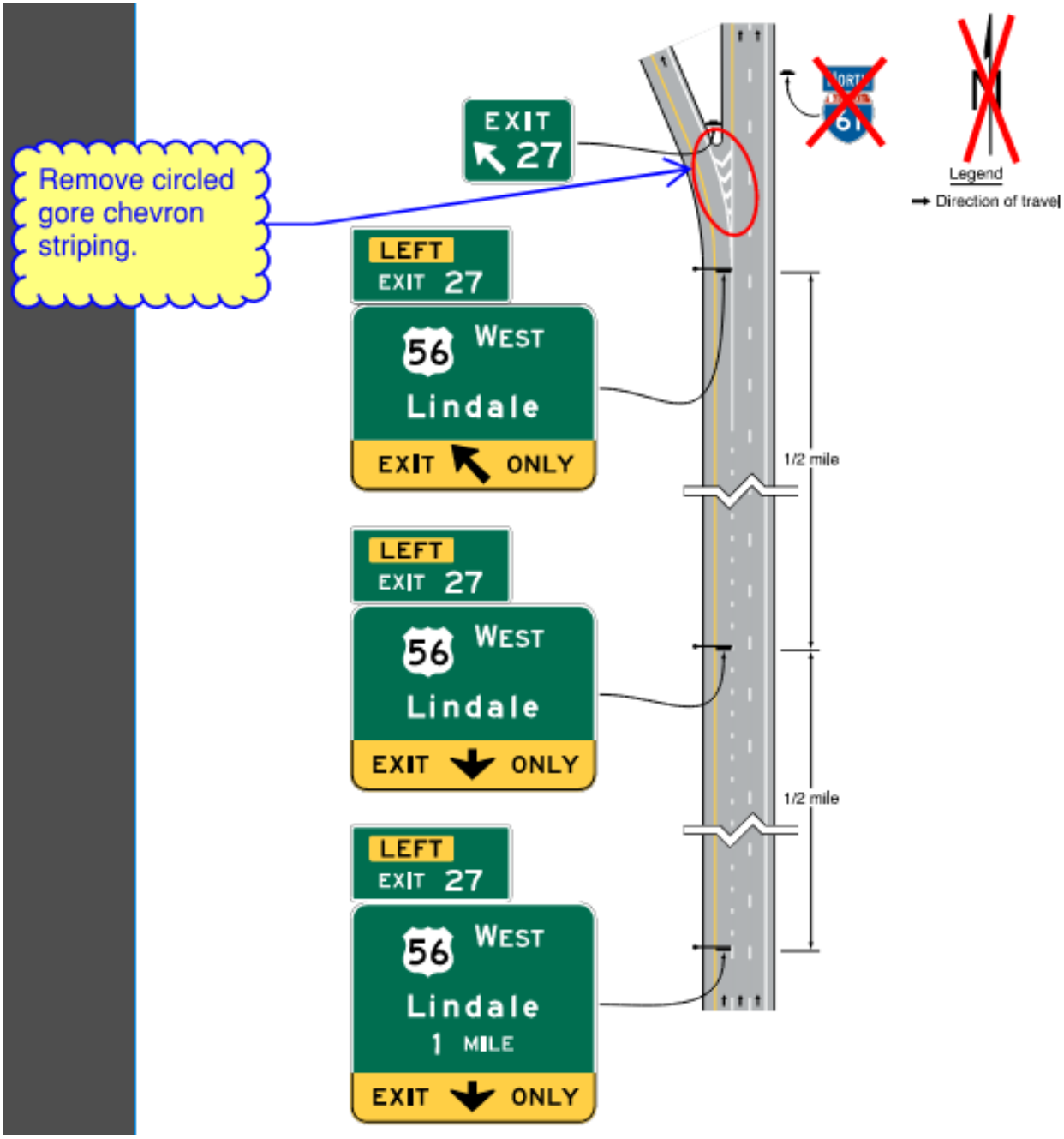
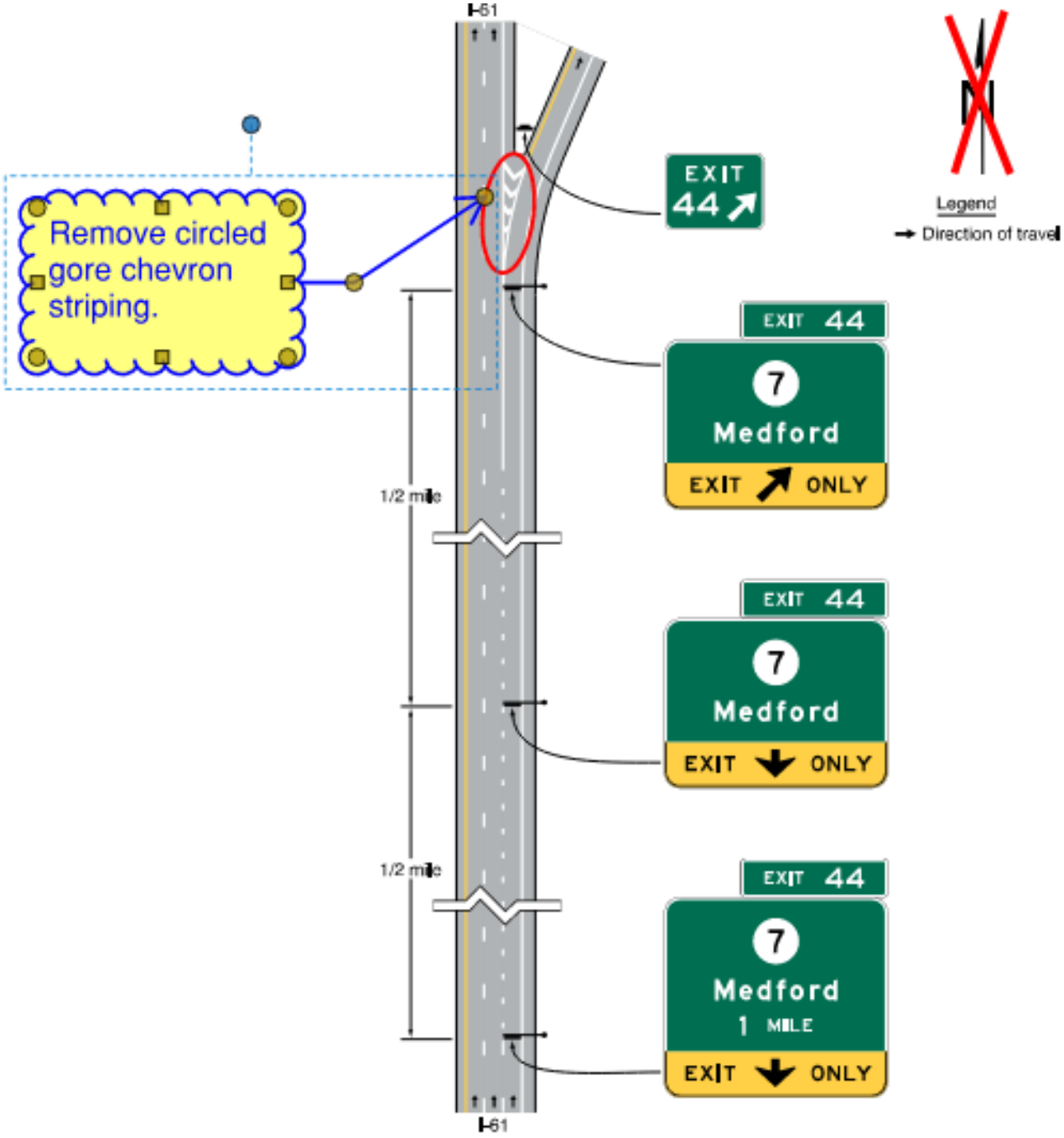


Figure 2E-19. Guide Signs for a Single-Lane Exit to the Right with a Dropped Lane



08 Except as provided in ~~Paragraph 9 of this Section~~ the paragraph below for an auxiliary lane, Interchange Advance guide signs for lane drops within 1 mile of the interchange should not display the distance message.

09 Where the dropped lane is an auxiliary lane that is provided between successive entrance and exit ramps of two separate interchanges and the distance between the two ramps is less than 1 mile, the first Interchange Advance guide sign in the sequence downstream from the entrance ramp should display the distance message (see Figures 2E-20 and 2E-21).

10 Where the dropped lane carries the through route, signs should be used without the EXIT ONLY sign panel.

Support:

11 Figures 2E-20 ~~and 2E-21~~ shows an example~~s~~ of guide signs for a dropped auxiliary lane between separate interchanges using ~~post-mounted and~~ overhead guide signs~~, respectively~~. Figure 2E-22 shows guides signs used for an auxiliary lane that is ~~½ mile~~ 1,000 feet or longer.

12 Sections 2E.39 through 2E.42 contain information on the signing of lane drops at exits that also have an option lane.

13 Section 2B.31 contains information regarding regulatory signs that can also be used for freeway lane drop situations and Section 2C.50 contains information regarding warning signs that can also be used for freeway lane drop situations.

Guidance:

14 In limited cases in which conditions are so constrained that it is impossible to locate an Interchange Advance guide sign either overhead or partly over the dropped lane, precluding positioning of the down arrow as provided in ~~Paragraph 3~~ the third Standard paragraph of this Section, a sign panel displaying the legend RIGHT (LEFT) LANE ONLY in a black legend on a fluorescent yellow background should be substituted for the EXIT ONLY panel on that sign. In such cases, the Interchange Advance guide signs should be alternated with RIGHT (LEFT) LANE ~~FOR~~ EXIT ONLY (W9-7) signs (see Section 2C.50).

MoDOT modified the W9-7 sign in Section 2C.50. Revised Dec. 2025

15 Where a mainline lane is terminated immediately after an exit ramp, overhead and/or post mounted warning signs should be used to warn traffic as shown in Figure 2E-23.

Figure 2E-20. Examples of Overhead Guide Signs for a Dropped Auxiliary Lane between Separate Interchange Ramps

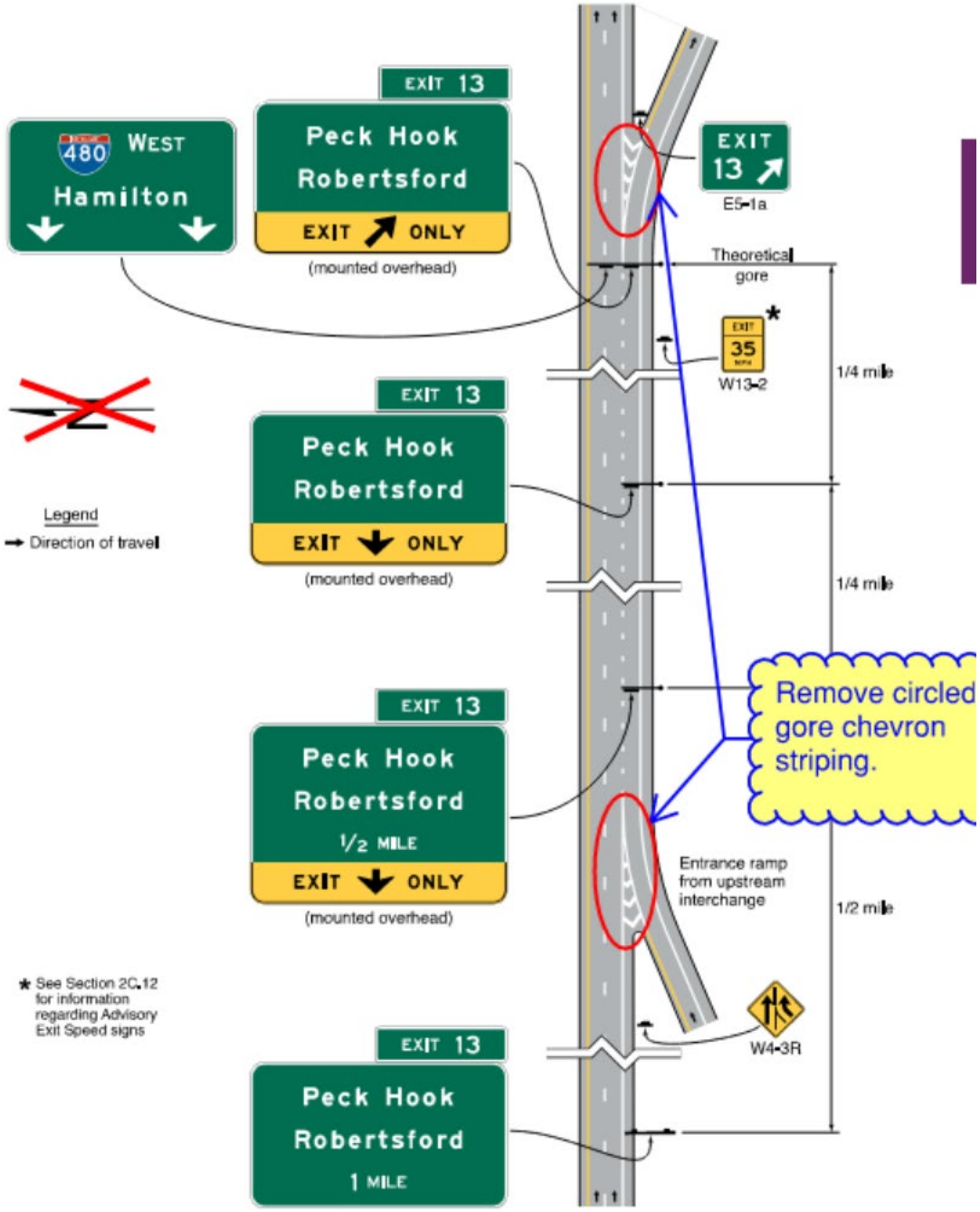


Figure 2E-21. Examples of Post-Mounted Advance Guide and Supplemental Warning Signs for a Dropped Auxiliary Lane between Separate Interchange Ramps

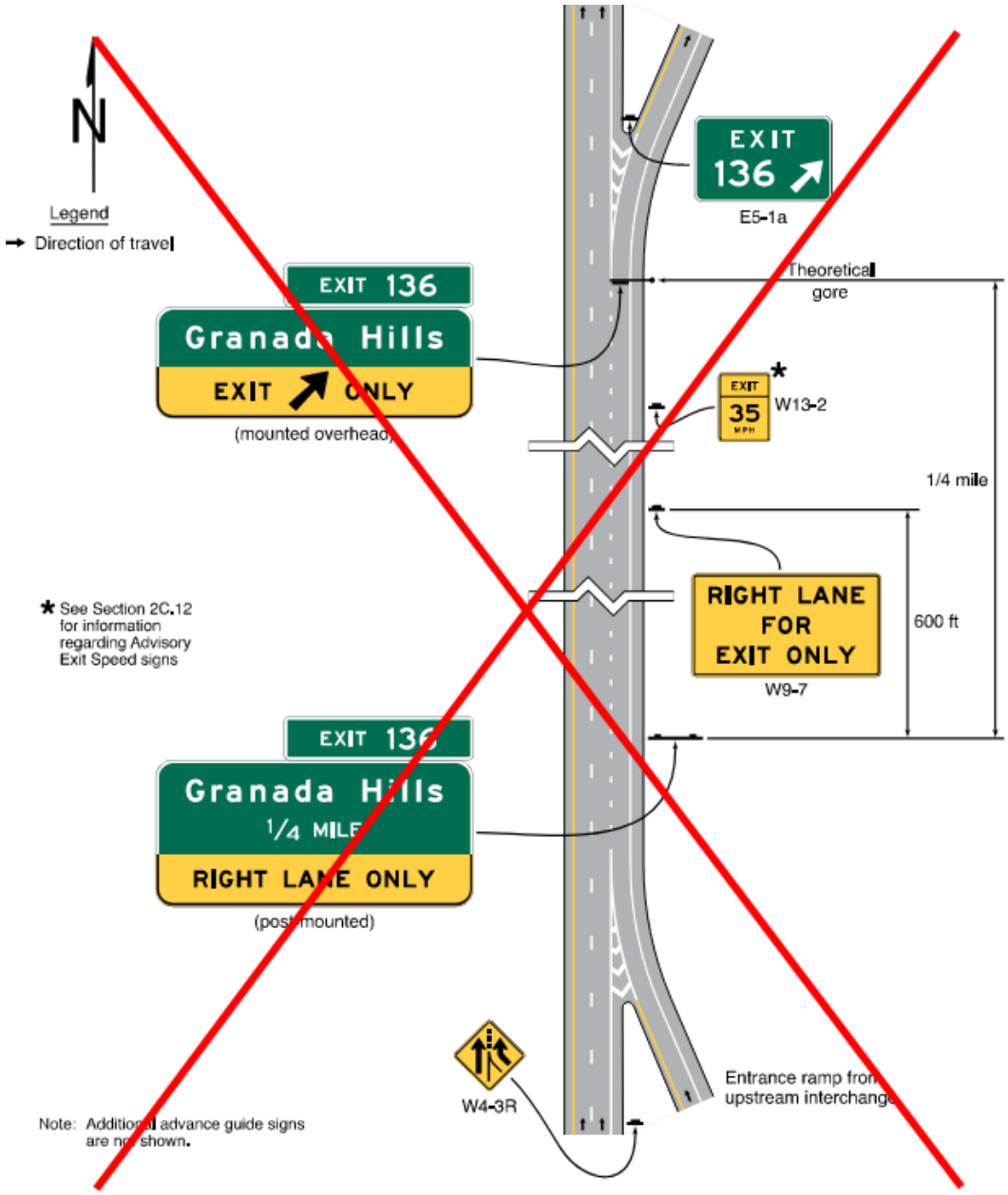


Figure 2E-22. Examples of Guide Signs for an Auxiliary Lane of at Least ~~One-Half Mile~~ 1,000 Feet in Length

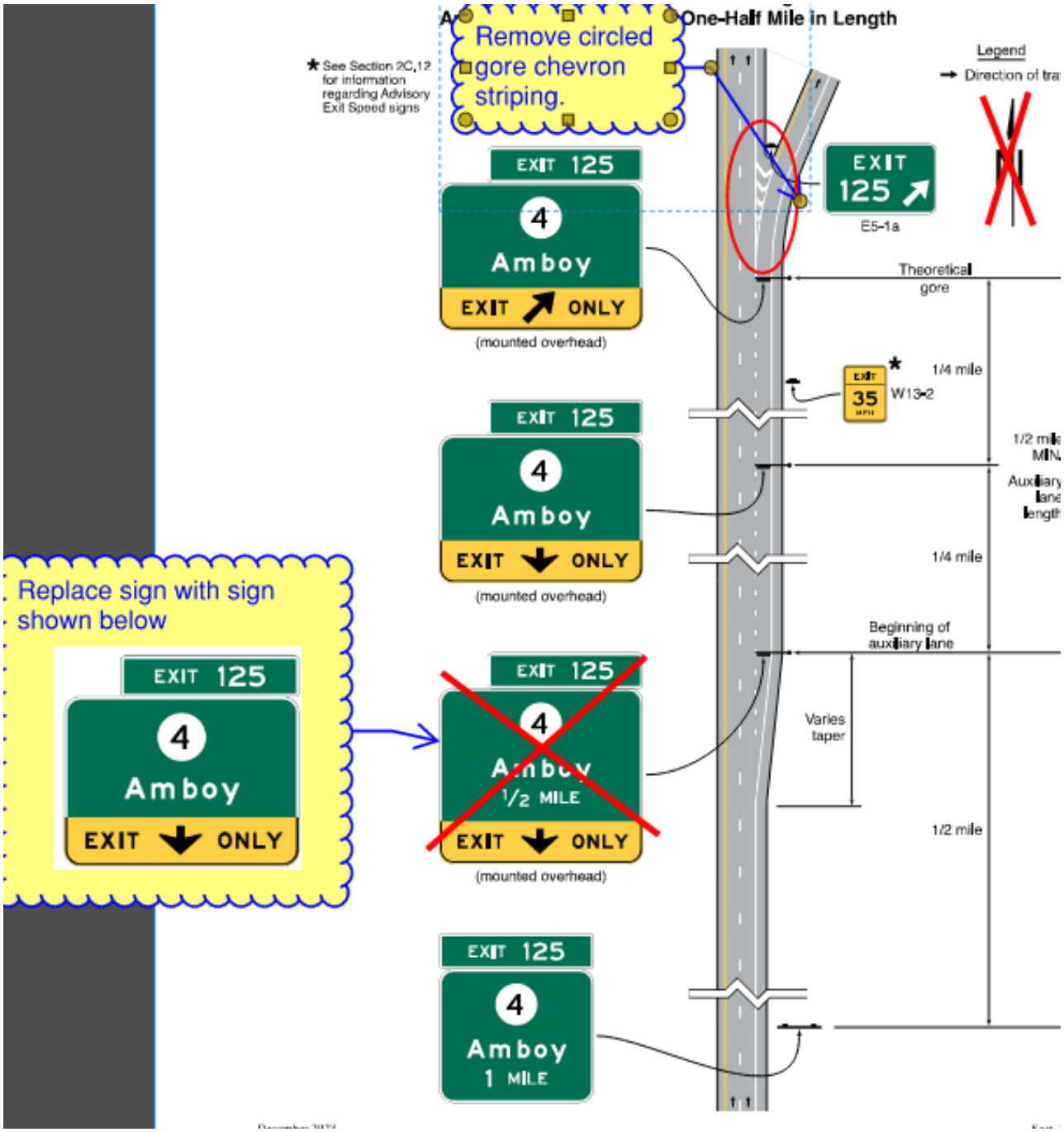
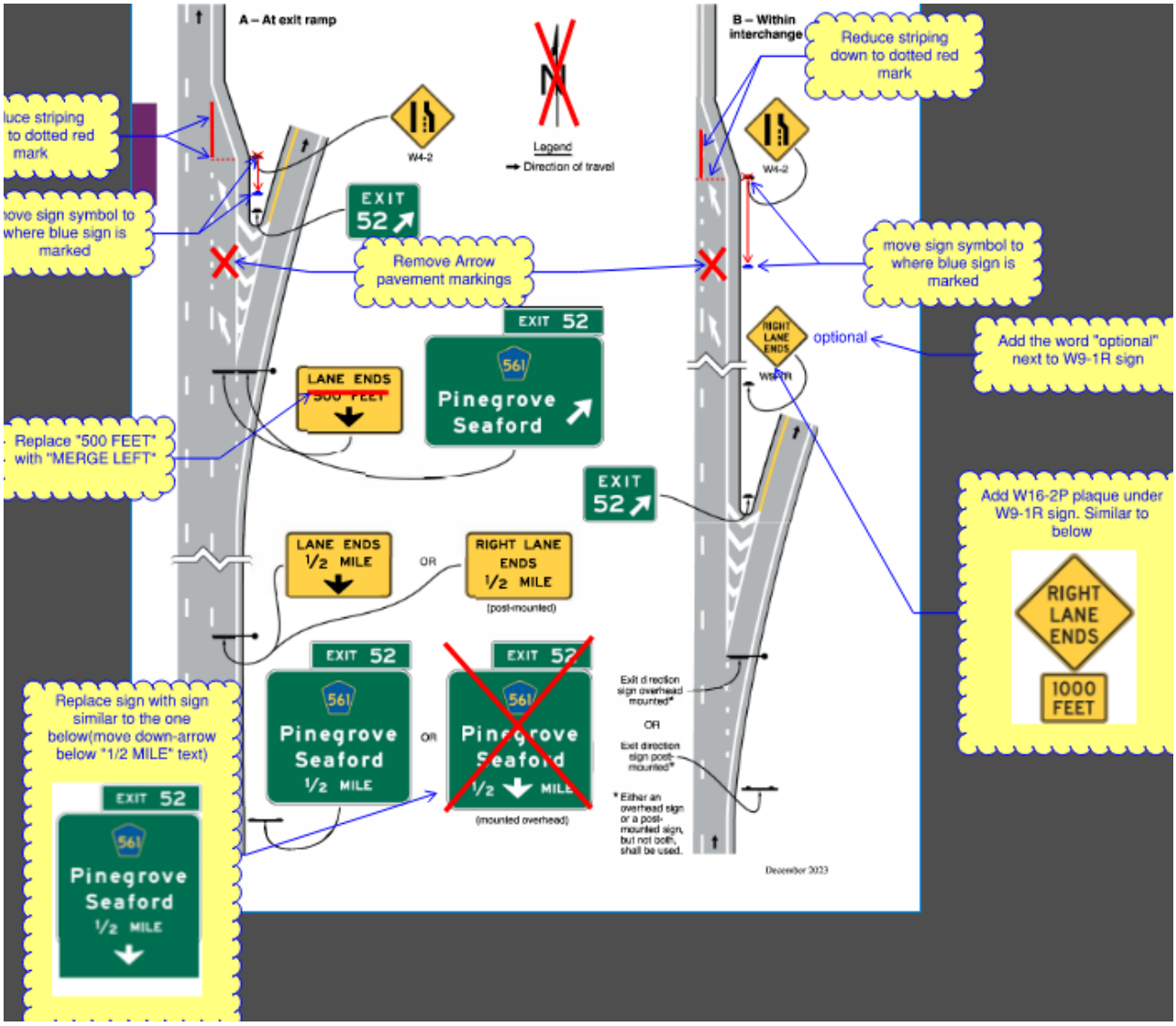


Figure 2E-23. Examples of Signing for Mainline Terminations within an Interchange



Section 2E.29 Signing by Type of Interchange

Support:

01 Road users need signs to help identify the location of the exit, as well as to obtain route, direction, and destination information for specific exit ramps. Figures 2E-26 through 2E-33 show examples of guide signs for common types of interchanges. The interchange layouts shown in most of the figures illustrate only the major guide signs for one direction of traffic on the freeway and on the exit ramps. Section 2D.49 contains information regarding the signing of the crossroad approaches and connecting roadways to freeways and expressways.

Guidance:

02 The signing layout for all interchanges of the same type should be similar. For the purpose of uniform application, the significant features of the signing layout for each of the more frequent types of interchanges (illustrated in Figures 2E-26 through 2E-33) should be followed as closely as possible. Even when unusual geometric features exist, variations in signing layout should be held to a minimum.

03 Where a single interchange combines a different type of ramp configuration for each direction of travel, the main roadway major guide signing should be determined by the specific interchange type for that direction of travel.

Support:

~~04 Figure 2E-24 shows an example of signing for a complex interchange that combines intermediate interchange ramps within a major interchange.~~

MoDOT does not classify interchanges for the purposes of signing. Revised Dec. 2025

05 Figure 2E-25 shows an example of signing for an interchange exit ramp with a downstream split.

Figure 2E-24. Examples of Signing for an Intermediate Interchange within a Major Interchange

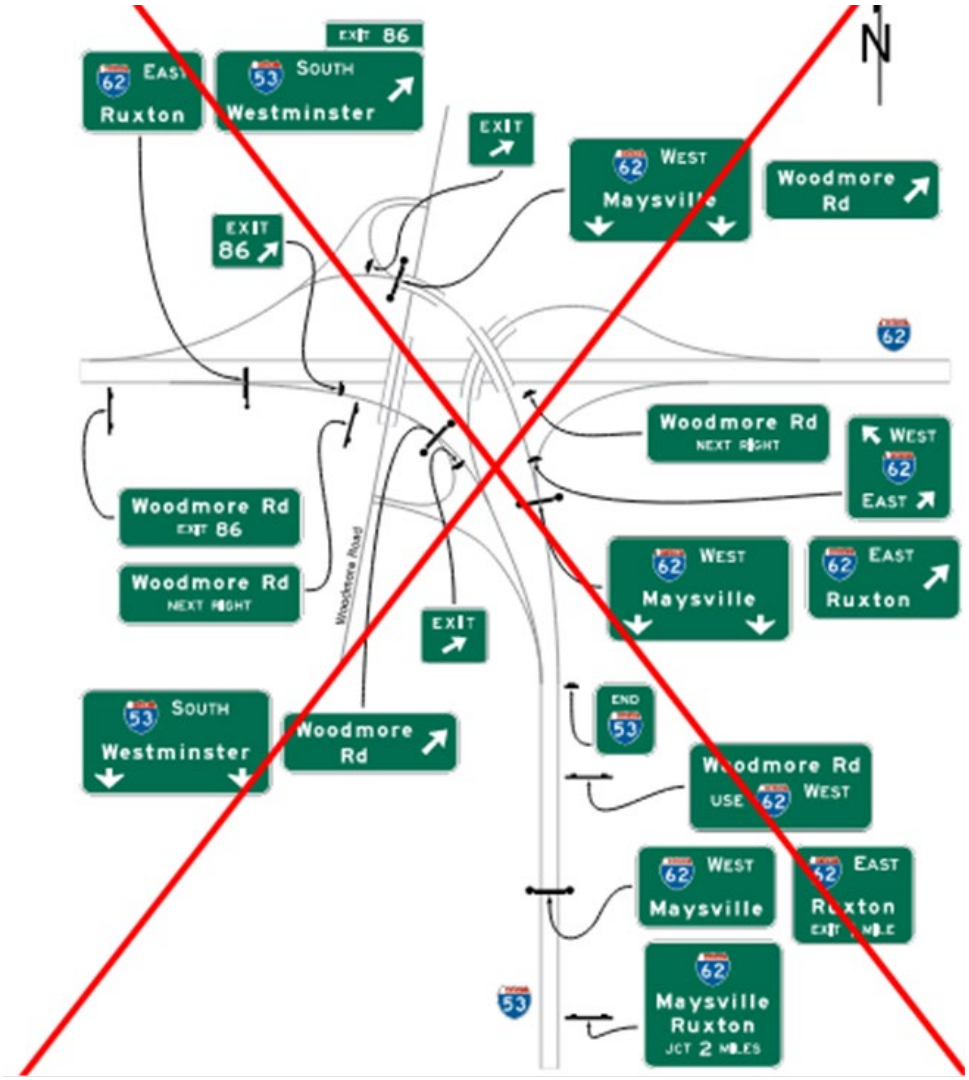


Figure 2E-25. Examples of Signing for an Interchange Exit Ramp with a Downstream Split
(Sheet 1 of 2)

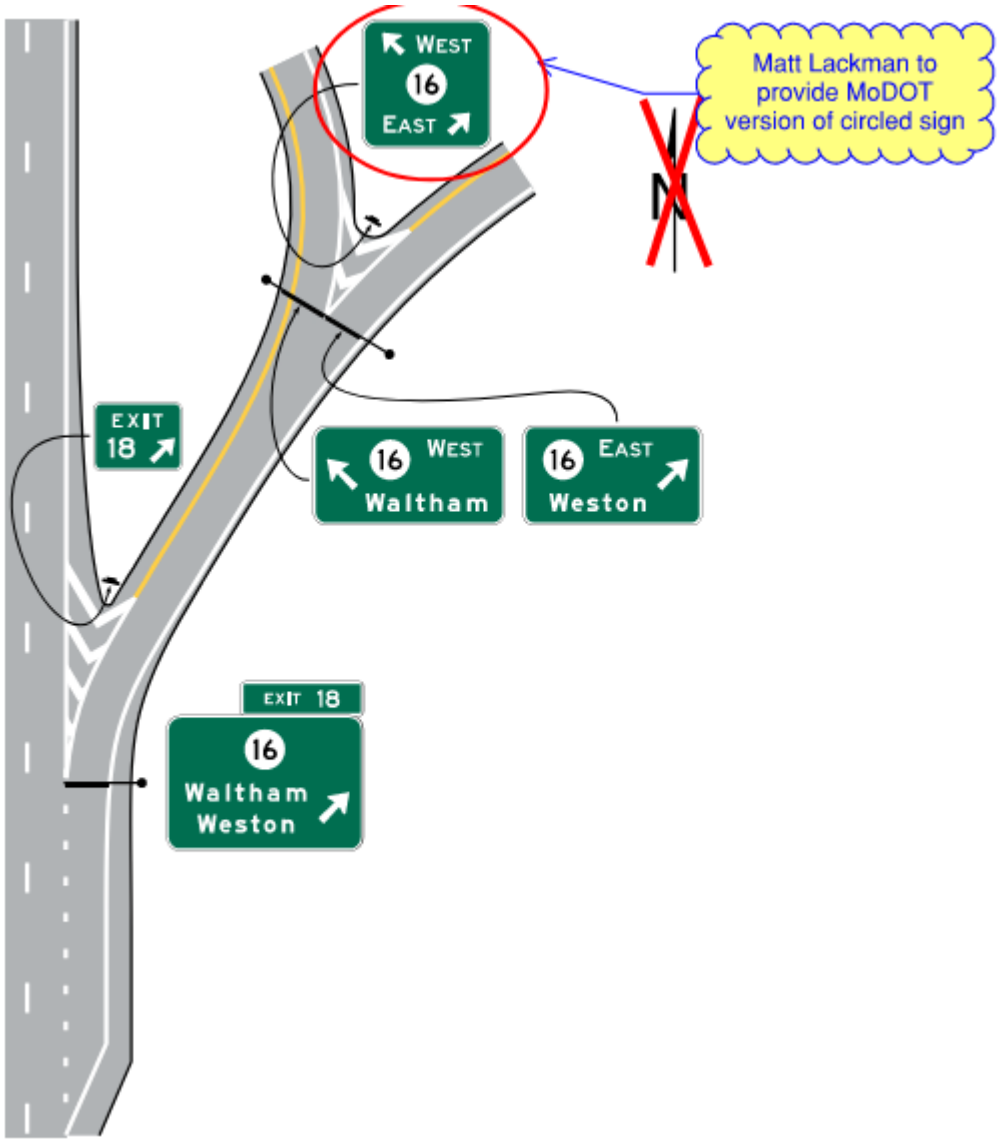
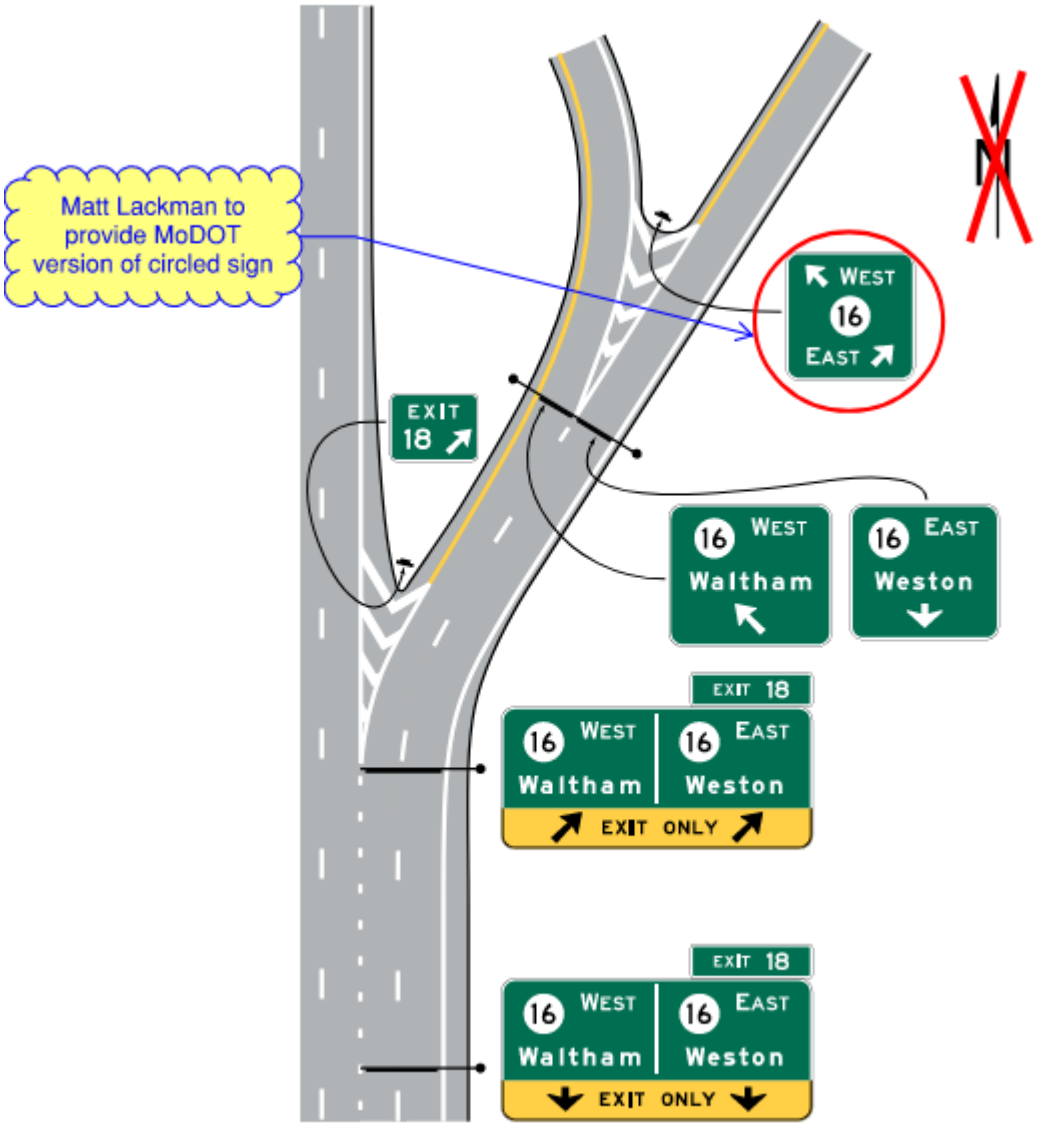


Figure 2E-25. Examples of Signing for an Interchange Exit Ramp with a Downstream Split
(Sheet 2 of 2)



Section 2E.30 Minor Interchange

Option:

01 Less signing may be used for minor interchanges because such interchanges customarily serve low volumes of mostly local traffic.

Support:

02 An example of guide signs for a minor interchanges is shown in Figure 2E-26.

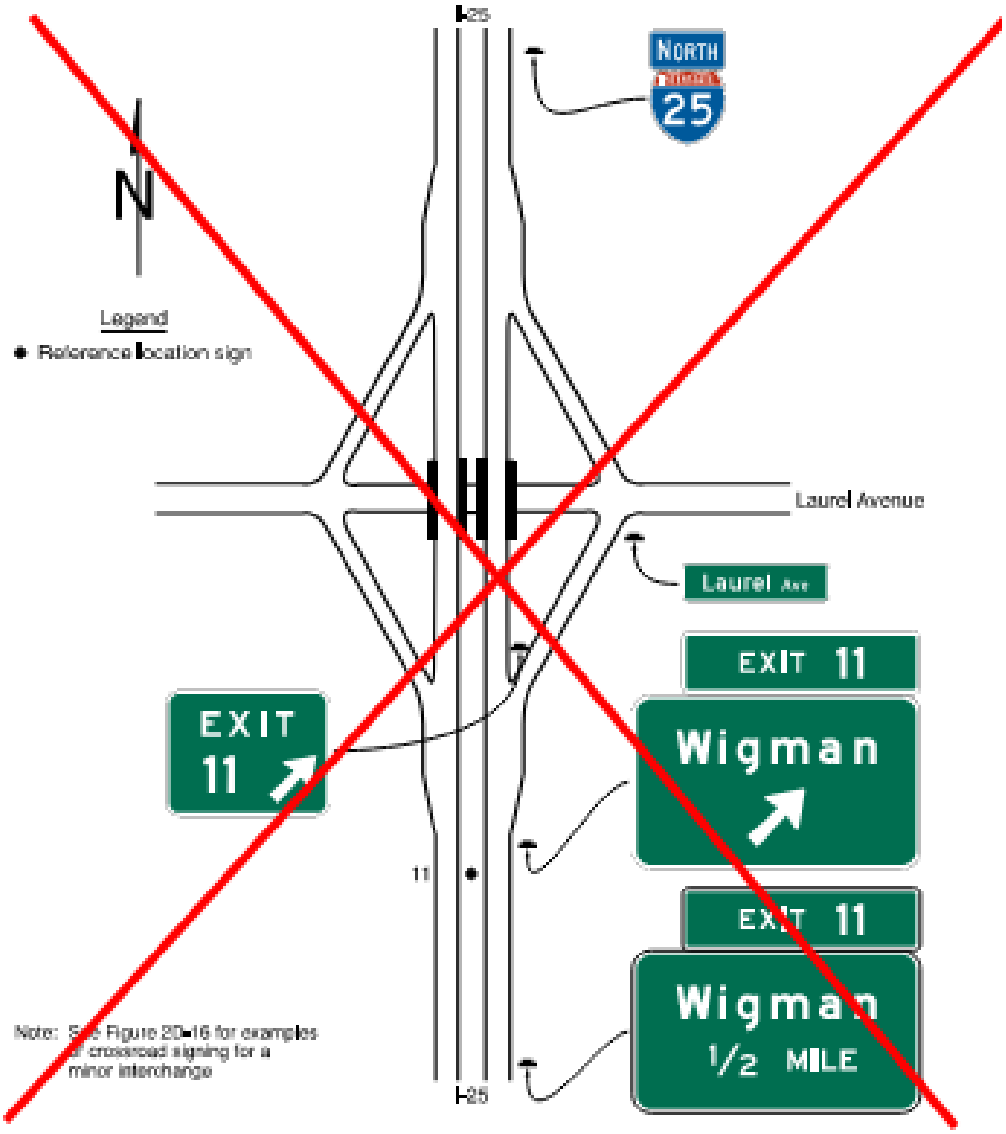
Standard:

03 In accordance with the provisions of Sections 2E.23 and 2E.26, at least one Interchange Advance guide sign and an Exit Gore sign shall be used at a minor interchange.

Guidance:

04 An Exit Direction sign in compliance with Section 2E.25 should also be used.

Figure 2E-26. Examples of Guide Signs for a Minor Interchange



Section 2E.31 Diamond Interchange

Support:

01 An example of guide signs for a diamond interchange is shown in Figure 2E-27.

02 The typical diamond interchange ramp departs from the main roadway such that a speed reduction generally is not necessary in order for a driver to negotiate an exit maneuver from the main roadway onto the ramp roadway. Section 2C.12 contains provisions for the use of an Advisory Exit Speed (W13-2) sign for situations where a speed reduction is necessary.

Guidance:

03 When a speed reduction is not necessary, an Advisory Exit Speed sign should not be used.

04 The Advisory Exit Speed sign, if used, should be located along the deceleration lane or along the ramp such that it is visible to the driver far enough in advance to allow the driver to decelerate before reaching the curve associated with the exiting maneuver. Use and placement of the Advisory Exit Speed sign should otherwise comply with Section 2C.12 of ~~this Manual~~ the EPG.

Option:

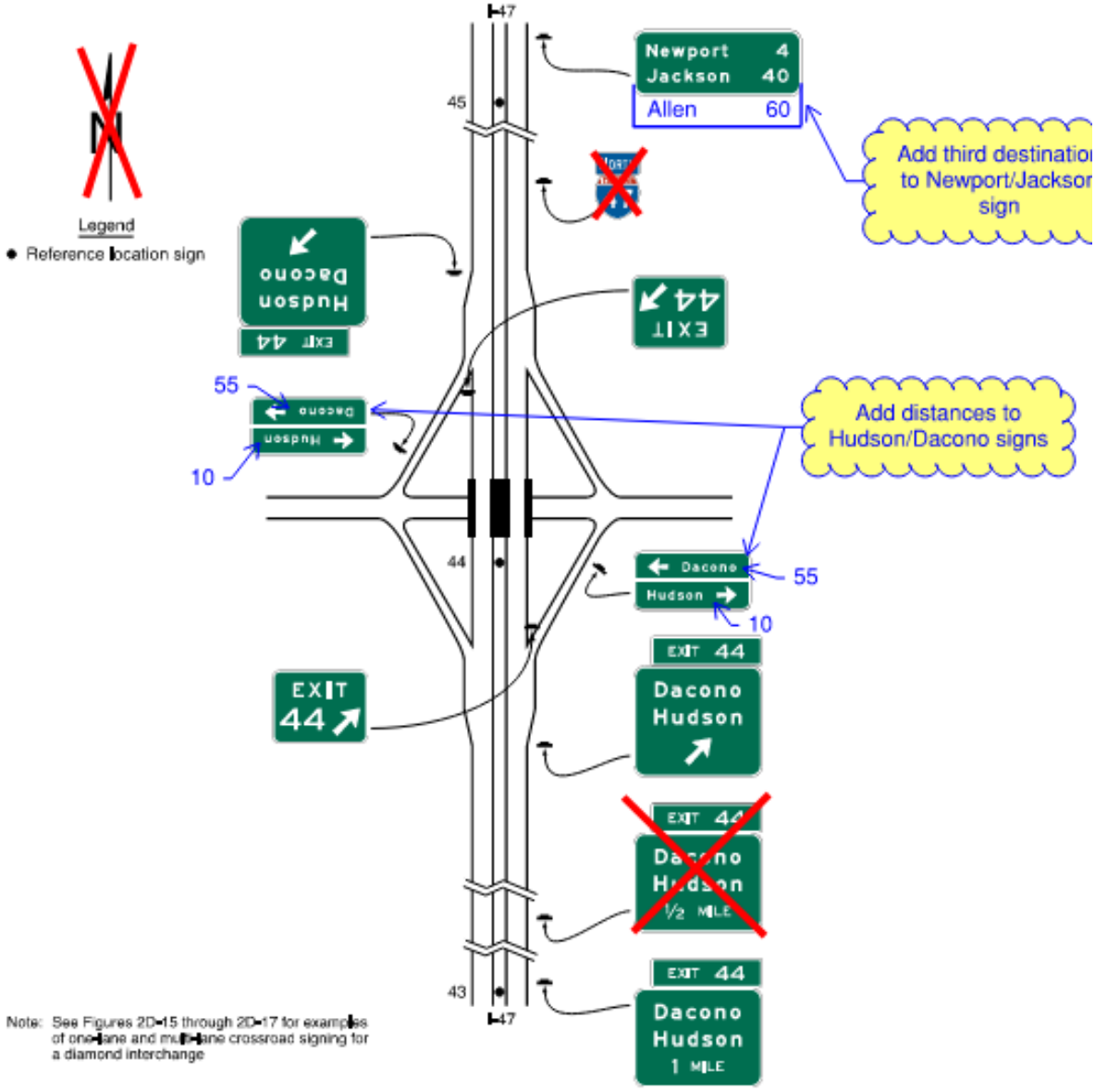
05 A Stop Ahead (W3-1) or Signal Ahead (W3-3) warning sign (see Section 2C.35) may be placed, where engineering judgment indicates a need, along the ramp in advance of the crossroad, to give notice to the driver.

Guidance:

06 When used on two-lane ramps, Stop Ahead or Signal Ahead signs should be used in pairs with one sign on each side of the ramp.

07 Where the exit ramp allows traffic to turn in either direction onto the crossroad, a Destination (D1 series) sign (see Section 2D.36) that includes each destination displayed on the Advance, Exit Direction, and Supplemental guide signs along the main roadway for that exit should be placed along the ramp.

Figure 2E-27. Example of Guide Signs for a Diamond Interchange



Section 2E.32 Diamond Interchange in Urban Area

Support:

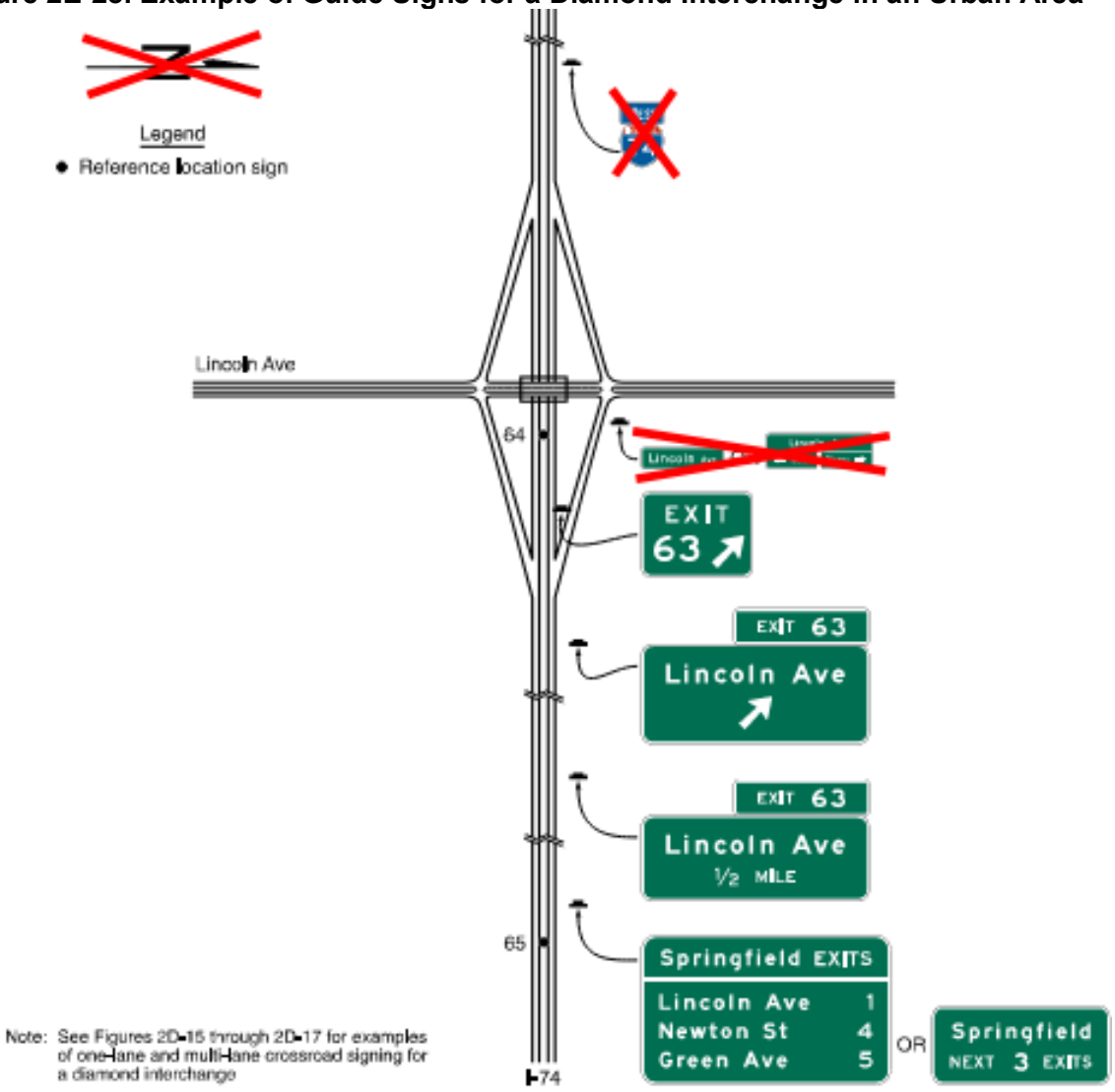
01 An example of guide signs for a diamond interchange in an urban area is shown in Figure 2E-28. This example includes the use of the Community Interchanges Identification sign (see Section 2E.52), which might be useful if two or more interchanges serve the same community.

02 In urban areas, street names are often displayed as the principal message in destination signs.

Option:

03 If interchanges are too closely spaced to locate the Interchange Advance guide signs at the distances specified in Section 2E.23, they may be placed closer to the exit with the distances displayed adjusted accordingly.

Figure 2E-28. Example of Guide Signs for a Diamond Interchange in an Urban Area



Section 2E.33 Cloverleaf Interchange

Support:

01 A cloverleaf interchange has two exits for each direction of travel. The exits are closely spaced and have common Advance guide signs. An example of guide signs for a cloverleaf interchange is shown in Figure 2E-29.

Guidance:

02 The Advance guide signs should include two place names, one corresponding to each exit ramp, with the name of the place served by the first exit on the upper line.

Standard:

03 An overhead guide sign assembly shall be placed at the theoretical gore of the first exit ramp, with an Exit Direction sign for the first exit and an Interchange Advance guide sign for the second exit, as shown in Figure 2E-29. The second exit shall be indicated by an overhead Exit Direction sign over the auxiliary lane.

04 Interchanges with more than one exit from the main roadway shall be numbered as described in Section 2E.22 with an appropriate suffix.

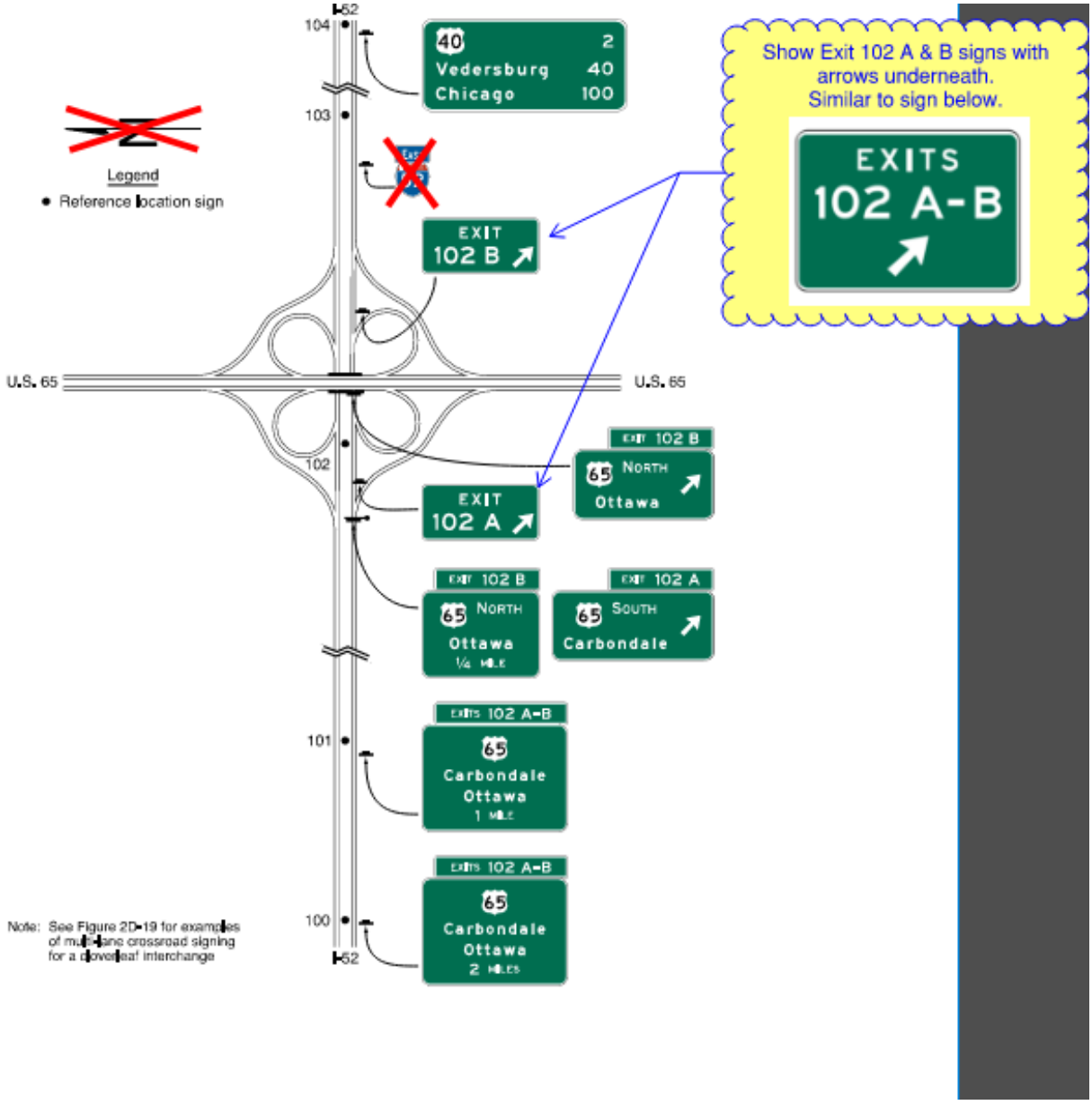
~~**05 Diagrammatic Advance signs shall not be used for cloverleaf interchanges except as otherwise provided in Section 2E.41.**~~

MoDOT does not use Diagrammatic Advance signs. Revised Dec. 2025

Guidance:

06 Where the main roadway passes under the crossroad and the exit roadway is located beyond the overcrossing structure, the placement of the overhead Exit Direction sign for the second exit should comply with Section 2E.25 (see Figure 2E-29).

Figure 2E-29. Example of Guide Signs for a Full Cloverleaf Interchange



Section 2E.34 Cloverleaf Interchange with Collector-Distributor Roadways

Support:

01 An example of guide signs for a full cloverleaf interchange with collector-distributor roadways is shown in Figure 2E-30.

Guidance:

02 Destination names and route numbers shown on the collector-distributor roadway signing should be the same as those used on the upstream Interchange Advance guide signs on the main roadway.

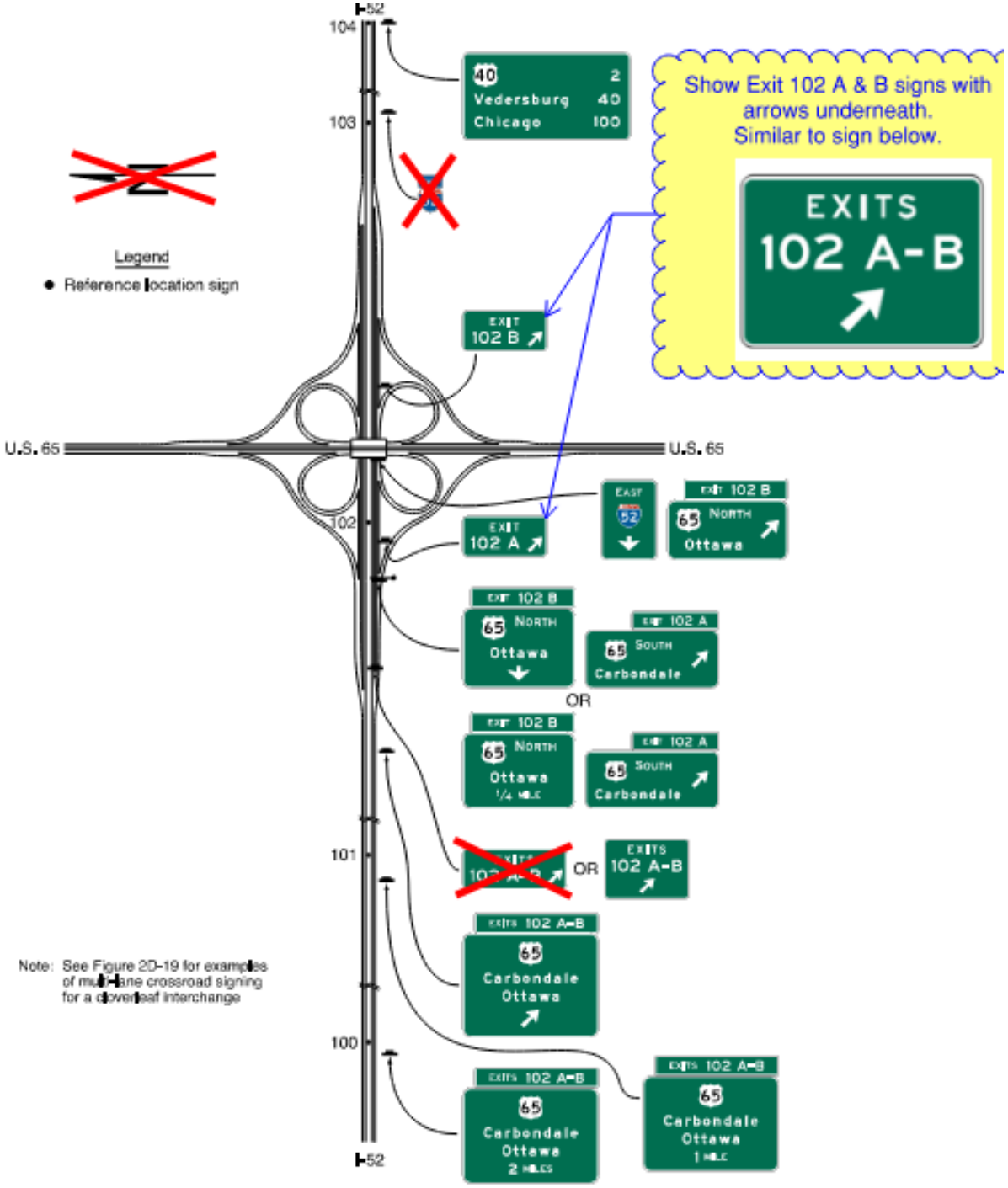
Standard:

03 Exit Direction signs at exits from the collector-distributor roadways shall be overhead and located at the theoretical gore of the collector-distributor roadway and the exit ramp.

Guidance:

04 Exits from the collector-distributor roadways should be numbered with an appropriate suffix. If the exits from a collector-distributor roadway are numbered, the Interchange Advance guide and Exit Direction signs on the main roadway should include, in addition to two place names, their corresponding exit number and suffixes with the plural EXITS in the Exit Number (E1-5P series) plaque. If only the exit from the main roadway is numbered, the Interchange Advance guide and Exit Direction signs on the main roadway should use the singular EXIT in the Exit Number plaque. If interchange exit numbering is not used, the Interchange Advance guide signs on the main roadway should use the singular EXIT in the distance messages.

Figure 2E-30. Example of Guide Signs for a Full Cloverleaf Interchange with Collector-Distributor Roadways



Section 2E.35 Partial Cloverleaf Interchange

Support:

01 An example of guide signs for a partial cloverleaf interchange is shown in Figure 2E-31.

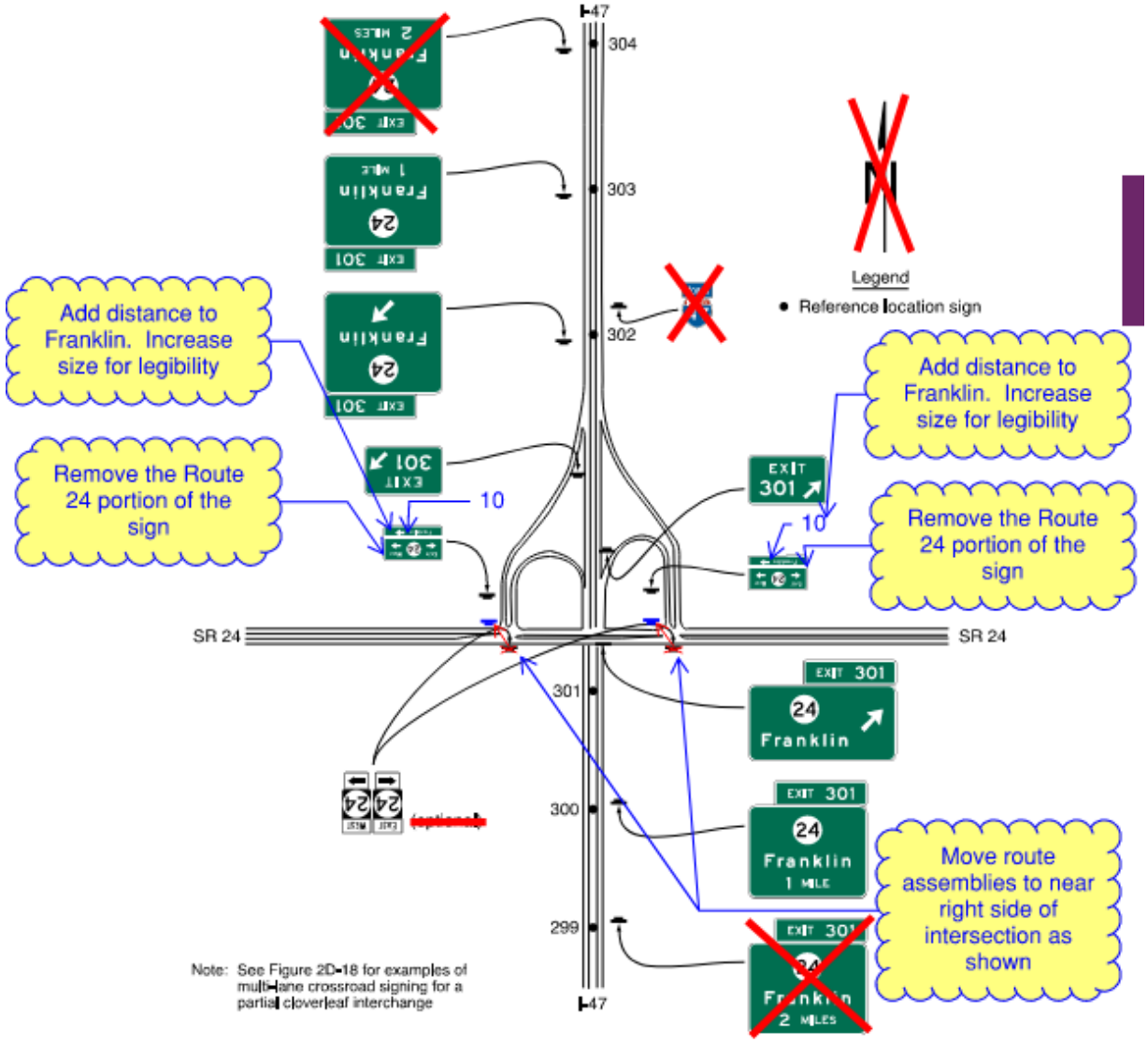
Guidance:

02 For a partial cloverleaf with only one exit roadway in a direction of travel, where the main roadway passes under the crossroad and the exit roadway is located beyond the overcrossing structure, the overhead Exit Direction sign should be placed either on the overcrossing structure (see Figure 2E-31) or on a separate structure located immediately in front of the overcrossing structure.

Support:

03 Partial cloverleaf interchanges with successive exit ramps from the same direction of travel are signed the same as cloverleaf interchanges for that direction of travel (see Section 2E.33).

Figure 2E-31. Example of Guide Signs for a Partial Cloverleaf Interchange



Section 2E.36 Collector-Distributor Roadways for Successive Interchanges

Support:

01 Examples of guide signs for a collector-distributor roadway that provides access to multiple interchanges are shown in Figure 2E-32. Section 2J.09 contains provisions for General Service and Specific Service signs.

Guidance:

02 Where access to successive interchanges is provided from a single collector-distributor roadway, the number of lines of destination information displayed on the major guide signs on the main roadway approach to the collector-distributor roadway should comply with the provisions of Section 2E.15. ~~*Where additional destinations are displayed on the main roadway, those destinations should be displayed on Supplemental guide signs (see Section 2E.51) on the approach to the collector-distributor roadway.*~~

03 Where exit numbering is used, the exit numbers for exits accessed from the collector-distributor roadway should be displayed on the main roadway guide signs.

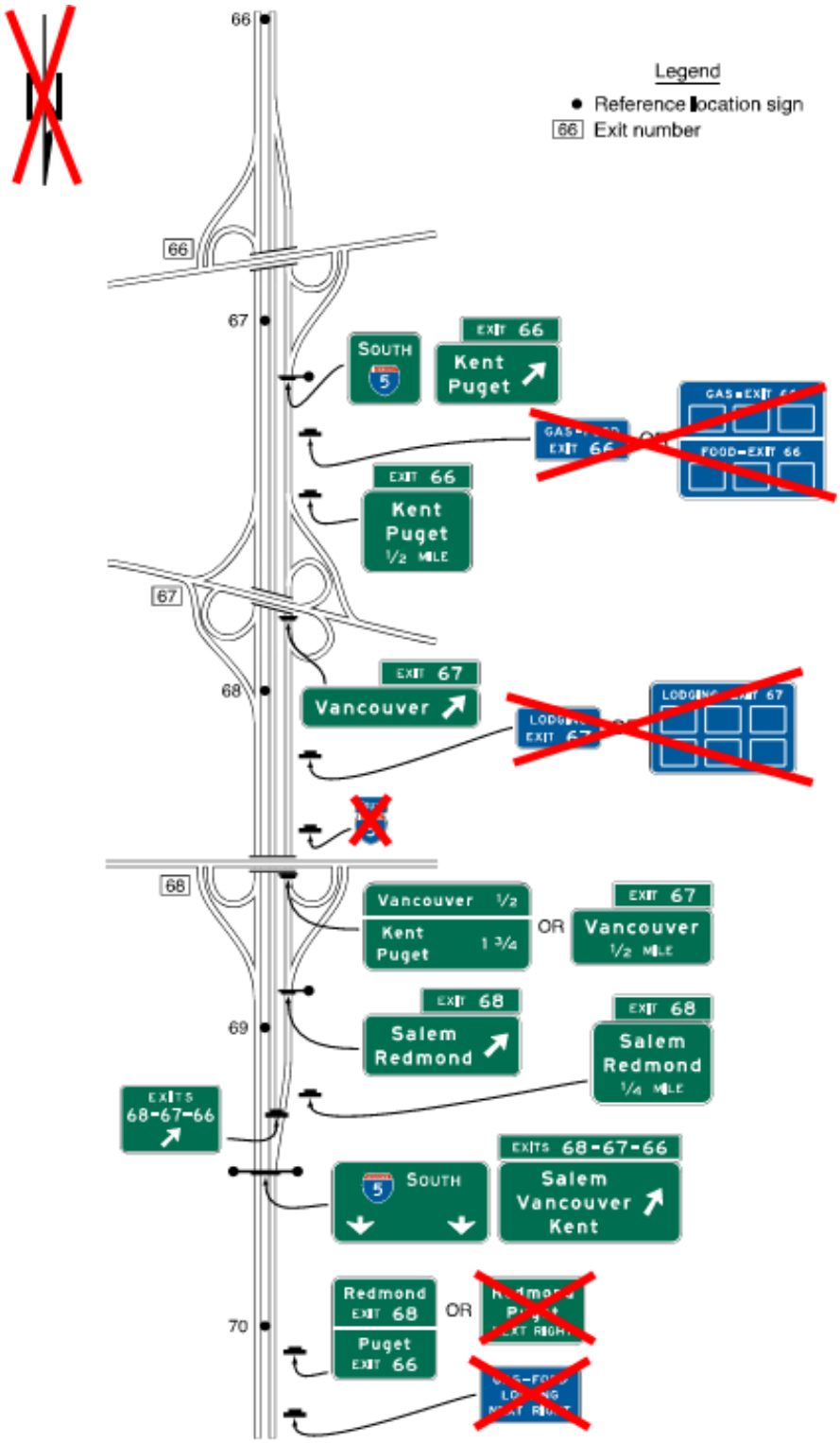
04 An Exit Gore sign (see Section 2E.26) should be placed in the gore where the collector-distributor roadway departs from the main roadway.

05 Interchange guide signing along the collector-distributor roadway should comply with the provisions for interchange signing in ~~*this Chapter*~~ *EPG 903.5.*

Figure 2E-32. Example of Guide Signs for Successive Interchanges With Collector-Distributor Roadways (Sheet 1 of 2)



Figure 2E-32. Example of Guide Signs for Successive Interchanges With Collector-Distributor Roadways (Sheet 2 of 2)



Section 2E.37 Freeway-to-Freeway Interchanges

Support:

01 Freeway-to-freeway interchanges are major decision points where the effect of taking a wrong ramp cannot be easily corrected. Reversing direction on the connecting freeway or reentering to continue on the intended course is usually not possible. Examples of guide signs for freeway-to-freeway interchanges are shown in Figure 2E-33.

Guidance:

02 The sign messages should contain only the route shield, cardinal direction, and the name of the next control city on the route. Arrows should point as indicated in Section 2D.08, except where Overhead Arrow-per-Lane ~~or Diagrammatic Advance~~ signs are used in accordance with the provisions of Sections 2E.39 through ~~2E.41~~2E.40.

Support:

03 An off-route movement is the movement that does not follow the through route. Drivers might not expect the off-route movement to be to the left or an optional lane at a split (see Figure~~s~~ 2E-38~~ and 2E-39~~). Section 2E.22 contains information about the use of the Left Exit Number (E1-5fP through E1-5kP) plaque at splits where the off-route movement is to the left. Sections 2E.39 and 2E.40 contain information about the use of Overhead Arrow-per-Lane guide signs for freeway splits with an option lane and for multi-lane freeway-to-freeway exits having an option lane. ~~Section 2E.41 contains information about the use of a Diagrammatic Advance guide sign for complex geometric configurations at ramp departures.~~

Standard:

04 The roadway for the off-route shall be signed as an exit. If exit numbering is used, the signs shall comply with the provisions of Section 2E.22. Distance messages on the Advance guide signs shall comply with the provisions of Section 2E.23.

05 Overhead signs shall be used at a distance of 1 mile and at the theoretical gore of each connecting ramp. When Overhead Arrow-per-Lane ~~or Diagrammatic Advance guide~~ signs are used, they shall be located in accordance with the provisions of Section~~s~~ 2E.40 ~~and 2E.41, respectively~~.

Option:

06 The Advance guide signs at the ½-mile and 2-mile locations may also be mounted overhead.

Guidance:

07 An Advisory Exit Speed (W13-2) sign should be used where an engineering study shows that it is necessary to display a speed reduction message for ramp signing (see Section 2C.12).

MoDOT does not use diagrammatic signs. Revised Dec. 2025

Figure 2E-33. Example of Guide Signs for Freeway-to-Freeway Interchange (Sheet 1 of 2)

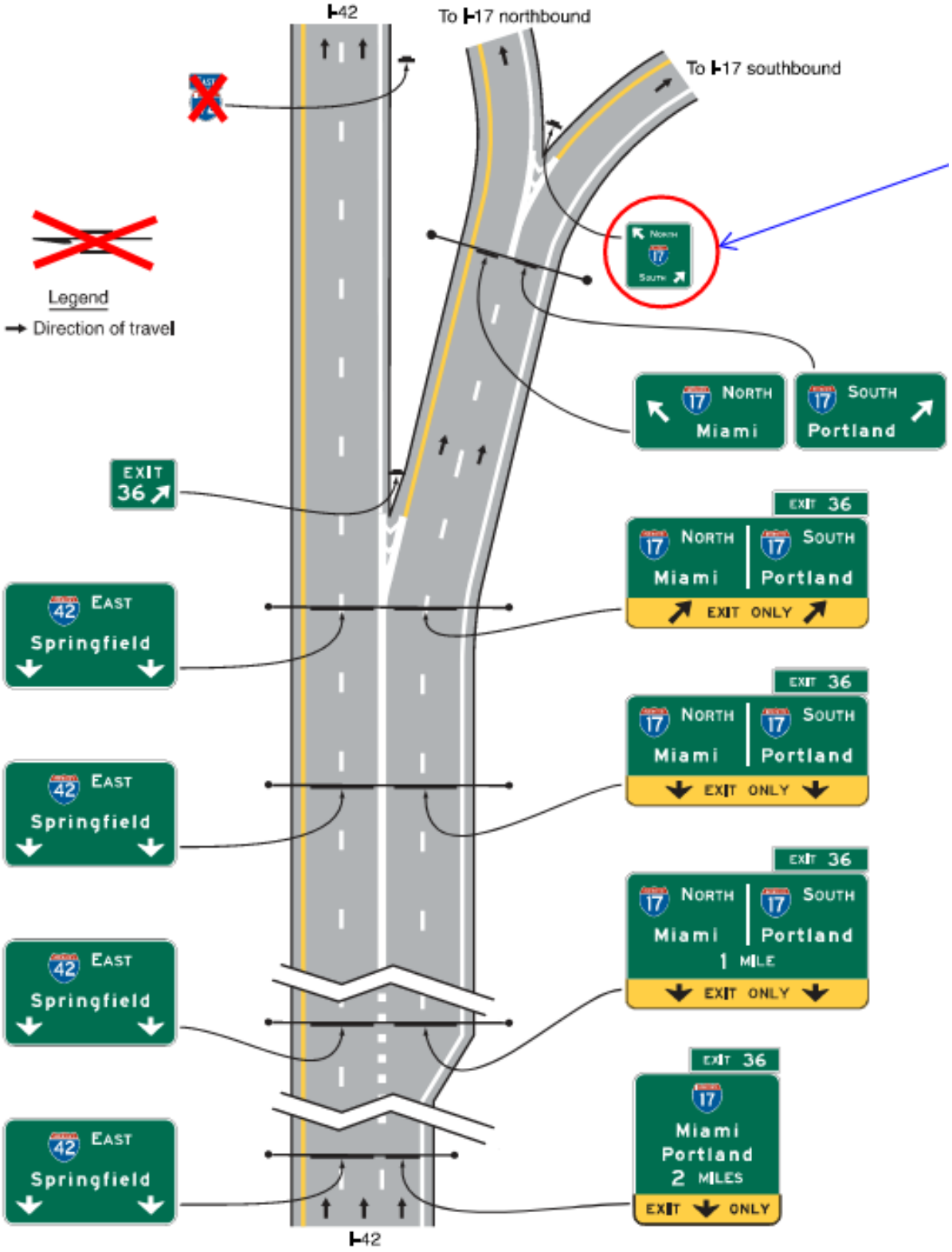
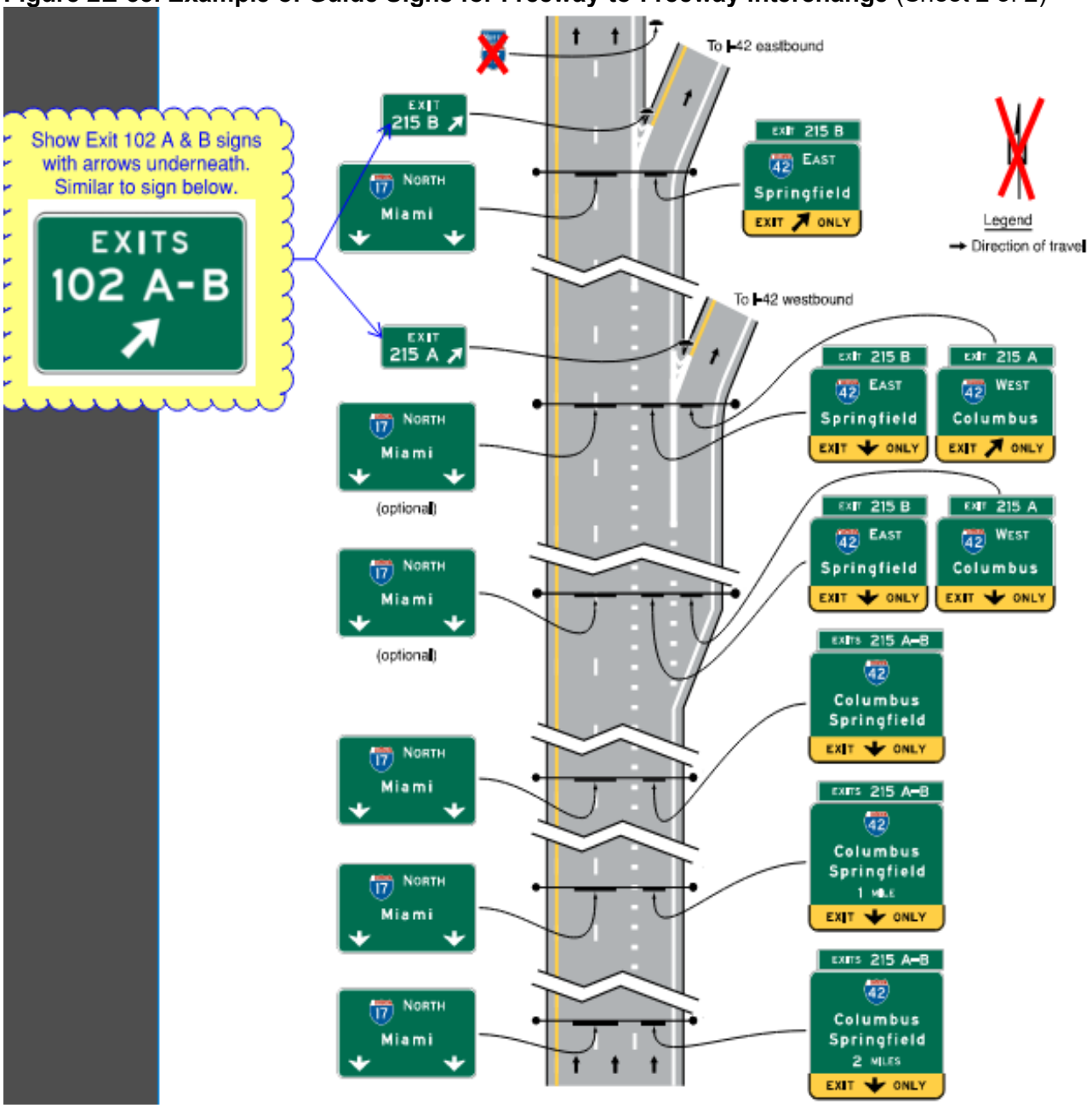


Figure 2E-33. Example of Guide Signs for Freeway-to-Freeway Interchange (Sheet 2 of 2)



Section 2E.38 Freeway Split with Dedicated Lanes

Standard:

01 Signing for freeway splits with dedicated lanes shall use the sign designs shown in Figure 2E-34.

02 The arrows on each Interchange Advance guide sign shall match the number of lanes present at the location of the Advance guide sign.

03 The signs for this application shall be mounted overhead. When arrows are used, each arrow shall be located over the approximate center of the lane to which it applies.

04 Where one roadway of the split carries the through route, the other roadway of the split shall be signed as an exit. If exit numbering is used, the signs shall comply with the provisions of Section 2E.22. Distance messages on the Advance guide signs shall comply with the provisions of Section 2E.23.

05 The number and location of Advance guide signs shall comply with the provisions of Section 2E.23.

Guidance:

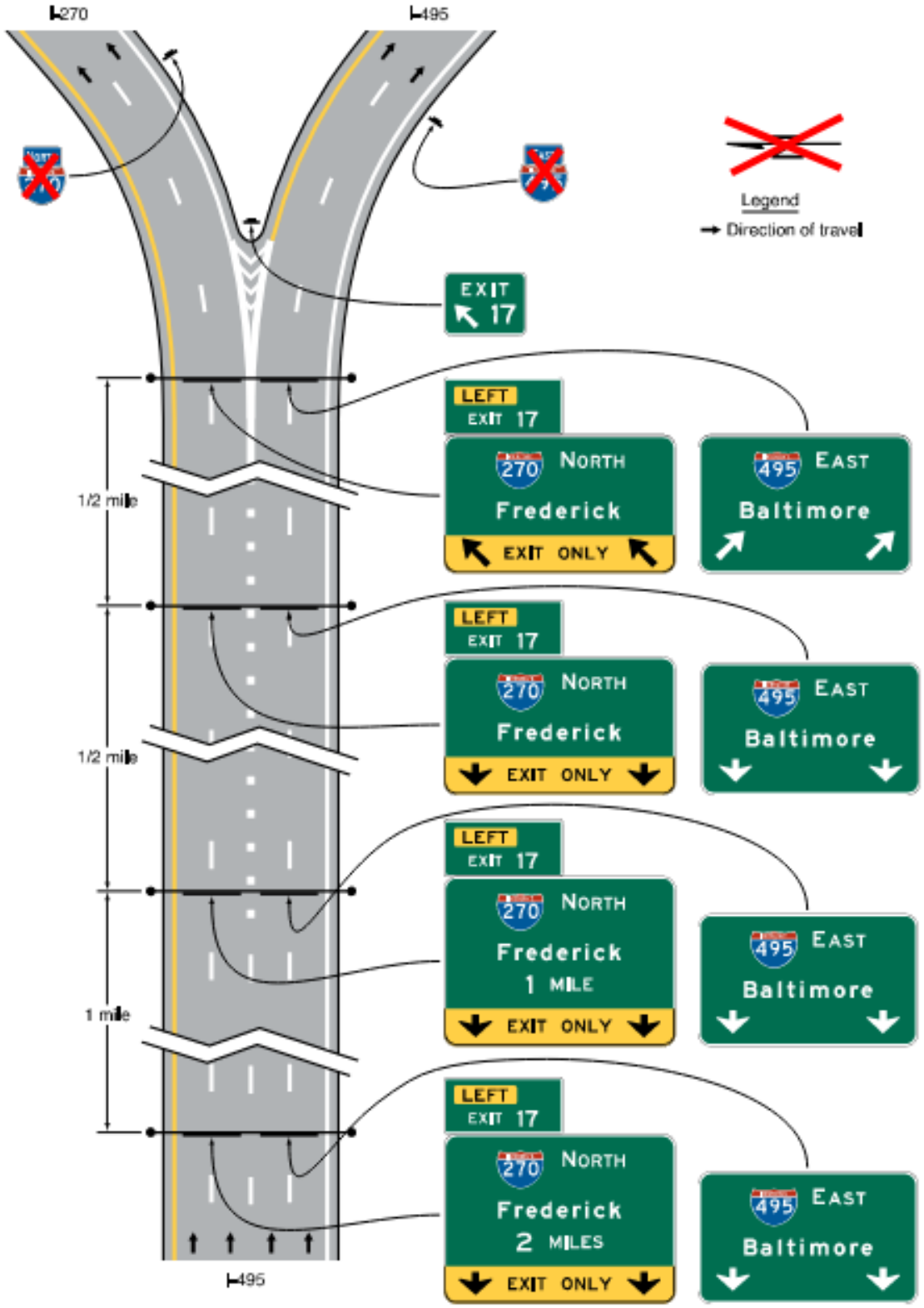
06 The Exit Direction and Pull-Through signs should be located at the theoretical gore.

07 The Exit Direction and Pull Through signs should display down arrows if the alignment is straight or diagonal upward-pointing directional arrows if the alignment is curved (see Section 2D.08).

Standard:

08 The Exit Direction sign shall contain the EXIT ONLY (E11-1 series) sign panel (see Section 2E.28).

Figure 2E-34. Example of Guide Signs for a Split with Dedicated Lanes



Section 2E.39 Signing for Option Lanes at Splits and Multi-Lane Exits

Support:

01 Some freeway and expressway splits or multi-lane exit interchanges contain an interior option lane serving both movements in which traffic can either leave the route or remain on the route, or choose either destination at a split, from the same lane.

Standard:

02 On freeways and expressways, ~~either the~~ Overhead Arrow-per-Lane guide sign designs as provided in Section~~s~~ 2E.40 ~~and 2E.41~~ shall be used for all multi-lane exits at ~~major~~ interchanges (see Section 2E.11) that have an optional exit lane that also carries the through route (see Figures 2E-36~~,~~ and 2E-37~~, and 2E-42~~) and for all splits that include an option lane (see Figure 2E-38). Overhead Arrow-per-Lane guide signs shall not be used on freeways and expressways for any other types of exits or splits, including single-lane exits and splits that do not have an option lane.

~~*Guidance:*~~

~~*03 The Overhead Arrow-per-Lane guide sign design (see Section 2E.40) should also be considered for multi-lane exits with an option lane at intermediate interchanges (see Section 2E.11) based on such factors as the extent of the need to optimize the mainline operation by maximizing the usage of the option lane, the extent of the period(s) of the day during which the exiting volumes warrant the multi-lane exit arrangement, and the nature of the traffic that primarily uses the option lane during the high-volume periods.*~~

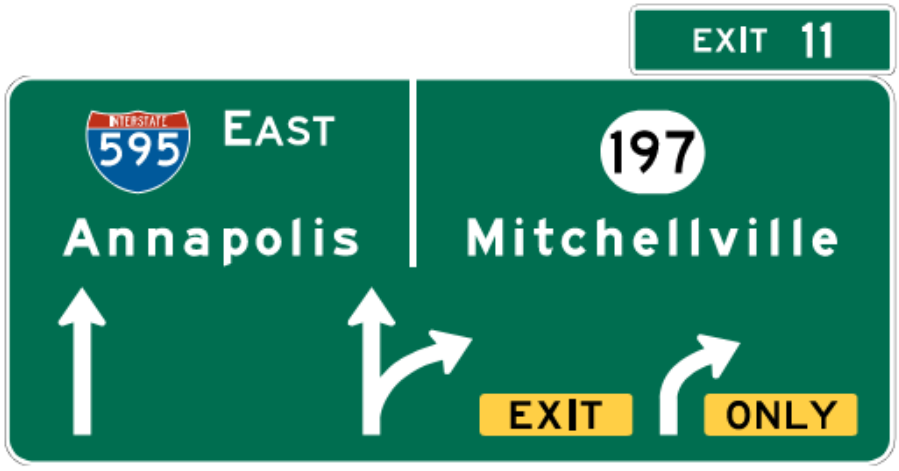
~~*04 Signing at intermediate interchanges (see Section 2E.11) that have an optional exit lane at which it has been determined that the Overhead Arrow-per-Lane guide sign design is not warranted or at multi-lane exits at minor interchanges (see Section 2E.11) that have an optional exit lane should use signing in accordance with the provisions of Section 2E.42.*~~

Section 2E.40 Design of Overhead Arrow-per-Lane Guide Signs for Option Lanes

Support:

01 Overhead Arrow-per-Lane guide signs (see Figure 2E-35) are used where an option lane is present at freeway and expressway multi-lane exit interchanges and splits. They display an upward-pointing arrow above each lane that conveys the direction(s) of travel that the lane serves at the point of departure. At locations where an option lane is present at a multi-lane exit or split, Overhead Arrow-per-Lane guide signs have been shown to be superior to other guide sign designs because they convey positive direction about which destination and direction each approach lane serves, particularly for the option lane, which is otherwise difficult to clearly sign.

Figure 2E-35. Example of an Overhead Arrow-per-Lane Guide Sign for a Multi-Lane Exit with and Option Lane



Standard:

02 Overhead Arrow-per-Lane guide signs as provided in Section 2E.39 shall be used at all new or reconstructed freeway and expressway locations and at freeway and expressway locations where replacement of existing sign support structures is necessitated by reconstruction. The Overhead Arrow-per-Lane guide sign at the exit or split shall be located at or in the immediate vicinity of the point where the exiting lanes begin to diverge from the through lanes or, for a split, at the point where the approach lanes begin to diverge from one another, preserving the relation of the arrows displayed on the sign to their respective lanes. The Overhead Arrow-per-Lane guide sign at the exit shall not be located at or near the theoretical gore.

Option:

03 At existing or non-reconstructed locations where an overhead Exit Direction sign exists at the theoretical gore, and the existing sign support structure is retained, an overhead Exit Direction sign may continue to be used on the existing sign support structure in conjunction with a replacement of the advance signs using the Overhead Arrow-per-Lane guide sign design.

Standard:

04 If an existing Exit Direction sign is being retained at an interchange as provided in ~~Paragraph 3 of this Section~~ the previous paragraph, an Overhead Arrow-per-Lane guide sign shall not be used at the location of the Exit Direction sign at or in the vicinity of the theoretical gore. New installations of Exit Direction and Pull-Through signs shall not be permitted in conjunction with Overhead Arrow-per-Lane guide signs on new or reconstructed facilities.

Guidance:

05 Overhead Arrow-per-Lane guide signs should be located at approximately ½ mile and 1 mile in advance of the exit or split, and at approximately 2 miles in advance of the exit or split where space is available and conditions allow.

Standard:

06 Overhead Arrow-per-Lane guide signs used on freeways and expressways shall be designed in accordance with the following criteria:

- **A. ~~Except as provided in Section 2E.42 for partial width Overhead Arrow-per-Lane signs, t~~The sign shall include an upward-pointing (vertical, curved, or bifurcated) arrow for each lane of the approach to the split or exit.**
- **B. The shaft of each arrow shall be located over the approximate center of the lane to which it applies.**
- **C. Arrows for continuing through lanes shall be vertically upward-pointing (see Figure 2E-36) unless the continuing through lanes are on a significantly curved alignment beyond the theoretical gore (see Figure 2E-37).**
- **D. The arrow for a lane that must exit shall be curved in the direction of the exit and shall be accompanied by black-on-fluorescent yellow EXIT (E11-1a) and ONLY (E11-1b) sign panels adjacent to the lower end of the arrow shaft. The E11-1a and E11-1b sign panels shall not be used for a split of two overlapping routes where neither of the diverging routes is designated as an exit. Where the through lanes curve and the exit continues on a straight alignment, upward-pointing vertical arrows shall be used for the exiting movement and curved arrows for the through movement (see Figure 2E-37).**
- **E. The arrow for an optional exit lane that also carries the through route shall have a single shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow corresponding to the configuration of the through and exit lanes.**
- **F. For splits with an option lane, the arrow for the lane from which either direction of the split can be accessed shall have a single shaft that bifurcates into two upward-pointing curving arrows (see Figure 2E-38).**
- **G. A vertical white line shall be used to separate the route shields and destinations for the two diverging movements from each other.**

H. The distance to the exit or split shall be displayed below the off-movement destination on the advance signs at the 1-mile and 2-mile locations.

I. The number of lanes displayed on a sign shall correspond to the number of lanes at the location of that sign. An advance sign shall not depict lanes that are added downstream of the sign location.

J. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be used at the top of the sign in accordance with Section 2E.23. For unnumbered exits to the left, a LEFT (E1-5mP) plaque shall be added on the top left-hand edge of and adjacent to the sign.

Guidance:

07 Overhead Arrow-per-Lane guide signs used on freeways and expressways should be designed in accordance with the following additional criteria:

A. No more than one destination should be displayed for each movement, and no more than two destinations should be displayed per sign.

B. The arrowhead(s) for the diverging movement should be positioned lower on the sign than the arrowhead(s) for the movement that continues straight ahead, independent of which movement carries the through route. Where the movements are freeway or expressway splits rather than exits, the arrowheads should be positioned at approximately the same height on the sign.

C. Route shields, cardinal directions, and destinations should be positioned on the sign such that they are clearly related to the arrowhead(s) for the movement to which they apply.

D. The cardinal direction should be placed adjacent to the route shield for exits or splits leading in a single cardinal direction.

E. The vertical white line that is used to separate the route shields and destinations for the two diverging movements from each other should not descend below the top of the arrowheads for the through lanes, and should be positioned approximately halfway between the diverging arrowheads for the optional movement lane (see Figure 2E-35).

Figure 2E-36. Example of Overhead Arrow-per-Lane Guide Signs for a Two-Lane Exit to the Right with an Option Lane

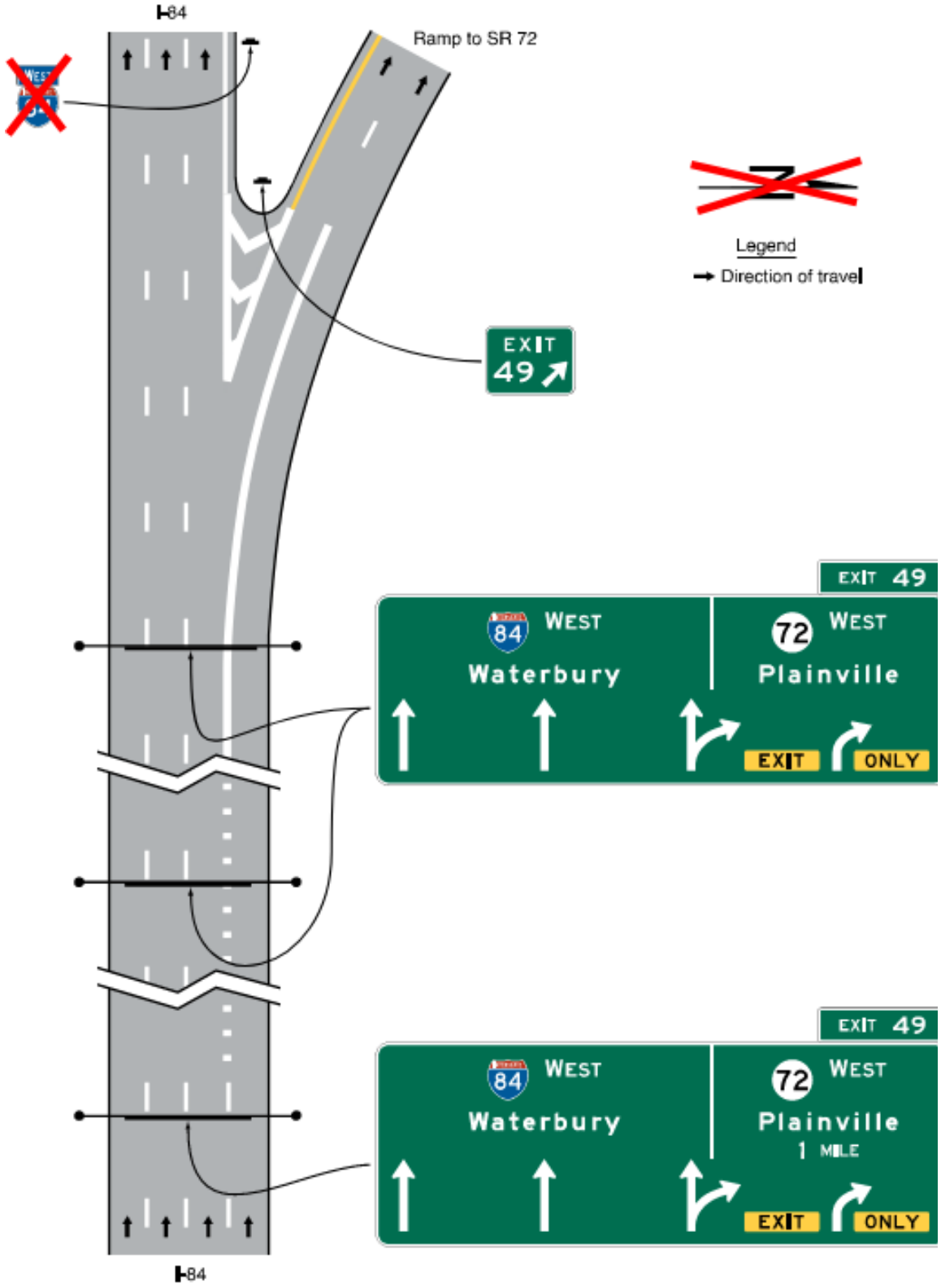


Figure 2E-37. Example of Overhead Arrow-per-Lane Guide Signs for a Two-Lane Exit to the Right with an Option Lane (Through Lanes Curve to the Left)

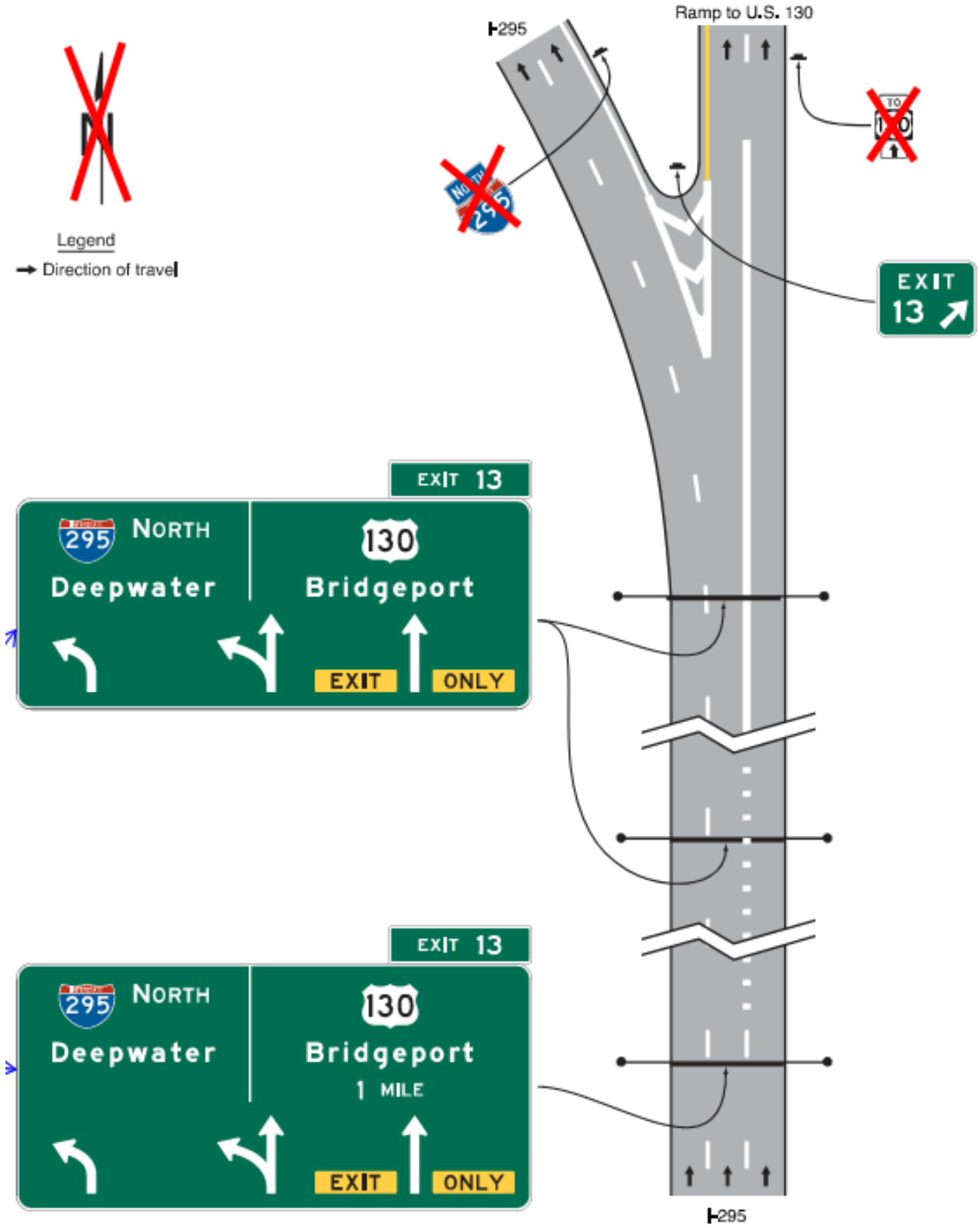
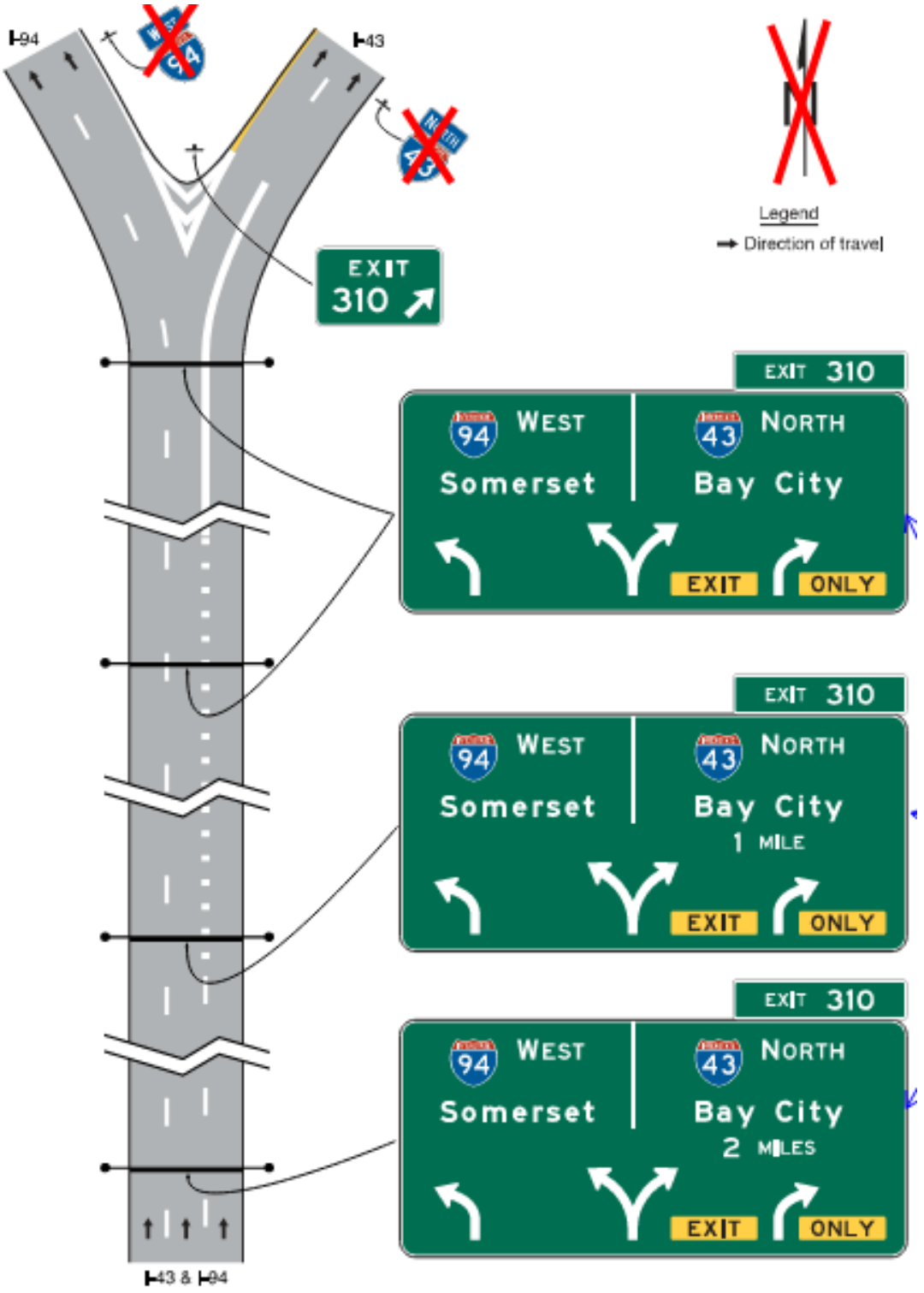


Figure 2E-38. Example of Overhead Arrow-per-Lane Guide Signs for a Split with an Option Lane



Standard:

08 Overhead Arrow-per-Lane guide signs shall not be used to depict a downstream split of an exit ramp on a sign located on the mainline.

Support:

09 Specific ~~guidelines for more~~ detailed design of Overhead Arrow-per-Lane guide signs ~~are contained in the "Standard Highway Signs" publication (see Section 1A.05)~~ will be provided by the Highway Safety and Traffic division.

MoDOT Highway Safety and Traffic division provides designs for all guide signs. Revised Dec. 2025

Standard:

10 The arrow heights for Overhead Arrow-per-Lane guide signs on freeways and expressways shall be as shown in Table 2E-6.

Table 2E-6. Overhead Arrow-per-Lane Arrow Height Based on Principal Legend Letter Height

~~Principle~~ Legend Letter Height	Through Arrow	Turn Arrow	Through with Turn Arrow	Split Arrow
~~20~~ Principal	~~48~~	~~36~~	~~48~~	~~44~~
16 or less	40	30	40	33.33

Note: Letter and arrow heights are shown in inches.

Option:

11 Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to supplement, but not to replace, the exit or ramp advisory speed warning signs.

~~12 Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2 sign panel.~~

MoDOT does use warning beacons with the E13-2 sign panel. Revised Dec. 2025

~~Support:~~

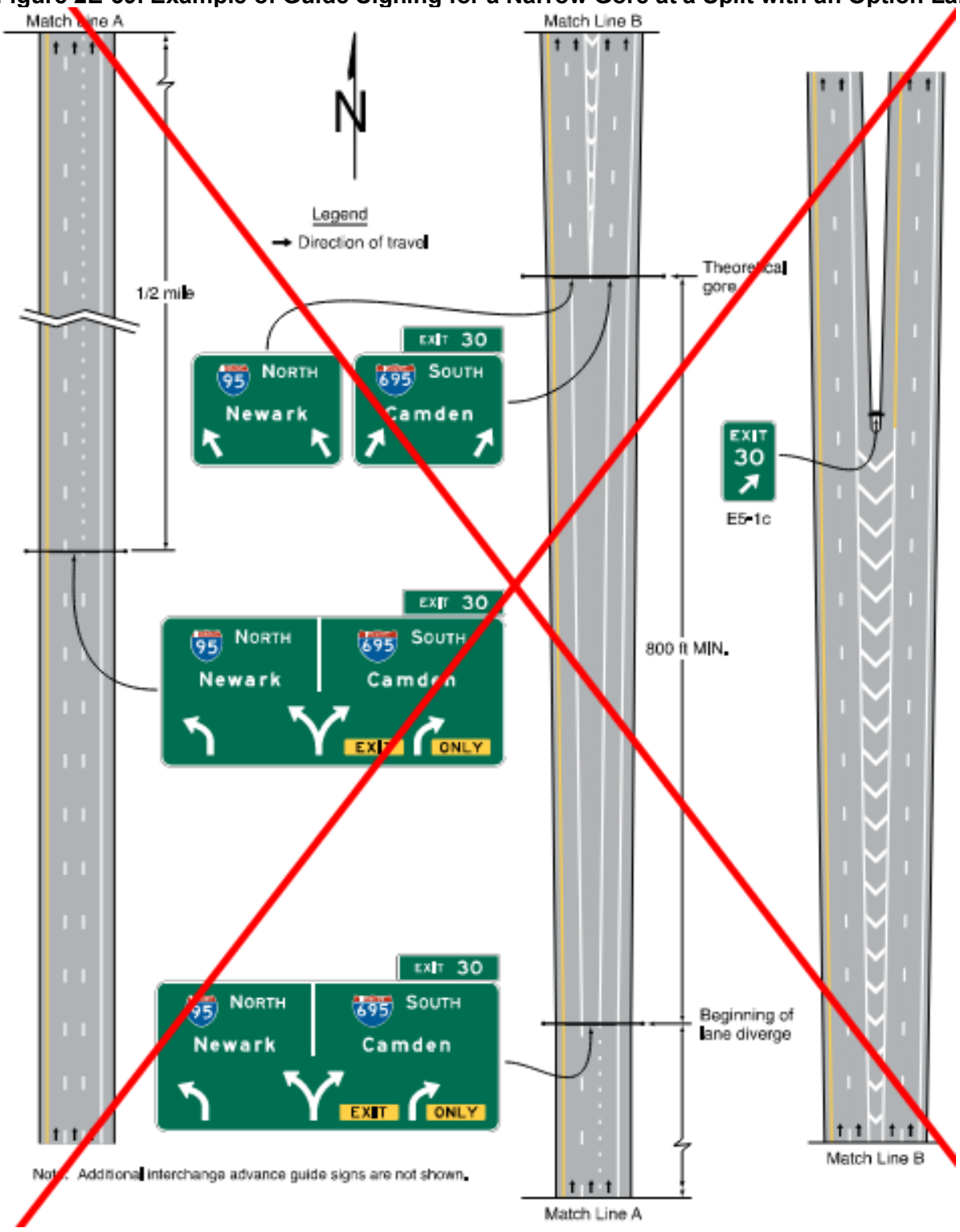
~~13 An example of guide signing for a narrow gore at a split with an option lane is shown in Figure 2E-39, and an example of guide signing for a narrow gore at a two-lane exit with an option lane is shown in Figure 2E-40.~~

~~Option:~~

~~14 Where there is 800 feet or more between the beginning of the lane diverge and the theoretical gore, signs indicating the destinations allowed by each lane may be added in the vicinity of the theoretical gore to reinforce positive guidance (see Figures 2E-39 and 2E-40).~~

MoDOT does not adopt the option for signing narrow gores. Revised Dec. 2025

Figure 2E-39. Example of Guide Signing for a Narrow Gore at a Split with an Option Lane



Section 2E.41 Design of Freeway and Expressway Diagrammatic Advance Guide Signs

Support:

M00 MoDOT no longer uses diagrammatic signs for option lanes. Overhead arrow-per-lane guide signs are used exclusively for this purpose.

~~01 The Diagrammatic Advance guide sign (see Figure 2E-41) is a guide sign that shows a simplified graphic view of the exit departure arrangement in relationship to the main highway at an interchange. Its purpose is to provide advance notice of complex or unexpected road geometry or ramp departures at an interchange and/or depict successive decision points where additional context might be helpful to interpreting the subsequent primary Interchange Advance guide signs. Unlike Diagrammatic signs that were included in previous editions of this Manual, the Diagrammatic Advance guide sign does not depict which or the number of specific lanes that serve a particular destination or depict lanes added or reduced.~~

Figure 2E-41. Example of Diagrammatic Advance Guide Signs



~~Option:~~

~~02 A Diagrammatic Advance guide sign may be used in advance of the interchange guide sign sequence, or in lieu of an Interchange Advance guide sign located 2 miles in advance of the exit, to supplement conventional or Overhead Arrow-per-Lane guide signs used for a downstream interchange.~~

~~Standard:~~

~~03 Diagrammatic Advance guide signs shall be designed in accordance with the following criteria:~~

- **~~A. The graphic legend shall be of a plan view showing a simplified schematic graphic of the relative through and off-ramp movements.~~**
- **~~B. No symbols or route shields shall be used as a substitute for arrowheads.~~**
- **~~C. They shall not be installed at the Exit Direction sign location (see Section 2E.25).~~**
- **~~D. The EXIT ONLY sign panel shall not be used on Diagrammatic Advance guide signs in advance of the interchange.~~**
- **~~E. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be used at the top of the sign in accordance with Section 2E.22. For unnumbered left exits, the LEFT (E1-5aP) plaque shall be used at the top left edge of the sign.~~**
- **~~F. The graphic shall not depict deceleration or auxiliary lanes.~~**
- **~~G. Arrow shafts shall not contain lane lines.~~**
- **~~H. Destination legends for off-movements shall be positioned to the side of the arrow from which the ramp departs.~~**

~~Guidance:~~

~~04 Diagrammatic Advance guide signs used on freeways and expressways should be designed in accordance with the following additional criteria:~~

- *~~A. No more than one destination should be displayed for each movement.~~*
- *~~B. The arrowhead for the diverging movement should be positioned lower on the sign than the arrowhead for the movement that continues straight ahead, independent of which movement carries the through route (see Figure 2E-42). Where the movements are freeway or expressway splits rather than exits, the arrowheads should be positioned at approximately the same height on the sign.~~*
- *~~C. Arrow shaft widths should not vary for different movements.~~*
- *~~D. Route shields, cardinal directions, and destinations should be positioned on the sign such that they are clearly related to the arrowhead(s), and the arrowhead for the off movement should point toward the route shield or, for unnumbered routes, the upper line of destination legend for the off movement.~~*
- *~~E. For exits or splits leading in a single direction, the cardinal direction should be placed adjacent to the route shield, and the destination should be placed below the route shield and cardinal direction.~~*
- *~~F. Where two exits are displayed on a Diagrammatic Advance guide sign, the control destination for the through route should be omitted from the sign.~~*
- *~~G. The distance legend should be placed below the exit destination legend. For splits where neither direction carries a through route, the distance legend should be centered below the diagrammatic arrow. Where successive exits from the same side of the roadway are displayed, the distance legend should be placed below the destination legend for the first exit, with the distance to the second exit omitted. Where successive exits from opposite sides of the roadway are displayed, the distance to the first exit should be centered below the diagrammatic arrow, with the distance to the second exit omitted.~~*

~~Standard:~~

~~05 Diagrammatic Advance guide signs shall not be used at cloverleaf interchanges for the purpose of depicting separate downstream departures from a collector-distributor roadway.~~

~~06 Diagrammatic Advance guide signs located on the main roadway shall not be used to depict a downstream split of an exit ramp.~~

~~Support:~~

~~07 Specific guidelines for more detailed design of Diagrammatic Advance guide signs are contained in the "Standard Highway Signs" publication (see Section 1A.05).~~

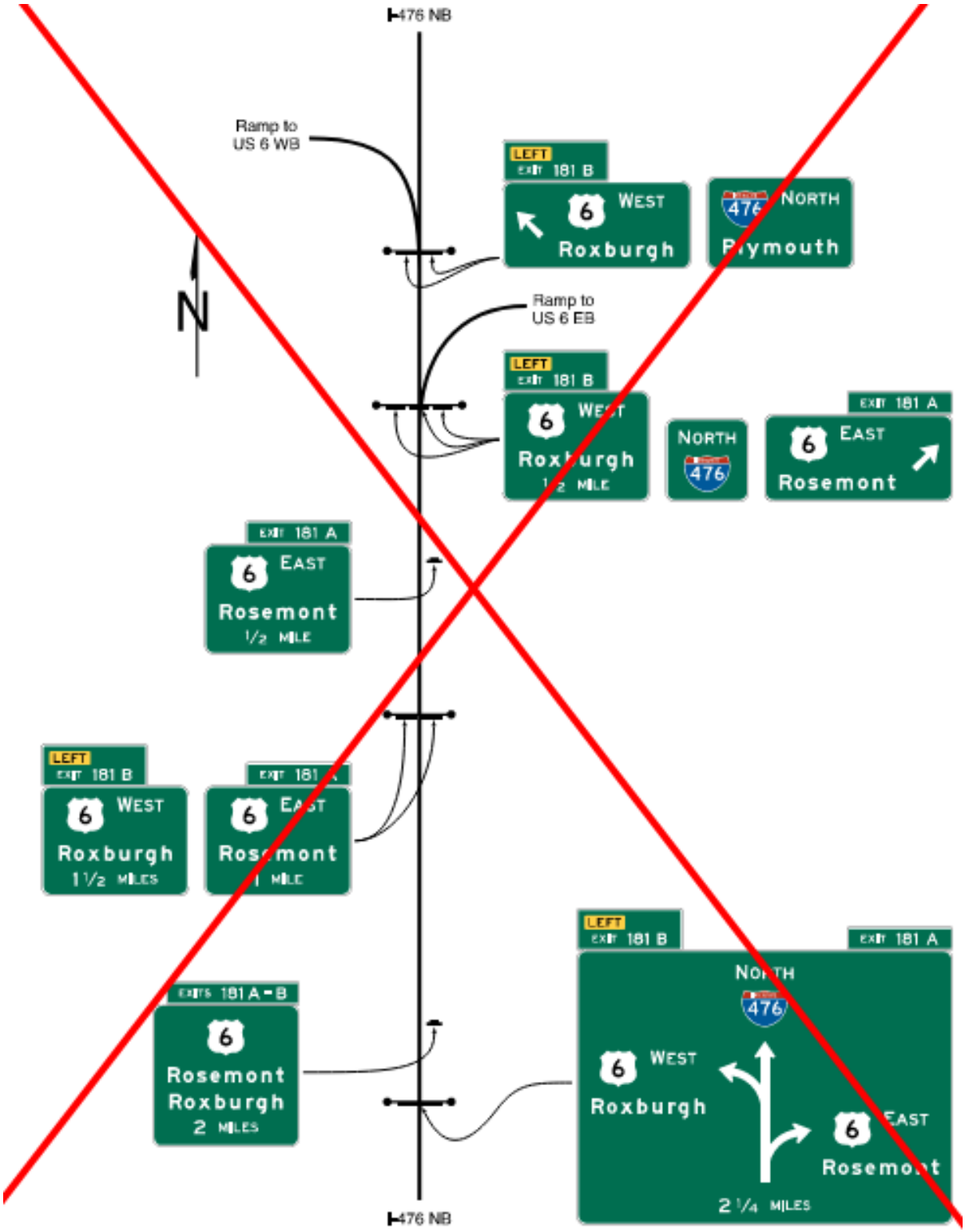
~~Option:~~

~~08 Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to supplement, but not to replace, the exit or ramp advisory speed warning signs.~~

~~09 Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2 sign panel.~~

~~10 Diagrammatic Advance guide signs may be used on any class of roadway and may be modified to depict relative movements for intersections on conventional roads.~~

Figure 2E-42. Example of Diagrammatic Advance Guide Sign Use

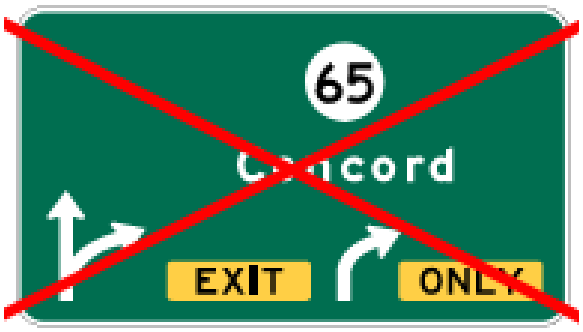


Section 2E.42 Signing for Intermediate and Minor Interchange Multi-Lane Exits with an Option Lane

Support:

01 Intermediate and minor multi-lane exits might have an operational need for the presence of an option lane for only the peak period during which excessive queues might otherwise develop if the option lane were not available. In such cases, the Overhead Arrow-per-Lane guide signing described for option lanes in Sections 2E.39 and 2E.40 might not be practical, depending on the level of use of the option lane and the spacing of nearby interchanges, particularly in non-rural areas.

Figure 2E-43. Example of a Partial-Width Overhead Arrow-per-Lane Guide Sign for Intermediate or Minor Interchanges



Guidance:

02 When full-width Overhead Arrow-per-Lane guide signing is not practical, as described in Paragraph 1 of this Section, signing for an intermediate or minor interchange that has a multi-lane exit with an option lane that also carries the through route should use a partial-width form of the Overhead Arrow-per-Lane guide sign (see Figures 2E-43 through 2E-45). The partial-width Overhead Arrow-per-Lane sign should display arrows only for the option lane and the mandatory exit lane(s) using the same bifurcated arrow type for the option lane and curved arrow type for the exit only lane(s) as are used for the full-width Overhead Arrow-per-Lane sign. The legend displayed for the exit movement should be clearly aligned with the arrows pointing in the direction of the exit and not with the vertical arrow head of the bifurcated arrow depicting the through movement.

Standard:

03 The through route and/or destination shall not be displayed on the partial-width Overhead Arrow-per-Lane guide sign.

04 Partial-width Overhead Arrow-per-Lane signs shall be located in compliance with the provisions of Section 2E.40 for full-width Overhead Arrow-per-Lane signs (see Figures 2E-44 and 2E-45).

Option:

05 At an intermediate or minor interchange that has a multi-lane exit with an option lane that also carries the through route, where full-width Overhead Arrow-per-Lane guide signing is not practical, conventional signing as provided in Paragraphs 7 through 9 of this Section may be used (see Figures 2E-46 and 2E-47).

06 When either full-width or partial-width Overhead Arrow-per-Lane signing is used at existing or non-reconstructed locations where an overhead Exit Direction sign exists at the theoretical gore, and the existing sign support structure is retained, an overhead Exit Direction sign may continue to be used on the existing sign support structure in conjunction with a replacement of the advance signs using the partial-width Overhead Arrow-per-Lane guide sign design (see Figure 2E-44).

Guidance:

07 When conventional signing is used, the option lane should not be signed on the Interchange Advance guide signs. For such exits that involve the addition of an auxiliary lane that is not present at the Interchange Advance guide sign locations, but do not involve a lane drop (see Figure 2E-47), a sequence of post-mounted or overhead-mounted Interchange Advance guide signs should be used, located in accordance with the interchange classification (see Section 2E.11). The Exit Direction sign should be located at the theoretical

~~*gore and should display a diagonally upward-pointing directional arrow above each lane that departs from the mainline alignment. The Exit Direction sign should not contain the EXIT ONLY legend.*~~

~~*08 For such interchanges that also have a lane drop (see Figure 2E-46), the Interchange Advance guide and Exit Direction signs should follow the provisions of Section 2E.28. The Exit Direction sign should be located at the theoretical gore and should contain the EXIT ONLY (E11-1e) sign panel.*~~

~~*09 Where the modified partial-width Overhead Arrow-per-Lane guide signs are not used, the presence of the option lane should be conveyed by the use of post-mounted lane-use (R3-8 series) signs (see Section 2B.30). When used, the R3-8 signs should be of an appropriate size for their application to optimize their conspicuity. The signs should be located in succession with the Interchange Advance guide signs, where the option and exit lanes have developed (see Figure 2E-46). In cases where the exiting lane or lanes have not developed and the option lane is created by the addition of an auxiliary lane that exits, the R3-8 signs should be located only adjacent to where the lanes have been fully developed and not in advance of the lane or along its transition (see Figure 2E-47).*~~

~~Support:~~

~~10 The use of a down arrow on overhead freeway or expressway guide signs has been shown to be misinterpreted by road users as an indication of a dedicated lane.~~

~~**Standard:**~~

~~**11 Interchange Advance guide signs that are mounted overhead shall not display a down arrow over an option lane.**~~

MoDOT does not use partial-width overhead arrow-per-lane signs. Revised Dec. 2025

Figure 2E-44. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with an Option Lane and a Dropped Lane using Partial-Width Overhead Arrow-per-Lane Signs

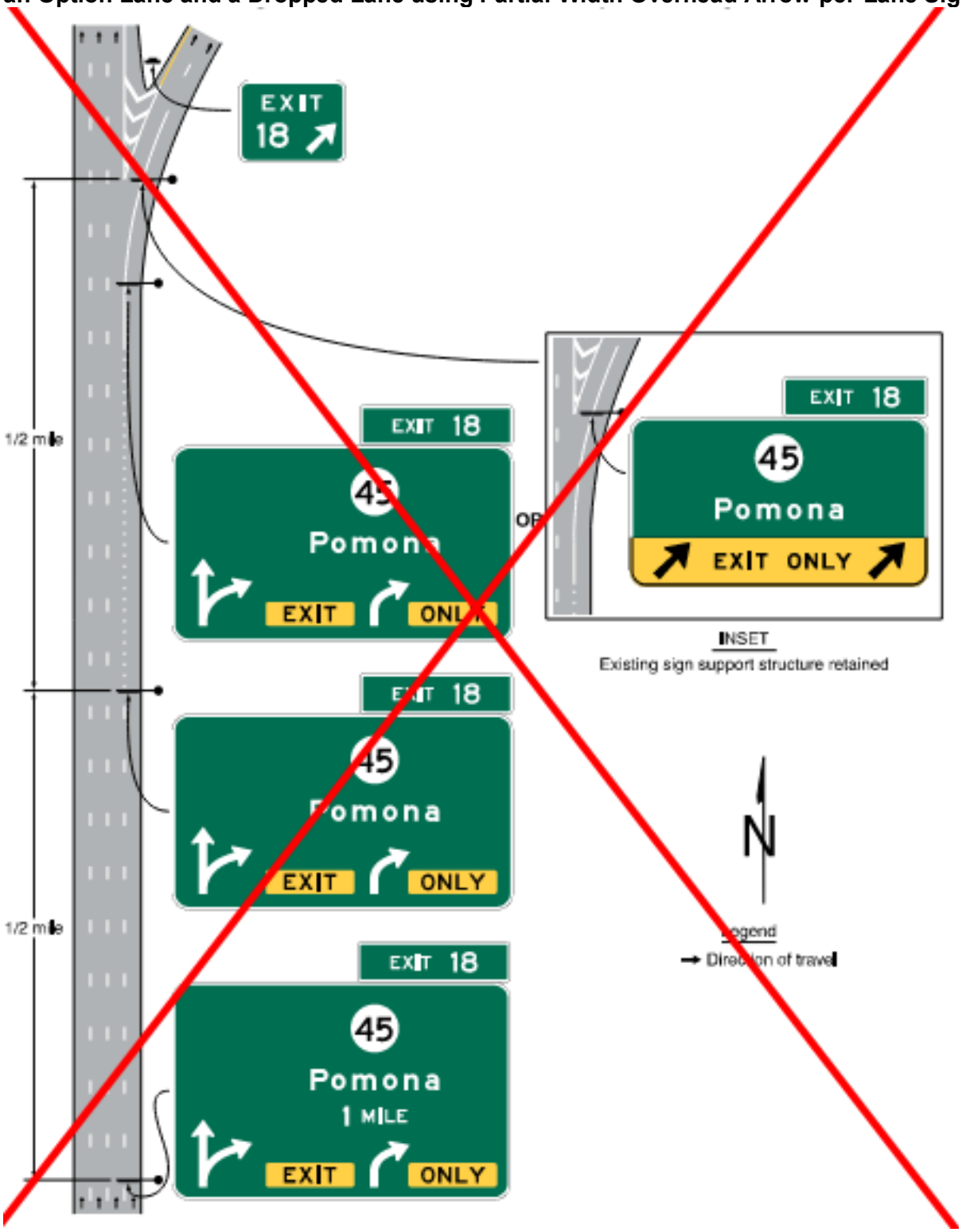


Figure 2E-45. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with an Option and Auxiliary Lanes using Partial-Width Overhead Arrow-per-Lane Signs

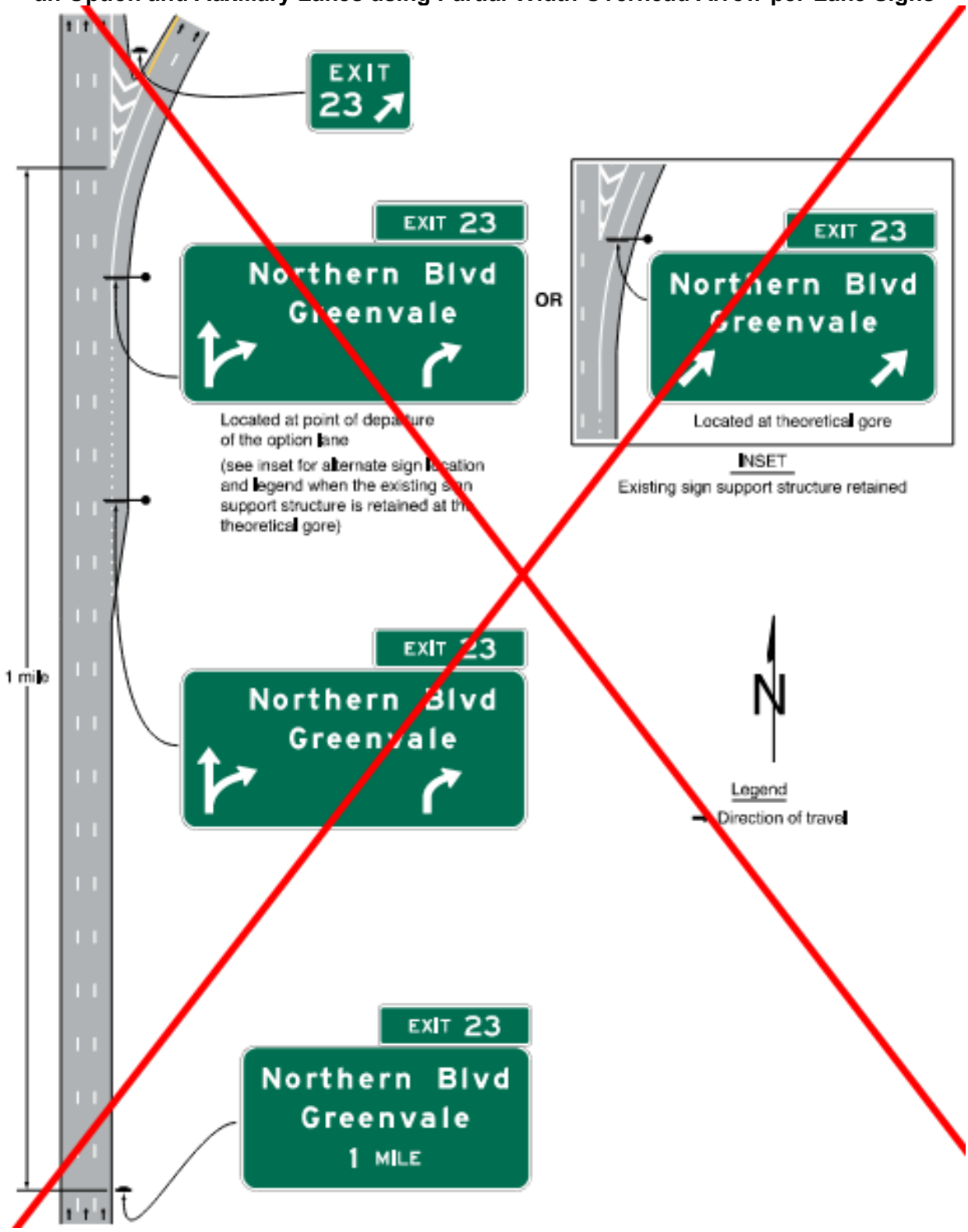


Figure 2E-46. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with an Option Lane and a Dropped Lane

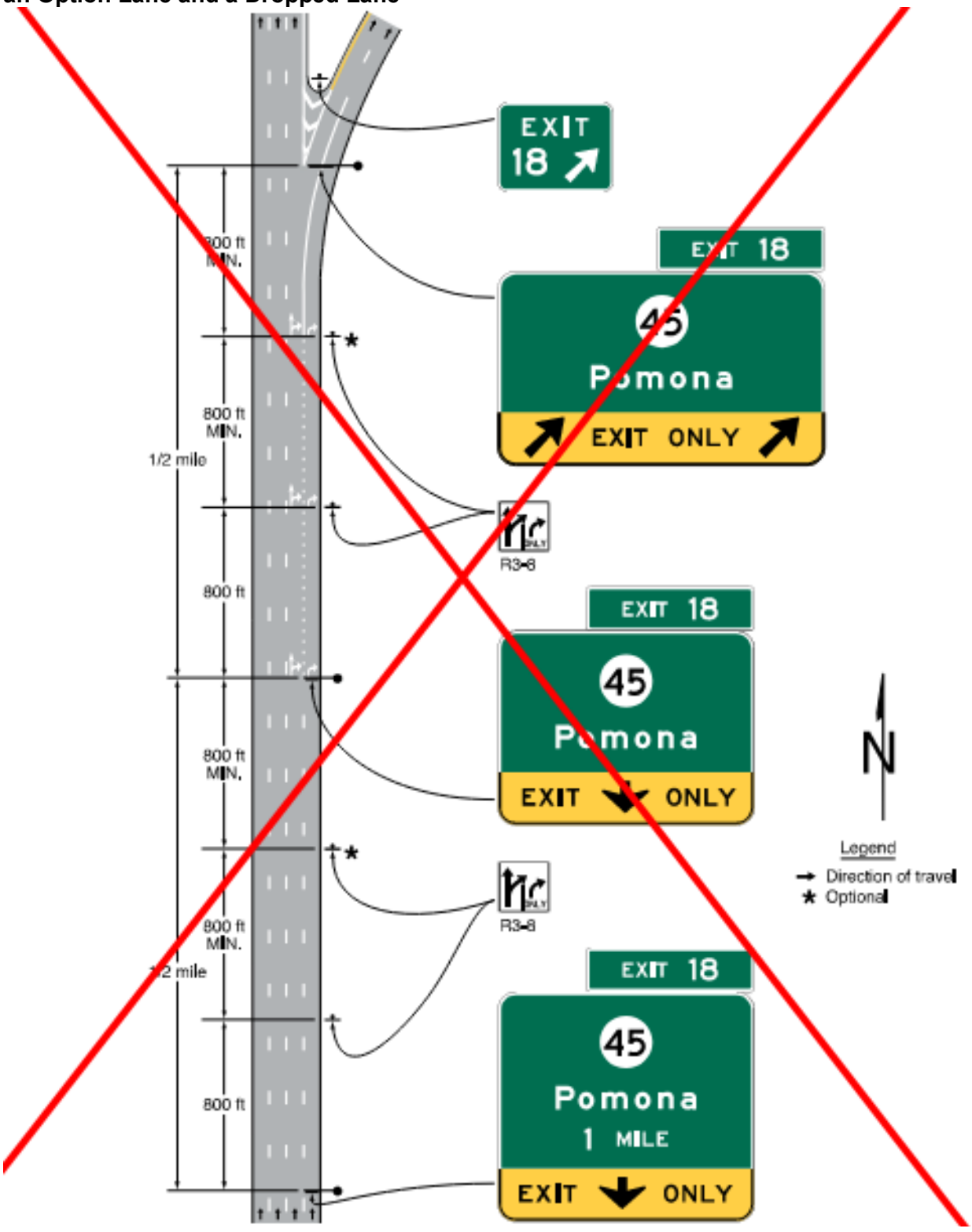
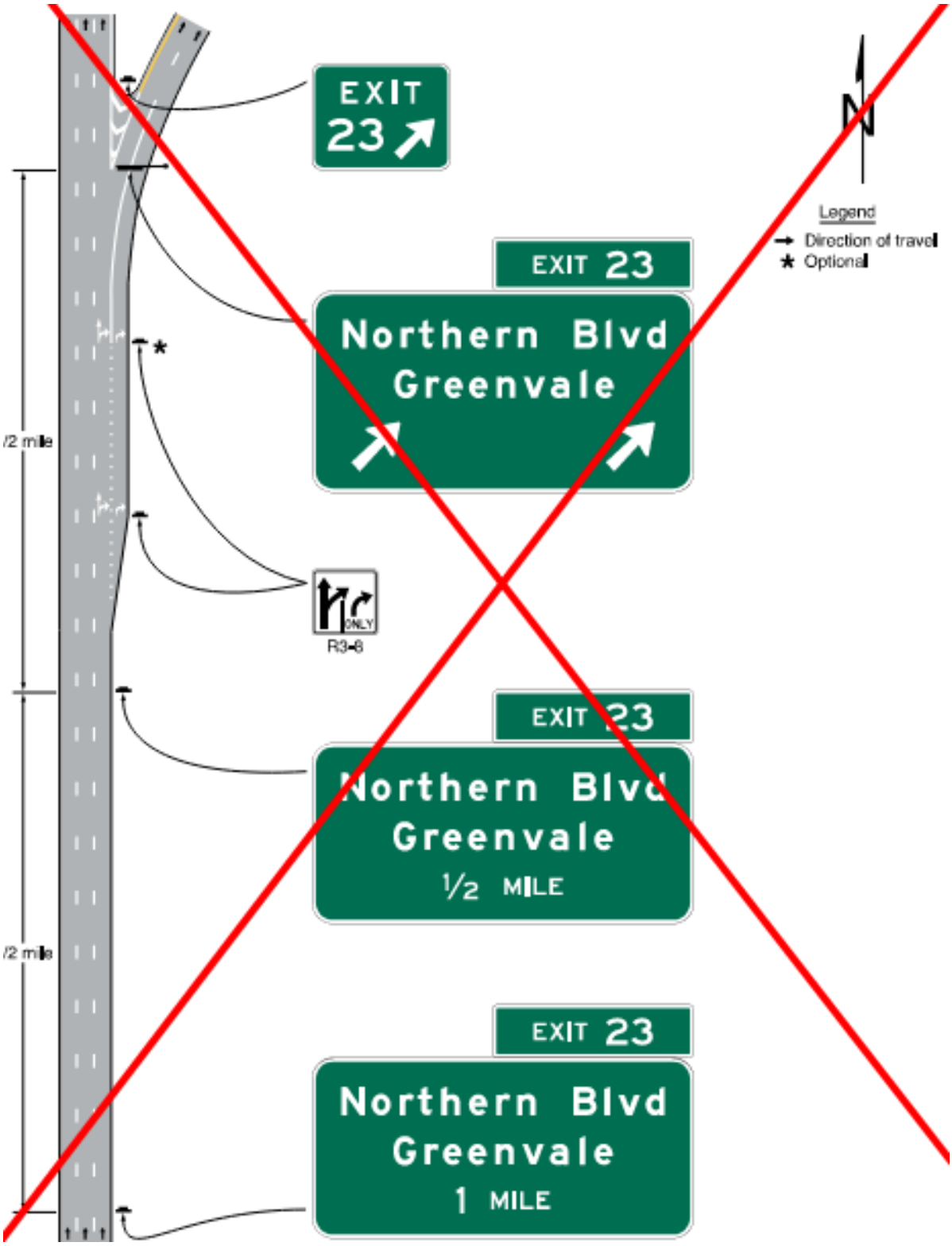


Figure 2E-47. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with an Option Lane and Auxiliary Lanes



Section 2E.43 Number of Signs at an Overhead Installation and Sign Spreading

Guidance:

01 If overhead signs are warranted, as set forth in Section 2A.13, the number of signs at these locations should be limited to only those essential in communicating pertinent destination information to the road user. Exit Direction signs for a single exit and the Interchange Advance Guide signs should have only one sign with one or two destinations. Regulatory signs, such as speed limits, should not be used in conjunction with overhead guide sign installations. Because road users have limited time to read and comprehend sign messages, there should not be more than three guide signs displayed at any one location either on the overhead structure or its support for one direction of travel.

Option:

02 At overhead locations, more than one sign may be installed to advise of a multiple exit condition at an interchange. If the roadway ramp or crossroad has complex or unusual geometrics, additional signs with confirming messages may be provided to properly guide the road user.

Support:

03 Sign spreading is a concept where major overhead signs are spaced so that road users are not overloaded with a group of signs at a single location. ~~Figure 2E-48 illustrates an example of sign spreading.~~

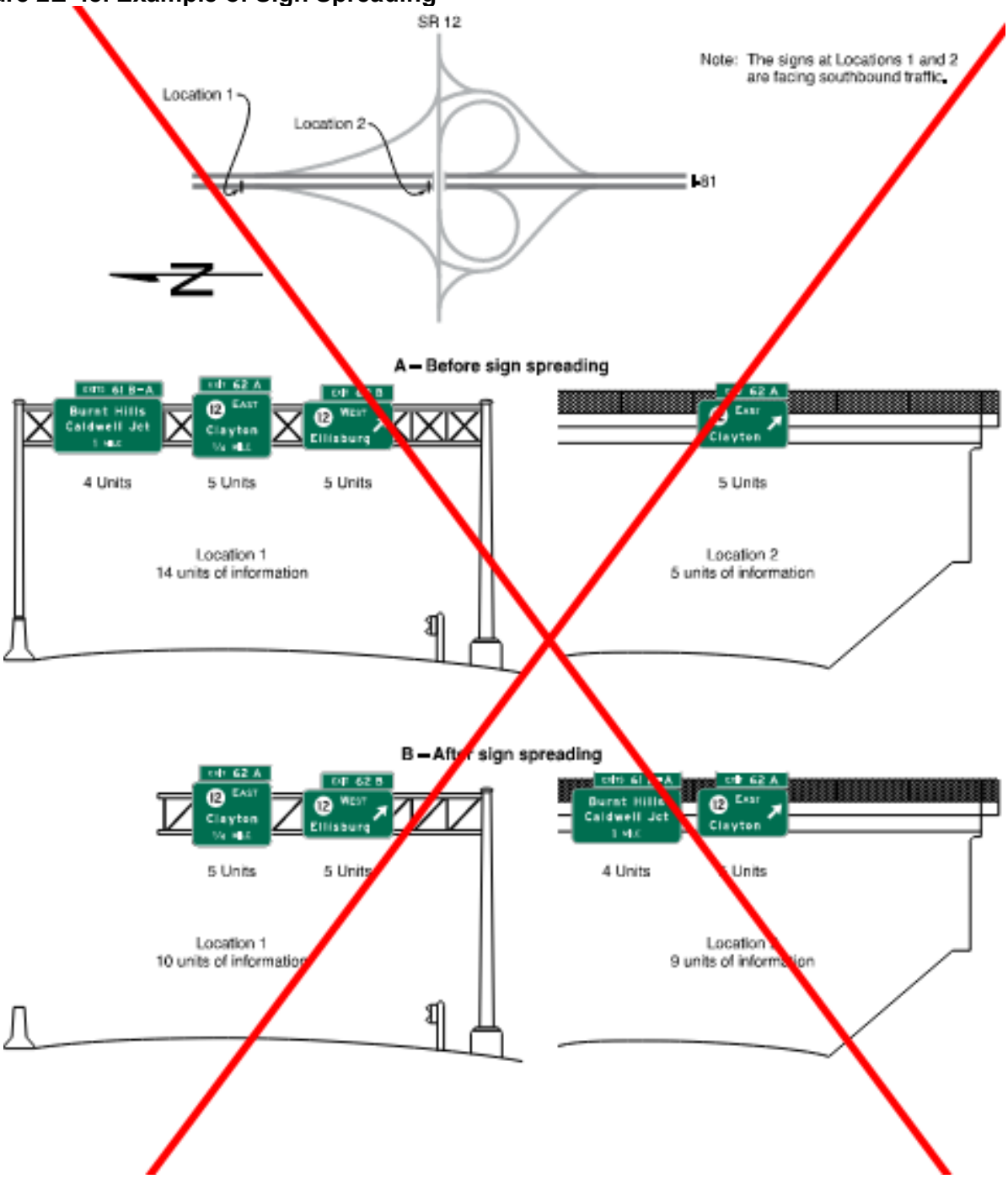
Guidance:

04 Where overhead signing is used, sign spreading should be used at all single-exit interchanges and to the extent possible at multi-exit interchanges. Sign spreading should be accomplished by use of the following:

A. The Exit Direction sign should be the only guide sign used in the vicinity of the gore (other than the Exit Gore sign). It should be located overhead near the theoretical gore and generally on an overhead sign support structure.

B. The Interchange Advance guide sign to indicate the next interchange exit should be placed near the crossroad location. If the crossroad goes over the mainline, the Interchange Advance guide sign should be placed on the overcrossing structure or on a separate structure immediately in front of the overcrossing structure.

Figure 2E-48. Example of Sign Spreading



Section 2E.44 Closely-Spaced Interchanges

Support:

01 Section 2E.43 contains information regarding sign spreading where the Exit Direction sign and the Interchange Advance guide sign for the next interchange are mounted overhead. Sign spreading is particularly beneficial where interchanges are closely spaced and overhead signing is used in conjunction with Interchange Sequence signs as provided in ~~Paragraph 2 of this Section~~ the following paragraph.

Guidance:

02 Interchange Sequence signs (see Section 2E.24) should be used at closely-spaced interchanges. When used, they should identify and show street names and distances for the next two or three exits as shown in Figure 2E-11.

Standard:

03 Interchange Advance guide signs for closely-spaced interchanges shall show information for only one interchange.

Section 2E.45 Guide Signing in Tunnels and Similar Structures

Support:

01 The application of the provisions for freeway and expressway guide signs in tunnels and other similar structures can present unique challenges not encountered elsewhere due to the extended and continuous distances of constrained vertical and horizontal clearances in which to place signs. The effect of these constraints is particularly evident when there are interchange exit ramps inside the tunnel that require guide signing. As a result, it might not always be possible to use the typical layouts for guide signs inside a tunnel. In addition, interchange guide signs might need to be limited to one destination only, with other destinations displayed separately on Supplemental guide signs (see Section 2E.51). Acceptable methods to modify the layout of a sign to fit the space available in a tunnel are provided in ~~Paragraph 2 of this Section~~ the following paragraph.

Option:

02 Overhead-mounted guide signs in tunnels, or in other similar structures with extended constrained vertical and horizontal clearances, may be modified in accordance with the following when needed to accommodate limited vertical clearance available for signs:

A. Some sign legend elements may be arranged side by side, such as by placing route shields to the left of the destination instead of above.
B. The Exit Number plaque (see Section 2E.22) may be placed at the right-hand edge of the sign for right exits or at the left-hand edge of the sign for left exits instead of at the top edge of the sign. The legend of the Exit Number plaque may use a reduced letter height of not less than 6 inches for the word EXIT(S) and not less than 12 inches for numerals and suffixes.
C. Destination and roadway names may be displayed in reduced letter heights with an initial upper-case letter of not less than 10.67 inches, when determined acceptable based on consideration of reduced speed and other relevant factors, while maintaining adequate space between the legend and edges of the sign to ensure legibility and quick recognition.
D. Unusually long destination and roadway names that cannot be adequately shortened or otherwise acceptably abbreviated may be displayed using Series D letters in lieu of Series E(modified).

Standard:

03 Applicability of the provisions of ~~Paragraph 2 of this Section~~ the previous paragraph shall be limited to those signs within the limits of the tunnel or other similar structure and shall not be extended to the approaches to or departures from the tunnel.

Support:

04 Unlike typical guide signs that are exposed to rain, guide signs in tunnels accumulate grime and residue quickly. This accumulation can reduce visual contrast between legend and background and reduce the retroreflectivity of the sign sheeting. Therefore, guide signs in tunnels generally need more maintenance.

Guidance:

05 Overhead signs in tunnels should have external or internal sign illumination to ensure adequate visibility between scheduled maintenance and cleanings.

06 One or more Interchange Sequence signs (see Section 2E.24) should be used on the approach to the tunnel entrance to display the distances to the next interchanges that have exit ramps inside the tunnel or immediately following the end of the tunnel.

07 Supplementary pavement markings, such as word, arrow, and/or route shield markings, should be considered inside the tunnel in addition to the basic lane and edge line markings.

Section 2E.46 Next Exit Plaques (E2-1P and E2-1aP)

Option:

01 Where the distance to the next interchange is ~~unusually long~~5 miles or more, a Next Exit (E2-1P or E2-1aP) plaque ~~(see Figure 2E-49)~~ may be installed to inform road users of the distance to the next interchange.

Figure 2E-49. Next Exit Plaques



Guidance:

02 The Next Exit plaque should not be used unless the distance between successive interchanges is more than 5 miles.

03 Where the Next Exit plaque is used, the E2-1P plaque should be used where the width of the Interchange Advance guide sign is equal to or greater than the width of the E2-1P plaque. The E2-1aP plaque should be used where the width of the E2-1P plaque exceeds the width of the Interchange Advance guide sign.

Standard:

04 The Next Exit plaque shall display the legend NEXT EXIT XX MILES. If the Next Exit plaque is used, it shall be placed below the Interchange Advance guide sign nearest the interchange. It shall be mounted so as to not adversely affect the breakaway feature of the sign support structure.

Section 2E.47 Post-Interchange Signs

Guidance:

01 If space between interchanges permits, as in rural areas, and where undue repetition of messages will not occur, a fixed sequence of signs should be displayed beginning 500 feet beyond the downstream end of the acceleration lane. At this point a Route Sign assembly should be installed followed by a Speed Limit sign and a Distance sign, each at a spacing of 1,000 feet (see Figure 2E-2).

Option:

M01A On interstates, the route confirmation markers may be omitted due to the existence of the emergency reference markers.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

02 If space between interchanges does not permit placement of these three post-interchange signs without encroaching on or overlapping the Advance guide signs necessary for the next interchange, or in rural areas where the interchanging traffic is primarily local, one or more of the post-interchange signs should be omitted.

Option:

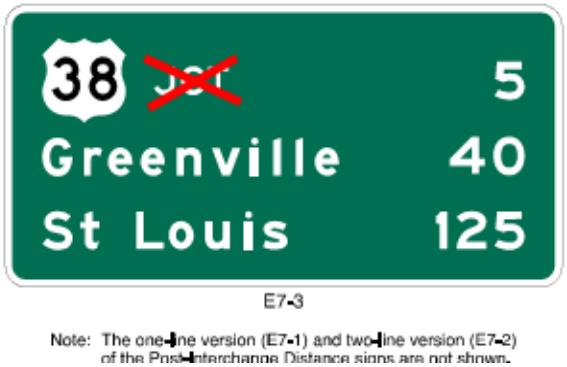
03 Usually the Distance sign will be of less importance than the other two signs and may be omitted, especially if Interchange Sequence signs are used. If the sign for through traffic on an overhead assembly already contains the route sign, the post-interchange route sign assembly may also be omitted.

Section 2E.48 Post-Interchange Distance Signs (E7-1 through E7-3)

Standard:

01 If used, the Post-Interchange Distance sign (see Figure 2E-50) shall consist of a one-line, two-line, or three-line sign displaying the names of significant destination points and the distances to those points. The top line of the sign shall identify the next meaningful interchange with the name of the community near or through which the route passes, or if there is no community, the route number or name of the intersected highway.

Figure 2E-50. Example of a Post-Interchange Distance Sign



Guidance:

M01A Post-Interchange Distance signs should not be used on roadways that use interchange sequence signing.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

02 The minimum sizes of the route shields identifying a significant destination point are prescribed in Tables 2E-3 and 2E-5.

~~Option:~~

~~03 The text identification of a route may be displayed instead of a route shield, such as "U.S. XX," "[State abbreviation] XX" (such as "Del XX"), or "County XX."~~

Guidance:

04 If a second line is used, it should be reserved for communities of general interest that are located on or immediately adjacent to the route or for major traffic generators along the route.

Option:

05 The choice of names for the second line, if it is used, may be varied on successive Distance signs to give road users maximum information concerning communities served by the route.

Standard:

06 The third, or bottom line, shall contain the name and distance to a control city (if any) that has national significance for travelers using the route.

Guidance:

07 Distances to the same destinations should not be shown more frequently than at 5-mile intervals. The distances displayed on these signs should be the actual distance to the destination points and not to the exit from the freeway or expressway. The distance displayed for each community should comply with the provisions of Section 2D.43.

Support:

M08 For interchanges, all guide sign distances are calculated from the advance sign location to the exit gore. Guide signs are located as close to the actual distance as possible. Guide sign distances do not have to be exact, but they need be as close as practical. For intersections, the stop bar or beginning of the crossroad radius is used to set guide sign distances. When referencing to a cloverleaf or another design where the exit ramps for the same route are separated by an appreciable distance, advance guide sign distances refer to the first theoretical gore.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2E.49 Post-Interchange Travel Time Sign ~~(E7-4)~~

Support:

01 At certain locations, it might be more meaningful to recurrent road users to display the travel time rather than the distance to a destination. Such instances might be areas of adverse roadway conditions due to weather, such as in mountain passes or high elevations, congestion that occurs during peak travel seasons, or recurring congestion.

02 Section 2E.50 contains information on Distance and Travel Time and Comparative Travel Time signs.

Standard:

03 If used, the Post-Interchange Travel Time ~~(E7-4)~~ sign (see Figure 2E-51) shall replace of the Post-Interchange Distance sign in the series of post-interchange signs (see Section 2E.47).

Figure 2E-51. Example of a Post-Interchange Travel Time Sign



04 The Post-Interchange Travel Time sign shall comply with the provisions of ~~Paragraph 1~~ the first Paragraph of Section 2E.47 with the following exceptions:

- **A. The distance shall be replaced with a changeable message element to display the current travel time to the applicable destination; and**
- **B. The abbreviation MINS shall follow the changeable message element.**

05 Travel times shall not be used on Interchange guide signs (see Section 2E.21).

Section 2E.50 Distance and Travel Time Sign ~~(E7-5)~~ and Comparative Travel Time Sign ~~(E7-6)~~

Support:

01 Some locations might benefit from a travel time message displayed with the distance, or comparative travel times displayed for alternative routes to a common destination. These locations are often in advance of an urbanized area where interchanges become more closely spaced and/or in advance of a circumferential or other alternative route(s) where the road user can decide to divert depending on the destination. Nonetheless, these signs are typically located in advance of a decision point where the road user can divert to an alternate route to avoid recurring congestion.

02 Section 2E.49 contains information on Post-Interchange Travel Time signs.

~~03 Section 2G.19 contains information on Comparative Travel Time signs for parallel lanes within the same highway route, such as for general-purpose lanes and managed lanes.~~

MUTCD Chapter 2G is not adopted by MoDOT. Revised Dec. 2025

Standard:

04 The Distance and Travel Time ~~(E7-5)~~ sign (see Figure 2E-52) shall display a major destination, landmark, or junction; a distance message; and a travel time message, each on a separate line. The distance units shall be displayed in the distance message. The travel time shall be displayed in a changeable message element and the abbreviation MINS shall follow the changeable message element. The Distance and Travel Time sign shall not display distance and time to more than one destination or junction.

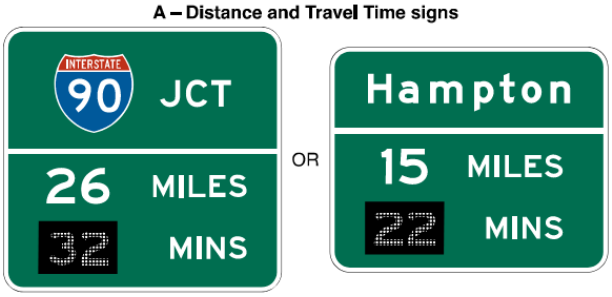
05 The Comparative Travel Time ~~(E7-6)~~ sign (see Figure 2E-52) shall display a major destination, landmark, or junction, and two alternative routes with travel time messages. Each alternative route and

associated travel time message shall be on a separate line. The travel time shall be displayed in a changeable message element and the abbreviation MINS shall follow the changeable message element.

06 Comparative travel times shall not be used to promote different modes of travel, such as personal vehicle highway travel compared with transit, or different forms of transit.

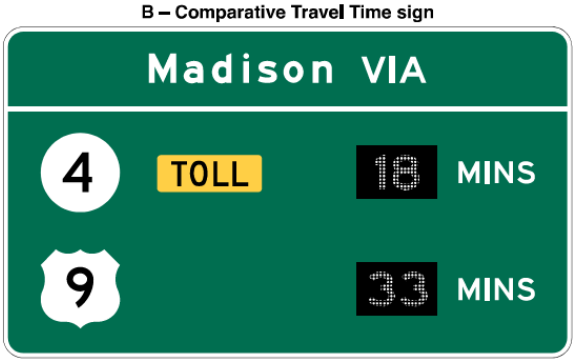
Figure 2E-52. Example of Travel Time Signs

A – Distance and Travel Time signs



E7-5

B – Comparative Travel Time sign



E7-6

Guidance:

07 Where used, the Distance and Travel Time sign should be located between interchanges and away from the sequence of interchange guide signs or other major signs.

08 Where used, the Comparative Travel Time sign should be located in advance of the sequence of interchange guide signs to provide adequate time for the road user to decide whether to reroute.

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.~~ Article.

M01A This class of sign includes College and Major Traffic Generator signs. Recreational area and historic signs are white on brown. Major traffic generator signs and most other supplemental signs are white on green.

MoDOT specific content from the EPG. Revised Dec. 2025

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 A Supplemental guide sign should not be installed unless a destination meets the criteria established by ~~the State or agency~~ MoDOT policy. ~~States and other agencies~~ MoDOT 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.

M03A Supplemental Guide signs should be post-mounted when adequate space is available, regardless of other guide signs being overhead or post-mounted.

Figure 2E-53. Example of Supplemental Guide Signs for a Mult-Exit Interchange



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.~~ If cloverleaf or closely spaced interchanges exist, the interchange exit number and suffix may be used.

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:

M07A Supplemental Guide signs shall be installed as an independent guide sign assembly.

MoDOT modifies the last sentence of paragraph 5 to be a standard statement. Revised Dec. 2025

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~~ the fourth and fifth Guidance paragraphs of this ~~Section~~ Article 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 shall be considered as Supplemental guide signs (see Figure 2E-54).**~~

MoDOT does not use guide signs for Park-and-Ride facilities. Revised Dec. 2025

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:

M11A A pictograph (see definition in EPG 911 (MUTCD Section 1C.02)) may be used on a Supplemental Guide sign in conjunction with a destination that is associated with governmental agencies, military bases, universities, or other government-approved institutions.

MoDOT specific content from the EPG that was included in the 2009 Edition of the MUTCD. Revised Dec. 2025

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



~~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.**~~

MoDOT does not use guide signs for Park-and-Ride facilities. Revised Dec. 2025

M16 The maximum dimension (height or width) of a pictograph shall not exceed two times the upper-case letter height of the destination legend and shall not exceed the size of a route shield on the guide sign. If used, the pictograph shall be located to the left of the destination legend it represents

M17 A pictograph representing a state, county, or municipal corporation or other incorporated or unincorporated community shall not be displayed on a Supplemental Guide sign.

M18 Pictographs shall otherwise comply with the provisions of Section 2A.05.

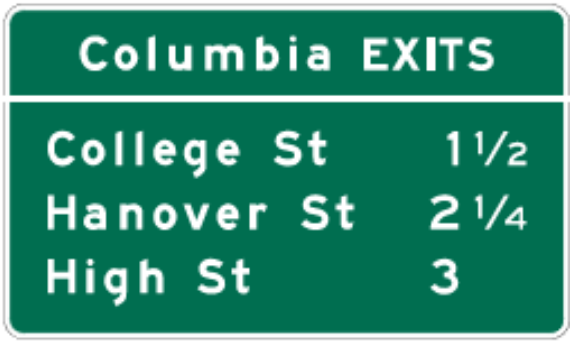
MoDOT specific content from the EPG that was included in the 2009 Edition of the MUTCD. Revised Dec. 2025

Section 2E.52 Community Interchanges Identification Signs (E9-4 and E9-5)

Support:

01 For suburban or rural communities served by ~~two or~~ three or more interchanges, Community Interchanges Identification (E9-4 and E9-5) signs ~~(see Figure 2E-55)~~ reduce the amount of information displayed on the Interchange Advance guide and Exit Direction signs by eliminating repetition of the same destinations for separate interchanges.

Figure 2E-55. Example of Community Interchanges Identification Sign



Guidance:

02 In these cases, the name of the community followed by the word EXITS should be displayed on the top line; the lines below should display the destination, road name or route number, and the corresponding distances to the nearest ¼ mile.

03 The sign should be located in advance of the first Interchange Advance guide sign for the first interchange within the community (see Figure 2E-56).

04 The legend displayed on the Interchange Advance guide and Exit Direction signs for each interchange should be consistent with the interchange names displayed on the Community Interchanges Identification sign. The name of the community displayed on the Community Interchanges Identification signs should be omitted from the legends of the Interchange Advance guide and Exit Direction signs.

Standard:

M04A The amount of destinations listed shall not exceed three.

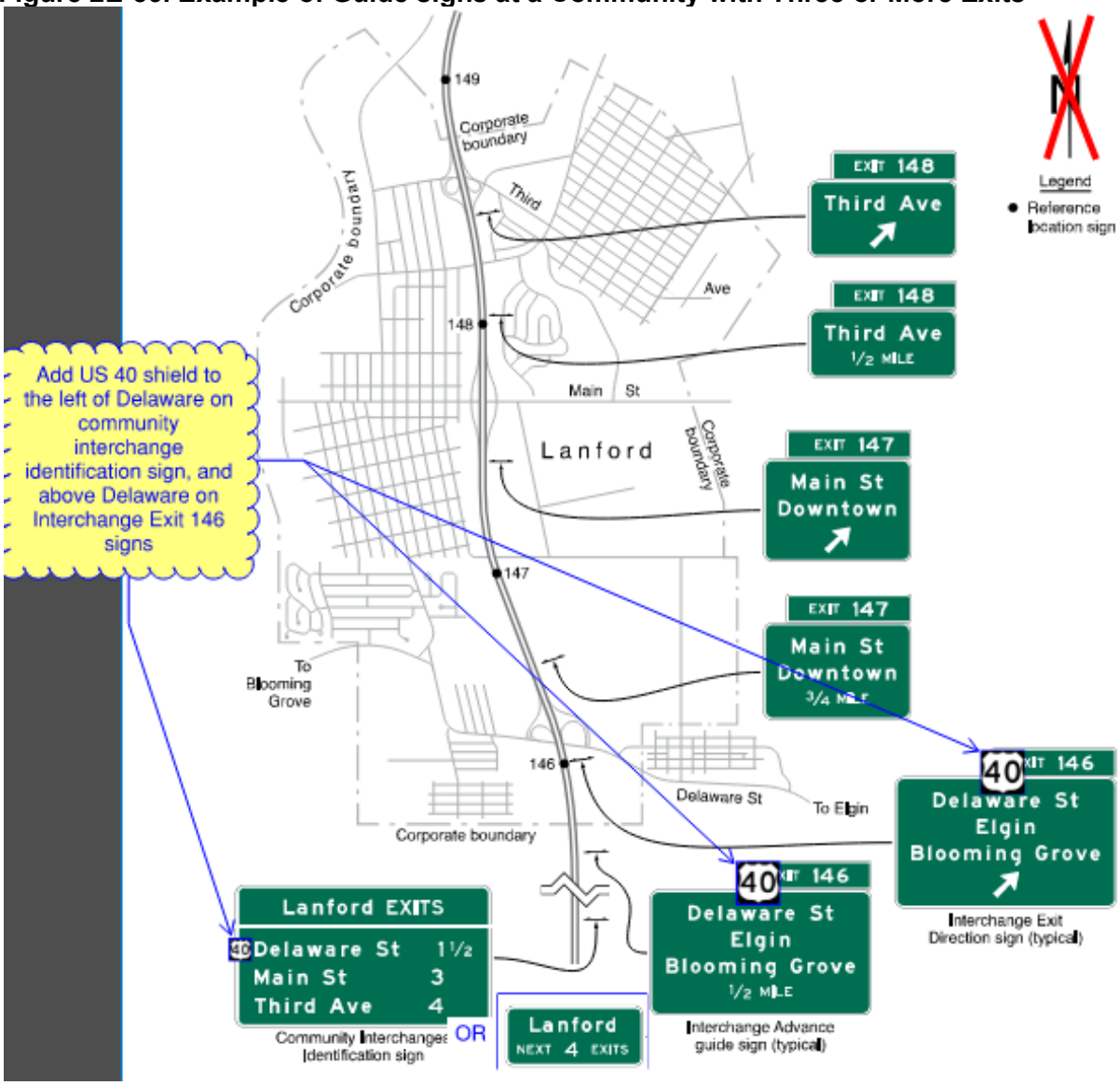
M04B Interchange exit numbers shall not be shown on Community Interchange Identification signs.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

05 If interchanges are not conveniently identifiable or if there are more than three interchanges to be identified, the Next Exits sign (see Section 2E.53) may be used.

Figure 2E-56. Example of Guide signs at a Community with Three or More Exits



Section 2E.53 Next Exits Signs (E9-3 and E9-3a)

Support:

01 Many freeways or expressways pass through historical or recreational regions, or urban areas served by a succession of several interchanges.

Option:

02 Such regions or areas may be indicated by a Next Exits (E9-3 or E9-3a) sign ~~(see Figure 2E-57)~~ located in advance of the Advance guide sign or signs for the first interchange.

Figure 2E-57. Example of Next Exits Sign

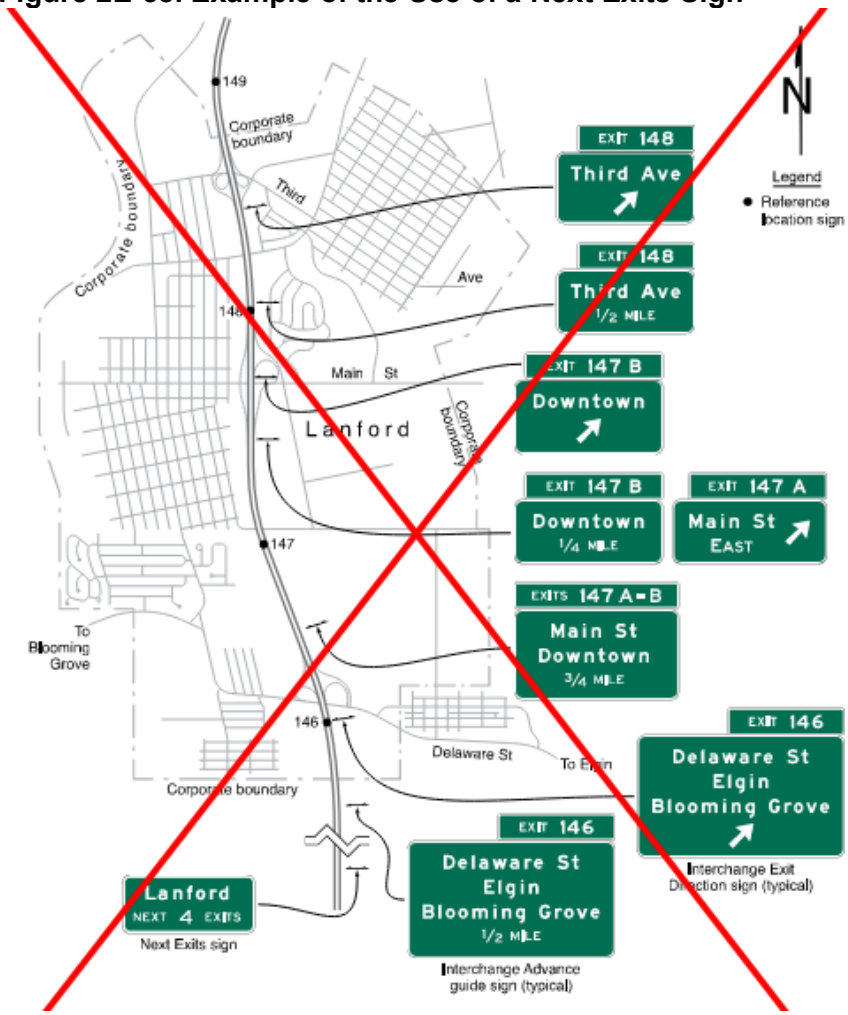


Guidance:

03 The sign legend should identify the region or area followed by the words NEXT XX EXITS.

04 The legend displayed on the Interchange Advance guide and Exit Direction signs for each interchange should not display the region or area name that is displayed on the Next Exits sign. ~~(see Figure 2E-58).~~

Figure 2E-58. Example of the Use of a Next Exits Sign



Section 2E.54 Weigh Station Signing

Support:

01 Independent facilities or areas have been added along many highways where certain commercial vehicles are directed to stop to be weighed 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 Rest Area signing (see Section 2I.05) because in both cases traffic using either area remains within the highway right-of-way.

Standard:

03 The standard sequence of signs for a Weigh Station on an expressway or freeway shall include four basic signs (see Figure 2E-59):

- **A. An Advance Weigh Station Distance (D8-1) sign with the distance 1 MILE displayed,**
- **B. An Advance Weigh Station Distance (D8-1) sign with the distance ½ MILE displayed, or a Weigh Station Advance Direction (D8-2) sign,**
- **C. A Weigh Station Entrance Direction (D8-3) sign, and**
- **D. A Weigh Station Gore sign (with the same legend as the Entrance Direction (D8-3) sign).**

M03A If the weigh station uses a preclearance system, a WEIGH STATION PRECLEARANCE – ALL TRUCKS RIGHT LANE sign shall be used.

MoDOT sign for weigh stations. Revised Dec. 2025

Option:

04 When spacing of 1 mile and ½ mile are not practical for the D8-1 signs, the 1 MILE and ½ MILE distances on the D8-1 signs may be adjusted to match the spacing determined by engineering judgment.

~~05 Where State law requires trucks of a certain weight to enter the weigh station, a Weigh Station (R13-1) regulatory sign (see Section 2B.65) may be added to the sign sequence as shown in Figure 2E-59.~~

~~06 Where only commercial vehicle inspections are conducted in the inspection area and vehicles are not weighed, the WEIGH STATION legend of the D8 series signs may be replaced with the alternate legend, COMMERCIAL VEHICLE INSPECTION AREA.~~

Standard:

~~**07 When the WEIGH STATION legend of the D8 series signs is replaced with COMMERCIAL VEHICLE INSPECTION AREA legend as provided for in Paragraph 6 of this Section, the WEIGH STATION legend of the R13-1 sign shall be replaced with the alternate legend INSPECTION AREA.**~~

MoDOT does not use commercial motor vehicle inspections signs, as these inspections are mobile and permanent signing is not applicable. Revised Dec. 2025

08 A changeable legend display that displays either OPEN or CLOSED shall be included in the signing sequence to indicate when trucks are required to enter the weigh station.

Guidance:

09 The required changeable legend display OPEN or CLOSED describe in ~~Paragraph 8 of this Section~~ the previous paragraph should be displayed within and at the bottom of the Weigh Station Advance Direction (D8-2) sign or the Advance Weigh Station Distance (D8-1) sign, or on a supplemental plaque or sign panel.

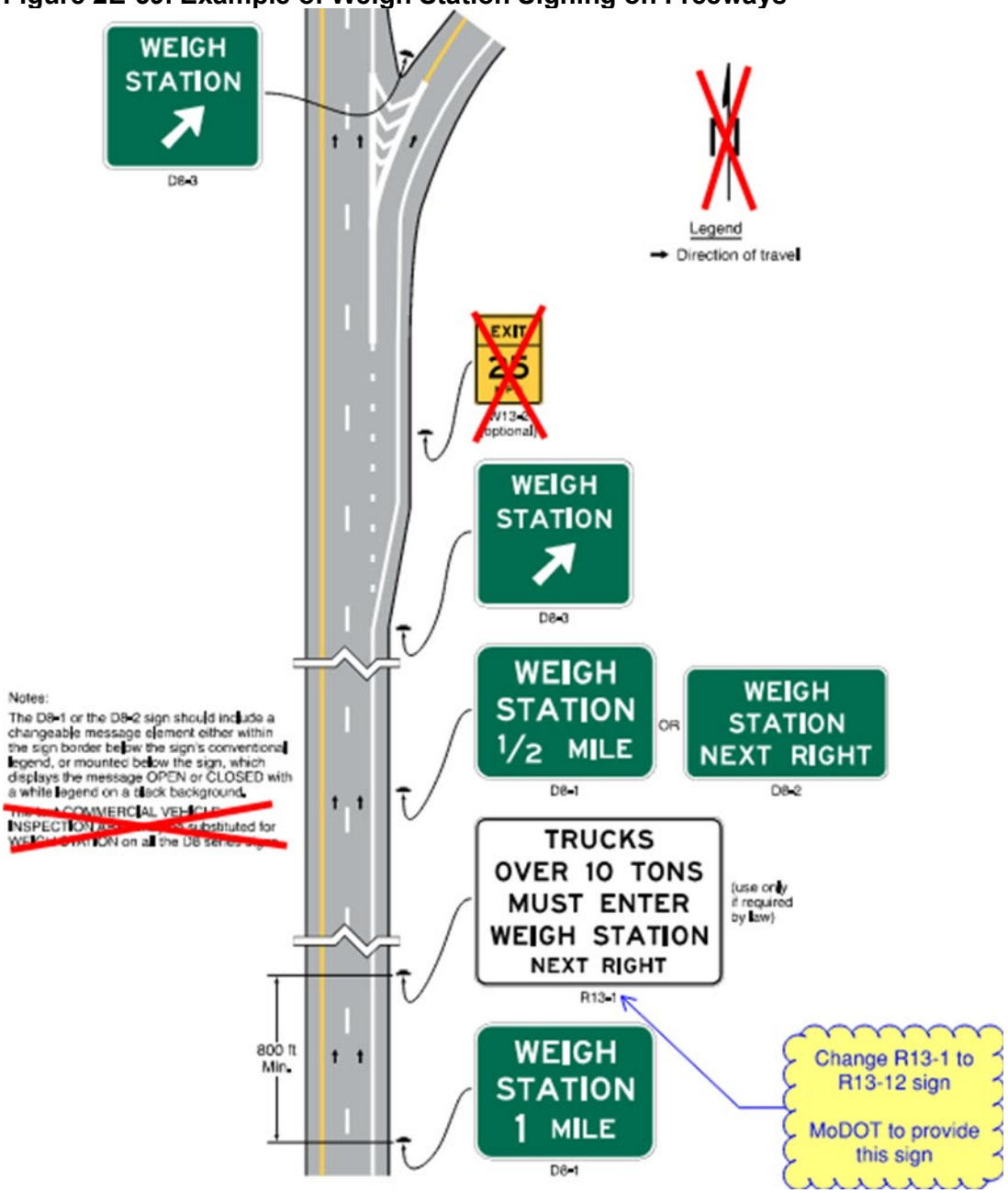
~~Option:~~

~~10 A plaque with the legend OPEN WHEN FLASHING may be added to one of the Advance Weigh Station Distance signs along with associated flashing beacons, in place of the changeable legend OPEN or CLOSED sign, to indicate when commercial vehicles are required to enter the weigh station.~~

Support:

11 ~~Weigh Station Area sign layouts for freeway and expressway applications are shown in the "Standard Highway Signs" publication (see Section 1A.05).~~ An example of weigh station signing for use on freeways and expressways is shown in Figure 2E-59.

Figure 2E-59. Example of Weigh Station Signing on Freeways

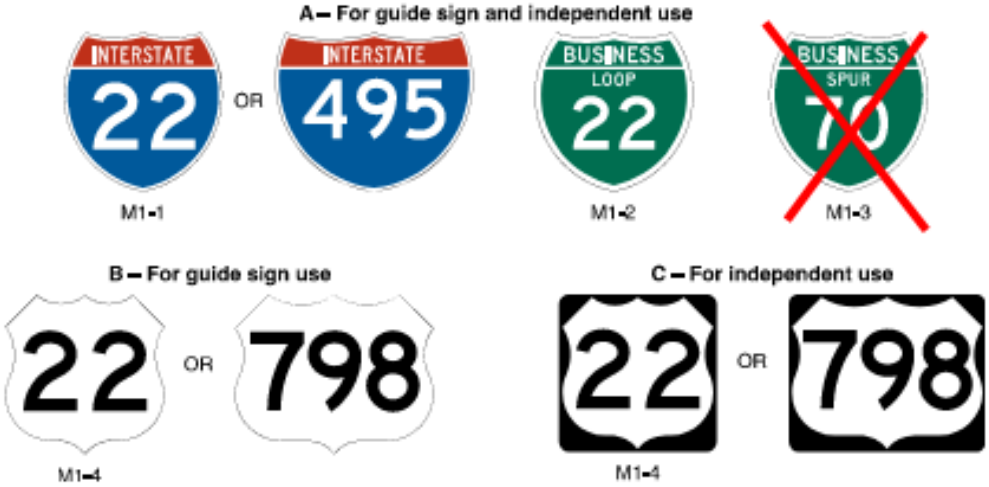


Section 2E.55 Route Signs and Trailblazer Assemblies

Guidance:

01 Route signs (see Figure 2E-60) should be incorporated as cut-out shields or other distinctive shapes on large directional guide signs. Where the Interstate shield is displayed in an assembly or on the face of a guide sign with U.S. or State Route signs, the Interstate numeral should be at least equal in size to the numerals on the other Route signs. The use of independent Route signs should be limited primarily to route confirmation assemblies.

Figure 2E-60. Interstate, Off-Interstate, and U.S. Route Signs



02 Route signs and auxiliary plaques showing junctions and turns should be used for guidance on approach roads, for route confirmation just beyond entrances and exits, and for reassurance along the freeway or expressway. ~~When used along the freeway or expressway, the Route signs should be enlarged to a 36 x 36-inch minimum size for route numbers with one or two digits and to a 45 x 36-inch minimum size for route numbers with three digits as shown in the "Standard Highway Signs" publication (see Section 1A.05). When independently-mounted Route signs are used in place of Pull-Through signs (see Section 2E.27), they should be located just beyond the exit.~~

M02A Only standard sizes should be used for guide signs and independent use.

M02B Route shields should be placed before street names and destinations, usually in the first line of the legend.

Support:

M02C Shields are detailed in the standard plans. Numbered primary, U.S. and interstate route shields have two widths available for each type of mount: one for two-digit routes and one for three-digit routes.

M02D A business plaque is available in the standard plans for independent use only.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

03 The standard Trailblazer Assembly (see Section 2D.34) may be used on roads leading to the freeway or expressway. Component messages of the Trailblazer Assembly may be incorporated into a single sign in accordance with the provisions of Section 2D.12. Independently-mounted Route signs may be used instead of Pull-Through signs as confirmation information.

M03A The word "TO" may be used when a guide sign is acting similar to a trailblazer. Some turning movements for roadways may lead to a route, but they may also have other possible destinations.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Support:~~

~~04 Section 2D.58 contains information regarding the design of signs for Auto Tour Routes.~~

~~Option:~~

~~05 The commonly-used name or trailblazer route sign for a toll highway (see Chapter 2F) may be displayed on non-toll sections of the Interstate Highway System at:~~

~~A. The last exit before entering a toll section of the Interstate Highway System;~~

~~B. The interchange or connection with a toll highway, whether or not the toll highway is a part of the Interstate Highway System; and~~

~~C. Other locations within a reasonable approach distance of toll highways when the name or trailblazer symbol for the toll highway would provide better guidance to road users unfamiliar with the area than would place names and route numbers.~~

~~06 The toll highway name or route sign may be included as a part of the guide sign installations on intersecting highways and approach roads to indicate the interchange with a toll section of an Interstate route. Where needed for the proper direction of traffic, a trailblazer for a toll highway that is part of the Interstate Highway System may be displayed with the Interstate Trailblazer Assembly.~~

~~Support:~~

~~07 Chapter 2F contains additional information regarding signing for toll highways.~~

There are no toll facilities on the state highway system. Revised Dec. 2025

Standard:

M08 The word "TO" shall only be used to trailblaze to a route, not a destination. The word "TO" shall be vertically centered on the shield and shall be placed before the shield to read properly.

M09 When a conflict arises between "TO" and a cardinal direction on the left of a shield, place "TO" first (starting from left hand side), then the shield, then the cardinal direction.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Section 2E.56 Eisenhower Interstate System Signs (M1-10 and M1-10a)~~

~~Option:~~

~~01 The Eisenhower Interstate System (M1-10 and M1-10a) signs (see Figure 2E-61) may be used, in accordance with Paragraphs 2 and 3 of this Section, on Interstate highways at periodic intervals and in rest areas, scenic overlooks, or other similar roadside facilities on the Interstate Highway System.~~

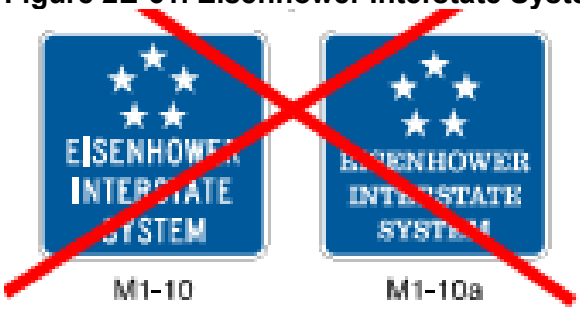
~~**Standard:**~~

~~**02 If used, the M1-10a sign shall be used only in rest areas or other similar facilities where the sign can be viewed by occupants of parked vehicles or by pedestrians. The M1-10a sign shall not be installed on Interstate highway mainlines, ramps, or other roadways where it can be viewed by vehicular traffic.**~~

~~**03 The M1-10 and M1-10a signs shall not be used as part of a Junction, Advance Route Turn, Directional, or Trailblazer Assembly, or as part of a guide sign or similar assembly providing direction to a route or destination.**~~

MoDOT does not use M1-10 signs. Dec. 2025

Figure 2E-61. Eisenhower Interstate System Signs



SIGNS FOR ROUTE DIVERSION BY VEHICLE CLASS

Section 2E.57 Signs for Route Diversion by Vehicle Class

Support:

01 On some highways, a physical condition or highway feature might limit certain types or classes of vehicles from proceeding along that route through the site of that condition beyond which those vehicles are otherwise allowed. Examples include, but are not limited to, a restriction on taller legal height vehicles through a tunnel with a low clearance; a restriction of hazardous materials through a tunnel or over a bridge; and a restriction on wider vehicles, such as large trucks, over a viaduct with narrow lanes. In such cases, the restricted vehicles might be diverted along another route to reach a destination beyond the location of the limiting condition.

Guidance:

02 Where certain vehicles are prohibited at a downstream location along a route and those vehicles must divert to reach a through destination beyond that location, regulatory, warning, and/or guide signs advising those vehicle operators of the diversion should be installed in advance of the decision point to leave the through route for the diversion route.

Option:

03 The interchange and pull-through guide signs for the last point at which restricted vehicles must exit may be modified to incorporate regulatory and/or warning panels with word legends to display the regulations and/or warning messages relative to the vehicle class restriction.

04 Standard post-mounted regulatory and warning signs, such as the No Hazardous Materials (R14-3) or Advance Low Clearance (W12-2) signs, may be used as provided elsewhere in this Manual at independent locations to supplement the regulatory and warning signs and panels referenced in Paragraphs 2 and 3 of this Section.

Support:

05 An example of signing for a route diversion by vehicle class is shown in Figure 2E-62.

MoDOT does not sign for route diversion by class. Dec. 2025

Figure 2E-62. Example of Signing for Route Diversion by Vehicle Class



Section 2E.58 Signing on Conventional Road Approaches and Connecting Roadways

Support:

01 Section 2D.49 contains information regarding the signing on conventional roads on the approaches to interchanges and the signing on connecting roadways.

Section 2E.59 Wrong-Way Traffic Control at Interchange Ramps

Support:

01 Section 2B.48 contains information regarding the use of regulatory signs to deter wrong-way movements at intersections of freeway or expressway ramps with conventional roads, and in the area where entrance ramps intersect with the mainline lanes.

~~02 Section 2D.50 contains information regarding the use of a Directional assembly or a guide sign to mark the entrance to a freeway or expressway from a conventional road.~~

MoDOT does not sign for freeway or expressway entrances. Dec. 2025

Section 2E.60 Traffic Generator Signing

Support:

M01 MoDOT's policy on signing for traffic generators is defined in the following rules and regulations. These regulations can be found under the Code of State Regulations Title 7, Division 10, Chapter 17 (7 CSR 10-17.010).

Standard:

M02 The Traffic Generator Program, along with other supplemental guide sign programs, is managed by a 3rd party contractor. Requests to participate in the Traffic Generator Program shall be forwarded to this 3rd party contractor for processing so they may do site reviews, evaluate eligibility and convey options to the perspective participant.

Support:

M03 There are select traffic generator style signs which remain MoDOT's responsibility to install and maintain include:

Signing for Nationally Known / Nationally Prominent Historic Sites (see EPG 903.8.18)

Signing for Lakes over 7,000 acres (see EPG 903.5.57).

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2E.61 Supplemental Guide Signs for Lakes

Standard:

M01 For the purposes of interpretation of this policy, major lakes, bodies of water that are over 7,000 surface acres, shall qualify for signing at the Commission's expense, see Table 903.5.57. No signing shall be provided for any individual site, building or event located within a larger signed area.

M02 The signs shall comply with the provisions of EPG 903.5.49 except as provided below.

M03 The signs shall only be installed on freeways or expressways wherever the direct routes serving the lake intersect, see Fig. 903.5.57.

M04 The signs shall be rectangular and have a white legend and border on a brown background.

M05 If trailblazing signs are requested, the requesting agency shall be responsible for the participation fee for the trailblazing signs and shall comply with the provisions of EPG 903.13 State and Federal Recreation and Historic Site Signing.

M06 No pictograph shall be displayed on the signs.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2E.62 Lane Reduction

Guidance:

M01 When a lane is dropped on a multi-lane, high-volume, high-speed roadway by merging lanes (lane not dropped at an interchange), at least two overhead advance signs should be used. The first sign should indicate the lane that ends and a distance.

M02 The last sign should indicate the lane that ends and an action line.

These signs should be black legend on fluorescent yellow background and placed over the lane that is ending. These signs should have 12 in. series E Modified letters, all upper-case.

Support:

M03 For example, the first line may read RIGHT LANE ENDS. The second line should provide a distance in feet or mileage such as "1000 FT" or "1/2 MILE". When sufficient distance is available, two advance distance signs are provided at 1 mile and 1/2 mile.

M04 Another example, the first line states RIGHT LANE ENDS, and the second line may read "MERGE LEFT".

M05 For typical 4-lane to 2-lane reductions see EPG 903.16 Typical Signing Applications.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2E.63 Signing for Route Termination

Standard:

M01 In advance of the termination of any route, a sign shall be installed to indicate the route ends and all traffic must exit. The sign shall include the shield of the route, which terminates with a relevant text message, such as "ALL VEHICLES MUST EXIT".

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2E.64 Signing for Route Name Change

Standard:

M01 In advance of the location where a route name changes, a sign shall be erected indicating "(Rte. XXX) Ends Continue on (Rte. YYY)".

Guidance:

M02 If Route XXX and YYY use different cardinal directions, then they should be included as modifiers to the route shields.

Support:

M03 For termination of conventional roads see EPG 903.7.20.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2E.65 Crossroad Guide Sign

Support:

M01 he Crossroad Guide (E8 series) sign is used on a crossroad to provide destination and direction for traffic entering an expressway or freeway.

Guidance:

M02 The destination used should be a control city (see Table 903.5.7) for interstate routes.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 2F. TOLL ROAD SIGNS [EPG 903.6]

MoDOT does not adopt Chapter 2F as there are no toll facilities on the state highway system

CHAPTER 2G. PREFERENTIAL AND MANAGED LANE SIGNS [EPG 903.7]

MoDOT does not adopt Chapter 2G as there are no preferential or managed lanes on the state highway system

CHAPTER 2H. GENERAL INFORMATION SIGNS [EPG 903.8]

Section 2H.01 Scope

Support:

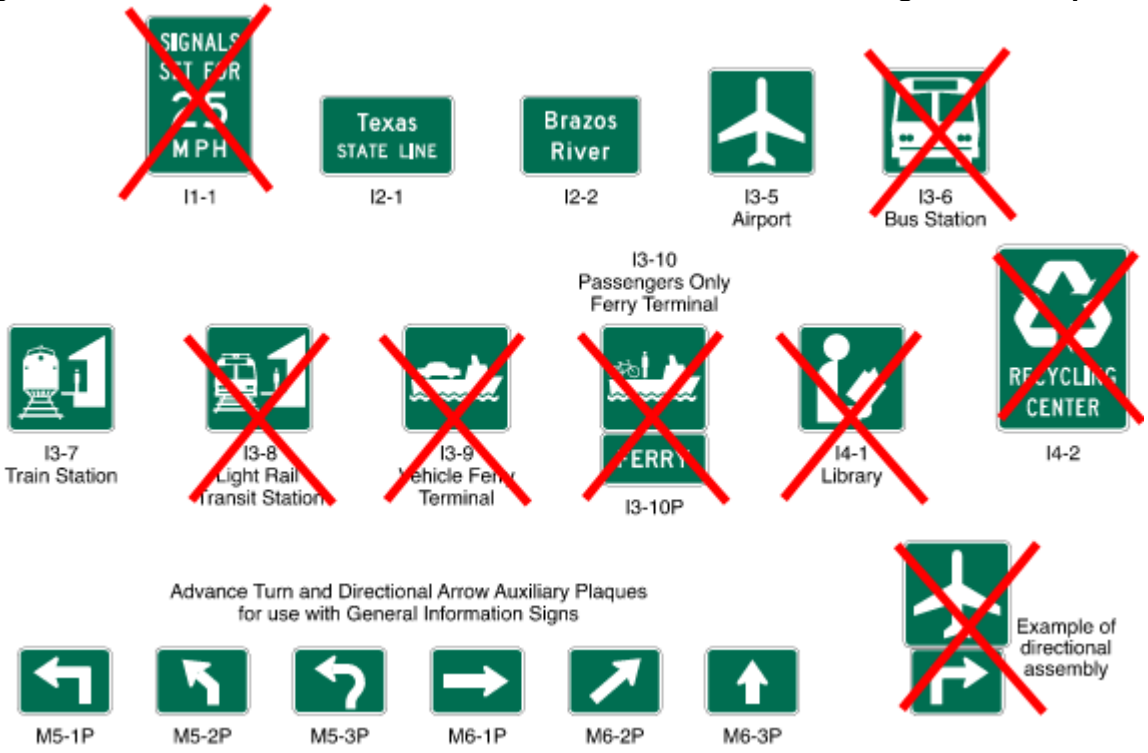
01 General Information signs provide road users with navigational or orientation, geographic, or other information useful for traffic operational purposes. They include such items as Missouri State lines (I2-1), ~~c~~City limits (I4-1, I4-1a), ~~time zones, stream names, elevations, landmarks, and similar geographic features~~ unincorporated community signs (I5-1), County line (I6-1), and river names (I3-1). ~~Chapter 2M~~EPG 903.13 contains recreational and cultural interest area symbol signs that are sometimes used in combination with General Information Signs. EPG 911 (MUTCD Section 1D.09) contains information on unnecessary traffic control devices. ~~Section 2A.20~~ EPG 903.1.20 contains information on the excessive use of signs and sign clutter.

Option:

02 A General Information (I3-5 ~~through I4-2~~and I3-7) symbol sign ~~(see Figure 2H-1)~~ may be used to provide direction to a transportation (I3 series signs) ~~or other (I4 series signs)~~ facility. The symbol sign may be supplemented by an educational plaque where necessary. The name of the facility may be used, if needed, to distinguish between similar facilities in the same area.

03 The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary plaques ~~(see Figure 2H-1)~~ with white arrows on green backgrounds may be used with General Information symbol signs to create a General Information Directional Assembly.

Figure 2H-1. General Information and Miscellaneous Information Signs and Plaques



~~04 The Recycling Center (I4-2) symbol sign may be used to direct road users to recycling centers.~~

~~*Guidance:*~~

~~*05 The Recycling Center symbol sign should not be used on freeways and expressways.*~~

MoDOT does not use I4 series signs. Revised Dec. 2025

~~Option:~~

~~06 The Passengers Only Ferry Terminal (I3-10) symbol sign may be used with the FERRY (I3-10P) plaque (see Figure 2H-1) mounted below it in a directional assembly to direct road users to passenger-only ferry terminals.~~

MoDOT does not use I3-10 signs. Revised Dec. 2025

Guidance:

07 General Information signs should not be installed within a series of guide signs, or at other equally critical locations, unless there are specific reasons for orienting the road user or identifying control points for activities that are clearly in the public interest. On all such signs, the designs should be simple and dignified, devoid of any tendency toward advertising, such as complex graphics or unnecessary messages, and in general compliance with other guide signing.

Standard:

08 Promotional descriptive messages that are not relevant to navigation and orientation, such as "Scenic" or "Historic," shall not be included in the legends of General Information signs, except as otherwise provided in ~~this Chapter~~ EPG 903.8 or in cases in which these terms are part of an official name, such as for a Scenic Byway or Historic District.

09 Except for State Welcome signs (see Section 2H.07) and~~,~~ ~~Acknowledgment signs (see Section 2H.13)~~, ~~and Alternative Fuels Corridor signs (see Section 2H.14)~~, General Information signs shall have white legends and borders on green rectangular-shaped backgrounds.

Standard:

M09 When a sign is used to display a safety or transportation-related message, the display format shall not be of a type that would be considered similar to advertising displays. Messages and symbols that resemble any official traffic control device shall not be used on safety or transportation-related message signs.

M10 The Amtrak Station (I3-7) sign shall not be installed if a city will not provide supplemental signing for these locations.

M11 The Amtrak Station and the appropriate M6 series arrow shall be used for ramp signs.

Guidance:

M12 The Amtrak Station sign should be compatible with the color and size of existing signing design.

Support:

M13 The Amtrak Station sign is a supplemental guide sign of variable size.

Standard:

M14 The "Missouri Train Service – 1-800-USA-RAIL – morail.org" sign has been discontinued. Existing signs shall be removed at the end of their service life.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2H.02 Sizes of General Information Signs

Standard:

01 Except as provided in ~~Section 2A.07~~EPG 903.1.7, the sizes of General Information signs that have a standardized design shall be as shown in Table ~~2H-1~~903.8.2.

Support:

02 ~~Section 2A.07~~ EPG 903.1.7 contains information regarding the applicability of the various columns in Table ~~2H-1~~903.8.2.

Option:

03 Signs larger than those shown in Table ~~2H-1~~903.8.2 may be used (see ~~Section 2A.07~~EPG 903.1.7), except where a maximum allowable size is specified.

Table 2H-1. General Information and Miscellaneous Information Signs and Plaques

Sign	Sign Designation	EPG Article	Conventional Road (in. x in.)	Freeway/Expressway (in. x in.)
				Mainline & Ramps
Emergency Reference	D10-5	903.9.4	-	18 X 60
Auto Tour	M11-1 Series	903.9.5	24 X 24	24 X 24
Lewis and Clark (Auto Tour)	M17-2	903.9.5	24 X 30	24 X 30
Sponsor A Highway	I9-1	903.9.6	Varies	Varies
Growing Together	I9-2	903.9.6	Varies	Varies
Airport	D4-10	903.9.7	Var X 36	-
Business District	D4-15	903.9.8	36 X 18	-
Industrial Park	D4-16	903.9.8	48 X 36	-
City Limit	I4-1	903.9.9	Var X 24	Var X 36
City Limit (Logo)	I4-1a	903.9.9	Var X 24	Var X 36
Unincorporated Community	I5-1	903.9.9	Var X 12	Var X 24 (Expressway Only)
County Line	I6-1	903.9.9	Var X 18	Var X 18
County Line (Logo)	I6-1a	903.9.11	Var X 36	Var X 36
Welcome To (Cities)	-	903.9.13	Varies	Varies
Missouri State Line	I2-1	903.9.14	36 X 18	72 X 36
Missouri Welcomes You	I2-2	903.9.14	96 X 48	144 X 72
River and Major Lake	I3-1	903.9.15	Var X 18	Var X 24
River and Major Lake (Structural)	I3-2	903.9.15	-	Var X 36
Airport (Symbol)	I3-5	903.9.16	24 X 24	30 X 30
Airport (Symbol and Airport Designation)	I3-5a	903.9.16	36 X 48	36 X 48
Amtrak Station (Symbol)	I3-7	903.9.16	24 X 24	30 X 30
Amtrak Station (With Arrow)	I3-7a	903.9.16	36 X 48	36 X 48
MetroLink (With Arrow)	D4-12	903.9.16	Varies	Varies
Veterans	-	903.9.19	Varies	Varies
College Signing	-	903.9.20	Varies	Varies
Correctional Center	-	903.9.21	Varies	Varies
Lewis and Clark (Historical Marker)	M17-2a	903.9.22	24 X 30	24 X 30

Section 2H.03 Airport Signs



Support:

M00A MoDOT signs for both public general aviation airports and commercial airports. Commercial airports are defined as those facilities which have acquired and continue to maintain FAA 14 CFR Part 139 Certification.

Standard:

M00B The Airport (D4-10) sign shall be used to sign general aviation airports and only at the first order sign location (see EPG 903.1.24). If the first order signing location is at an interchange, only ramp terminal signing will be provided. Airport signing shall not be provided for privately owned airports or flying fields.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Support:~~

~~01 Guide signs for commercial service airports and general aviation airports may be provided from the nearest Interstate, other freeway, or conventional highway intersection directly to the airport, normally not to~~

~~exceed 15 miles. The Airport (I3-5) symbol sign (see Figure 2H-1) along with a supplemental plaque may be used to indicate the specific name of the airport. An Airport symbol sign, with or without a supplemental name plaque or the word AIRPORT, and an arrow may be used as a trailblazer.~~

M01A Supplemental guide signing shall only be used to sign for commercial airports, guide signs shall be provided from the nearest interstate, or other freeway intersection directly to the airport, normally not to exceed 15 miles. Guide signs for commercial service airports shall be provided from the nearest interstate, or other freeway intersection directly to the airport, normally not to exceed 15 miles.

M01B The Airport (I3-5) Symbol sign shall be reserved for guidance to commercial airports.

Option:

M01C Signing for St. Louis Lambert International Airport and Kansas City International Airport may have additional guide signing beyond the third order locations and beyond the first interchange due to the fact they draw motorist from all over the state as well as neighboring states.

M01D Airport (I3-5) Symbol sign, with an arrow plaque, may be used as a trailblazer for commercial airports. The Airport (I3-5) Symbol may be included on primary guide signs for exits which lead motorists in the direction of commercial airports.

M01E The Airport (I3-5) symbol sign along with a supplemental plaque may be used to indicate the specific name of the airport. An Airport symbol sign, with or without a supplemental name plaque or the word AIRPORT, and an arrow may be used as a trailblazer.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

02 Airport pictographs or other graphical representation of the specific airport shall not be used with or in place of the specific airport name on guide signs.

Guidance:

03 If airport guide signs are used, adequate trailblazer signs should be used to provide motorist direction to the airport.

Standard:

M03A Adequate trailblazer signs shall be in place prior to installing the airport guide signs.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

04 Location and placement of all airport guide signs depends upon the availability of longitudinal spacing on highways.

~~05 Figure 2D-39 shows an example of the guide signing that is typically used for a large commercial airport.~~

~~Section 2H.04 Traffic Signal Speed Sign (I1-1)~~

~~Option:~~

~~01 The Traffic Signal Speed (I1-1) sign (see Figure 2H-1) displaying the legend SIGNALS SET FOR XX MPH may be used to indicate a section of street or highway on which the traffic control signals are coordinated into a progressive system timed for a specified speed at all hours during which they are operated in a coordinated mode.~~

~~02 If different system progression speeds are set for different times of the day, a changeable message element may be used for the numerals of the Traffic Signal Speed sign. If the system is operated in coordinated mode only during certain times, a blank-out version of the Traffic Signal Speed sign may be used to display the entire message only during those times.~~

~~**Standard:**~~

~~**03 An electronic-display changeable section of the Traffic Signal Speed sign shall be a white legend on a black opaque or green background.**~~

~~*Guidance:*~~

~~*04 If used, the Traffic Signal Speed sign should be mounted as near as practical to each intersection where the timed speed changes, and at intervals of several blocks throughout any section where the timed speed remains constant.*~~

MoDOT does not use Traffic Signal Speed signs. Revised Dec. 2025

Section 2H.05 Jurisdictional Boundary Signs (I2-1, I4-1, I4-1a, I4-2, I4-2b, I5-1, I6-1, I6-1a)

~~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.~~

Paragraph replaced by MoDOT specific content. Revised Dec. 2025

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.~~ Notices of statutes or local ordinances should be located separately from Jurisdictional Boundary signs using regulatory signs (see Chapter 2B).

MoDOT provides specific sign location information in the paragraphs below. Revised Dec. 2025

~~*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.*~~

Paragraph replaced by MoDOT specific content. Revised Dec. 2025

Standard:

04 In accordance with ~~Section 2H.01~~EPG 903.8.1, 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.

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 (see Section 2H.16 City County Accomplishment).

M05A The MISSOURI STATE LINE (I2-1) sign shall be erected at the state line on all lettered routes without interfering with higher-priority traffic control devices.

Support:

M05B See EPG 903.8.6 for information regarding State Welcome signs as state line signage for interstates and numbered routes.

Standard:

M05C The City Limit (I4 series) signs shall be erected at the city limit of each incorporated area, at the point where the city limit crosses the right of way. If there is inadequate space at this location to install a sign, the city limit sign shall be moved to the closest appropriate location within the city limit boundaries without interfering with higher-priority traffic control devices.

M05D County Line (I6 series) signs shall be erected on all state routes at the county line boundary. If there is inadequate space at this location to install a sign, the county line sign shall be moved to the closest appropriate location within the county boundaries without interfering with higher-priority traffic control devices.

M05E City limit and county line signs shall only display the proper name of the incorporated community, or the proper name of the county, these jurisdictional boundary signs are marking, followed by the jurisdictional boundary description of "CITY LIMIT" or "COUNTY LINE" respectively.

Guidance:

M05F The County Line sign should not be erected at the state line.

Support:

M05G City populations are no longer included on city limit signs. The decision to phase out the display of populations on city limit signs prior to the release of the 11th edition of the MUTCD was due to the pending release of the updated US Census numbers. This was to avoid the significant expenditure of resources to update all existing city limit signs with new populations. Existing city limit signs will continue to display the city population until the end of the sign's service life with no option to update the display.

M05H See EPG 903.15 for Typical Signing Applications of Jurisdictional Boundary signs.

Option:

M05I Unincorporated Community signs (I5-1) may be installed at the approximate entrance of an unincorporated community, similar to a city limit sign. Unincorporated communities eligible for signing are those that the traveling public would view or recognize as an organized community as they pass through the area. These unincorporated communities would typically have businesses, community centers, or other non-residential structures that are visible from the highway, in addition to their residential areas. They would also be significant enough to typically justify a reduction in the posted speed limit and/or be considered as a destination on highway signs. Eligible unincorporated communities are typically structured enough to also have some form of governing board or council.

M05J Residential developments or subdivisions are not to be considered unincorporated communities that would qualify for highway signing. Regions that once were recognized by the traveling public as an unincorporated community but now have very little or no community recognizable features would no longer be eligible for signing. Existing Community boards installed for regions that are no longer eligible for signing shall remain in place until the end of their service life.

M05K A Speed Limit sign may be mounted above the Unincorporated Community sign if the speed limit changes at that location.

MoDOT specific content from the EPG. Revised Dec. 2025

~~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.**~~

Pictograph content included in next section with custom city limit signs. Revised Dec. 2025

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.~~

Section 2H.05A Custom City Limit and Custom County Line Signs (I4-1a, I4-2b, I6-1a)

Support:

M01 Many cities and counties want to enhance their identity and presence to the traveling public. A way to do this is by requesting MoDOT to install customized city or county limit signs in lieu of the MoDOT standard jurisdictional boundary signs. Displaying the city or county logo or emblem along with the jurisdictional boundary information is in compliance with MUTCD standards. , Custom signs are not required at city or county limits on the state system.

M02 Incorporated communities are permitted to request that custom city limit signs be installed on the state system.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

M03 A pictograph representing the jurisdiction (such as a state, county, or municipal corporation) may be displayed on custom city limit or custom county line signs. The display of a pictograph is not a standard application, if a jurisdiction chooses to display a pictograph there is a fee associated with the installation and maintenance of the special signs covered by a MoDOT TR15 signing agreement with the city/county.

MoDOT modifications to paragraph 6 from Section 2H.05. Revised Dec. 2025

Standard:

M04 If a pictograph is displayed on the custom city limit or custom county line sign, it shall be the official seal of the jurisdiction and shall comply with the provisions of EPG 903.1.4. 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.

MoDOT modifications to paragraph 7 from Section 2H.05. Revised Dec. 2025

M05 Any custom sign not conforming to this policy shall be removed.

M06 MoDOT shall fabricate customized signs, for consistency, according to the standards described below. Graphics or messages requested by the city or county shall have the approval of the department prior to fabrication.

M07 The signs shall be white legend on a green background. The signs shall be made of reflectorized material according to MoDOT standards. Lettering on the signs shall be of the approved size and style as contained in the MUTCD for the type of facility where the signs will go.

M08 When a city or county elects to use a customized limit sign, MoDOT shall replace the standard sign with the custom sign. If there is a need for a speed limit sign, the speed limit sign shall be installed the same as if a standard city limit sign were used.

M09 A participation fee shall be paid for by the city/county which will include all cost for fabrication, installation, and maintenance of the signs. Refer to EPG 903.15 Signing Agreements for contract process.

M010 Lighting of these signs shall not be allowed.

Guidance:

M011 The TR-15 contract should be executed between the city or county and MoDOT before the sign is installed.

M012 The legend of the sign should be simple, dignified and void of any commercial advertising.

Landscaping around any of these signs should be coordinated and reviewed by the department's roadside management personnel.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2H.06 ~~Geographical Feature~~ River and Major Lake Signs (~~I2-2~~I3-1)

~~Option:~~

~~01 The Geographical Feature (I2-2) sign may be used to mark the locations of land features such as river or stream crossings, and summits, that are identifiable on maps or serve as landmarks in providing navigational orientation or reference to the road user.~~

Guidance:

02 If used, the ~~Geographical Feature~~ River or Major Lake sign should display only the name of the geographical feature. Additional information that is unnecessary for navigational or orientation purposes, such as watershed or tributary names, should not be displayed on the sign.

M03 River and Major Lake (I3-1) signs should be erected at all bridges on the interstate and numbered routes crossing the river and major lakes listed in Table 903.8.6.

Standard:

M04 River and Major Lake Name signs shall not be installed on letter routes. Signs shall only be installed at bridges crossing the rivers and major lakes listed in Table 903.8.6; all other river and lake name signs currently in place shall be removed at the end of their life cycle.

Table 903.8.6 Rivers and Lakes to be Signed

Rivers to be signed with I3-1 Signs		Lakes to be signed with I3-1 Signs
Big Piney River	Locust Creek	Bull Shoals Lake
Big River	Meramec River	Harry S Truman Lake
Black River	Mississippi River	Lake of the Ozarks
Blackwater River	Missouri River	Mark Twain Lake
Bourbeuse River	Moreau River	Norfork Lake
Cache River	Nishnabotna River	Pomme de Terre Lake
Chariton River	North Fork White River	Smithville Lake
Cuivre River	Niangua River	Stockton Lake
Current River	Nodaway River	Table Rock Lake
Des Moines River	North River	Thomas Hill Reservoir
Eleven Point River	Osage River	Wappapello Lake
Elk River	Platte River	
Fabius River	Pomme de Terre River	
Fox River	Sac River	
Gasconade River	Salt River	
Grand River	South Grand River	
Headwater Diversion	Spring River	
Jacks Fork River	St. Francis River	
James River	Tarkio River	
Kansas River	White River	
Lamine River	Wyaconda River	

M05 Rivers which receive signing are those which drain the major watersheds of the state; however, individual watersheds of any size shall not be signed on MoDOT roadways.

Option:

M06 Individual arms of major lakes may be signed on interstate and numbered routes.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2H.07 State Welcome Signs (I2-2 and I2-3)

Support:

01 The design, placement, and function of State Welcome signs that are used to identify State lines differ from Jurisdictional Boundary (I2-1) signs (see ~~Section 2H.05~~EPG 903.8.4). Because of these differences, it is necessary to distinguish State Welcome signs from State line Jurisdictional Boundary signs.

Option:

02 A State Welcome sign may be located at or in the vicinity of the State boundary except as prohibited in ~~Paragraph 4 of this Section~~the first Standard paragraph below.

03 State Welcome signs may display the State seal or the State flag, the officially-adopted State motto or slogan, and the name of the Governor, in addition to the State name. State Welcome signs may use legend and background colors that provide adequate visual contrast rather than the standard sign colors.

Standard:

04 State Welcome signs shall be located separate from other signs where they will not interfere with or detract from other traffic control devices.

05 State Welcome signs shall not display changeable or other electronic-display messages (see ~~Chapter 2L~~EPG 903.12). State Welcome signs shall not display messages that emulate promotional advertising of any type. State Welcome signs shall not incorporate Acknowledgment signs or messages (see Section 2H.13), or business identification sign panels or logos (see Section 2J.03) into their legends or assemblies. In accordance with Section 2A.04 of ~~this Manual~~ the EPG, telephone numbers, Internet addresses, and e-mail addresses, including domain names and uniform resource locators (URLs), and scanning graphics for the purpose of obtaining information shall not be displayed in the legends of State Welcome signs or on their supports.

Guidance:

06 State Welcome signs should be located farther from the edge of the roadway than other traffic control devices.

07 The maximum size of a State Welcome sign should be consistent with the prevailing size of other guide signs based on the roadway type.

M08 The large MISSOURI WELCOMES YOU (I2-3) sign shall be erected at or near the state line on numbered routes where the traffic volume is 1,000 AADT or greater. The Welcome to Missouri Welcome Center (I2-3P) plaque shall be installed below a Welcome to Missouri (I2-3) sign on interstates when there is a welcome center located downstream from the state line.

M09 The smaller sign (I2-2) shall be erected at or near the state line on numbered routes where the traffic volume is less than 1,000 AADT.

Guidance:

M10 At locations where it may be impractical to erect the MISSOURI WELCOMES YOU sign at or near the state line, the MISSOURI STATE LINE sign should be used. At locations where the MISSOURI WELCOMES YOU sign is erected in addition to the MISSOURI STATE LINE sign, the MISSOURI WELCOMES YOU should be installed within ¼ mile of the state line.

Option:

M11 The MISSOURI STATE LINE (I2-1) sign may be erected on other routes where it is impractical to use the Welcome to Missouri (I2-2 or I2-3) sign.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2H.07A Welcome To Signs for Cities

Option:

M07A Cities may place Welcome To signs on MoDOT right of way within city limits as a gateway to welcome visitors to their city.

Guidance:

M07B for Welcome To monuments can be found in EPG 941.5.

Standard:

M07C Welcome To signs shall fit on one or two MoDOT breakaway signposts (wood, PSST, pipe, structural) choosing the post type that properly supports the size of sign being installed using the post selection tools in EPG 903.3. MoDOT posts may be painted, but no other alterations may be applied as this can affect the safety performance of the post. The requirements for Welcome To signs include:

- **Welcome To signs shall only be installed as ground mounted signs, Welcome To signs shall not be mounted overhead or on bridge structures, i.e. girders, columns abutment walls, etc.**
- **Welcome To signs shall not be illuminated electrically.**
- **Welcome To signs shall not contain advertisement of any kind.**
- **Welcome To signs shall not provide directional guidance by displaying destinations with or without arrows.**

- **A TR-42 agreement shall be executed and a permit issued (to address traffic control, locate utilities and other aspects of the installation not addressed in the TR42 contract) before a Welcome To sign is installed. A city ordinance is required with the agreement. An ordinance provides evidence of the city's assent to enter into an agreement with the Commission.**
- **Welcome To sign installation and maintenance shall be completed by a MoDOT approved highway sign installer. This is to assure the signs and their associated breakaway sign supports are installed in accordance with MoDOT standards.**

Guidance:

M07D Welcome To signs should be installed in a location that does not interfere with normal highway signs and possess the least possible threat to the motorist should they leave the roadway.

Option:

M07E The content and design of the sign face is up to the city, design aspects which are optional and permissible include:

- Making the sign retroreflective so they are visible at night and have the same appearance at night as they do during the day.
- The sign can display a city slogan or recognition statement that does not change over time, such as, but limited to:
  - "Sister City To…"
  - "Home of…"
  - The City Population
  - The year the city was established

M07F A city may display city accomplishments below their Welcome To signs, see EPG 903.8.14 for program details and limitations.

Standard:

M07G When a Welcome To sign is installed with accomplishment plaques it shall meet the following criteria to permit proper installation expectations

- **Installed on two MoDOT Structural #1 I-Beam Posts**
- **Installed by an approved MoDOT sign installation contractor (see approved list)**
- **The sign shall be fabricated using extruded aluminum panels (MoDOT specifications) and flat sheet overlay material**
  - **Extruded panel construction is modular. This allows for a durable structure which is easy to install and to update accomplishment panels.**
- **Welcome To Sign panel shall be a maximum 8 foot wide by 4 foot tall**
- **The legend on the accomplishment plaques shall be a highly legible font, preferably FHWA Highway Font**

Option:

M07H Community Awareness signs may be displayed on Welcome To signs and monuments, see EPG 903.8.21

MoDOT policy for these signs. Revised Dec. 2025

Figure 2H.07A Example of Welcome To Sign



~~**Section 2H.08 Future Interstate Corridor Signs (I2-4 and I2-4a)**~~

~~Option:~~

~~01 The Future Interstate Corridor (I2-4 and I2-4a) signs (see Figure 2H-2) may be used sparingly along an existing route that will be reconstructed as an Interstate route or along an existing route adjacent to a corridor through which an Interstate route will be constructed, in accordance with the Policy and Conditions stated in 23 CFR 470, Appendix C.~~

~~02 Where the route number has been approved by the FHWA, either the I2-4 or I2-4a sign may be used.~~

~~**Standard:**~~

~~**03 The I2-4a sign shall not be used where the route number has not been approved by the FHWA.**~~

~~**04 Future Interstate Corridor signs shall not be located where they could interfere with or detract from other traffic control devices. If used, Future Interstate Corridor signs shall be installed as independent, post-mounted sign assemblies.**~~

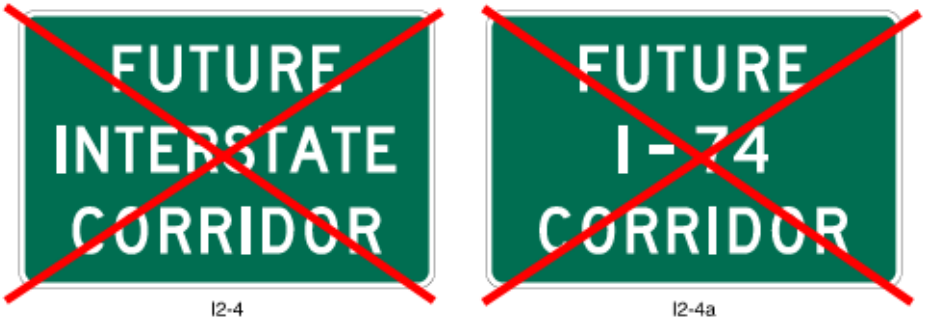
~~**05 Future Interstate Corridor signs shall not imply that an existing route has already been designated and marked as an Interstate route. Signs indicating that an existing route is designated as a future Interstate route or corridor shall not provide directional or distance information. Route Sign assemblies (see Section 2D.29) of any type shall not be used to sign a route as a future Interstate or other route. The Interstate route marker, or likeness thereof, shall not be displayed on the Future Interstate Corridor signs.**~~

~~*Guidance:*~~

~~*06 Future Interstate Corridor signs should be limited to strategic locations, such as at the beginning of the designated route or corridor, or beyond interchanges connecting from existing Interstate highways.*~~

MoDOT does not use Future Interstate Corridor signs. Revised Dec. 2025

Figure 2H-2. Future Interstate Signs (I2-4, I2-4a)



Section 2H.09 Project Information Sign (~~I2-5~~CONST-5)

Support:

01 The Project Information (~~I2-5~~ CONST-5) sign ~~(see Figure 2H-3)~~ provides limited information to road users about a highway construction project on which work is imminently forthcoming or ongoing.

Standard:

02 The Project Information sign legend shall be limited to the following project information:

- **A. The roadway name or route number,**
- **B. A brief description or title of the project,**
- **C. The completion date expressed in either a month or season (Spring, Summer, Fall, or Winter), and**
- **D. The agency name.**

Option:

03 Project Information signs installed more than one week prior to commencement of work may include a start date.

Standard:

04 Project Information signs shall not be installed more than one month prior to the commencement of work. When installing Project Information signs prior to the commencement of work, the jurisdiction shall have a policy on when the Project Information signs are to be installed. Project Information signs shall be removed at the conclusion of work on the project, even if the final inspection or project closeout has not yet occurred.

05 The number of Project Information signs shall be limited to one per direction of travel on the roadway on which the project is based. The location of the Project Information sign shall not interfere with the temporary traffic control zone devices.

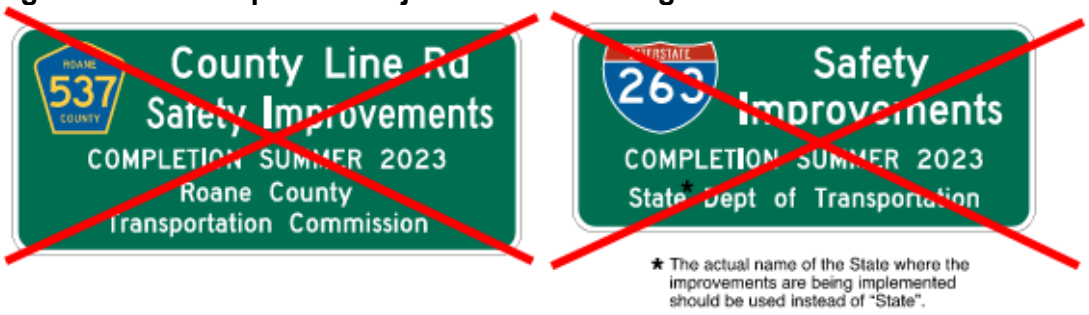
06 The Project Information sign shall have a white legend on a green background and shall not display Internet addresses, e-mail addresses, or telephone numbers (see Section 2A.04).

Support:

See EPG 616.9.5 for additional information.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 2H-3. Examples of Project Information Signs



Section 2H.10 Grade-Separated Roadway Identification Signs ~~(I2-3 and I2-3a)~~

~~Option:~~

~~01 The Grade-Separated Roadway Identification (I2-3 and I2-3a) signs (see Figure 2H-4) may be used to identify a grade separation of another highway or other transportation facility such as a railway, bikeway, or pathway.~~

~~*Guidance:*~~

~~*02 Except as provided in Paragraph 4 of this Section, when used to identify an overcrossing structure, the I2-3 sign should be mounted above the travel lanes or shoulder of the highway below.*~~

~~*03 When used to identify an undercrossing structure, the I2-3 or I2-3a sign should be post-mounted in advance of the structure as near to it as practicable.*~~

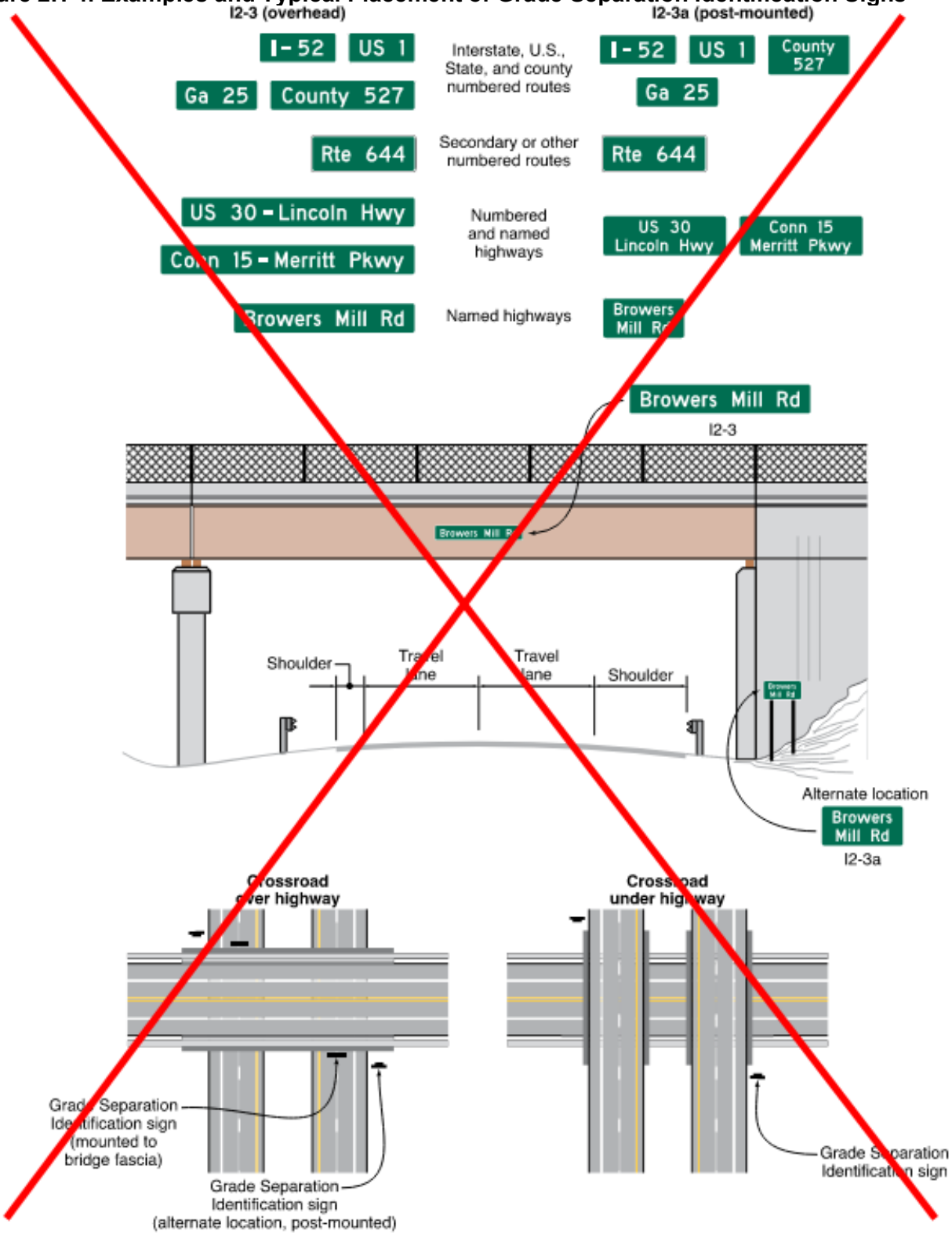
~~Option:~~

~~04 When used to identify an overcrossing structure, the I2-3 or I2-3a sign may be post-mounted in front of an overcrossing or may be mounted to the abutment of the overcrossing facing approaching traffic.~~

Standard:

M01 Street Identification/Orientation Street Name signs (D-3c) are used to identify roadways that pass over or under a freeway but have no direct access to the freeway. Street Identification/Orientation Street Name signs (D-3c) have been discontinued. MoDOT shall no longer provide Street Identification/Orientation Street Name signs (D-3c). Existing Street Identification/Orientation Street Name signs (D-3c) shall be left in place until they reach the end of their service life.

Figure 2H-4. Examples and Typical Placement of Grade Separation Identification Signs



Section 2H.11 Reference Location Signs (D10-1 through D10-3) and Intermediate Reference Location Signs (D10-1a through D10-3a)

Support:

01 There are two types of reference location signs:

A. Reference Location (D10-1 through D10-3) signs (see Figure 2H-5) show an integer distance point along a highway, and

B. Intermediate Reference Location (D10-1a through D10-3a) signs (see Figure 2H-6) show the same information as Reference Location signs, but they also show a tenth-of-a-mile decimal so that they can be installed between integer distance points along a highway.

Figure 2H-5. Reference Location Signs



Figure 2H-6. Intermediate Reference Location Signs



Standard:

02 Except when Enhanced Reference Location signs (see Section 2H.12) are used instead, Reference Location (D10-1 through D10-3) signs shall be placed on all expressway facilities that are located on a route where there is reference location sign continuity and on all freeway facilities to assist road users in estimating their progress, to provide a means for identifying the location of emergency incidents and traffic crashes, and to aid in highway maintenance and servicing.

Option:

03 Reference Location (D10-1 through D10-3) signs may be installed along any section of a highway route or ramp to assist road users in estimating their progress, to provide a means for identifying the location of emergency incidents and traffic crashes, and to aid in highway maintenance and servicing.

04 To augment the Reference Location sign system, Intermediate Reference Location (D10-1a through D10-3a) signs, which show the tenth of a mile with a decimal point, may be installed at one tenth of a mile, two tenths of a mile, or one-half mile intervals.

Standard:

05 When Intermediate Reference Location (D10-1a through D10-3a) signs are used to augment the reference location sign system, the reference location sign at the integer mile point shall display a decimal point and a zero numeral.

06 Reference Location and Intermediate Reference Location signs shall have a minimum mounting height of 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the roadway, and shall not be governed by the mounting height requirements prescribed in Section 2A.15.

07 The distance numbering shall be continuous for each route within a State, except where overlaps occur (see Section 2E.22). Where routes overlap, reference location sign continuity shall be established for only one of the routes. If one of the overlapping routes is an Interstate route, that route shall be selected for continuity of distance numbering.

08 The route selected for continuity of distance numbering shall also have continuity in interchange exit numbering (see Section 2E.22).

Guidance:

09 On a route without continuity of distance numbering, the first reference location sign beyond the overlap should indicate the total distance traveled on the route (including on the portion that did not have continuity of distance numbering) so that road users will have a means of correlating their travel distance between reference location signs with that shown on their odometer.

Standard:

10 For divided highways, the distance measurement shall be made on the northbound and eastbound roadways. The reference location signs for southbound or westbound roadways shall be set at locations directly opposite the reference location signs for the northbound or eastbound roadways.

11 Zero distance shall begin at the south and west State lines, or at the south and west terminus points where routes begin within a State.

12 Except as provided in Paragraph 13 of this Section, reference location signs shall be installed on the right-hand side of the roadway.

Option:

13 Where conditions limit or restrict the use of reference location signs on the right-hand side of the roadway, they may be installed in the median. On two-lane conventional roadways, reference location signs may be installed on one side of the roadway only and may be installed back-to-back. Reference location signs may be placed up to 30 feet from the edge of the pavement.

14 If a reference location sign cannot be installed in the correct location, it may be moved in either direction as much as 50 feet.

Guidance:

15 If a reference location sign cannot be placed within 50 feet of the correct location, it should be omitted.

MoDOT uses Emergency Reference Markers instead of Reference Location Signs. Revised Dec. 2025

Section 2H.12 ~~Enhanced Reference Location Signs (D10-4) and Intermediate Enhanced Reference Location Signs (D10-5)~~Emergency Reference Markers (D10-5 and D10-5a)

Support:

M01 Emergency Reference Markers (D10-5 series) are used to assist travelers in estimating their progress, provide a means for identifying the location of emergency incidents and traffic crashes, and to aid in highway maintenance and servicing. The typical mile marker D10-1 series and intermediate mile marker D10-1a series of signs are not used by MoDOT as they do not provide the same level of information to the driver.

M02 The Directional Ramp Emergency Reference Markers (D10-5a) are placed on long directional ramps to provide motorists a means to report incidents and/or request assistance. These signs help responders identify not only the interchange, but also the specific ramp they need to respond to.

Standard:

M03 Emergency Reference Markers (D10-5) shall be placed on all expressway facilities that are located on a route where there is reference location sign continuity.

M04 Emergency Reference Markers (D10-5) shall be placed on Interstates (instead of reference location signs) at two-tenth mile intervals. An Emergency Reference Marker shall not be installed if it cannot be set within 200 ft. of its exact location.

M05 Every attempt shall be made to install Emergency Reference Markers on walls, bridges or concrete median barrier, even if this requires special mounting designs.

Guidance:

M06 Directional Ramp Emergency Reference Markers (D10-5a) should be installed on directional ramps. These signs should be spaced approximately every 0.1 mile along the ramp with spacings being adjusted by engineering judgement to adjust for conditions.

Standard:

M07 Emergency Reference Markers (D10-5) shall be vertical panels having green backgrounds with white numerals, letters and borders, except for the route shield, which shall be the standard color and shape. The top line shall consist of the cardinal direction for the roadway. The second line shall consist of the applicable route shield for the roadway. The third line shall identify the mile reference for the location and the bottom line of the Emergency Reference Marker shall give the tenth of a mile reference for the location displaying the decimal point.

M08 Directional Ramp Emergency Reference Markers (D10-5a) shall be vertical panels having green backgrounds with white numerals, letters, and borders, except for the route shield, which shall be the standard color and shape. The sign shall display the cardinal direction and route shield of the route being departed followed by "TO" and then display the cardinal direction and route shield of the route being accessed. Only the route shields for the primary routes shall be displayed on these signs, see Standard Plan 903.03 for installation details.

M09 Emergency Reference Markers shall have a minimum mounting height of 4 feet to the bottom of the sign according to the mounting height requirements of and per details found in Standard Plan 903.03.

M10 The distance numbering shall be continuous for each route within the state, except where overlaps occur (see Section 2E.22). Where routes overlap, Emergency Reference Marker continuity shall be established for the route of higher classification. If two routes of the same class overlap each other, the route with the lower designation takes precedent unless that route overlaps for only a short segment.

Guidance:

M11 The route selected for continuity of distance numbering should also have continuity in interchange exit numbering (see Section 2E.22). On a route without Emergency Reference Marker continuity, the first Emergency Reference Marker beyond the overlap should indicate the total distance traveled on the route so that travelers will have a means of correlating their travel distance between Emergency Reference Markers with that shown on their odometer.

Standard:

M12 The distance measurement shall increase in the northbound and eastbound directions of travel. Emergency Reference Markers for southbound or westbound roadways shall be set at locations directly opposite to and displaying the same distance measurement as the Emergency Reference Marker for the northbound or eastbound roadways.

Guidance:

M13 The zero-distance should begin at the south and west state lines, or at the south and west terminus points where routes begin within a state.

Standard:

M14 Except as provided in the option below Emergency Reference Markers shall be installed on the right side of the roadway.

Option:

M15 Where conditions limit or restrict the use of Emergency Reference Markers on the right side of the roadway, they may be installed in the median. Emergency Reference Markers may be installed back-to-back if the median location is warranted. Emergency Reference Markers may be installed on non-interstate freeways and expressways under the following conditions:

1. Written support from the local response agency must first be obtained.
2. A logical beginning and ending point must be chosen. Examples of logical beginning or ending points include state boundaries, transitions from two to four lanes, or major intersections. District borders, county lines or construction project limits are not logical beginning and ending points.
3. All districts along the route must be involved in the decision to install Emergency Reference Markers on a route to ensure consistency of application.

Guidance:

M16 Emergency Reference markers should not be installed on routes which are likely to change in length due to future realignments. Roadway realignments would require the replacement of Emergency Reference Markers in the future to correct the distance measurement displayed on these signs.

~~Support:~~

~~01 There are two types of enhanced reference location signs:~~

~~A. Enhanced Reference Location (D10-4) signs (see Figure 2H-7), and~~
~~B. Intermediate Enhanced Reference Location (D10-5) signs (see Figure 2H-7).~~

Figure 2H-7. Enhanced Reference Location Signs



~~Option:~~

~~02 An Enhanced Reference Location (D10-4) sign, which enhances the reference location sign system by identifying the route, may be placed on freeways or expressways (instead of reference location signs) or on conventional roads.~~

~~03 To augment an enhanced reference location sign system, an Intermediate Enhanced Reference Location (D10-5) sign, which shows the tenth of a mile with a decimal point, may be installed along any section of a highway route or ramp at one tenth of a mile, two tenths of a mile, or one-half mile intervals.~~

~~**Standard:**~~

~~**04 When an Intermediate Enhanced Reference Location (D10-5) sign is used to augment the reference location sign system, the Enhanced Reference Location sign at the integer mile point shall display a decimal point and a zero numeral.**~~

~~**05 Except as provided in Paragraph 6 of this Section, if enhanced reference location signs are used, they shall be vertical signs having a green background with a white legend and border, except for the route shield, which shall be the standard color and shape. The top line shall display the cardinal direction for the roadway. The second line shall display the applicable route shield for the roadway. The third line shall identify the mile reference for the location and the bottom line of the Intermediate Enhanced Reference Location sign shall give the tenth of a mile reference for the location preceded by a decimal point.**~~

~~Support:~~

~~06 The provisions in Section 2H.11 regarding mounting height, distance numbering and measurements, sign continuity, and placement with respect to the right-hand shoulder and/or median for reference location signs also apply to enhanced reference location signs.~~

MoDOT has developed specific language for these signs that includes relevant content from Sections 2H.11 and 2H.12. Revised Dec. 2025

Section 2H.13 Acknowledgment (Sponsorship) Signs and Plaques (I9-1, I9-2, I9-2P, I9-3, and I9-4)



Support:

01 Acknowledgment signs and plaques ~~(see Figure 2H-8)~~ are a way of recognizing a company, business, or volunteer group that provides or sponsors a highway-related service. Acknowledgment signs include sponsorship signs for ~~adopt~~ sponsor-a-highway litter removal programs, maintenance of a parkway or interchange, and other highway maintenance or beautification sponsorship programs.

M01A Refer to EPG 141.8 Sponsorship Programs for more information on MoDOT's Sponsorship Policy.

M01B Refer to EPG 171 Maintenance Policy and Operations for acknowledgment sign program policy.

Guidance:

02 A State or local highway agency that elects to have a sponsorship acknowledgement program should develop a policy on Acknowledgment signs and plaques. The policy should require that eligible sponsoring organizations comply with State laws prohibiting discrimination based on race, religion, color, age, sex, national origin, and other applicable laws.

Standard:

03 The State or local acknowledgment sign policy shall include all of the provisions regarding placement and design of Acknowledgment signs and plaques that are contained in this Section.

04 Because regulatory, warning, and guide signs have a higher priority, Acknowledgment signs shall only be installed where adequate spacing is available between the Acknowledgment sign and other higher priority signs. Acknowledgment signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

05 Acknowledgment signs shall not be installed at any of the following locations:

A. On the front or back of, adjacent to, or around any other traffic control device, including traffic signs, highway traffic signals, and changeable message signs;

B. On the front or back of, adjacent to, or around the supports or structures of other traffic control devices, or bridge piers; or

C. At key decision points where a road user's attention is more appropriately focused on other traffic control devices, roadway geometry, or traffic conditions, including exit and entrance ramps, merging or weaving areas, lane terminations, intersections, grade crossings, toll plazas, temporary traffic control zones, and areas of limited sight distance.

06 Acknowledgment signs and plaques shall have a white legend and border on a blue background. Acknowledgment signs shall be independent post-mounted roadside installations only and shall not be mounted overhead.

Option:

07 An Acknowledgment sign may be used to acknowledge the sponsor of a rest area or welcome center.

Standard:

08 Acknowledgment signs for a rest area, when located on the highway mainline, shall be limited to one sign per direction of travel from which the rest area is accessible, shall be located at least 500 feet from other traffic control devices, and shall not display names or representations of specific products or services provided by the sponsor within the rest area. Acknowledgment signs for rest areas shall display the legend REST AREA as the program activity, such as REST AREA SPONSORED BY. In accordance with Paragraph 5 of this Section, the Rest Area and Welcome Center Acknowledgment (I20-4 and I20-4a) signs shall not be combined in the same sign assembly with or substitute for the Rest Area General Service guide signs (see Section 2I.05).

Option:

09 An additional Acknowledgment sign may be used within the rest area provided that it is not visible from the highway mainline or ramps to and from the rest area.

10 If a State has officially adopted and is actively promoting a program to encourage the use of safety rest areas through the use of a program name, then that program name may be displayed in smaller lettering below the legend REST AREA on the Rest Area Acknowledgment sign.

Standard:

11 Program names or slogans, as described in ~~Paragraph 14 of this Section~~ the Option paragraph below, shall not be displayed on the Rest Area General Service guide signs or other types of traffic signs.

Guidance:

12 The minimum spacing between Acknowledgment signs and any other traffic control signs, except parking regulation signs, should be:

A. 150 feet on roadways with speed limits of less than 30 mph,

B. 200 feet on roadways with speed limits of 30 to 45 mph, and

C. 500 feet on roadways with speed limits greater than 45 mph.

13 If the placement of a newly-installed higher-priority traffic control device, such as a higher-priority sign, a highway traffic signal, or a temporary traffic control device, conflicts with an existing Acknowledgment sign, the Acknowledgment sign should be relocated, covered, or removed.

Option:

~~14 State or local highway agencies may use their own pictograph (see definition in Section 1C.02) and/or a brief jurisdiction-wide program name, such as "Adopt-A-Highway" or "Litter Removal," as part of any portion of the Acknowledgment sign, provided that the signs comply with the provisions for shape, sign and legend size, color, and lettering style in this Chapter and in Chapter 2A.~~

M14 Acknowledgment signs may have their own designs and may also use their own pictograph and/or a brief jurisdiction-wide program slogan as part of any portion of the acknowledgment sign, provided that the signs comply with the provisions for shape, color, and lettering style in this article and in EPG 903.1.

Guidance:

15 Acknowledgment signs should clearly indicate the type of highway services provided by the sponsor.

Standard:

16 ~~In addition to the general provisions for signs described in Chapter 2A and the sign design principles covered in the "Standard Highway Signs" publication (see Section 1A.05),~~ Acknowledgment signs and plaques ~~designs developed by State or local highway agencies~~ shall comply with the following provisions:

- **A. Neither the sign or plaque design nor the sponsor acknowledgment name or logo shall contain any contact information, directions, slogans (other than a brief jurisdiction-wide program name, if used), telephone numbers, e-mail or Internet addresses, including domain names and uniform resource locators (URLs), metadata tags ("hash-tags"), or quick-response (QR) codes, bar codes, or similar scanning graphics (see ~~Section 2A.04~~EPG 903.1.4);**
- **B. Except for the sponsor acknowledgment logo, all of the lettering shall be in upper-case letters of the Standard Alphabets as provided in the FHWA's "Standard Highway Signs" publication (see EPG 911 (MUTCD Section 1A.05));**
- **C. If a logo, instead of a word legend, is used to represent the sponsor, the logo shall be the primary logo that identifies the sponsoring entity. Secondary or alternate logos, slogans, products, mascots, spokespersons, or other items associated with the sponsoring entity's commercial advertising or marketing shall not be displayed on Acknowledgment signs or plaques;**
- **D. In order to keep the main focus on the highway-related service and not on the sponsor acknowledgment name or logo, the area reserved for the sponsor acknowledgment name or logo shall not be located at the top of the sign or plaque, shall be a maximum of 8 square feet in area, and shall not exceed ⅓ of the total area of the sign;**
- **E. The entire sign display area of an Acknowledgment sign assembly shall not exceed 24 square feet;**
- **F. The sign or plaque shall not contain any messages, lights, symbols, or logos that resemble any official traffic control devices;**
- **G. The sign or plaque shall not contain any external or internal illumination, light-emitting diodes, luminous tubing, fiber optics, luminescent panels, or other flashing, moving, or animated features;**
- **H. The sign or plaque shall not distract from official traffic control messages such as regulatory, warning, or guidance messages;**
- **I. The area of the plaque shall not exceed the lesser of ⅓ the area of the General Service sign below which it is mounted or 24 square feet;**
- **J. The plaque size shall be based on the standard sizes as specified in Table 2H-1. If the size of the General Service sign is oversized for its application (greater than the size specified for the corresponding roadway application in Table 2H-1), or if the size of the General Service sign**

increases due to modification of the sign legend, a corresponding increase in the size of the plaque shall not be allowed; and

K. The sign or plaque shall not display promotional or contact information about the agency's sponsorship program, including if the sign or plaque does not currently display a sponsor.

Option:

17 If a specific outlet of a business with multiple locations in the same area is the sponsoring entity, such as a franchisee, the area reserved for the sponsor acknowledgment name or logo may include the name of the municipality or neighborhood in which the sponsoring entity is located.

~~18 An Acknowledgment plaque may be mounted below the following General Service signs to acknowledge the sponsor of a corridor-based or region-based highway-related service:~~

~~A. Radio Weather Information (D12-1) sign (see Section 2I.09);~~

~~B. Radio Traffic Information (D12-1a) sign (see Section 2I.09);~~

~~C. TRAVEL INFO CALL 511 (D12-5 and D12-5a) signs (see Section 2I.12); and~~

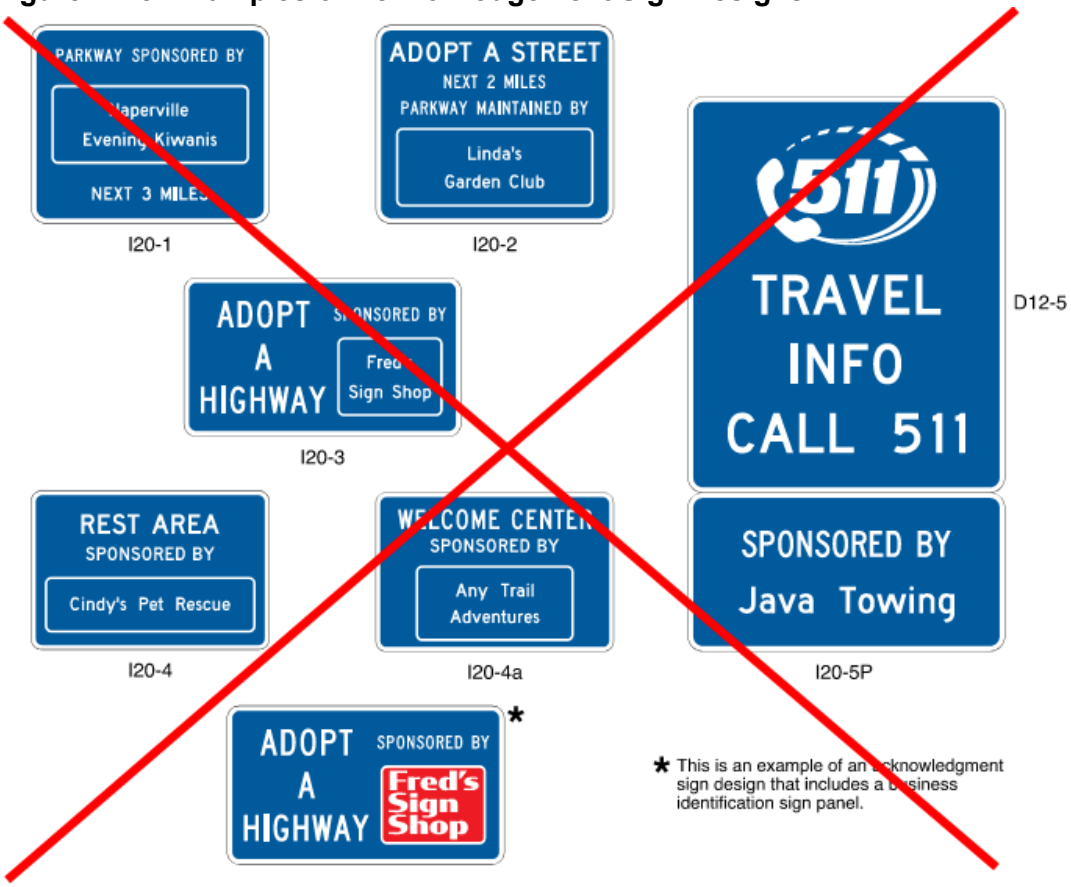
~~D. Roadside Assistance (D12-6) sign (see Section 2I.13).~~

Standard:

19 An Acknowledgment plaque shall not be mounted in conjunction with any other sign or traffic control device. An Acknowledgment plaque shall not be used alone ~~or without one of the General Service signs specified in Paragraph 18 of this Section~~.

20 The general restrictions on the type of content allowed for display on Acknowledgment signs (see ~~Paragraph 16 of this Section~~ the Standard paragraph above) shall apply to the legends of Acknowledgment plaques.

Figure 2H-8. Examples of Acknowledgement Sign Designs



Section 2H.14 Alternative Fuels Corridor Sign (D9-19)

Option:

01 The Alternative Fuels Corridor (D9-19) sign (see Figure 2H-9) may be used to inform motorists of an alternative fuels corridor highway segment that has been designated by the Secretary of Transportation as "Corridor Ready."

Standard:

02 Alternative Fuels Corridor signs shall only be used to designate alternative fuels corridor highway segments that have been designated by the Federal Highway Administration as "Corridor Ready." The appropriate General Service signs or plaques identifying the alternative fuels available in the corridor shall be included with the Alternative Fuels Corridor sign in a sign assembly. The alternative fuel services for an alternative fuels corridor shall be limited to electric vehicle charging, compressed natural gas, liquid natural gas, liquified petroleum, and hydrogen.

Support:

03 The General Service (D9-11a, D9-11b, D9-11d, D9-11e, and D9-11f) symbol signs for use with an Alternative Fuels Corridor sign are shown in Figure 2I-1.

Standard:

04 Alternative Fuels Corridor signs shall only be post-mounted on the side of the road and shall not be mounted overhead.

05 State or agency variations of the Alternative Fuels Corridor sign shall not be allowed. Acknowledgments of sponsors shall not be allowed in Alternative Fuels Corridor sign assemblies.

06 Except as provided in Paragraph 7 of this Section, Alternative Fuels Corridor signs shall be limited to one sign at or near the beginning of the alternative fuels corridor in each direction of travel.

Option:

07 For long corridors, such as segments connecting control cities or major urban areas, additional signs may be located beyond major intersections or major interchanges following the typical post-interchange sign sequence.

08 The beginning of an alternative fuels corridor may be indicated with a BEGIN (M4-14P) plaque (see Figure 2H-9) with a white legend and border on a blue background mounted above the alternative fuels corridor sign in the sign assembly.

09 The end of an alternative fuels corridor may be indicated with an END (M4-6P) plaque (see Figure 2H-9) with a white legend and border on a blue background mounted above the Alternative Fuels Corridor sign in the sign assembly.

Standard:

10 The General Service signs shall not be used in the sign assembly indicating the end of a corridor.

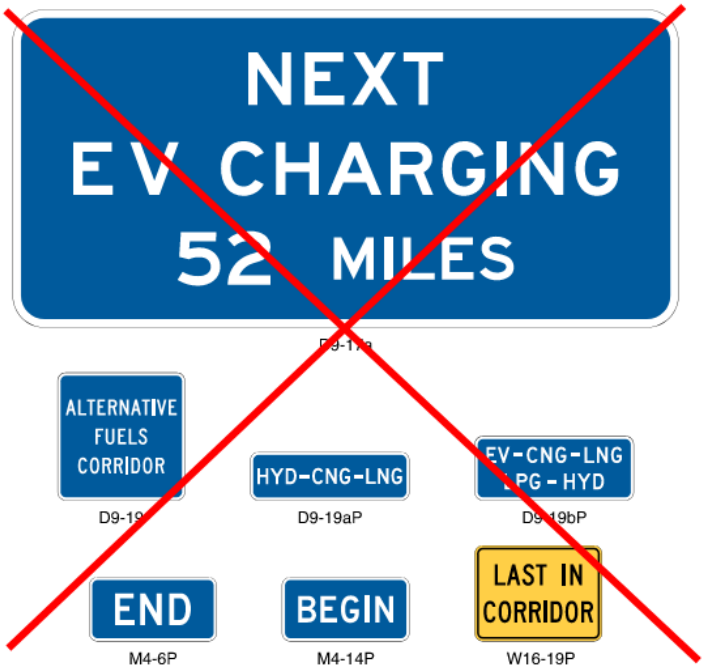
11 When the availability of one or more of the alternative fuel facilities discontinues in an alternative fuels corridor, the LAST IN CORRIDOR (W16-19P) plaque (see Figure 2H-9) shall be included on the last General Service directional assembly on the approach to the interchange or intersection.

Option:

12 When the availability of one or more of the alternative fuel facilities discontinues in an alternative fuels corridor, an Alternative Fuels Corridor sign with accompanying General Service signs indicating the types of fuels still available in the corridor may be provided beyond the intersection or interchange where the last discontinued fuel facilities were available.

13 When the distance between electric vehicle (EV) charging services in an alternative fuels corridor is greater than 50 miles, the Next EV Charging (D9-17a) sign (see Figure 2H-9) may be located after the EV charging directional assembly, but before the EV charging service exit or turn, to inform road users of the extended distance to the next EV charging service.

Figure 2H-9. Examples of Signs for Alternative Fuels Corridors



~~**Standard:**~~

~~**14 The Alternative Fuels Corridor (D9-19) sign shall not be used as a directional sign in a directional assembly, or be combined with other signs, except as provided in this Section.**~~

~~Option:~~

~~15 Up to three General Service symbol signs arranged horizontally displaying the alternative fuels available in the designated corridor may be installed below the Alternative Fuels Corridor sign (see Figure 2H-10).~~

~~**Standard:**~~

~~**16 The size of the General Service symbol signs for the alternative fuels available shall not exceed 18 x 18 inches when mounted with the 24 x 24-inch Alternative Fuels Corridor sign and 24 x 24 inches when mounted with the 36 x 36-inch Alternative Fuels Corridor sign.**~~

~~*Guidance:*~~

~~*17 When the number of eligible alternative fuels available in the corridor exceeds three, a separate plaque with the two-letter or three-letter designations (D9-19aP or D9-19bP) of each of the fuels available (see Figure 2H-9) should be used in place of the General Service symbol signs.*~~

~~**Standard:**~~

~~**18 When the Alternative Fuels Corridor sign is used in a designated corridor on a freeway or expressway, the applicable General Service signs shall be installed on the approach to an interchange in the corridor from which the designated fuel services are available. If the services are not visible from the ramp of a single-exit interchange, the service signing shall be repeated at the intersection of the exit ramp and the crossroad (see Figure 2H-10). Where the alternative fuel facility is not located along the crossroad, additional General Service directional assemblies shall be installed in advance of each subsequent turn to reach the facility (see Figure 2H-11).**~~

~~Support:~~

~~19 Because regulatory, warning, and guide signs are necessary for safe and efficient movement of traffic, they have a higher priority in placement location over Alternative Fuels Corridor signs.~~

~~**Standard:**~~

~~**20 Alternative Fuels Corridor sign assemblies shall be limited to those locations where adequate spacing is available between the Alternative Fuels Corridor sign and other signs. Alternative Fuels Corridor signs shall not be installed in a location where they might distract driver's attention from**~~

~~other traffic control devices or the roadway in a complex roadway environment. If the placement of a newly-installed, higher-priority traffic control device conflicts with an existing Alternative Fuels Corridor sign, the Alternative Fuels Corridor sign shall be relocated, covered, or removed.~~

~~21 Alternative Fuels Corridor signs shall not be installed on routes other than those officially designated as alternative fuels corridors, even if to provide directional information to such corridors.~~

MoDOT does not use Alternative Fuels Corridor signs. Revised Dec. 2025

Figure 2H-10. Examples of Signing for Alternative Fuels Corridors

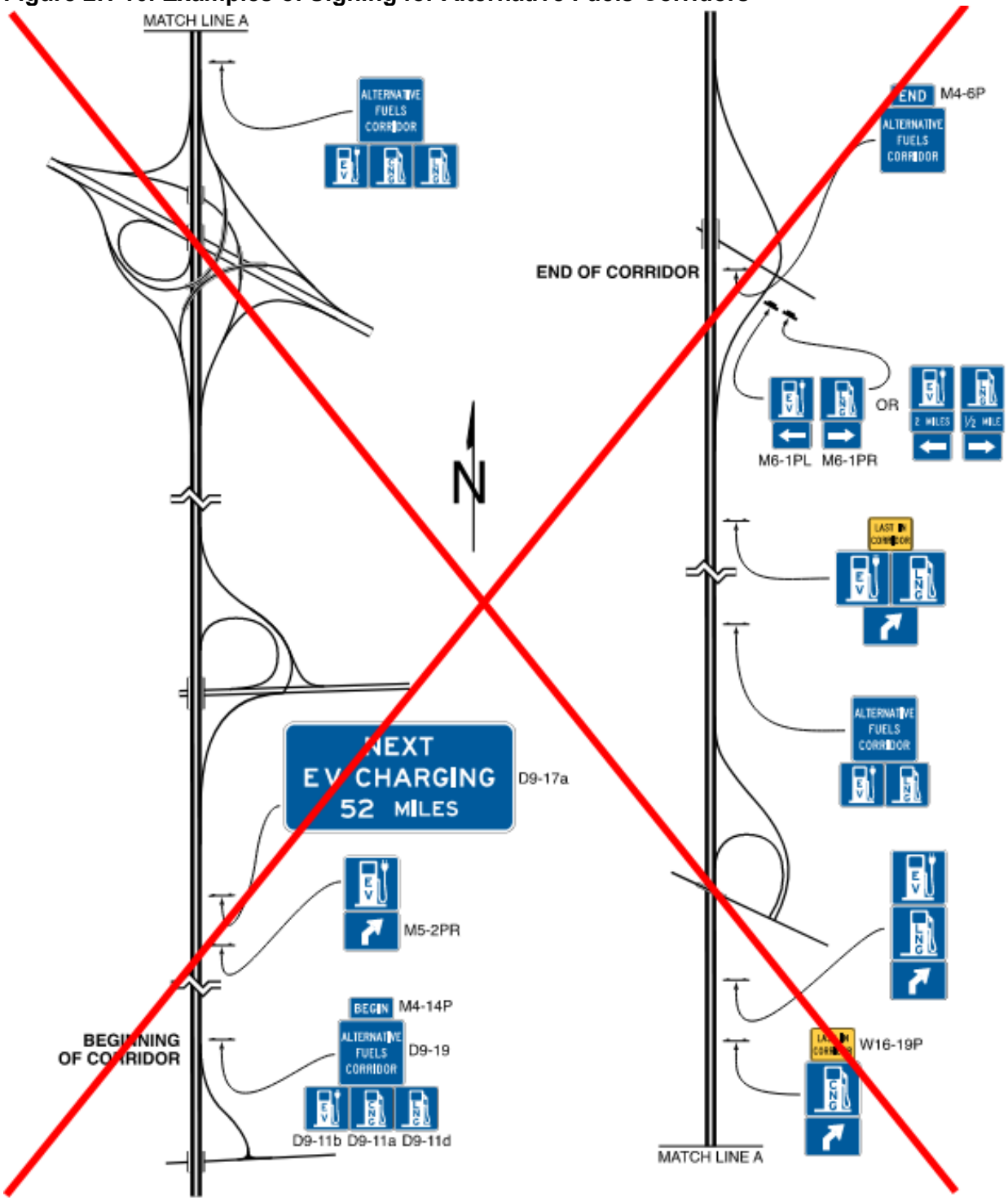
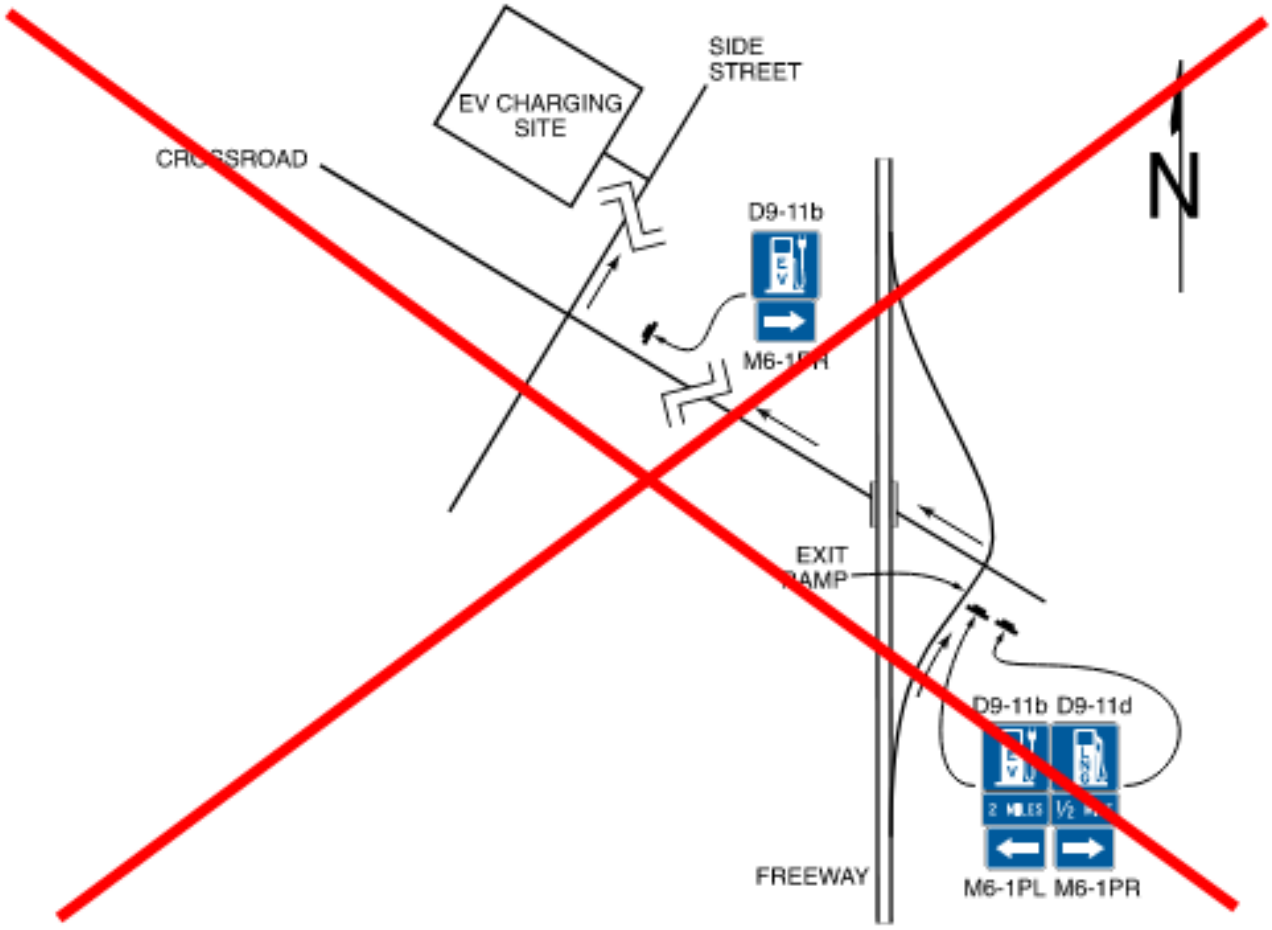
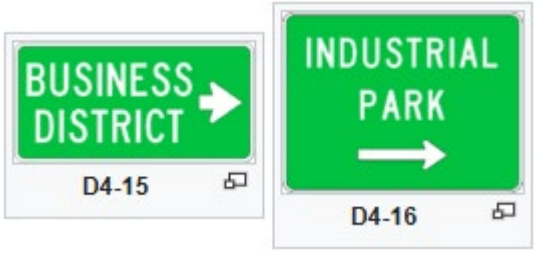


Figure 2H-11. Typical Signing from a Freeway Exit Ramp to a Service Facility



Section 2H.15 BUSINESS DISTRICT and INDUSTRIAL PARK Signs (D4-15, D4-16)



Option:

M01 The BUSINESS DISTRICT (D4-15) sign may be erected on a highway within the city limits at the principal intersection leading to the central business district.

Standard:

M02 If a route passes through the central business district, this sign shall not be used.

M03 If a route passes through the industrial park, this sign shall not be used.

Option:

M04 The INDUSTRIAL PARK (D4-16) sign may be erected on a highway within the city limits at the principal intersection leading to the central industrial park when truck traffic tends to get lost or miss turns.

Guidance:

M05 If used, the INDUSTRIAL PARK sign should be installed at first order signing for the most direct path.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.16 City and County Accomplishment Plaques

Support:

M01 MoDOT did have a city/county accomplishment program where a city or county could display up to three accomplishments below their jurisdictional boundary sign. This program was discontinued September 1, 2021 in response to pending federal rule changes that would prohibit such displays on jurisdictional boundary signs.

Standard:

M02 No new accomplishment plaque requests will be considered after September 1, 2021 to display accomplishments under or in association with a city limit or county line sign. All existing accomplishment plaques shall be maintained for the remainder of the 10-year term in accordance with the latest TR15 contract executed for each installation. No accomplishment contract will be renewed or extended beyond the contract termination date. All existing accomplishments listed on the plaques shall remain unchanged for the remainder of the contract terms. No additions, modifications or updates will be permitted.

Option:

M03 If cities have a Welcome To sign (see EPG 903.8.8), they may display accomplishments on these structures. Accomplishments are not recommended on city Welcome To monuments as these structures are farther off the roadway and accomplishment legends would not be legible.

Standard:

M04 If accomplishments are installed with a Welcome To sign, the following criteria apply:

1. **Accomplishments shall only be updated one time per year under a permit. If accomplishments are school related, they shall be updated at the end of the school year.**
2. **A maximum of three accomplishments, each displayed on an individual panel, shall be displayed below a city Welcome To sign.**
3. **Each accomplishment panel shall be no taller than 1 foot and shall be the width of the Welcome To sign they are installed under.**
4. **The total accomplishment sign area height shall be no taller than the Welcome To sign they are installed under.**
5. **The addition of the accomplishment plaques will be included in the TR42 agreement for the Welcome To sign they are installed beneath.**
6. **The size and fabrication method for the Welcome To sign with accomplishments must meet MoDOT specifications for this application of Welcome To sign (see 903.9.12).**

Guidance:

M05 Care should be taken when considering adding supplemental signs to make sure they do not interfere with or distract from regulatory, warning or guide signs. Sufficient spacing of at least 800 ft. on freeways or expressways should be allowed for drivers to be able to read and comprehend the sign messages.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.17 Missouri Regional Port Authorities

Support:

M01 Signing for port authorities is done in coordination with Multimodal Operations. For more information contact Multimodal Operations.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.18 Veterans Signing

Standard:

M01 MoDOT shall provide signing for veterans cemeteries in Missouri. The cemeteries shall be owned and operated by either the U.S. Department of Veterans Affairs (for national cemeteries) or the Missouri Veterans Commission (for state cemeteries). First order signing, on the state system, shall be provided for all cemeteries that meet the above upon request.

M02 The Missouri Veterans Commission shall pay a participation fee for veterans' home signs for 10 years. After 10 years, the signs will either be removed or renewed for another participation fee. All participation fees are to be determined by Traffic. First order signing, on the state system, shall be provided for all veterans' homes that meet the above upon request.

Option:

M03 Second order signing may be considered if there is an intersection of a state route or an interchange within 6 miles of the cemetery or of the veterans' home.

M04 Signing may be allowed for veterans' homes that are owned and operated by the Missouri Veterans Commission.

Support:

M05 See EPG 903.9.2 for signing of Veterans hospitals

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.19 College Signing

Support:

M01 Effective July 1, 2015 a new Code of State Regulations, 7 CSR Division 10, Chapter 17 – Supplemental Guide Sign Program, went into effect that incorporated the rules for college signing.

M02 College signing is now part of the Supplemental Guide Sign Program which is managed by a third party contractor, beginning July 1, 2015.

Standard:

M03 The signing programs managed under the Supplemental Guide Sign Program include:

1. **Tourist Oriented Directional Signing (TODS)**
2. **Specific Service Signing (Logos)**
3. **Traffic Generator Signing for privately owned and operated tourist-oriented activity sites**
4. **College Signing**
5. **Signing for State and Federal recreational and historic sites**
6. **State Correctional Center signing**
7. **Welcome Center Affiliate signing.**

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.20 State Correctional Center Signs

Support:

M01 Prior to July 2015, MoDOT's State Correctional Center Signing was managed, installed and maintained by MoDOT. The rules for correctional signing were contained in MoDOT policy in the EPG.

M02 Effective July 1st 2015, a new Code of State Regulations went into effect, 7 CSR Division 10 , Chapter 17 – Supplemental Guide Sign Program, which incorporated the rules for State Correctional Center Signing. State Correctional Center Signing is now part of the Supplemental Guide Sign Program which is managed by a third party contractor, beginning July 1, 2015.

Standard:

M03 All requests for State Correctional Center Signing shall be sent to MoDOT's Supplemental Guide Sign Program manager for processing.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.21 Historical Site Signs (M17-2a)



Support:

M01 Prior to July 2015, MoDOT's historic signing was accomplished through several different programs, Traffic Generator Signing and State and Federal Historic Site signing, these programs were managed, installed and maintained by MoDOT. In addition, historic sites could also be signed through MoDOT's TODS and Logos program, managed by MoDOT's TODS and Logos third party contract manager. The rules for Traffic generator signing and well as TODS and Logos signing were all contained in individual Codes of State Regulations while the rules for state and federal historic site signing were contained in policy within the EPG.

M02 Effective July 1st 2015, a new Code of State Regulations went into effect, 7 CSR Division 10 , Chapter 17 – Supplemental Guide Sign Program, which incorporated the rules for Traffic Generator Signing, TODS, Logos as well as for State and Federal Historic site signing.

M03 These programs are now part of the Supplemental Guide Sign Program which is managed by a third party contractor, beginning July 1, 2015.

Standard:

M04 All requests for Historic Site Signing shall be sent to MoDOT's Supplemental Guide Sign Program manager for processing.

Support:

M05 There are some historical sites which MoDOT staff still install and maintain signs for, these are sites that have "national prominence" and are "nationally known" and are signed at the Commission's expense. Table 903.9.23 shows the list of sites that are considered to have "national prominence" and are "nationally known" and are the historic sites the Commission deemed to be of such importance as to justify such signing per Missouri State Statue 226.525 for the signing of natural wonders and historic attractions. Other historic sites have the option for signing under the Supplemental Guide Sign Program.

Table 903.8.18 Nationally Known, Nationally Prominent Sites

Non-contractual Sites
Daniel Boone's Home
General Pershing's Boyhood Home
George Washington Carver Nat'l Monument
Harry S Truman's Birthplace
Mark Twain's Boyhood Home and Museum
Route 66 State Park
Scott Joplin House
Trail of Tears State Park
Ulysses S. Grant National Historic Site
Wilson's Creek National Battlefield Park
National Churchill Museum

Standard:

M06 MoDOT shall provide signing for certified Lewis and Clark historic sites. Signing for sites shall direct motorists from the Lewis and Clark trail to the certified historic site. Signing for a certified site shall be limited to the nearest junction on the trail to the site. Second and third order signing on the trail shall not be allowed. Along the Mississippi River, where there is not an official Lewis and Clark trail, signing shall be provided from the "pseudo-trail" as designated by MoDOT.

M07 Signing shall consist of the Lewis and Clark Historical Marker (M17-2a) sign and an appropriate Advance Turn Arrow placed in advance of the junction where motorists leave the trail. If additional trailblazers on the state system are required, the Lewis and Clark Historical Marker sign with the appropriate Advance Turn Arrow shall be used.

M08 Additional trailblazing off the state system may be required to reach the certified historic site. This signing shall consist of the smaller version of the Lewis and Clark Historical Marker (M17-2a) sign, which is installed and maintained by others. MoDOT shall manufacture the Lewis and Clark Historical Marker signs with the cost of manufacturing reimbursed according to the following subarticles. Signing on the state system shall not be allowed unless the appropriate trailblazer signs off the state system are also installed, if required.

M09 If a Public Area Directional sign does not exist for the facility, signing shall be provided according to the normal Lewis and Clark historic site policy.

M10 Trailblazers shall be reimbursed by the appropriate state agency.

M11 Requests for Lewis and Clark historic signing for a non-state owned location shall only be considered if the location has been certified by the National Park Service.

M12 Signing for certified sites shall be in accordance with the normal Lewis and Clark historic site policy. The owner of the site shall be responsible for the cost and installation of the trailblazer signs and securing approval from the appropriate local agencies for locating and maintaining the trailblazer signs.

Guidance:

M13 The Missouri Department of Natural Resources and the Missouri Department of Conservation have erected special interpretive signs at some of their sites. The advance signs for these sites should be incorporated into any signing that currently exists for the facility by adding it above the existing Public Area Directional sign.

M14 The Lewis and Clark Historical Marker sign should be mounted to either the left or right side of the Public Area Directional sign based on the turn required to reach the site.

Support:

M15 Information for certification can be found at:
Lewis & Clark National Historic Trail
1709 Jackson Street
Omaha, NE 68102-2571
www.nps.gov/lecl/parkmgmt/site-certification.htm.

M16 Information regarding the trail in Missouri can be found at:
The Missouri Lewis and Clark Bicentennial Commission
100 Jefferson Street, Suite 200
Jefferson City, MO 65101
573-522-9019
https://mostateparks.com/park/lewis-and-clark-state-park.

M17 Signing for certified sites will normally be from the approved Lewis and Clark trail. There are, however, several sites along the Missouri River in the north part of St. Louis County that are not conveniently located near the Lewis and Clark trail. Any signing provided along these routes will be in accordance with the normal Lewis and Clark historic site policy.

M18 On November 1952, the Commission entered into an agreement with the Missouri Historical Society for the erection of markers along the highways of Missouri at points of great historic interest. These signs are provided by others, normally in a rest area, roadside park or at a specific location of historical interest.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.22 Blue Star Markers (TR42-4)



Option:

M01 Blue Star Markers may be placed on the following routes: Route 36, Route 50, Route 67, I-44 and I-70. These signs are normally located in a rest area or roadside park. These signs are provided and maintained by others.

Standard:

M02 Approval for signing shall be obtained from the National Garden Clubs, Inc. prior to the erection of any new signs.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.23 Local Reference Signs



Support:

M01 Local Reference signs are small informational signs installed and maintained by a city or county on state right of way per the terms of a Roles and Responsibilities document (see EPG 903.15.4.1). These signs provide guidance to city or county owned and maintained community sites which do not qualify for one of MoDOT's supplemental guide sign programs.

M02 Typical examples of sites that would qualify for Local Reference signing include, but are not limited to:

1. City Hall
2. Police Station
3. Courthouse
4. City/County Park
5. City/County Pool
6. Senior Center
7. Recycling Center

Standard:

M03 Local Reference signs shall be 24 in. x 24 in. white legend on green guide signs with a directional arrow below the sign legend. The sign legend shall be limited to the generic name of the site, such as CITY PARK, and shall not include the proper name of the facility or the city / county name. Central Office Highway Safety and Traffic shall approve site types being requested for Local Reference signs and shall provide the sign design detail these signs shall be fabricated to match.

M04 Local Reference signs shall only be placed at the first order sign location where motorists leave the state highway system. If the first order location is an interchange, the Local Reference sign shall only be placed at the ramp terminal. Local Reference signs shall not be placed on interstate highways or

freeways. These signs shall only be installed on expressways with speed limits of 45 mph or less or on any conventional two-lane route.

M05 A maximum of two Local Reference Signs on a maximum of one post shall be permitted at any given first order location. Local Reference signs shall direct motorists to the site along the most direct path possible. If the most direct path is not the same for the two directions of travel on the state route, the Local Reference signs for each direction shall be placed at two appropriate first order locations.

M06 Local Reference signs and posts shall be provided, installed, and maintained by the city/county per the terms of a Roles and Responsibilities document, and the district shall approve all locations. Local reference signs shall be fabricated to MoDOT's sign design details and shall meet minimum *MUTCD* standards for color and retroreflection. A permit shall be issued by MoDOT to the city/county prior to the installation of Local Reference Signs. These signs shall be installed in accordance with the exhibits included with the Roles and Responsibilities document.

Guidance:

M07 Sites receiving Local Reference signing on MoDOT right of way could require additional trailblazer signing on city/county right of way to provide a complete path to the site. This signing is also the responsibility of the city/county to install and maintain. Trailblazer signs should match the same design, color and size as Local Reference signs so they are clearly associated with the first signs they see on MoDOT right of way.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.24 Community Awareness Signs

Support:

M01 Many cities/counties participate in programs sponsored by different organizations. Some of these programs provide signs the cities/counties then wish to post with their city limit sign to acknowledge their participation. Cities/counties must achieve the minimum program requirements outlined by each sponsoring organization in order to qualify and/or continue to qualify for one or more of these programs. Signing for the following programs are approved for installation on MoDOT right of way:

A. Storm Ready Program – Administered by National Weather Service program.
B. Disaster Resistant Community Program - Sponsored by FEMA and locally coordinated by SEMA.
C. Missouri Community Betterment Program - Administered by the Missouri Community Betterment Education Fund, Inc.
D. TREE CITY U.S.A. Program – Administered by National Arbor Day Foundation.
E. National Neighborhood Watch Program – Administered by the National Sheriff's Association
F. MADD Program – Administered by Mothers Against Drunk Driving
G. D.A.R.E. Program - Administered by the MSHP in conjunction with local law enforcement
H. Purple Heart City/County – Administered by the Military Order of the Purple Heart
I. POW-MIA City/County – Administered by the Jefferson Barracks POW-MIA Museum
J. Agri-Ready County - Administered by Missouri Farmers Care / Dept. of Agriculture
K. Firewise USA Program – Administered by the National Fire Protection Association
L. Main Street America – Administered by the Missouri Main Street Connection

Standard:

M02 Community Awareness signs shall not detract from, or interfere with, MoDOT signs or maintenance of the roadway. The signs shall look professional and shall not, contain advertising of any kind. These signs shall not be displayed on interstates or freeways. These signs shall only be installed on expressways with speed limits of 45 mph or less or on any conventional two-lane route. No Community Awareness sign shall be mounted to a MoDOT post assembly. Community Awareness signs shall be located 200 feet downstream of the city limit signs.

M03 Cities/counties shall not install signs on MoDOT right of way before signing the Roles and Responsibilities agreement (see EPG 903.19.4.1) and receiving a permit from the local MoDOT district

office. The roles and responsibilities agreement contains the guidance for how and where signs are to be installed on MoDOT right of way.

M04 Cities/counties shall be approved by the sign program sponsoring organization before acquiring signs. Cities shall not fabricate their own copies and/or versions of the official community awareness program signs, only those signs provided by the sponsoring organization shall be installed on MoDOT right of way. Signs shall be removed from the right of way if the city/county no longer qualifies for the program the sign represents.

Option:

M05 The location of Community Awareness signs may be adjusted as not to interfere with higher-priority traffic control devices.

M06 DARE signs may also be located at the right of way line on routes that pass along school properties.

M07 If a city has a Welcome To sign on MoDOT right of way (see EPG 903.8.8) or a Welcome To monument on right of way (see EPG 941.5), they have the option to install their Community Awareness signs at these locations. However, the city must choose their preferred location for their Community Awareness signs, they cannot be displayed at both their Welcome To sign/monument location and their MoDOT city limit sign location, and the city is still limited to a maximum of two Community Awareness signs per Welcome To sign/monument. If the city elects to install the Community Awareness signs on the city Welcome To sign, they must be installed on the sign posts directly below the city Welcome To sign, one Community Awareness sign per post. If these signs are associated with a city Welcome To monument, the Community Awareness signs must be attached to the monument.

MoDOT policy for these signs. Revised Dec. 2025

Section 2H.25 Municipal Bus Stop Signing

Support:

M01 Many cities operate public transportation that includes bus service. With many MoDOT routes running through cities and serving as city streets, bus stop locations many times are located on MoDOT routes.

Guidance:

M02 Signing for bus stops should be installed and maintained by municipality forces with standard red on white "No Parking - Bus Stop" signs following enactment of an enabling ordinance either on a blanket or specific location basis.

M03 No other bus system signing, such as trail blazing for bus routes, should be permitted on the state system.

Option:

M04 Where a special need exists, the shoulder may be improved for safety and maintenance reasons.

M05 Local bus officials may be permitted to install supplementary plates bearing schedules for the particular stop and other information relating to the bus operation. Distinctive bus system logos may be displayed on the supplementary signs provided they are not distracting to motorists. These supplementary signs should be installed beneath the municipality signs.

M06 Signing for other mass transit systems, including park and ride lots associated with the system, will be allowed under guidelines similar to bus stops.

M07 If the mass transit system has a logo, they may incorporate it into their sign.

MoDOT policy for these signs. Revised Dec. 2025

CHAPTER 2I. GENERAL SERVICE SIGNS [EPG 903.9]

Standard:

M01 General Service Signs have been discontinued. MoDOT shall no longer provide General Service Signs. General Service Signs shall be left in place until they reach the end of their service life.

Guidance:

M02 The districts should give advanced notice to the entity for which the sign was installed for before removing the signs at the end of their service life. Any General Service Sign which is in place that directs motorists to a location which is no longer providing the service should be removed immediately.

Support:

M03 General Service Signing was the motorist service signing system before the adoption of the Logo program in 1991. The Logo program has become the recognized system nationally for directing motorist to the services they wish to find, making the General Service Signing system redundant and not widely used by motorist. This is the reason the program has been eliminated. General Service Signing for Alternate Fuels will be incorporated into the next TODS and Logo contract to supplement these programs and help direct motorist to available alternate fuels which may be available at normal fuel stations. Alternate fuels will include Blended Ethanol (E85), Biodiesel (B20), Compressed Natural Gas (CNG) and Propane.

Section 2I.01 Sizes of General Service Signs

Standard:

01 Except as provided in ~~Section 2A.07~~EPG 903.1.7, the sizes of General Service signs that have a standardized design shall be as shown in Table 2I-1.

Table 2I-1. General Service Signs and Plaque Sizes

Sign	Sign Designation	EPG Article	Conventional Road (in. x in.)	Freeway/Expressway (in. x in.)
				Mainline & Ramps
Rest Area Advance	D5-1		-	132 X 60
Rest Area Advance (Direction)	D5-1a		-	132 X 60
Rest Area Entrance (Direction)	D5-2		-	132 X 60
Rest Area Gore	D5-2a		-	72 X 84

~~Support:~~

~~02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2I-1.~~

~~Option:~~

~~03 Signs larger than those shown in Table 2I-1 may be used (see Section 2A.07).~~

~~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 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.

Figure 2I-1. General Service Signs and Plaques



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.

Figure 2I-2. Example of Next Services Plaque



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.*~~

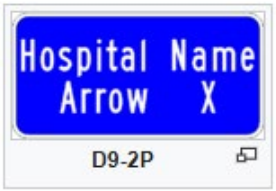
~~*2. Available 24 hours per day, 7 days per week.*~~

~~*3. The service should be endorsed, sponsored, or controlled by an appropriate government authority to guarantee the level of monitoring.*~~

MoDOT only uses the Hospital sign which is discussed in a unique section. Revised Dec. 2025

Section 2I.02A HOSPITAL Signs (D9-2, D92-2P, D9-27, D9-27P)









Option:

M01 The commission may provide signs on state right of way for the purpose of directing motorists to a qualified hospital for emergency care including Veterans hospitals.

M02 Hospital signing at a second interchange may be considered.

M03 Supplemental plaques may be added to the Hospital sign and symbolic "H".

M04 Hospitals, including veterans' hospitals, may purchase a supplemental plaque to be placed below the HOSPITAL sign with the hospital's name.

Standard:

M05 A qualified licensed hospital shall provide continuous emergency care available to the public 24 hours a day, 7 days a week, with a doctor on call at all times, not to exceed third order signing (see EPG 903.1.24). Veterans' hospital emergency rooms must be open to the general public, and not limited to treating only veterans, to qualify for hospital signing. Medical clinics not meeting these criteria shall not qualify for signing.

M06 On freeways and expressways, the hospital sign shall be kept separate from other service signs due to its unique nature and usage. The HOSIPTAL NEXT RIGHT (D9-27) sign shall be used on the mainline in advance of an interchange and mounted independently.

M07 The symbolic H (D9-2) sign shall be used at the top of the ramp along with the appropriate M series arrow in white on a blue background.

M05 Stand-alone hospital signs shall consist of a sign assembly containing the symbolic H and directional arrow. The intersection for hospital signing shall be at the location where the principal access road to the hospital intersects the state highway system.

M09 Hospital signs shall not be installed until it is determined that the motorist is adequately directed to the hospital once they leave the state highway system. If a hospital is farther than 1 mile from an interchange, a mileage plaque shall be provided with the symbolic H and M series arrow. If two hospitals are located at the same intersection the hospitals shall have a mileage plaque with distances in ¼ mile increments. Trailblazing on the state system shall consist of the symbolic H. Hospital signing shall be provided at the interchange or exit ramps that provide the most direct route to the hospital.

M010 Supplemental plaques shall only be used when the following criteria is met:

A. A maximum of 3 supplemental signs shall be allowed per Hospital sign. Each plaque shall be 132 in. x 12 in. for the Hospital sign and 24 in. x 12 in. for symbolic H,

B. Signs shall be white legend on blue background,

C. All minimum ground clearance and breakaway requirements shall be followed, and

D. No commercial advertising or business logos shall be permitted.

Guidance:

M011 In those instances where the hospital property abuts the MoDOT right of way, the nearest adjacent intersection of two state highways should be eligible. If the hospital is not located on the intersecting street where the state installed signs are located, assurance should be given that responsible local authorities will erect additional signs on the city, street or county highway.

MoDOT specific content from the EPG. Revised Dec. 2025

~~**Section 2I.03 General Service Signs for Freeways and Expressways**~~

~~Support:~~

~~01 General Service (D9-18 series) signs (see Figure 2I-3) are generally not appropriate at major interchanges (see definition in Section 2E.11) and in urban areas.~~

~~**Standard:**~~

~~**02 General Service signs shall have a white legend and border on a blue background. Letter and numeral sizes shall comply with the minimum requirements of Tables 2E-2 through 2E-5. All approved symbols shall be permitted as alternatives to word messages, but symbols and word service messages shall not be intermixed on the same sign. If the services are not visible from the ramp of a single-exit interchange, the service signing shall be repeated in smaller size at the intersection of the exit ramp and the crossroad. Such service signs shall use arrows to indicate the direction to the services.**~~

~~*Guidance:*~~

~~*03 Where General Service signs are used along routes with exit numbering, the General Service sign should include the exit number within the sign face as shown in Figure 2I-3.*~~

~~*04 Distance to services should be displayed on General Service signs along the exit ramp where distances are more than 1 mile from the ramp intersection with the crossroad.*~~

~~*05 General Service signing should only be provided at locations where the road user can return to the freeway or expressway and continue in the same direction of travel.*~~

~~*06 Only services that fulfill the needs of the road user should be displayed on General Service signs. If State or local agencies elect to provide General Service signing, there should be a statewide policy for such signing and criteria for the eligibility and availability of the various types of services. The criteria should consider the following:*~~

~~*A. Gas, diesel, and/or alternative fuels, except for electric vehicle (EV) charging, if all of the following are available:*~~

~~*1. Vehicle services such as gas, oil, and water;*~~
~~*2. Modern sanitary facilities and drinking water; and*~~
~~*3. Continuous operations at least 16 hours per day, 7 days per week.*~~

~~*B. Food if all of the following are available:*~~

~~*1. Licensing or approval, where required;*~~
~~*2. Continuous operation to serve at least two meals per day, at least 6 days per week; and*~~
~~*3. Modern sanitary facilities.*~~

~~*C. Lodging if all of the following are available:*~~

~~*1. Licensing or approval, where required;*~~
~~*2. Adequate sleeping accommodations; and*~~
~~*3. Modern sanitary facilities.*~~

~~*D. Public telephone if continuous operation, 7 days per week is available.*~~

~~*E. Hospital if continuous emergency care capability, with a physician on duty 24 hours per day, 7 days per week is available. A physician on duty would include the following criteria and should be signed in accordance with the priority as follows:*~~

~~*1. Physician on duty within the emergency department;*~~

~~*2. Registered nurse on duty within the emergency department, with a physician in the hospital on call; or*~~

~~*3. Registered nurse on duty within the emergency department, with a physician on call from office or home.*~~

~~*F. 24-Hour Pharmacy if a pharmacy is open, with a State-licensed pharmacist present and on duty, 24 hours per day, 7 days per week and is located within 3 miles of an interchange on the Federal-aid system.*~~

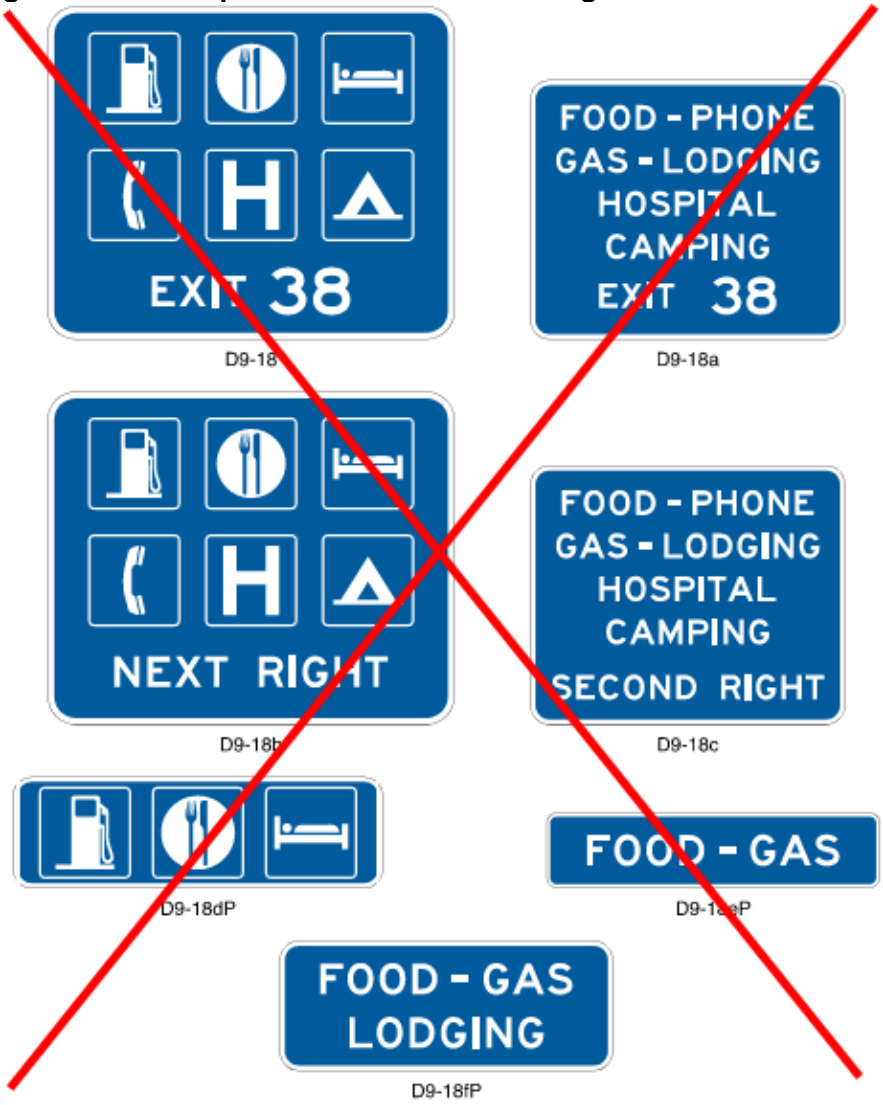
~~*G. Camping if all of the following are available:*~~

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

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

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

Figure 2I-3. Examples of General Service Signs with and without Exit Numbering



~~**Standard:**~~

~~**07 To be eligible for an EV Charging General Service sign on freeways and expressways, 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.**~~

Support:

08 Motorist expectations for facilities providing alternative fuels, such as EV Charging, compressed natural gas, liquefied natural gas, liquefied petroleum gas, and hydrogen, vary considerably and alternative fuel vehicles might have different needs than conventional fuel vehicles.

Guidance:

09 The policy criteria for alternative fuel vehicles should take into account the needs, convenience, and safety of alternative fuel vehicle users (see Section 2H.14).

Standard:

10 For any service that is operated on a seasonal basis only, the General Service signs shall be removed or covered during periods when the service is not available.

11 The General Service signs shall be mounted in an effective location, between the Advance Guide sign and the Exit Direction sign, in advance of the exit leading to the available services.

Option:

12 If the distance to the next point where services are available is greater than 10 miles, a Next Services Advance (D9-17P) plaque (see Figure 2I-2) may be installed below the Exit Direction sign.

Standard:

13 Signs for services shall comply with the format for General Service signs (see Section 2I.02) and as provided in this Manual. No more than six general road user services shall be displayed on one sign, which includes any appended supplemental signs or plaques. General Service signs shall display the legends for one or more of the following services: Food, Gas, EV Charging, Lodging, Camping, Phone, Hospital, 24-Hour Pharmacy, or Tourist Information.

14 The qualified services available shall be displayed at specific locations on the sign.

Guidance:

15 To provide for future services that might become available, the sign space normally reserved for a given service symbol or word should be left blank when that service is not present.

16 The standard display of word messages should be FOOD and PHONE in that order on the top line, and GAS and LODGING on the second line. If used, HOSPITAL, 24-HOUR PHARMACY, and CAMPING should be on separate lines (see Figure 2I-3).

Option:

17 Signing for EV Charging, DIESEL, LP-GAS, or other alternative fuel services may be substituted for any of the general services or appended to such signs. The International Symbol of Accessibility (D9-6) sign (see Figure 2I-1) may be used for facilities that qualify.

Guidance:

18 When symbols are used for the road user services, they should be displayed as follows:

A. Six services:

1. Top row – GAS, FOOD, and LODGING
2. Bottom row – PHONE, HOSPITAL, and CAMPING

B. Four services:

1. Top row – GAS and FOOD
2. Bottom row – LODGING and PHONE

C. Three services:

1. Top row – GAS, FOOD, and LODGING

Option:

19 Substitutions of other services for any of the services described in Paragraph 18 of this Section may be made by placing the substitution in the lower right (four or six services) or extreme right (three services) portion of the sign. An action message or an interchange number may be used for symbol signs in the same manner as they are used for word message signs. The Diesel Fuel (D9-11) symbol or the LP-GAS (D9-11e) symbol may be substituted for the symbol representing fuel or appended to such assemblies. The Tourist

Information (D9-10) or the 24-Hour Pharmacy (D9-20 and D9-20aP) symbol may be substituted on any of the configurations provided in Paragraph 18 of this Section.

20 At rural interchange areas where limited road user services are available and where it is unlikely that additional services will be provided within the near future, a Rural Interchange General Services (D9-18dP, D9-18eP, or D9-18fP) plaque displaying one to three services (words or symbols) may be mounted below a post-mounted Interchange Advance guide sign.

Standard:

21 If more than three services become available at rural interchange areas where limited road user services were anticipated, the appended supplemental plaque described in Paragraph 20 of this Section shall be removed and replaced with an independently-mounted General Service sign as described in this Section.

Option:

22 A separate Telephone Service (D9-1) sign (see Figure 2I-1) may be installed if telephone facilities are located adjacent to the route at places where public telephones would not normally be expected.

23 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 dumping wastes from recreational vehicle holding tanks.

24 In some locations, signs may be used to indicate that services are not available.

25 A separate Truck Parking (D9-16) sign (see Figure 2I-1) may be mounted below the other general road user services to direct truck drivers to designated parking areas.

26 A TRUCK EXTERNAL POWER (D9-16aP) plaque (see Figure 2I-1) may be mounted below the Truck Parking (D9-16) sign to indicate the availability of receptacles providing power for electrical devices within the truck.

Adopted Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2I.04 Interstate Oasis Signing (D5-12 Series)

Support:

01 An Interstate Oasis is a facility near an Interstate highway that provides products and services to the public, 24-hour access to public restrooms, and parking for automobiles and heavy trucks. Interstate Oasis guide signs inform road users on Interstate highways as to the presence of an Interstate Oasis at an interchange and which businesses have been designated by the State within which they are traveling as having met the eligibility criteria of the Federal Highway Administration's Interstate Oasis policy. The FHWA's policy, which is dated October 18, 2006, and which can be viewed on the MUTCD Web site at http://muted.fhwa.dot.gov/res-policy.htm, provides a more detailed definition of an Interstate Oasis and specifies the eligibility criteria for an Interstate Oasis designation in compliance with the requirements of laws enacted by Congress.

Guidance:

02 If a State elects to provide or allow Interstate Oasis signing (see Figure 2I-4), there should be a statewide policy, program, procedures, and criteria for the designation and signing of a facility as an Interstate Oasis that complies with the FHWA's policy and with the provisions of this Section.

03 States electing to provide or allow Interstate Oasis signing should use the following signing practices on the freeway for any given exit to identify the availability of a designated Interstate Oasis:

A. If adequate sign spacing allows, a separate Interstate Oasis (D5-12) sign should be installed in an effective location with spacing of at least 800 feet from other adjacent guide signs, including any Specific Service signs. This Interstate Oasis sign should be located upstream from the Advance Guide sign or between the Advance Guide sign and the Exit Direction sign for the exit leading to the Interstate Oasis. The Interstate Oasis sign should display the words INTERSTATE OASIS and the exit number or, for an unnumbered interchange, an action message such as NEXT RIGHT.

B. If the spacing of the other guide signs precludes the use of a separate sign as described in Item A of this Paragraph, an INTERSTATE OASIS (D5-12aP) supplemental plaque should be mounted below an existing D9-18 series General Service sign for the interchange.

~~Option:~~

~~04 If Specific Service signing is provided at the interchange, a business designated as an Interstate Oasis and having a business identification sign panel on the Food and/or Gas Specific Service signs may use the bottom portion of the business identification sign panel to display the word OASIS.~~

~~05 If Specific Service signing is not provided at the interchange, the name of the business designated as an Interstate Oasis may be displayed on a business identification sign panel, in compliance with the provisions of Sections 2J.03 through 2J.05, below the INTERSTATE OASIS legend on the D5-12 sign.~~

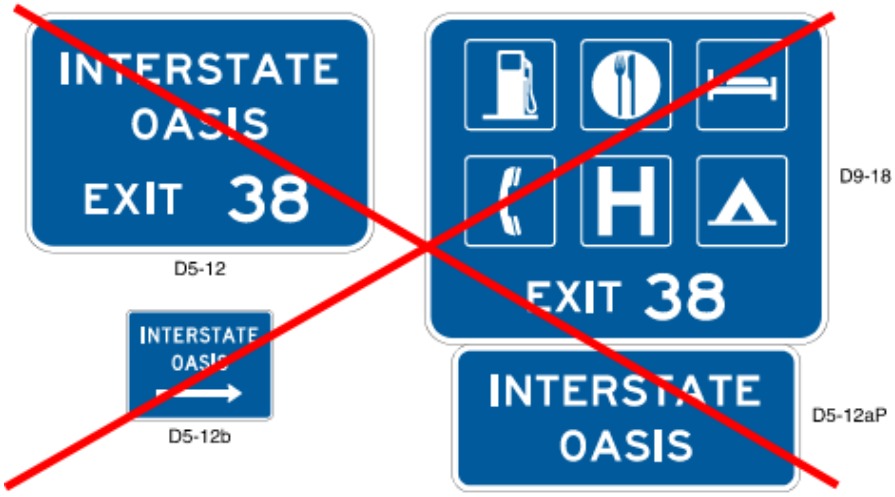
~~Standard:~~

~~06 If Specific Service signs containing the OASIS legend as a part of the business identification sign panel(s) are not used on the ramp and if the Interstate Oasis is not clearly visible and identifiable from the exit ramp, an Interstate Oasis Directional (D5-12b) sign shall be provided on the exit ramp to indicate the direction and distance to the Interstate Oasis.~~

~~07 If needed, additional trailblazer guide signs shall be used along the crossroad to guide road users to an Interstate Oasis.~~

MoDOT does not use interstate oasis signing. Revised Dec. 2025

Figure 2I-4. Examples of Interstate Oasis Signs and Plaques



Section 2I.05 Rest Area and Other Roadside Area Signs (D5-1 through D5-11 Series)

Standard:

M00 The appropriate roadside feature sign shall be erected in advance of state maintained roadside parks, historic marker, scenic view or roadside table. Any combination of these facilities is to be signed only for the facility appearing first in that order. If a table is provided at a historic marker or scenic view, the Table sign may be mounted below the Historic Marker or Scenic View sign.

MoDOT specific content from the EPG. Revised Dec. 2025

01 Rest Area signs ~~(see Figure 2I-5)~~ shall have a retroreflective white legend and border on a blue background.

02 Signs that include the legend REST AREA shall be used only where parking and restroom facilities are available.

~~*Guidance:*~~

~~*03 A roadside area that does not contain restroom facilities should be signed to indicate the major road user service that is provided. For example, the sign legends for an area with only parking should use the words PARKING AREA (D5-9 series) instead of REST AREA. The sign legends for an area with only picnic tables and parking should use words such as PICNIC AREA, ROADSIDE TABLE, or ROADSIDE PARK (D5-10 series) instead of REST AREA.*~~

MoDOT does not sign for roadside areas that do not contain restroom facilities. Revised Dec. 2025

04 Rest areas that have tourist information and welcome centers should be signed as provided in Section 2I.08.

~~*05 Scenic area signing should be consistent with that provided for rest areas, except that the legends should use words such as SCENIC AREA, SCENIC VIEW, or SCENIC OVERLOOK (D5-11 series) instead of REST AREA.*~~

MoDOT does not sign for roadside areas that do not contain restroom facilities. Revised Dec. 2025

06 If a rest area or other roadside area is provided on a conventional road, a D5-1 and/or D5-1a sign should be installed in advance of the rest area or other roadside area to permit the driver to reduce speed in preparation for leaving the highway. A ~~D5-5 sign (or a~~ D5-2 sign ~~if an exit ramp is provided)~~ should be installed at the turn-off point where the driver needs to leave the highway to access the rest area or other roadside area if an exit ramp is provided.

MoDOT does not use D5-5 signs. Revised Dec. 2025

07 If a rest area or other roadside area is provided on a freeway or expressway, a D5-1 sign should be placed 1 mile and/or 2 miles in advance of the rest area.

08 A D5-2a sign shall be placed at the rest area or other roadside area exit gore.

Option:

09 A D5-1a sign may be placed between the D5-1 sign and the exit gore on a freeway or expressway. A second D5-1 sign may be used in place of the D5-1a sign with a distance to the nearest ½ or ¼ mile displayed as a fraction rather than a decimal for distances of less than 1 mile.

10 To provide the road user with information on the location of succeeding rest areas, a Next Rest Area (D5-6) sign ~~(see Figure 2I-5)~~ may be installed independently or as a supplemental sign mounted below one of the REST AREA advance guide signs.

Standard:

11 All signs on freeways and expressways for rest and other roadside areas shall have letter and numeral sizes that comply with the minimum requirements of Tables 2E-2 ~~through~~ and 2E-5. The sizes for General Service signs that have standardized designs shall be as shown in Table 2I-1.

~~Option:~~

~~12 If the rest area has facilities for persons with disabilities (see Section 2I.02), the International Symbol of Accessibility (D9-6) sign (see Figure 2I-1) may be placed with or beneath an advance guide sign for the rest area.~~

~~13 If telecommunication devices for the deaf (TDD) are available at the rest area, the TDD (D9-21) symbol sign (see Figure 2I-1) may be used to supplement the advance guide signs for the rest area.~~

~~14 If wireless Internet services are available at the rest area, the Wireless Internet (D9-22) symbol sign (see Figure 2I-1) may be used to supplement the advance guide signs for the rest area.~~

MoDOT does not use D9 series signs. Revised Dec. 2025

Figure 2I-5. Rest Area and Other Roadside Area Signs

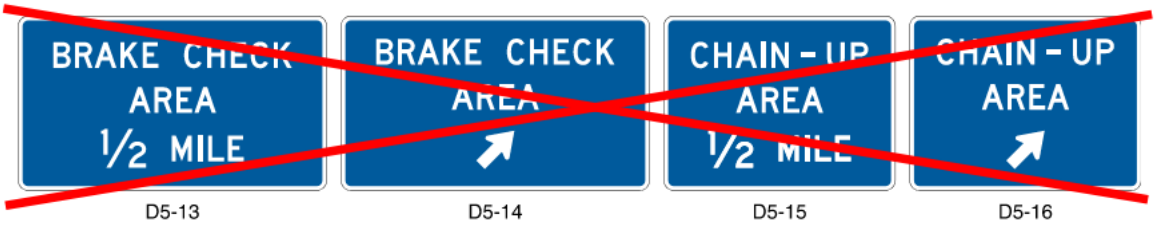


~~**Section 2I.06 Brake Check Area Signs (D5-13 and D5-14)**~~

~~*Guidance:*~~

~~*01 If an area has been provided for drivers to pull off of the roadway to check the brakes on their vehicle, a Brake Check Area Advance (D5-13) sign (see Figure 2I-6) should be installed in advance of the brake check area.*~~

Figure 2I-6. Brake Check Area and Chain-Up Area Signs



MoDOT does not use D5-13 signs. Revised Dec. 2025

~~**Section 2I.07 Chain-Up Area Signs (D5-15 and D5-16)**~~

~~*Guidance:*~~

~~*01 If an area has been provided for drivers to pull off of the roadway to install chains on their tires, a Chain-Up Area Advance (D5-15) sign (see Figure 2I-6) should be installed in advance of the chain-up area, and a D5-16 sign (see Figure 2I-6) should be placed at the entrance to the chain-up area.*~~

MoDOT does not use D5-15 or D5-16 signs. Revised Dec. 2025

Section 2I.08 Tourist Information and Welcome Center Signs (D5-7 Series and D5-8)

Standard:

M00A The Commission shall no longer provide service signing for tourist information centers either privately or publicly owned. The MISSOURI WELCOME CENTER AFFLIATE signs will be the only signing choice for Tourist Information Center requests. See EPG 903.9.5 for additional information. Existing service signing for Tourist Information Centers shall be left in place until they reach the end of their service life.

Support:

M00B Tourist Information Centers operated only by the Missouri Division of Tourism are designated as Missouri Welcome Centers.

Guidance:

M00C Where Missouri Welcome Centers are located off state owned highways, Missouri Welcome Center affiliates signs should be used (see Section 2I.08A).

M00D Where Missouri Welcome Centers are located in rest areas the combination signs, Missouri Welcome Center / Rest Area (D5-7 and D5-8) sign, should be used in lieu of the rest area series of signing.

MoDOT specific content from the EPG replaces MUTCD content for this section. Revised Dec. 2025

~~Support:~~

~~01 Tourist information and welcome centers have been constructed within rest areas on freeways and expressways and are operated by either a State or a private organization. Others have been located within close proximity to these facilities and operated by civic clubs, chambers of commerce, or private enterprise.~~

Guidance:

02 The number of supplemental sign panels installed with Tourist Information or Welcome Center signs should be limited to a maximum of three so as not to impose an undue informational load on the road user.

Figure 2I-7. Examples of Tourist Information and Welcome Center Signs



Standard:

03 Tourist Information or Welcome Center signs ~~(see Figure 2I-7)~~ shall have a white legend and border on a blue background. Continuously staffed or unstaffed operation at least 8 hours per day, 7 days per week, shall be required.

~~**04 If operated only on a seasonal basis, the Tourist Information or Welcome Center signs shall be removed or covered during the off seasons.**~~

~~*Guidance:*~~

~~*05 For freeway or expressway rest area locations that also serve as tourist information or welcome centers, the following signing criteria should be used:*~~

~~*A. The locations for tourist information and welcome center Advance Guide, Exit Direction, and Exit Gore signs should meet the General Service signing requirements described in Section 2I.03.*~~

~~*B. If the signing for the tourist information or welcome center is to be accomplished in conjunction with the initial signing for the rest areas, the message on the Rest Area Tourist Info Center Advance (D5-7) sign should be REST AREA, TOURIST INFO CENTER, XX MILES or REST AREA, STATE NAME (optional), WELCOME CENTER XX MILES. On the Rest Area Tourist Info Center Entrance Direction (D5-8) sign the message should be REST AREA, TOURIST INFO CENTER with a diagonally upward pointing directional arrow (or NEXT RIGHT), or REST AREA, STATE NAME (optional), WELCOME CENTER with a diagonally upward pointing directional arrow (or NEXT RIGHT).*~~

~~*C. If the initial rest area Advance Guide and Exit Direction signing is in place, these signs should include, on supplemental signs, the legend TOURIST INFO CENTER or STATE NAME (optional), WELCOME CENTER.*~~

~~*D. The Exit Gore sign should contain only the legend REST AREA with the arrow and should not be supplemented with any legend pertaining to the tourist information center or welcome center.*~~

MoDOT has standardized the design of the D5-7 and D5-8 series signs which meets the guidance criteria listed in paragraph 5. Section 2I.08A includes criteria for sign locations where facilities are located off the highway. Revised Dec. 2025

~~Option:~~

~~06 As an alternative to the supplemental TOURIST INFO CENTER legend, the Tourist Information (D9-10) sign (see Figure 2I-1) may be appended beneath the REST AREA advance guide sign.~~

~~07 The name of the State or local jurisdiction may appear on the Advance Guide and Exit Direction tourist information/welcome center signs if the jurisdiction controls the operation of the tourist information or welcome center and the center meets the operating criteria set forth in this Manual and is consistent with State policies.~~

~~*Guidance:*~~

~~*08 For tourist information centers that are located off the freeway or expressway facility, additional signing criteria should be as follows:*~~

~~*A. Each State should adopt a policy establishing the maximum distance that a tourist information center can be located from the interchange in order to be included on official signs.*~~

~~*B. The location of signing should be in accordance with requirements pertaining to General Service signing (see Section 2I.03).*~~

~~*C. Signing along the crossroad should be installed to guide the road user from the interchange to the tourist information center and back to the interchange.*~~

Section 2I.08A below is MoDOT's policy for signing tourist information centers located off the highway. Revised Dec. 2025

~~Option:~~

~~09 As an alternative, the Tourist Information (D9-10) sign (see Figure 2I-1) may be appended to the guide signs for the exit that provides access to the tourist information center. As a second alternative, the Tourist Information sign may be combined with General Service signing.~~

Section 2I.08A Missouri Welcome Center Affiliates

Support:

M01 The Missouri Division of Tourism has developed operational guidelines for Missouri Welcome Center Affiliates as detailed in 7 CSR 10-17 Supplemental Guide Sign Program. This program is a means for local chamber/convention and visitor bureaus and institutions of higher education with an established tourism curriculum to promote tourism and increase the number of welcome centers in Missouri without expending state funds. Organizations interested in becoming a Missouri Welcome Center Affiliate should contact the Missouri Division of Tourism via email at tourism@ded.mo.gov or call (573) 751-4133.

Standard:

M02 Upon written approval as a Missouri Welcome Center Affiliate by the Missouri Division of Tourism, the affiliate will request signing for the facility through the Missouri supplemental guide sign program contractor. The signing shall be paid for by the affiliate.

M03 Missouri Welcome Center Affiliate signing will be allowed up to the third order signing location (see EPG 903.1.24) or the first interchange encountered traveling away from the affiliate, whichever is encountered first. Signing will be allowed up to a maximum of 6 miles from the affiliate in an rural location and 2 miles in an urban location measured along the roadway path. A maximum of two signs at each sign order location will be allowed, with each sign providing turn guidance for one approach. The mainline and ramp signs for a given direction of travel at an interchange constitute one "sign". No more than one intersection or interchange may receive signing for each direction on a given route. However, the two signs for a given order of signing may be split between two intersections or interchanges if directional access is better served by different sign locations. Interchange-to-interchange signing is not permitted. If an at-grade intersection is upgraded to an interchange during the affiliate contract period, signing at the farthest interchange will be removed and relocated at the new closer interchange.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

M04 The number of supplemental sign panels installed with Tourist Information or Welcome Center signs should be limited to three so as not to impose an undue informational load on the road user.

Adding Guidance paragraph 2 from Section 2I.08 to unique MoDOT section. Revised Dec. 2025

~~**Section 2I.09 Radio Information Signing (D12-1 Series)**~~

~~Option:~~

~~01 A Radio Weather Information (D12-1) sign (see Figure 2I-8) may be used in areas where difficult driving conditions commonly result from weather systems. Radio Traffic Information (D12-1a) signs may be used in conjunction with traffic management systems.~~

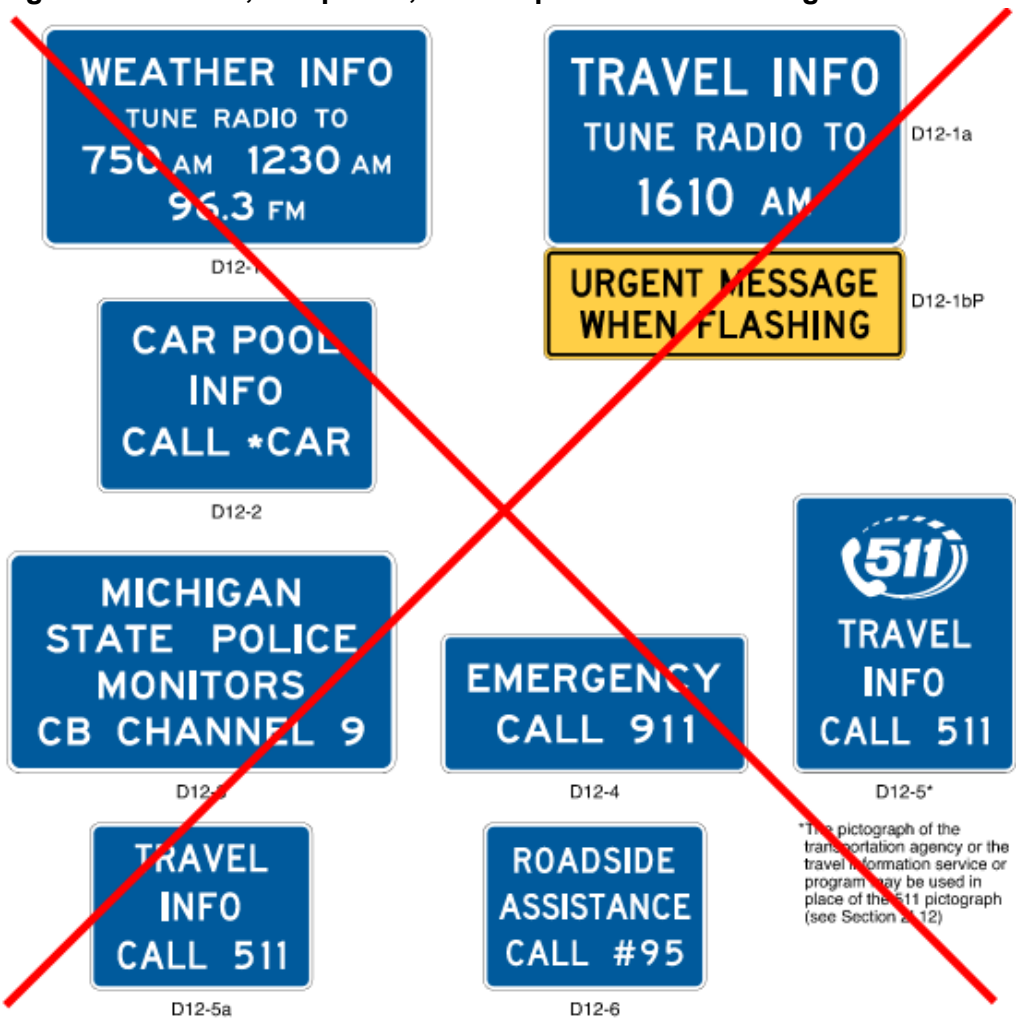
~~**Standard:**~~

~~**02 Radio Weather and Radio Traffic Information signs shall have a white legend and border on a blue background. Only the numerical indication of the radio frequency shall be used to identify a station broadcasting travel-related weather or traffic information. No more than three frequencies shall be displayed on each sign. Only radio stations whose signal will be of value to the road user and who agree to broadcast either of the following two items shall be identified on Radio Weather and Radio Traffic Information signs:**~~

- ~~**A. Periodic weather warnings at a rate of at least once every 15 minutes during periods of adverse weather; or**~~
- ~~**B. Driving condition information (affecting the roadway being traveled) at a rate of at least once every 15 minutes, or when required, during periods of adverse traffic conditions, and when supplied by an official agency having jurisdiction.**~~

~~**03 If a station to be considered operates only on a seasonal basis, its signs shall be removed or covered during the off season.**~~

Figure 2I-8. Radio, Telephone, and Carpool Information Signs



~~*Guidance:*~~

~~*04 The radio station should have a signal strength to adequately broadcast at least 70 miles along the route. Signs should be spaced as needed for each direction of travel at distances determined by an engineering study. The stations to be included on the signs should be selected in cooperation with the association(s) representing major broadcasting stations in the area to provide: (1) maximum coverage to all road users on both AM and FM frequencies; and (2) consideration of 24 hours per day, 7 days per week broadcast capability.*~~

~~Option:~~

~~05 The URGENT MESSAGE WHEN FLASHING (D12-1bP) plaque may be mounted below the D12-1 or D12-1a sign if supplemented by Warning Beacons (see Section 4S.03) that flash only when a message related to adverse travel conditions is being broadcast.~~

~~06 In roadway rest area locations, a smaller sign using a greater number of radio frequencies, but of the same general design, may be used.~~

~~**Standard:**~~

~~**07 Radio Weather and Radio Traffic Information signs installed in rest areas shall be positioned such that they are not visible from the main roadway.**~~

MoDOT does not use D12-1 Series signs. Revised Dec. 2025

~~**Section 2I.10 Channel 9 Monitored Sign (D12-3)**~~

~~Option:~~

~~01 A Channel 9 Monitored (D12-3) sign (see Figure 2I-8) may be installed as needed. Official public agencies or their designees may be displayed as the monitoring agency on the sign.~~

~~**Standard:**~~

~~**02 Only official public agencies or their designee shall be displayed as the monitoring agency on the Channel 9 Monitored sign.**~~

MoDOT does not use D12-3 signs. Revised Dec. 2025

Section 2I.11 EMERGENCY ~~CALL 911~~ DIAL *55 Sign (D12-4a)

~~Option:~~

~~01 An Emergency CALL 911 (D12-4) sign (see Figure 2I-8) may be used for cellular telephone communications.~~

Guidance:

*M02 The EMERGENCY DIAL *55 (D12-4a) signs will no longer be installed along MoDOT roadways.*

*M03 EMERGENCY DIAL *55 signs shall only be installed at Commuter Lots or at locations deemed necessary, at the District Engineers discretion. Existing EMERGENCY DIAL *55 signs shall be left in place until they reach the end of their service life.*

MoDOT specific content from the EPG. Revised Dec. 2025

~~**Section 2I.12 TRAVEL INFO CALL 511 Signs (D12-5 and D12-5a)**~~

~~Option:~~

~~01 A TRAVEL INFO CALL 511 (D12-5 or D12-5a) sign (see Figure 2I-8) may be installed if a 511 travel information services telephone number is available to road users for obtaining traffic, public transportation, weather, construction, or road condition information.~~

~~02 The pictograph of the transportation agency or the travel information service or program that is providing the travel information may be displayed in place of the 511 pictograph on the D12-5 sign above the TRAVEL INFO CALL 511 legend.~~

~~**Standard:**~~

~~**03 The logo of a commercial entity shall not be incorporated within the TRAVEL INFO CALL 511 signs.**~~

~~**04 If the pictograph of the transportation agency or the travel information service or program is used in place of the 511 pictograph on the D12-5 sign (see Paragraph 2 of this Section), the maximum height of the pictograph shall not exceed the height of the 511 pictograph on the standard sign size specified for the roadway classification in Table 2H-1.**~~

~~**05 The TRAVEL INFO CALL 511 signs shall have a white legend and border on a blue background.**~~

MoDOT does not use D12-5 or D12-5a signs. Revised Dec. 2025

~~**Section 2I.13 Roadside Assistance Sign (D12-6)**~~

~~Option:~~

~~01 A Roadside Assistance (D12-6) sign (see Figure 2I-8) displaying the Highway Assistance cellular telephone code designated for that roadway or jurisdiction may be used along a highway that is served by an authorized roadside assistance program with authorized service vehicles and personnel that provide roadside vehicle repair assistance to road users free of charge.~~

MoDOT does not use D12-6 signs. Revised Dec. 2025

Section 2I.14 Carpool and Ridesharing Signing (D12-2)



Option:

01 In areas having carpool matching services, a Carpool Information (D12-2) sign ~~(see Figure 2I-8)~~ may be provided adjacent to highways with preferential lanes or along any other highway.

02 Carpool Information signs may include an Internet domain name or telephone number of more than four characters within the legend.

M02A A Car Pool Information/Ride Share (D12-2a, D12-2b) sign may be installed in those communities where the Department of Natural Resources facilitates this program.

Standard:

03 If a local transit pictograph or carpool symbol is incorporated into the Carpool Information sign, the maximum vertical dimension of the pictograph or symbol shall not exceed 18 inches and the maximum horizontal dimension shall not exceed 30 inches.

Section 2I.15 Signing for Truck Parking Availability (D9-16b through D9-16e)

Support:

M00 MoDOT does not currently install Truck Parking Availability signs.

~~Option:~~

~~01 General Service signs may be used to display the number of available truck parking spaces at roadside areas such as rest areas, welcome centers, and weigh stations, and at facilities off a highway that are open to the public and provide parking for commercial vehicles 24 hours per day, 7 days per week.~~

~~**Standard:**~~

~~**02 The Truck Parking Availability General Service (D9-16b through D9-16e) signs (see Figure 2I-9) shall include a changeable message element with a white changeable legend on a black opaque background that displays only the number of parking spaces currently available at each location or the legend FULL. The upper section of the sign shall display the Truck Parking (D9-16) symbol sign and the legend SPACES OPEN. The sign shall display the number of available truck parking spaces for no more than three parking facilities. Where two lines of legend, such as the location and a distance, are displayed for a parking facility, not more than two parking facilities shall be displayed on the sign.**~~
~~**03 Where the truck parking facility is located off the main highway and is accessed from the crossroad, directional assemblies with the Truck Parking (D9-16) sign shall be installed along the ramp and along crossroads where the route to the facility requires a turn, where it is unclear as to which roadway to follow, or where additional guidance is needed.**~~

~~Support:~~

~~04 Displaying the number of parking spaces available at a facility when the number is low could result in truckers choosing to continue to a distant facility that no longer has available space by the time they arrive.~~

~~Option:~~

~~05 The word FULL in a white legend may be displayed on changeable message elements of a Truck Parking Availability General Service sign when the number of truck parking spaces available at the associated facility reaches a predetermined lower threshold.~~

~~Guidance:~~

~~06 Truck Parking Availability signs should be located 3 to 5 miles in advance of the nearest parking facility. The parking facilities displayed on the sign should be no more than 60 miles from the sign location.~~

~~Support:~~

~~07 Examples of uses of Truck Parking Availability signs are shown in Figure 2I-10.~~

MoDOT does not use D9-16b through D9-16e signs. Revised Dec. 2025

Figure 2I-9. Examples of Truck Parking Availability Signs

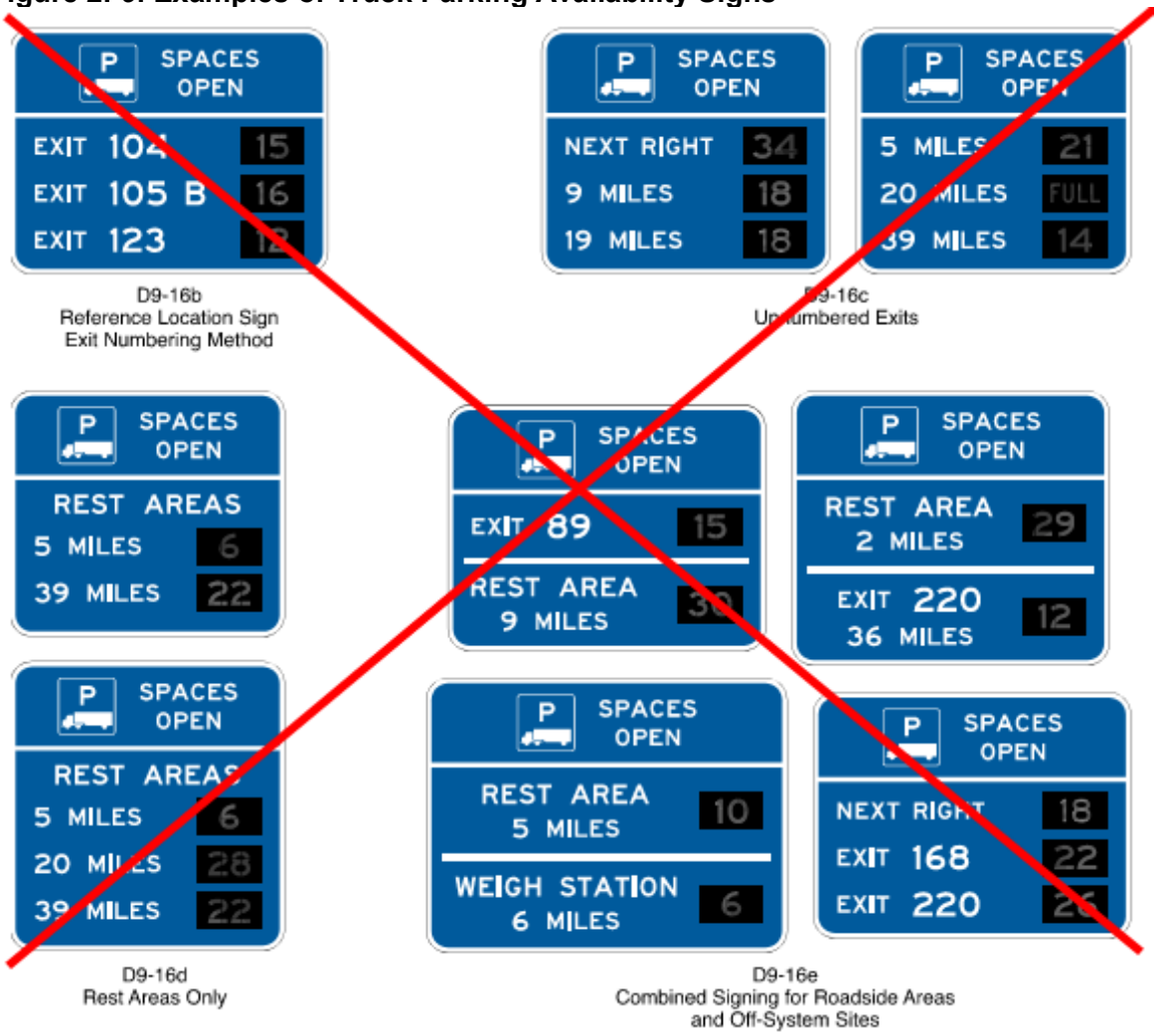
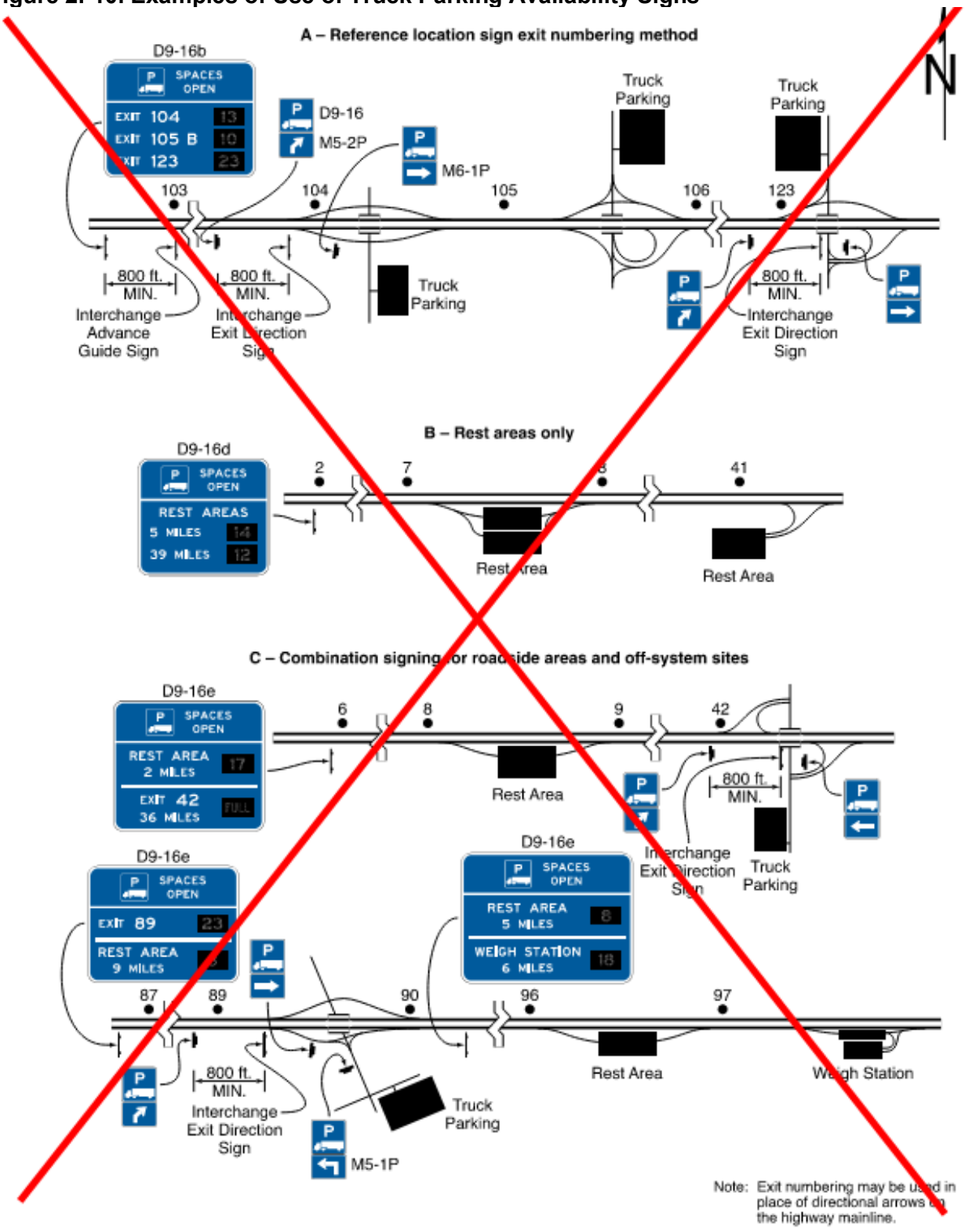


Figure 2I-10. Examples of Use of Truck Parking Availability Signs



Section 2I.16 Advance Information Signs for Roadside Features

Standard:

M01A Advance Information Signs for Roadside Features have been discontinued. MoDOT shall no longer provide Advance Information Signs for Roadside Features. Existing Advance Information Signs for Roadside Features shall be left in place until they reach the end of their service life.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2I.17 Emergency Service Signs

Option:

M01 MoDOT may permit a rural emergency service to install on state right of way a numbering system, which will identify number properties.

M02 Fire hydrant identifying signs may be installed along the state highway system.

Standard:

M03 Signs marking the boundaries of fire, ambulance, and law enforcement boundaries shall not be provided nor installed on state roadways. The fire department shall be required to provide, install and maintain fire hydrant identifying signs. These signs shall be 30 in. x 24 in., reflectorized, with a white legend on a blue background. The legend shall include a number that specifically identifies that specific hydrant location for cross-reference. The numbering system used shall be consistent throughout a county or region for ease of identification by mutual-aid departments.

Guidance:

M04 The background of fire hydrant identifying signs should have a fire hydrant emblem to indicate the purpose of the signs. These signs should be installed at the edge of the right of way or at the best possible locations for visibility in fill sections. These signs should be installed with the face of the sign parallel to the roadway.

M05 Districts should approve locations based on the following:

A. The fire hydrant or other water source must be accessible from the roadway.

B. The hydrant should be 1/4 mile or less from the roadway centerline.

Support:

M06 The purpose of fire hydrant signing should help speed response time for accidents or spills on our roadway system, as well as the roadsides.

M07 Typical numbering schemes for fire hydrant identifying signs would identify the hydrants using the local or regional fire department numbering systems. For example, hydrant number 7301 would be the first hydrant for a fire protection district with the designation “73” in the regional numbering system.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2I.18 Safety Stop Sign (D5-6c)



Option:

M01 Civic organizations may be allowed to dispense free coffee or other refreshments on right of way as a service to motorists during holiday periods. Interstate rest areas, roadside parks and scenic turnouts may be utilized for such activities.

M02 A sign indicating the host organization may be displayed at the serving location.

Standard:

M03 Official temporary Safety Stop signs may be erected for such facilities provided the following guidelines are met:

A. **Applicant must obtain a permit and reserve a time slot in advance of the event. A copy of this permit must be posted during serving hours.**

B. **The activity shall be carried on solely within the safety rest area, roadside park, or scenic turnout in locations designated in the permit. Parking or any other activity shall not be permitted on the travel surface, shoulders, ramps, or other surfaces used for the movement of vehicles.**

C. **The activity shall be conducted for the express purpose of improving the safety of highway travel and not primarily to the advantage of any other organization or activities. No advertising shall be permitted.**

D. **The applicant must be a nonprofit organization showing a record of concern for automotive, highway or driver safety.**

E. **The refreshments or any other service offered shall be free of charge to the motorists without the solicitation of contributions or donations or any other benefits to the organization.**

F. **Solicitation or collection of contributions, donations, etc. is forbidden.**

G. **Handing out or posting of printed literature is prohibited. Cups or dispensing unit may not carry any advertising. The only exception to this is pre-approved highway safety literature.**

H. **Participating groups must conduct cleanup of the immediate area, both during and following the activities. All trash is to be placed into bags and placed in the Safety Rest Area trash dumpster or other trash containers located at the facility.**

I. **Participants are not to interfere with the work of the Safety Rest Area attendants or with the access to the restrooms or drinking fountains for safety breaks conducted at Rest Areas.**

J. **The serving organization may have two signs showing the service and organization. For example, "Free Coffee, Compliments of _____." Maximum size of these signs shall be 18 in. x 24 inches.**

K. **Violation of any of the rules may result in cancellation of future reservations for the offending organization.**

M04 There have been a number of other safety stops operating adjacent to highway right of way. Signing for such stops shall be placed on state right of way.

M05 The SAFETY BREAK FREE COFFEE (D5-6c) sign shall be used for safety stops at all rest areas on freeways. One sign for each direction of travel shall be mounted beneath the existing advance directional sign for the rest area. This sign shall only be visible to the motorists during the time the facility is in operation and then removed.

Guidance:

M06 Special care should be taken before approval is given in roadside parks and scenic turnouts to ensure that adequate parking facilities are available.

Support:

M07 A "flip-down" sign is also available.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 2I.19 Ferry Crossing Signs

Option:

M01 Directional information signs may be provided for ferry crossings.

Standard:

M02 To qualify for signing, a ferry crossing shall meet the following guidelines:

A. **The owner of the ferry shall operate the boat weather permitting during the following periods:**
   1. **Hours of operation are generally sunrise to sunset, five days a week.**
   2. **Operating season is March 15 through December 15.**
   3. **The operator should be responsible to notify the Missouri State Highway Patrol or the local district office when conditions will not allow a day or more of normal operation.**

B. The ferryboat operation shall be U.S. Coast Guard inspected and certified.

M03 MoDOT shall provide a maximum of third order generic signing (i.e. “Toll Ferry to KY"). The signs shall be considered as a supplemental sign if installed on freeways.

M04 Signs shall be white reflectorized border and legend on a green reflectorized background for all roadway systems.

M05 It shall be the responsibility of the local jurisdiction(s) to provide all supplemental signing over city or county roadways leading to the ferry crossings.

M06 When a ferry is seasonally operated, a Commission furnished sign shall be installed to indicate when the ferry in not in operation for the season.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

M01 MoDOT's Logo contract signing program began in 1991 and was largely managed internally. In 2010, Tourist Oriented Destination Signing (TODS) was added to the Logo program and they were combined under one contract. Then, in 2015, a Code of State Regulation (7 CSR 10-17) was established which replaced the CSRs for TODS, Logos, Traffic Generator, and College signing, and included rules for State and Federal site signing, Welcome Center Affiliate Signing, and State Correctional Center Signing.

M02 Since 2015, MoDOT's contractor has assumed full responsibility of the program to execute contracts, collect and track revenue, as well as install and maintain all signs with their portion of the revenue. MoDOT receives guaranteed annual revenue from this program which is deposited in the state road fund to help maintain the state's road and bridge network. MoDOT's role under this current program format is limited to site plan reviews for new sign installations, reporting any sign damage to the contractor so they can correct it, and to serve as a resource on MoDOT's policy and Code of State Regulations under which the programs operate.

Standard:

M03 All requests for participation in the Logo program shall be forwarded to MoDOT's Supplemental Guide Sign Program contractor for processing. Per the CSR, it is the program manager's responsibility to receive all requests, evaluate eligibility and administer the contract with the applicant.

M04 MoDOT districts' role in the program is to review and approve site plans for new sign installations, assuring the new sign installations do not conflict with existing traffic control devices or create sight distance issues. Another critical responsibility is to identify and report damage and/or deficiencies with any of the signs to the program manager.

M05 Central Office Highway Safety and Traffic Division shall be responsible for managing the Supplemental Guide Sign Program Contract, updating the CSR, and interpreting the intent of the CSR and program contract if there are questions or appeals from prospective applicants. Highway Safety and Traffic Division shall also be responsible for working with Governmental Relations on legislative issues.

M06 The Logo program shall be managed in accordance with the Code of State Regulations 7 CSR 10-17 Supplemental Guide Sign Program and the Supplemental Guide Sign Program contract between the Commission and MoDOT's third party contractor. The CSR is binding and has the effect of law. Exceptions and/or variations from the CSR are not permitted under normal conditions with the Director having the only authority to authorize such actions.

M07 The rules contained within the CSR are based on, and are in conformance with, the *Manual on Uniform Traffic Control Devices* and the *AASHTO Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators*.

Support:

M08 Construction project guidance for Relocation of Service Signs is available in EPG 616.23. Also reference "Supplemental Guide Signs" in the General Provisions for contractual requirements.

MoDOT specific content replaces Chapter 2J content. Revised Dec. 2025

~~**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 conventional roads.

Guidance:

05 Specific Service signs 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 Except as provided in Paragraph 9 of this Section, distances to eligible services should not exceed 3 miles in any direction.

Option:

09 If, within the 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 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.

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.

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.~~

Eligibility requirements, including the information in all adopted standard and guidance statements, are included in 7 CSR 10-17. Revised Dec. 2025

Section 2J.02 Application

Support:

M00 Information in this section supplements the primary guidance contained in 7 CSR 10-17.

~~01 Examples of Specific Service signs are shown in Figure 2J-1.~~

~~02 Examples of sign locations are shown in Figure 2J-2.~~

Standard:

03 The number of Specific Service signs along an approach to an interchange or intersection, regardless of the number of service types displayed, shall be limited to a maximum of four. ~~Except as provided in Paragraph 4 of this Section,~~ in the direction of traffic flow, successive Specific Service signs shall be for attraction, camping, lodging, food, EV charging, and gas services, in that order.

~~Option:~~

~~04 When spacing does not allow EV Charging Specific Service signs to be located as described in Paragraph 3 of this Section, then the EV Charging Specific Service signs may be located anywhere within the successive Specific Service sign order where adequate spacing between signs allows.~~

Guidance:

05 The Specific Service signs should be located to ~~take advantage of natural terrain, to have the least impact on the scenic environment, and to~~ avoid visual conflict with other signs within the highway right-of-way.

06 Where a service type is displayed on two signs, the signs for that service should follow one another in succession.

~~**Standard:**~~

~~**07 A Specific Service sign shall display the word message GAS, EV CHARGING, FOOD, LODGING, CAMPING, or ATTRACTION, an appropriate directional legend such as the word message EXIT XX, NEXT RIGHT, SECOND RIGHT, or directional arrows, and the related business identification sign panels. Distances to eligible facilities shall not be displayed on the Specific Service signs on the approach to an interchange.**~~

~~**08 A business that does not offer gasoline, but offers alternative fuels, shall not be signed using GAS Specific Service signs.**~~

~~Option:~~

~~09 A business that does not offer gasoline but offers alternative fuels may be signed using General Service signs for the alternative fuel provided.~~

Support:

10 General Service signs for facilities providing alternative fuels, including EV charging, compressed natural gas, liquefied natural gas, liquefied petroleum gas, and hydrogen, are provided in Chapter 2I.

Guidance:

11 Due to the unique and widely varying characteristics of the services that qualify as attractions, and lesser recognition of their business identification sign panels (see Paragraph 12 of this Section), ATTRACTION Specific Service signs should have no more than four business identification sign panels.

Support:

12 The types of services that meet the definition of attraction, such as those providing amusement, historical, cultural, or leisure activities to the public, vary considerably. In most cases, attractions do not include well-known services or easily recognizable logos, making it more difficult and requiring more time to distinguish between types of attractions shown on an ATTRACTION sign than for other categories of Specific Service signs.

Standard:

13 No more than three types of services shall be represented on any sign or sign assembly and no more than six business identification sign panels shall be displayed on any one sign. If three types of services are displayed on one sign, then the business identification sign panels shall be limited to two for each service type (for a total of six business identification sign panels). If two types of services are displayed on one sign, then the business identification sign panels shall be limited to either three for each service type, or four for one service type and two for the other service type (for a total of six business identification sign panels in either case). The legend and business identification sign panels applicable to a service type shall be displayed such that the road user will not associate them with another service type on the same sign. Other configurations or arrangements of business identification sign panels shall not be allowed.

14 No service type shall appear on more than two signs (see Paragraph 6 of this Section).

15 The Specific Service signs shall have a blue background, a white border, and white legends of upper-case letters, numerals, and arrows.

Guidance:

16 If a service type is no longer available from an interchange or intersection, the Specific Service sign should be removed when the business identification sign panels are removed. If a sign is to remain, but the service type is no longer available, then the service type legend should be covered so that road users do not misinterpret the sign as a General Service sign implying that the service is available.

17 A Specific Service sign should not be installed unless a service type is currently available from an interchange or intersection.

Option:

18 If there is indication that a service type will again be available in the near future, the sign may be covered, in accordance with Paragraph 16 of this Section, rather than removed.

19 Separate installations of General Service signs (see Figure 2J-3 and Sections 2I.02 and 2I.03) may be used in conjunction with Specific Service signs for eligible types of services that are not represented by a Specific Service sign.

Application requirements not included in the MoDOT MUTCD, including the information in all adopted standard and guidance statements, are included in 7 CSR 10-17. Revised Dec. 2025

Section 2J.03 Logos and Business Identification sign Panels

Standard:

01 A business identification sign panel legend shall be either an identification trademark or a word message of the business's name. Each logo or word message shall be placed on a separate business identification sign panel that shall be attached to the Specific Service sign. Logos or trademarks used alone for a business identification sign panel shall be reproduced in the colors and general shape

consistent with customary use, and any integral legend shall be in proportionate size. A logo that resembles an official traffic control device shall not be used.

02 Scanning graphics that are visible to the road user from the roadway for the purpose of obtaining information shall not be displayed on business identification sign panels, including on any logo displayed thereupon.

Guidance:

03 The logo or trademark used on a business identification sign panel should be consistent with the on-premise business identification signs at the location of the business that are visible from the roadway.

04 A word message business identification sign panel that does not use a logo or trademark should have a blue background with a white legend and border.

Support:

05 Section 2J.05 contains information regarding the minimum letter heights for business identification sign panels.

Option:

06 A portion of a business identification sign panel may be used to display a supplemental message horizontally along the bottom of the business identification sign panel, provided that the message displays essential motorist information consistent with the service category type and related to the operation of the business (see Figure 2J-4).

Standard:

07 All supplemental messages shall be displayed within the business identification sign panel and shall have letters and numerals that comply with the minimum height requirements shown in Table 2J-1. Supplemental messages promoting the availability of products, amenities, or services that are not directly related to the service category and/or those not available to non-patrons of the primary service provided for the service category, such as car wash, automated teller machines, Internet, lottery, or swimming pool, shall not be displayed on business identification sign panels.

08 Messages related to the promotion or availability of business identification sign panel space shall not be displayed on Specific Service signs.

09 To be eligible for an EV CHARGING supplemental message on a business identification sign panel, the business shall:

A. Offer electric vehicle charging to the general public without purchasing the primary service (gas, food, lodging, camping, or attraction, as appropriate); and

B. For the service categories of gas, food, and attraction, provide EV chargers meeting the criteria for Direct Current Fast Chargers (DCFC) provided in 23 CFR 680.106; or

C. For the service categories of camping and lodging, provide EV chargers meeting the criteria for DCFCs provided in 23 CFR 680.106 and/or AC Level 2 Charging.

Option:

10 A Supplemental message identifying an alternative fuel available may be added only to the business identification sign panels on the GAS Specific Services sign for gasoline facilities that provide the specified alternative fuel in addition to gasoline.

11 The Supplemental message EV CHARGING may be added to a business identification sign panel for the service categories of gas, food, lodging, or camping in accordance with the criteria in Paragraph 9 of this Section.

Guidance:

12 A business identification sign panel should not display more than one supplemental message.

13 The supplemental message should be displayed in a black legend on a yellow background for that portion of the business identification sign panel.

14 State or local agencies that elect to allow supplemental messages on business identification sign panels should develop a statewide policy for such messages.

Support:

15 Typical supplemental messages might include DIESEL, LP-GAS, EV CHARGING, 24 HOURS, CLOSED SUNDAY, and RV ACCESS.

Guidance:

16 If a State or local agency elects to display the designation of businesses as providing on-premise accommodations for recreational vehicles with the RV ACCESS supplemental message, there should be a statewide policy for such designation and criteria for qualifying businesses. The criteria should include such site conditions as access between the public roadway and the site, on-premise geometry, and parking.

Option:

17 If a business designated as an Interstate Oasis (see Section 2I.04) has a business identification sign panel on the Food and/or Gas Specific Service signs, the word OASIS may be displayed on the bottom portion of the business identification sign panel for that business.

Standard:

18 A business identification sign panel shall not display the identification logo/trademark or name of more than one business. A business identification sign panel shall not display more than one name or identification logo/trademark for the same business. Slogans, such as marketing slogans associated with the business, shall not be displayed on business identification sign panels or the Specific Service sign itself.

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

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 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 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.

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2J.05 Size of Lettering

Standard:

01 All Specific Service signs and business identification sign panels shall have letter and numeral sizes that comply with the minimum requirements of Table 2J-1.

Guidance:

02 Any legend on a business identification graphic/trademark should be proportional to the size of the graphic trademark.

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2J.06 Signs at Interchanges

Standard:

01 The Specific Service signs shall be installed between the preceding interchange and at least 800 feet in advance of the Exit Direction sign at the interchange from which the services are available (see Figure 2J-2).

02 Specific Service signs shall not be used at freeway-to-freeway interchanges (see Section 2E.37), except where the exit ramp also provides direct access to a conventional road within that interchange (see Figure 2J-5).

Guidance:

03 There should be at least an 800-foot spacing between the Specific Service signs, except for Specific Service ramp signs. Excessive spacing should not be used between Specific Service signs, as this is not desirable either.

04 Specific Service ramp signs should be spaced at least 100 feet longitudinally beyond the Exit Gore sign, from each other, and from the ramp terminal. Specific Service ramp signs should be spaced at least 200 feet longitudinally from any Destination guide signs along the ramp. Longer longitudinal spacing should be provided between Specific Service ramp signs and any warning or regulatory signs along the ramp, and any intersection traffic control devices at the ramp terminal.

05 When the distance to the next exit providing access to EV charging service is 50 miles or greater, the Next EV Charging (D9-17a) sign should be used (see Figure 2H-9). When used, the Next EV Charging sign should be located directly after the General Service sign for the fuel type displayed in the signing sequence for the exit (see Figure 2H-10).

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

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).

Option:

03 Specific Service ramp signs 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.

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2J.08 Double-Exit Interchanges

Guidance:

01 At double-exit interchanges, the Specific Service signs should consist of two sections, one for each exit (see Figure 2J-1).

Standard:

02 At a double-exit interchange, the top section shall display the business identification sign panels for the first exit and the bottom section shall display the business identification sign panels for the second exit. At numbered interchanges, the name of the service type and the exit number shall be displayed above the business identification sign panels in each section. At unnumbered interchanges, the word message NEXT RIGHT (LEFT) and SECOND RIGHT (LEFT) shall be used in place of the exit number. The number of business identification sign panels on the sign (total of both sections) or the sign assembly shall be limited to six.

Guidance:

03 At a double-exit interchange, where a service type is displayed on two Specific Service signs in accordance with the provisions of Section 2J.04, one of the signs should display the business identification sign panels for that service type for the businesses that are accessible from one of the two exits and the other sign should display the business identification sign panels for that service type for the businesses that are accessible from the other exit.

Option:

04 At a double-exit interchange where there are four business identification sign panels to be displayed for one of the exits and one or two business identification sign panels to be displayed for the other exit, the business identification sign panels may be arranged in three rows with two business identification sign panels per row.

05 At a double-exit interchange, where a service is to be signed for only one exit, one section of the Specific Service sign may be omitted, or a single exit interchange sign may be used.

06 Signs on ramps and crossroads as described in Section 2J.07 may be used at a double-exit interchange.

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2J.09 Collector-Distributor Roadways for Successive Interchanges

Support:

01 Examples of Specific Service signs used in advance of interchanges for collector-distributor roadways that provide access to multiple interchanges are shown in Figure 2J-6.

Option:

02 If services are available from more than one of the interchanges along the collector-distributor roadway and those services are signed with Specific Service signs as described in Paragraph 4 of this Section, then Specific Service signs may be used on the mainline in conformance with the provisions of this Chapter.

Standard:

03 No more than four Specific Service signs shall be displayed on a highway mainline approach to a collector-distributor roadway.

04 If Specific Service signs are located on the highway mainline for services accessed from the collector-distributor roadway, then the business identification sign panels displayed on the collector-distributor roadway shall be only duplicates of those displayed on the highway mainline.

05 If more than four Specific Services signs would be required on the mainline in advance of the collector-distributor roadway in order to display all the business identification sign panels used on Specific Service signs in advance of the collector-distributor roadway exits, then General Service signs shall be used on the mainline to identify the types of services displayed on Specific Service signs on the collector-distributor roadway.

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2J.10 Specific Service Trailblazer Signs

Support:

01 Specific Service trailblazer signs (see Figure 2J-7) are guide signs with one to four business identification sign panels that display business identification and directional information for services and eligible attractions. Specific Service trailblazer signs are for facilities that have installed along crossroads business identification sign panels displayed along the main roadway and ramp, and that require additional vehicle maneuvers or are a long distance from the ramp along the crossroad.

Standard:

02 Specific Service trailblazer signs shall be installed along crossroads where the route to the business requires a direction change, where it is questionable as to which roadway to follow, or where additional guidance is needed. Where it is not feasible or practical to install Specific Service trailblazer signs to such businesses, those businesses shall not be considered eligible for signing from the ramp and main roadway. A Specific Service trailblazer sign shall not be required at the point where the business is visible from the roadway and its access is readily apparent.

Guidance:

03 If used, a Specific Service trailblazer sign should be located a maximum of 500 feet in advance of any required turn.

Standard:

04 The location of other traffic control devices shall take precedence over the location of a Specific Service trailblazer sign.

05 When used, each Specific Service trailblazer sign or sign assembly shall be limited to no more than four business identification sign panels. The business identification sign panels on Specific Service trailblazer signs shall be duplicates of those displayed on the Specific Service ramp signs.

06 Appropriate legends, such as directional arrows or the action message NEXT RIGHT or SECOND RIGHT, shall be displayed with the business identification sign panel to provide proper guidance. The directional legend and border shall be white and shall be displayed on a blue background.

~~Option:~~

~~07 Specific Service trailblazer signs may contain various types of services on a single sign or on a sign assembly.~~

~~08 Specific Service trailblazer signs may be placed farther from the edge of the road than other traffic control signs.~~

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

~~Section 2J.11 Signs at Intersections~~

~~*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 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 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.~~

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

~~Section 2J.12 Signing Policy~~

~~**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.*~~

Signing policy is established by 7 CSR 10-17 as well as the EPG. Revised Dec. 2025

Support:

M00A See Chapter 2J (EPG 903.10) for history of MoDOT's Tourist-Oriented Directional Signs (TODS) program.

Standard:

M00A All requests for participation in the TODS program shall be forwarded to MoDOT's Supplemental Guide Sign Program contractor for processing. Per the CSR, it is the program manager's responsibility to receive all requests, evaluate eligibility, and administer the contract with the applicant.

M00B MoDOT districts' role in the program is limited to reviewing and approving site plan reviews for new sign installations to assure these new sign installations are appropriate, looking for items such as, but not limited to, ensuring new installations do not conflict with existing traffic control devices, have sight distance issues, or create an issue for maintaining the right of way. Another critical responsibility is to identify and report damage and/or deficiencies with any of the signs the program manager is responsible for.

M00C Central Office Highway Safety and Traffic Division shall be responsible for managing the Supplemental Guide Sign Program Contract, updating the CSR, and interpreting the intent of the CSR and the program contract if there are questions or appeals from prospective applicants. Highway Safety and Traffic Division shall also be responsible for working with Governmental Relations on legislative issues.

M00D The TODS program shall be managed in accordance with the Code of State Regulations 7 CSR 10-17 Supplemental Guide Sign Program and the Supplemental Guide Sign Program contract between the Commission and MoDOT's third party contractor. The CSR is binding and has the effect of law. Exceptions and/or variations from the CSR are not permitted under normal conditions with the Director having the only authority to authorize such actions.

M00E The rules contained within the CSR are based on, and are in conformance with, the *Manual on Uniform Traffic Control Devices* and the *AASHTO Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators*.

Support:

M00F Construction project guidance for Design and Construction is available in EPG 616.23, Relocation of Service Signs (Supplemental Guide Sign Program Signs). Also reference "Supplemental Guide Signs" in the General Provisions for contractual requirements.

MoDOT specific content replaces Chapter 2K content. Revised Dec. 2025

~~**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:

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.

Purpose and Application information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2K.02 Design

Standard:

01 Tourist-oriented directional sign assemblies shall have one or more signs (see Figure 2K-1) for the purpose of displaying the business identification of and directional information for eligible facilities. Except as provided in Paragraph 7 of this Section, each sign shall be rectangular in shape and shall have a white legend and border on a blue background.

02 The content of the legend on each sign shall be limited to the identification and directional information for no more than one eligible business, service, or activity facility. The legends shall not include promotional advertising.

Guidance:

03 Each sign should have a maximum of two lines of legend including no more than one symbol (see Paragraph 4 of this Section), a separate directional arrow, and the distance to the facility displayed beneath the arrow. Arrows pointing to the left or up should be at the extreme left of the sign panel. Arrows pointing to the right should be at the extreme right of the sign panel. Symbols, when used, should be to the left of the word legend or business identification sign panel (see Paragraphs 6 and 9 of this Section).

Option:

04 The General Service sign symbols (see Section 2I.02) and the symbols for recreational and cultural interest area signs (see Chapter 2M) may be used on tourist-oriented directional signs.

05 Based on engineering judgment, the hours of operation may be displayed on the sign.

06 Business identification sign panels (see Section 2J.03) for specific businesses, services, and activities may be used in place of word legends on tourist-oriented direction signs.

Standard:

07 When used, recreational and cultural interest area symbols shall be white on a brown background.

08 When used, symbols shall be an appropriate size (see Section 2K.04).

09 When used, business identification sign panels shall not exceed 24 inches in width and 15 inches in height. Logos resembling official traffic control devices shall not be permitted.

Option:

10 The word message TOURIST ACTIVITIES may be displayed at the top of the tourist-oriented directional sign assembly.

Standard:

11 The TOURIST ACTIVITIES word message shall have a white legend in all upper-case letters and a white border on a blue background. If used, it shall be placed above and in addition to the directional signs.

Support:

12 Examples of tourist-oriented directional signs are shown in Figures 2K-1 and 2K-2.

Adopted Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2K.03 Style and Size of Lettering

Guidance:

01 All letters and numbers on tourist-oriented directional signs, except on the business identification sign panels, should be upper-case and at least 6 inches in height. Any legend on a business identification sign panel should be proportional to the size of the business identification sign panel.

Standard:

02 Design standards for letters, numerals, and spacing shall be as provided in the "Standard Highway Signs" publication (see Section 1A.05).

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2K.04 Arrangement and Size of Signs

Standard:

01 The total height of the tourist-oriented directional signs in a sign assembly shall be limited to a maximum of 6 feet. Additional height shall be allowed to accommodate the addition of the optional TOURIST ACTIVITIES message provided in Section 2K.02 and the action messages provided in Section 2K.05.

Guidance:

02 The number of intersection approach sign assemblies (one sign assembly for tourist-oriented destinations to the left, one for destinations to the right, and one for destinations straight ahead) installed in advance of an intersection should not exceed three. The number of signs installed in each assembly should not exceed three. The signs for right-turn, left-turn, and straight-through destinations should be on separate sign assemblies. Signs for facilities in the straight-through direction should be considered only when there are signs for destinations in either the left or right direction.

03 If it has been determined to be appropriate to combine the left-turn and right-turn destination signs on a single sign assembly, the left-turn destination signs should be above the right-turn destination signs (see Figure 2K-1). When there are multiple destinations in the same direction, they should be in order based on their distance from the intersection. Except as provided in Paragraph 5 of this Section, a straight-through sign should not be combined in a sign assembly displaying left-turn and/or right-turn destinations.

04 The signs should not exceed the size necessary to accommodate two lines of legend without crowding. Symbols on a directional sign should not exceed the height of two lines of a word legend. All directional signs and other parts of the sign assembly should be the same width, which should not exceed 6 feet.

Option:

05 At intersection approaches where three or fewer facilities are displayed, the left-turn, right-turn, and straight-through destination sign panels may be combined on the same sign.

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2K.05 Advance Signs

Guidance:

01 Advance signs should be limited to those situations where sight distance, intersection vehicle maneuvers, or other vehicle operating characteristics require advance notification of the destinations and their directions.

02 The design of the advance sign should be identical to the design of the intersection approach sign. However, the directional arrows and distances to the destinations should be omitted and the action messages NEXT RIGHT, NEXT LEFT, or AHEAD should be placed on the sign above the business identification signs. The action messages should have the same letter height as the other word messages on the directional signs (see Figures 2K-1 and 2K-2).

Standard:

03 The action message signs shall have a white legend in all upper-case letters and a white border on a blue background.

Option:

04 The legend RIGHT ½ MILE or LEFT ½ MILE may be used on advance sign assemblies when there are intervening minor roads.

05 The height required to add the directional word messages recommended for the advance sign assembly may be added to the maximum sign height of 6 feet.

Guidance:

06 The optional TOURIST ACTIVITIES message, when used on an advance sign assembly, and the action message should be combined on a single sign with TOURIST ACTIVITIES as the top line and the action message as the bottom line (see Figure 2K-2).

Standard and Guidance statement information is included in 7 CSR 10-17. Revised Dec. 2025

Section 2K.06 Sign Locations

Guidance:

01 If used, the intersection approach signs should be located at least 200 feet in advance of the intersection. Sign assemblies should be spaced at least 200 feet apart and at least 200 feet from other traffic control devices.

02 If used, advance signs should be located approximately ½ mile from the intersection with 500 feet between these sign assemblies. In the direction of travel, the order of advance sign placement should be to show the destinations to the left first, then destinations to the right, and last, the destinations straight ahead (see Figure 2K-2).

03 Position, height, and lateral offset of sign assemblies should be governed by Chapter 2A except as permitted in this Section.

Option:

04 Tourist-oriented directional signs may be placed farther from the edge of the road than other traffic control signs.

Standard:

05 The location of other traffic control devices shall take precedence over the location of tourist-oriented directional signs.

Sign location information is included in 7 CSR 10-17. Revised Dec. 2025

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.

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.~~

State policy is established by 7 CSR 10-17 as well as the EPG. Revised Dec. 2025

CHAPTER 2L. CHANGEABLE MESSAGE SIGNS [EPG 903.12]

Section 2L.01 Description of Changeable Message Signs

Support:

01 A changeable message sign (CMS) is a traffic control device that is capable of displaying one or more alternative messages. Some CMS have a blank mode when no message is displayed, while others display multiple messages with only one of the messages displayed at a time (such as OPEN/CLOSED signs at weigh stations).

M01A Dynamic message signs (DMS) are a type of CMS which are stationary traffic control devices capable of displaying one or more alternative messages that provide travelers with real-time, traffic-related variable messages. DMS are used to warn, regulate, route and manage traffic.

02 The provisions in ~~this Chapter~~ EPG 903.12 apply to both permanent and portable changeable message signs with electronic displays or the electronic display portion of an otherwise conventional static sign. Additional provisions that only apply to portable changeable message signs (PCMS) can be found in Section 6L.05. Additional MoDOT provisions that apply to permanently-located DMS can be found in EPG 910.3. ~~The provisions in this Chapter generally do not apply to CMS with non-electronic displays that are changed either manually or electromechanically, such as a hinged panel, rotating drum, or back-lit curtain or scroll CMS.~~

MoDOT does not use CMS with non-electric displays. Revised Dec. 2025

03 The CMS is a traffic control device at all times regardless of the type of message being displayed. Accordingly, the limitations on design, format, and manner of display of a message conveyed on a conventional sign apply to CMS regardless of the type of message being displayed at any given time. Some of the general provisions regarding traffic control devices are reiterated in ~~this Chapter~~ EPG 903.12. However, ~~this Chapter~~ EPG 903.12 is not an independent or stand-alone reference for CMS. Users of CMS are expected to consult the other ~~chapters~~ articles in ~~this Manual~~ the EPG for criteria on how to develop effective messages that comply with ~~this Manual~~ the EPG and that meet the expectancy and limitations of the road user. In this regard, the engineering processes applied to decisions about whether to use a particular sign, for example, are no different for the decisions about the type and content of the message under consideration for display on a CMS. The other limited-use messages allowed on CMS as provided for in ~~this Chapter~~ EPG 903.12 likewise fall under the same MUTCD provisions as the primary-use traffic operation regulatory, warning, and guidance messages except as stated otherwise in ~~this Chapter~~ EPG 903.12.

04 CMS messaging can be subject to habituation, a phenomenon by which repeated exposure to a stimulus results in diminished response. CMS habituation can occur through repeated exposure to messages, especially those messages that might not be perceived as having relevance to the road user, resulting in diminished responsiveness of the road user to that message. Because messages can be changed or extinguished, the effectiveness of CMS is tied more to the messages displayed thereon, the frequency of displayed messages, and the relevance to the road user, rather than to the installation of the signs themselves.

Guidance:

05 Changeable message signs should be used judiciously to avoid habituation and preserve their effectiveness during the display of real-time messages about traffic conditions or traffic advisories.

Standard:

~~**06 The design of legends for non-electronic display CMS shall comply with the provisions of Chapters 2A through 2K, 2M, and 2N of this Manual. Other CMS shall comply with the design and application principles established in this Chapter, Chapter 2A, and provisions elsewhere in this Manual for specific signs.**~~

MoDOT does not use CMS with non-electric displays. Revised Dec. 2025

07 No items other than inventory or maintenance-related information (see ~~Section 2A.04~~ EPG 903.1.4) shall be displayed on the front or back of a CMS or portable CMS. Names or logos of the manufacturer, brand, or model shall not be displayed on a CMS or portable CMS, either in the message display itself or on the exterior housing.

Guidance:

08 Blank-out signs that display only single-phase, predetermined electronic-display legends that are limited by their composition and arrangement of pixels or other illuminated forms in a fixed arrangement (such as a blank-out sign indicating a part-time turn prohibition, a blank-out or changeable lane-use sign, or a changeable OPEN/CLOSED sign for a weigh station) should comply with the provisions of the applicable Section for the specific type of sign, provided that the letter forms, symbols, and other legend elements are duplicates of the conventional messages as detailed in the "Standard Highway Signs" publication (see EPG 911 (MUTCD Section 1A.05)). Because such a sign is effectively an illuminated version of a conventional sign, the size of its legend elements, the overall size of the sign, and the placement of the sign should comply with the applicable provisions for the conventional version of the sign.

Section 2L.02 Applications of Changeable Message Signs

Standard:

01 CMS shall display only traffic operational, regulatory, warning, and guidance information except as otherwise provided in ~~this Chapter~~ EPG 903.12 and EPG 910.3. Advertising or other messages not related to traffic control shall not be displayed on a CMS or on its supports or other equipment.

Option:

02 CMS may display traffic safety campaign messages (see ~~Section 2L.07~~ EPG 903.12.7), transportation-related messages, emergency homeland security messages, and America's Missing: Broadcast Emergency Response (AMBER) and Blue ~~a~~Alert messages, all as provided for in ~~this Chapter~~ EPG 903.12 and 910.3.

03 Transportation-related messages for the purpose of improving traffic conditions, such as those providing information on alternative means of transportation, electronic toll collection, or carpooling may be displayed to remind or inform drivers of relevant options or opportunities for transportation.

Support:

04 Messages regarding broader transportation items not related to improving traffic conditions, such as reminders of driver's license or vehicle registration renewal, vehicle recall information, and vehicle maintenance, do not meet the purpose of a transportation-related message.

05 Examples of transportation-related messages include "STADIUM EVENT SUNDAY, DELAYS NOON TO 4 PM" and "OZONE ALERT—USE TRANSIT."

Guidance:

06 A CMS should not be used to display a transportation-related message if doing so could adversely affect respect for the sign. "CONGESTION AHEAD" or other overly simplistic or vague messages should not be displayed alone. These messages should be supplemented with a message on the location or distance to the congestion or incident, delay and travel time, alternative route, or other similar messages.

07 CMS should not be used in place of conventional signs for conditions that do not change, except for blank-out type signs used to display regulatory, warning, and guidance information that routinely reoccurs, but only on a part-time basis. Similarly, when only certain elements of a message on a non-changeable sign are subject to change, only those elements of the sign should be in an electronic display~~, for example the prices shown on the R3-48 and R3-48a signs (see Figure 2G-18)~~.

Support:

08 The purpose of CMS is to provide real-time traffic regulatory, warning, or guidance messages as follows:

A. Incident management and route diversion;
B. Warning of adverse roadway travel conditions due to weather;
C. Special event applications associated with traffic control or conditions;
D. Lane, ramp, and roadway control;
E. Priced or other types of managed lanes;
F. Travel times;
G. Warning situations;

H. Traffic regulations;
I. Speed control or warning;
J. Variable destination guidance;
K. Supporting temporary traffic control; or
L. Active Traffic Management.

09 CMS provide significant flexibility and capability in communicating many types of real-time traffic control messages to road users. While their intended purpose is the display of traffic regulatory, warning, or guidance information, other limited uses are also allowed under certain conditions, as provided in ~~this Chapter~~ EPG 903.12. Their integrity as an official traffic control device rests significantly on their judicious use and proper messaging format and content, regardless of the message type being displayed.

Standard*:*

10 ~~State and local highway agencies that have permanently installed or positioned CMS~~ MoDOT shall issue and maintain a policy regarding the use and display of all types of messages to be used on their CMS. The policy shall define the types of messages that will be allowed, the priority of messages, the proper syntax of messages, the timing of messages, and other important messaging elements to ensure messages displayed meet the basic principles that govern the design and use of traffic control devices in general (see EPG 911 (MUTCD Section 1D.01)) and traffic signs in particular as provided for in ~~this Manual~~ the EPG.

Guidance:

~~11 State and local agencies that use CMS, but do not have permanently installed or positioned signs, should develop and establish a policy as discussed in Paragraph 10 of this Section.~~

MoDOT has permanently installed DMS. Revised Dec. 2025

12 When CMS are used at multiple locations to address a specific situation, the message displays should be consistent along the roadway corridor and adjacent corridors, which might necessitate coordination among different operating agencies.

13 AMBER and Blue A~~a~~lerts (see ~~Paragraph 2~~the first option paragraph of this Section), when displayed, should not preempt messages related to traffic or travel conditions. AMBER and Blue A~~a~~lert messages should be kept as brief as possible and, when possible, direct road users to another source, such as broadcast or highway advisory radio, for detailed information about the alert.

Support:

M13A EPG 910.3.2.15 contains procedures for Child Abduction, Blue Alert, and Ozon Alert messages.

Standard:

14 Types of "alert" messages other than AMBER and Blue alerts that are unrelated to traffic or travel conditions shall not be displayed on CMS.

15 The format of CMS displays shall not be of a type that could be considered similar to advertising or promotional displays.

Support:

16 In times of a declared state of emergency, it might be appropriate to display messages related to evacuation, homeland security, or emergency information. Traffic patterns, movement, or other situations might be atypical due to the emergency, necessitating unique messaging not specifically related to traffic conditions.

Standard:

17 Homeland security and emergency messages shall only be displayed in declared states of emergency when there is an imminent threat to the general population. Generic security or personal safety messages shall not be displayed when there is no context of a declared state of emergency or known imminent national security threat. Homeland security and emergency messages shall not be promotional or advisory in nature, including the message design, layout, or manner of display.

Guidance:

18 Homeland Security and emergency messages should undergo significant levels of scrutiny prior to being approved for broadcast to ensure accuracy and consistency with emergency conditions. These messages should be designed to convey a clear and simple meaning in a similar format to traffic control messages.

Support:

19 ~~Section 2B.21~~ EPG 903.2.20 contains information regarding the design of CMS that are used to display variable speed limits that change based on ambient or operational conditions on the variable Speed Limit (R2-1) sign.

20 ~~Section 2C.13~~ EPG 903.3.13 contains information regarding the design of CMS that are used to display the speed at which approaching vehicles are traveling on the Vehicle Speed Feedback (W13-20 and W13-20aP) sign and plaque.

~~21 Section 2H.04 contains information regarding the design of CMS that are used to display variable speeds for traffic signal progression on the Traffic Signal Speed (I1-1) sign.~~

22 EPG 912 (MUTCD Section 5B.01) contains provisions for LEDs used in electronic-display signs to accommodate driving automation systems.

Section 2L.03 Legibility and Visibility of Changeable Message Signs

Support:

01 The maximum distance at which a driver can first correctly identify letters and words on a sign is called the legibility distance of the sign. Legibility distance is affected by the characteristics of the sign design and the visual capabilities of drivers. Visual capabilities, and thus legibility distances, vary among drivers.

02 For the more common types of CMS, the longest measured legibility distances on sunny days occur during mid-day when the sun is overhead. Legibility distances are much shorter when the sun is behind the sign face, when the sun is on the horizon and shining on the sign face, or at night.

03 Visibility is the characteristic that enables a CMS to be seen. Visibility is associated with the point where the CMS is first detected, whereas legibility is the point where the message on the CMS can be read. Environmental conditions such as rain, fog, and snow impact the visibility of CMS and can reduce the available legibility distances. During these conditions, there might not be enough viewing time for drivers to read the message.

Guidance:

04 CMS used on roadways with speed limits of 55 mph or higher should be visible from ½ mile under both day and night conditions. The message should be designed to be legible from a minimum distance of 600 feet for nighttime conditions and 800 feet for normal daylight conditions. When environmental conditions that reduce visibility and legibility are present, or when the legibility distances stated in the previous sentences in this paragraph cannot be practically achieved, messages composed of fewer units of information should be used and consideration should be given to limiting the message to a single phase (see ~~Section 2L.05~~ EPG 903.12.5 for information regarding the lengths of messages displayed on CMS).

05 The electronic display of standardized regulatory and warning signs used individually or as part of the legend for a larger sign should meet the size and legend requirements for those specific signs in ~~Chapters 2B and 2C~~ EPG 903.2 and 903.3.

Section 2L.04 Design Characteristics of Messages

Standard:

01 Except as provided in ~~Paragraph 2 of this Section~~ the following paragraph, messages shall not include animation, flashing, dissolving, exploding, scrolling, or other dynamic display elements.

02 When a portable CMS is used as an arrow board that uses a flashing or sequential display for a lane or shoulder closure, the display and operation shall be considered that of an arrow board and shall comply with the provisions of ~~Sections 6L.05~~ EPG 616.12.5 and ~~6L.06~~ 616.12.6.

Guidance:

03 In developing messages for display on CMS, the provisions of EPG 911 (MUTCD Section 1D.01) should be consulted for the principles of an effective traffic control device.

Standard:

04 All message displays on CMS, whether for traffic operational, regulatory, warning, or guidance information, or for the other allowable message types as defined in ~~this Chapter~~ EPG 903.12, shall follow the same design and display principles found in ~~this Manual~~ the EPG used for other traffic control signs, except as provided elsewhere in ~~this Chapter~~ EPG 903.12.

Guidance:

05 Except in the case of a limited-legend CMS (such as a blank-out or a part-time regulatory sign display) that is used in place of a conventional regulatory sign or an activated blank-out warning sign that supplements a conventional warning sign at a separate location, the signs should be used as a supplement to and not as a substitute for conventional signs and markings unless otherwise provided for in ~~this Manual~~ the EPG.

Support:

06 When CMS are overused for messages not directly associated with real-time driving conditions, road users might pay less attention to the sign, thereby limiting their effectiveness as traffic control devices.

Guidance:

07 Warning Beacons (see ~~Section 4S.03~~ EPG 902.18.3) should not be installed on CMS, rather CMS should be used predominately to display messages that are critical to real-time travel conditions. CMS word messages should be limited to no more than three lines, with no more than 20 characters per line.

08 The spacing between characters in a word should be between 25 and 40 percent of the letter height. The spacing between words in a message should be between 75 and 100 percent of the letter height. Spacing between the message lines should be between 50 and 75 percent of the letter height. Table 2L-1 contains information for spacing between characters, words, and lines of text.

Table 2L-1. Spacing between Message Characters, Words, and Lines of Text

Height of Letters Used on CMS	Spacing between Characters in Words	Horizontal Spacing between Words	Vertical Spacing between Lines of Text
12	3 - 5	9 - 12	6 - 9
18	4 ½ - 7	13 ½ - 18	9 - 13 ½

Note: All units are in inches

09 Except as otherwise provided in ~~this Manual~~ the EPG, word messages on CMS should be composed of all upper-case letters. The minimum letter height should be 18 inches for CMS on roadways with speed limits of 45 mph or higher. The minimum letter height should be 12 inches for CMS on roadways with speed limits of less than 45 mph. When a message is composed of two phases and higher informational load (see Section 2L.05), the letter height should be 18 inches, regardless of the speed limit, to optimize legibility distance and available viewing time.

Option:

10 CMS used to replicate a conventional sign may use the character size of the conventional sign being replicated.

Support:

11 Using letter heights of more than 18 inches will not result in proportional increases in legibility distance.

Guidance:

12 The width-to-height ratio of the sign characters should be between 0.7 and 1.0. The stroke width-to-height ratio should be 0.2.

Support:

13 The width-to-height ratio is commonly accomplished using a minimum font matrix density of five pixels wide by seven pixels high.

Standard:

14 CMS shall automatically adjust their brightness under varying light conditions to maintain legibility.

Guidance:

15 The luminance design of a CMS should meet industry criteria for daytime and nighttime conditions. Luminance contrast design should be between 8 and 12 for all conditions.

Support:

16 CMS maintenance and replacement practices might need to account for the reduction of LED luminance and luminance contrast that occurs naturally over time and might substantially impact legibility.

Guidance:

17 Contrast orientation of CMS should always be positive, that is, with luminous characters on a dark or less-luminous background.

Support:

18 Legibility distances for negative-contrast CMS are likely to be at least 25 percent shorter than those of positive-contrast messages. In addition, the increased light emitted by negative-contrast CMS has not been shown to improve detection distances and might visually overwhelm the darker characters of the sign legend.

Standard:

19 The colors used for the legends and backgrounds on CMS shall be as provided in Table 2A-2.

Guidance:

M19A When displaying color messages use of full background color should be avoided in nighttime conditions. Full background color at night can cause a washout effect of the text or other image being displayed.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

20 Except as provided for in ~~Paragraph 21 of this Section~~ the following paragraph, if a black background is used, the color used for the legend on a CMS shall match the background color that would be used on a standard sign for that type of legend as specified in Table 2A-2.

Option:

21 CMS that use only yellow or amber LEDs may display a yellow or amber legend that does not match the background color used on a standard sign for that type of legend as specified in Table 2A-2.

Standard:

22 If a green background is used for a guide message on a CMS or if a blue background is used for a motorist services message on a CMS, the background color shall be provided by green or blue lighted pixels such that the entire CMS would be lighted, not just the white legend.

Support:

23 Some CMS that employ newer technologies have the capability to display a near duplicate of a standard sign or other sign legend using standard symbols, the Standard Alphabets and letter forms, route shields, and other typical sign legend elements with no apparent loss of resolution or recognition to the road user when compared with a conventional version of the same sign legend. Such signs are of the full-matrix type and can typically display full-color legends. Figure 2L-1 shows comparative examples of the effects of varying pixel densities on legend form.

Guidance:

24 If used, the CMS described in ~~Paragraph 23 of this Section~~ the previous paragraph should not display symbols or route shields unless they can do so in the appropriate legend and background color combinations. Where an LED matrix is used to form the changeable legend, signs with pixel spacing greater than 20 millimeters should display only word legends and no symbols or route shields.

25 For a single-phase message where the Standard Alphabets and other legend elements of standard designs are used, the lettering style, size, and line spacing should comply with the applicable provisions for the type of message displayed as provided elsewhere in ~~this Manual~~ the EPG. For two-phase messages, larger

legend heights should be used as described previously in this Section because of the need for such messages to be legible at a greater distance. Regardless of the number of phases, the CMS should comply with the legibility and visibility provisions of Section 2L.03.

Support:

M26 EPG 910.3.2.8.1 includes additional information regarding Design Characteristics of Messages for DMS.

Figure 2L-1. Example of Capability to display Sign Legends Based on Pixel Pitch



Color full-matrix CMS with pixel pitches of 20 millimeters or less are typically capable of displaying legends nearly identical to conventional sign legends, including route shields and symbols as provided in the MUTCD.



CMS with insufficient pixel density, typically with pixel pitches greater than 20 millimeters – whether full color or monochrome – are generally not capable of adequately displaying conventional sign legends with sufficient clarity and should only display monochrome word messages.

Notes:
1. Pixel pitch is the distance from the center of a pixel to the center of an adjacent pixel.
2. The pixel pitch is described in Metric units because sign manufacturers only use Metric units.

Section 2L.05 Message Length and Units of Information

Guidance:

01 The maximum length of a message should be dictated by the number of units of information contained in the message, in addition to the size of the CMS. A unit of information, which is a single answer to a single question that a driver can use to make a decision, should not be more than four words.

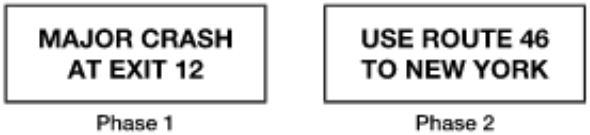
Support:

02 In order to illustrate the concept of units of information, Table 2L-2 shows an example message that is comprised of four units of information.

Table 2L-2. Example of Units of Information

Question	Answer	Number of Information Units
What happened?	MAJOR CRASH	1
Where?	AT EXIT 12	1
Who is the advisory for?	Drivers heading TO NEW YORK	1
What is advised?	USE ROUTE 46	1

Note: The following is an example of a two-phase message that could be developed from the four information units shown in this table:



Phase 1 Phase 2

03 The maximum allowable number of units of information in a CMS message is based on the principles described in this Section, the current highway operating speed, the legibility characteristics of the CMS, and the lighting conditions.

Standard:

04 Each message shall consist of no more than two phases. A phase shall consist of no more than three lines of text. Each phase shall be understood by itself, and the meaning of the entire message shall be the same, regardless of the sequence in which the phases are read. Each line of legend shall be centered on the sign. ~~Except for signs located on toll plaza structures or other facilities with a similar booth-lane arrangement, if~~ If more than one CMS is visible to road users, then only one sign shall display a sequential message at any given time.

Option:

05 A legend on a CMS that replicates a legend on a conventional sign that would not normally be center justified may be left justified or right justified as appropriate, such as a travel time ~~or a variable rate toll~~ display.

Standard:

06 Abbreviations displayed on CMS shall comply with the provisions of EPG 911 (MUTCD Section 1D.08).

Guidance:

07 When designing and displaying messages on CMS, the following principles should be used:

- *A. The minimum time that an individual phase is displayed should be based on 1 second per word or 2 seconds per unit of information, whichever produces a lesser value. The display time for a phase should never be less than 2 seconds.*
- *B. The maximum cycle time of a two-phase message should be 8 seconds.*
- *C. The duration between the display of two phases should not exceed 0.3 seconds.*
- *D. No more than three units of information should be displayed in a message phase.*
- *E. No more than four units of information should be in a message when the traffic operating speeds are 35 mph or more.*
- *F. No more than five units of information should be in a message when the traffic operating speeds are less than 35 mph.*
- *G. Only one unit of information should appear on each line of the CMS.*

Support:

08 Table 2L-2 provides an example of the number of units of information in a message.

Option:

09 A unit of information consisting of more than one word may be displayed on more than one line. An additional CMS at a downstream location may be used for the purpose of allowing the entire message to be read twice.

10 If more than two phases would be needed to display the necessary information, additional CMS may be used to display this information as a series of two distinct, independent messages with a maximum of two phases at each location, in accordance with the provisions of ~~Paragraph 4 of this Section~~ the first Standard paragraph of EPG 903.12.5.

Support:

11 Tables 2L-3 and 2L-4 provide examples of message construction for CMS. Each example shows the message content, layout, and phasing for a potential message and an improved message. The improved message for each example has been optimized for recognition, comprehension, and effectiveness.

M12 See EPG 910.3.2.8.1 for additional information regarding Message Length and Units of Information for DMS.

Table 2L-3. Examples of Message Construction for CMS

Example	Phase	Potential Message	Improved Message	Comments
1	1	EXIT 10	EXIT 10 CLOSED	**Diversionary message:** Each message phase should convey a complete thought independent of the other message phase. The entire message should also make sense regardless of which phase is read first.
	2	CLOSED USE EXIT 12	USE EXIT 12	
2	1	ROADWORK AHEAD	ROAD WORK AHEAD	**Advance warning message:** Condensing ROAD and WORK into single word is not necessary since sign width will accommodate the conventional 2-word message. A general CAUTION message is not specific enough to be actionable by the road user. Message should not be repeated to fill sign. Phase 2 of the improved message can be eliminated without any loss of meaning to Phase 1.
	2	CAUTION CAUTION CAUTION	FINES DOUBLE	
3	1	RIGHT LANE CLOSED	RIGHT LANE CLOSED 1 MILE	**Advance warning message:** Use of single phase message reduces time necessary to read and glances away from the road. Second phase does not provide a complete message.
	2	1 MILE	N/A Single-Phase Message	
4	1	RT LN CLSD 1 MI	RIGHT LANE CLOSED 1 MILE	**Advance warning message:** Less common abbreviations (see Table 1D-2) are not warranted when the sign can accommodate the full message. Abbreviations in Table 1D-2 should be limited only to portable CMS where the number of characters per line is limited.
	2	N/A Single-Phase Message	N/A Single-Phase Message	
5	1	9TH AVENUE SOUTHWEST KEEP RIGHT	9TH AVE SW KEEP RIGHT	**Directional message:** Conventional abbreviations for street name descriptors (see Table 2D-3) are used for consistency with standard signs to improve recognition and reduce the apparent amount of legend.
	2	N/A Single-Phase Message	N/A Single-Phase Message	
6	1	EXPWY CONGESTED USE 101 FOR AIRPORT	US 19 CONGESTED	**Diversionary message:** Lack of Expressway route number is vague to unfamiliar road user. Adding exit number for diversion route simplifies message. Diversion message is stated in reverse order and requires more words as a result.
	2	N/A Single-Phase Message	AIRPORT USE EXIT 101	
7	1	TRAVEL TIME TO I-89 13 MINUTES	I-89 JCT 12 MILES 13 MINS	**Travel time information:** TRAVEL TIME legend is extraneous and out of context for the distance message. Changing only one line of legend between phases compromises recognition of the message.
	2	TRAVEL TIME TO I-89 12 MILES	N/A Single-Phase Message	
8	1	SEAT BELTS SAVE LIVES	STATE LAW FASTEN SEAT BELTS	**Safety campaign regulatory message:** Slogan-type message does not convey the legal requirement. As an alternative, the STATE LAW legend could be eliminated and the fine for violations displayed on a second phase to convey the regulatory nature of the message.
	2	N/A Single-Phase Message	N/A Single-Phase Message	
9	1	DONT TEXT JUST DRIVE	NO HAND-HELD PHONE BY DRIVER	**Regulatory message.** Slogan-type message does not convey the legal requirement. Phase 2 of the improved message can be eliminated without any loss of meaning to Phase 1.
	2	IT CAN WAIT	$250 FINE AND POINTS	

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

Table 2L-4. Examples of Message Construction for Portable CMS*

Example	Phase	Potential Message	Improved Message	Comments
1	1	EXIT 10	EXIT 10 CLOSED	**Diversionary message:** Each phase conveys a complete thought.
	2	CLOSED USE EXIT 12	USE EXIT 12	
2	1	ROADWORK AHEAD	ROAD WORK AHEAD	**Advance warning message:** Condensing ROAD and WORK into a single word is unnecessary because the sign width will accommodate the conventional 2-word phrase. A general CAUTION message is not specific enough to be useful to the road user. Message should not be repeated to fill the sign. Phase 2 of the improved message can be eliminated without any loss of meaning to Phase 1.
	2	CAUTION CAUTION CAUTION	FINES DOUBLE	
3	1	RIGHT LANE CLOSED	RIGHT LN CLOSED 1 MILE	**Advance warning message:** Separation of the message into 2 phases is unnecessary. Second phase does not provide a complete message.
	2	1 MILE	N/A Single-Phase Message	
4	1	RT LN CLSD 1 MI	RIGHT LN CLOSED 1 MILE	**Advance warning message:** Less common abbreviations (see Table 1D-2) are not warranted when the sign can accommodate the full message.
	2	N/A Single-Phase Message	N/A Single-Phase Message	
5	1	9TH AVENUE SW	9 AVE SW KEEP RIGHT	**Directional message:** Conventional abbreviations for street name descriptors (see Table 2D-3) are used for consistency with standard signs to improve recognition and reduce the apparent amount of legend.
	2	KEEP RIGHT	N/A Single-Phase Message	
6	1	ROAD WORK	ROADWORK NEXT 3 MILE	**Advance warning message:** Condensing ROAD and WORK into single word (see Table 1D-2) accommodates a single-phase message.
	2	NEXT 3 MILES	N/A Single-Phase Message	
7	1	SEAT BELTS	FASTEN SEAT BELTS	**Safety campaign regulatory message:** Slogan-type message does not convey the legal requirement. As an alternative, the STATE LAW legend could be eliminated and the fine for violations displayed on a second phase to convey the regulatory nature of the message. Phase 2 of the improved message can be eliminated without any loss of meaning to Phase 1.
	2	SAVE LIVES	STATE LAW	
8	1	DONT TEXT	NO HAND-HELD PHONE	**Regulatory message:** Slogan-type message does not convey the legal requirement.
	2	JUST DRIVE	BY DRIVER	

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

Section 2L.06 Travel Time Messages

Support:

01 Travel times provide road users useful information about the level of congestion on segments of highways where motorists experience frequent incidents that slow traffic. Travel times are only helpful to the road user if they have a general understanding of the length of the road segment the travel time is related to so that they can compare that to the time it takes them to travel a similar distance on a highway without congestion. However, travel time messages require road users to read and process a significant amount of information and careful consideration is needed to ensure the overall message is not overloading the motorist.

Guidance:

02 Travel times should be tied to the distance to a particular destination or junction so that road users can estimate the level of congestion based on the time to travel that distance. When travel times are displayed on CMS, such as during peak traffic conditions, the message should comply with the provisions of ~~Sections 2E.49~~ EPG 903.5.47 and ~~2E.50~~ 903.5.48. If both a travel time and a distance are displayed, the sign should display only one destination. A distance displayed as part of a travel time message should be rounded to the nearest whole mile.

Option:

03 When comparative travel time displays are used providing travel times on different routes to one destination, distances to that destination may be eliminated.

04 A reference-location-based exit number (see ~~Section 2E.22~~ EPG 903.5.22) may be displayed in lieu of a destination name or junction thereby providing the necessary distance information to the road user. If reference-location-based exit numbers are displayed, then up to two travel times may be displayed provided that the distance to the exit is not also displayed.

Support:

M05 EPG 910.3.2.12 includes information regarding Congestion Messages for DMS.

Section 2L.07 Traffic Safety Campaign Messages

Support:

01 An allowable ancillary use of CMS is the display of traffic safety messages in conjunction with a traffic safety campaign that includes other forms of media as the primary communication and education mechanism.

Standard:

02 Traffic control messages shall have priority over traffic safety campaign messages.

Guidance:

03 When a CMS is used to display a traffic safety campaign, the message should be simple, direct, brief, legible, and clear (see EPG 911(MUTCD Section 1D.01)). Traffic safety campaign messages should be relevant to the road user on the roadway on which the message is displayed. For example, messages regarding school bus stop safety should not be displayed on freeways where school bus stops are not found.

04 A CMS should not be used to display a traffic safety campaign message if doing so could adversely affect respect for the sign. Messages with obscure or secondary meanings, ~~such as those with popular culture references, unconventional sign legend syntax, or that are intended to be humorous,~~ should not be used as they might be misunderstood or understood only by a limited segment of road users and require greater time to process and understand. Similarly, slogan-type messages and the display of statistical information should not be used.

MoDOT uses a team to review all traffic safety campaign messages to ensure proper messaging is used. Revised Dec. 2025

05 The broad traffic safety campaign marketing message should be appropriately shortened or otherwise modified to comply with the provisions of ~~Section 2L.05~~ EPG 903.12.5 when a traffic safety campaign message is displayed on a CMS.

06 Traffic safety campaign messages should emphasize the applicable regulation or warning and should reference any penalties associated with violations of the regulation. Traffic safety campaigns using CMS

should include coordinated enforcement efforts where penalties or enforcement type warnings are part of the message displayed on the CMS.

07 Traffic safety campaign messages should not be displayed on CMS unless they are part of an active, coordinated safety campaign that uses other media forms as the primary means of outreach. For consistency on a national level, traffic safety campaigns should be coordinated with those on the National Highway Transportation Safety Administration's annual communications calendar~~.~~ or similarly planned sate campaigns.

Support:

08 Examples of traffic safety campaign messages include "UNBUCKLED SEAT BELTS FINE + POINTS" and "IMPAIRED DRIVERS LOSE LICENSE + JAIL."

M09 EPG 910.3.2.16 includes additional information related to Driver Safety Campaigns.

Section 2L.08 Permanently-Located Changeable Message Signs (DMS)

Support:

M00 Dynamic message signs (DMS) are permanently-located changeable message signs. EPG 903.12.1 through 903.12.7 contain provisions regarding all changeable message signs. The provisions of this section apply to DMS or other permanently-located CMS.

01 Careful consideration of CMS or DMS installation location is important to having a safe and effective message, taking into account several factors. CMS or DMS message length and complexity will vary and often include two-phase displays, all of which might require longer glance times by motorists than would be required for conventional sign messages.

02 Permanently-located CMS or DMS are generally used on higher-speed, multi-lane facilities with high traffic volumes where more time might be required to properly respond to a message, such as by changing lanes or reducing speed. It also is common for other signs to be in the same vicinity of the desired location for a permanently-located CMS raising the concern of overloading road users with information.

Guidance:

03 A CMS or DMS that is used in place of a conventional sign (such as a blank-out or variable legend regulatory sign) should be located in accordance with the provisions of ~~Chapter 2A~~ EPG 903.1 and the provisions for the conventional sign it replaces.

04 Permanently-located CMS or DMS should:

A. Be located sufficiently upstream of known bottlenecks and high crash locations to enable road users to select an alternate route or take other appropriate action in response to a recurring condition.
B. Be located sufficiently upstream of major diversion decision points, such as interchanges, to provide adequate distance over which road users can change lanes to reach one destination or the other.
C. Not be located within an interchange ~~except for toll plazas or managed lanes~~.
D. Not be positioned at locations where the information load on drivers is already high because of guide signs and other types of information.
E. Not be located in areas where drivers frequently perform lane-changing maneuvers in response to guide sign information, or because of merging or weaving conditions.

Support:

05 Many of the factors in locating permanently-located CMS or DMS apply to PCMS. Information regarding the design and application of PCMS in temporary traffic control zones is contained in ~~Section 6L.05~~ EPG 616.12.5.

CHAPTER 2M. RECREATIONAL, HISTORIC SITE, AND CULTURAL INTEREST AREA SIGNS

[EPG 903.13]

Support:

M01 State and Federal Recreational site, Historic Site, and Cultural Interest Area signing placed on the MoDOT system is a form of traffic generator sign. As such, they are included in the department Supplemental Guide Sign Program. These signs only provide guidance to these recreational and historical sites.

M02 Federal and state agencies owning recreational and historical sites are responsible for installing and maintain internal site signing to MUTCD standards. MoDOT only adopts those portions of the National MUTCD that are relevant to state-maintained highways. For this reason, MUTCD content related to signing inside these sites is not included in the EPG. Practitioners should reference the National MUTCD for provisions related to traffic control devices that are not included in the EPG.

Standard:

M03 For this signing program, a State or Federal Recreation and Historic Site is defined as a site owned and operated by a Missouri state agency (Missouri Department of Conservation or Missouri Department of Natural Recourse) or a federal agency (National Park Service, National Forest Service, Corps of Engineers, US Fish and Wildlife).

M04 All requests for participation in the State and Federal Recreation and Historic Site Signing program shall be forwarded to MoDOT's Supplemental Guide Sign Program manager for processing. Per the CSR, it is the program manager's responsibility to receive all requests, evaluate eligibility and administer the contract with the applicant.

M05 MoDOT districts' role in the program is to review and approve site plans for new sign installations, assuring the new sign installations do not conflict with existing traffic control devices or create sight distance issues. Another critical responsibility is to identify and report damage and/or deficiencies with any of the signs the for which the program manager is responsible.

M06 Central Office Highway Safety and Traffic Division shall be responsible for managing the Supplemental Guide Sign Program Contract, updating the CSR, and interpreting the intent of the CSR and the program contract if there are questions or appeals from prospective applicants. Highway Safety and Traffic Division shall also be responsible for working with Governmental Relations on legislative issues.

M07 The State and Federal Recreation and Historic Site Signing program shall be managed in accordance with the Code of State Regulations 7 CSR 10-17 Supplemental Guide Sign Program and the Supplemental Guide Sign Program contract between the Commission and MoDOT's third party contractor. The CSR is binding and has the effect of law. Exceptions and/or variations from the CSR are not permitted under normal conditions with the Director having the only authority to authorize such actions.

M08 The rules contained within the CSR are based on, and are in conformance with, the Manual on Uniform Traffic Control Devices and the AASHTO Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators.

Guidance:

M09 Recreational and cultural interest symbol signs used on MoDOT right of way are typically limited to those that indicate the availability of camping at a site. These signs are installed as part of state and federal signing in the Supplemental Guide Sign Program managed by MoDOT's third party contractor and their use is based on a site evaluation for eligibility. The design and size of the symbol signs should match MUTCD standards.

Option:

M10 Rustic Signs may be used by state and federal agencies at first order locations, the intersection that leads drivers off the state system or at the entrance of the site when the state route passes through the recreational areas or historic site. Rustic signs do not meet Federal breakaway standards therefore when they

are used they shall be placed at or outside of MoDOT's right of way line for safety. These signs will typically replace MoDOT's standard first order signing (see EPG 903.1.24).

MoDOT specific content replaces Chapter 2M content. Revised Dec. 2025

~~Section 2M.01 Scope~~

~~Support:~~

~~01 Recreational or cultural interest areas are attractions or traffic generators that are open to the general public for the purpose of play, amusement, or relaxation. Recreational attractions include such facilities as parks, campgrounds, game hunting facilities, and ski areas, while examples of cultural attractions include museums, art galleries, and historical buildings or sites.~~

~~02 The purpose of recreation and cultural interest area signs is to guide road users to a general area and then to specific facilities or activities within the area.~~

~~Option:~~

~~03 Recreational and cultural interest area guide signs directing road users to significant traffic generators may be used on freeways and expressways where there is direct access to these areas as provided in Section 2M.09.~~

~~04 Recreational and cultural interest area signs may be used off the road network, as appropriate.~~

MoDOT specific content replaces Chapter 2M content. Revised Dec. 2025

~~Section 2M.02 Application of Recreational and Cultural Interest Area Signs~~

~~Support:~~

~~01 Provisions for signing recreational or cultural interest areas are subdivided into two different types of signs: (1) symbol signs and (2) destination guide signs.~~

~~Guidance:~~

~~02 Highway agencies providing recreational and cultural interest area signing should establish a policy with signing criteria for the eligibility of the various types of services, accommodations, and facilities. These signs should not be used where they might be confused with other traffic control signs.~~

~~Option:~~

~~03 Recreational and cultural interest area guide signs may be used in recreational or cultural interest areas for signing non-vehicular events and amenities such as trails, structures, and facilities.~~

~~Support:~~

~~04 Symbols for use only within recreational and cultural interest area facilities are noted in Table 2M-1.~~

~~05 Section 2A.09 contains information regarding the use of recreational and cultural interest area symbols on other types of signs.~~

Policy with signing criteria for eligibility is contained in 7 CSR 10-17. Revised Dec. 2025

Section 2M.03 Regulatory and Warning Signs

Standard:

01 All regulatory and warning signs installed on roads and streets open to public travel within recreational and cultural interest areas shall comply with the requirements ~~elsewhere~~ in ~~this Manual~~ the MUTCD.

~~Section 2M.04 General Design Requirements for Recreational and Cultural Interest Area Symbol Guide Signs~~

~~**Standard:**~~

~~**01 When a General Information symbol contained in Chapter 2H (see Figure 2H-1) is used in conjunction with recreational and cultural interest area signing on roadways outside a recreational and cultural interest area facility, the legend and background color of the General Information symbol sign shall be as prescribed in Chapter 2H.**~~

02 When a General Service symbol contained in Chapter 2I (see Figure 2I-1) is used in conjunction with recreational and cultural interest area signing on roadways outside a recreational and cultural interest area facility, the legend and background color of the General Service symbol sign shall be as prescribed in Chapter 2I.

Option:

03 For roadways inside a recreational and cultural interest area, General Information symbol signs and General Service symbol signs may have a white legend on a brown background (see Figures 2H-1 and 2I-1).

Standard:

04 Except as provided in Section 2M.09, recreational and cultural interest area symbol guide signs shall be square or rectangular in shape and shall have a white symbol or message and white border on a brown background. The symbols shall be grouped into the following usage and series categories:

A. General Applications,
B. Accommodations,
C. Services,
D. Land Recreation,
E. Water Recreation, and
F. Winter Recreation.

Support:

05 Table 2M-1 contains a listing of the symbols within each series category.

Option:

06 Mirror images of symbols may be used where the reverse image will better convey the message (see Section 2A.09).

Design requirements are included in 7 CSR 10-17. Revised Dec. 2025

Section 2M.05 Symbol Sign Sizes

Guidance:

01 Recreational and cultural interest area symbol signs should be 24 x 24 inches. Where greater visibility or emphasis is needed, larger sizes should be used. Symbol sign enlargements should be in 6-inch increments.

02 Recreational and cultural interest area symbol signs should be 30 x 30 inches when used on guide signs on freeways or expressways.

Option:

03 A smaller size of 18 x 18 inches may be used on low-speed, low-volume roadways and on non-road applications.

Sign sizes for all signs used on MoDOT facilities are listed individually and meet the guidance statement. Revised Dec. 2025

Section 2M.06 Use of Educational Plaques

Guidance:

01 Educational plaques should accompany all initial installations of recreational and cultural interest area symbol signs. If used, the educational plaque should be the same width as the symbol sign.

Option:

02 Symbol signs that are readily recognizable by the public may be installed without educational plaques.

Support:

03 Figure 2M-1 illustrates some examples of the use of educational plaques.

MoDOT does not adopt the use of educational plaques. Revised Dec. 2025

Section 2M.07 Use of Prohibitive Circle and Diagonal for Non-Road Applications

Standard:

01 Where it is necessary to indicate a prohibition of an activity or an item within a recreational or cultural interest area for non-road use and a standard regulatory sign for such a prohibition is not provided in Chapter 2B, the appropriate recreational and cultural interest area symbol shall be used in combination with a red prohibitive circle and diagonal. The recreational and cultural interest area symbol and the sign border shall be black and the sign background shall be white. The symbol shall be scaled proportionally to fit completely within the circle. The diagonal shall be oriented from the upper left to the lower right portions of the circle as shown in Figure 2M-1 and as detailed in the "Standard Highway Signs" publication.

02 Requirements for retroreflection of the red circle and diagonal shall be the same as those requirements for backgrounds, legends, symbols, arrows, and borders.

MoDOT does not sign off of roadways. Revised Dec. 2025

Section 2M.08 Placement of Recreational and Cultural Interest Area Symbol Signs

Standard:

01 If used, recreational and cultural interest area symbol signs shall be placed in accordance with the general requirements contained in Chapter 2A. The symbol(s) shall be placed as sign panels in the uppermost part of the sign and the directional information shall be placed below the symbol(s).

02 If the name of the recreational or cultural interest area facility or activity is displayed on a destination guide sign (see Section 2M.09) and a symbol is used, the symbol shall be placed below the name (see Figure 2M-2).

Option:

03 The symbols displayed with the facility or activity name may be placed below the destination guide sign as illustrated in Figure 2M-2 instead of as sign panels placed with the destination guide sign.

04 Secondary symbols of a smaller size (18 x 18 inches) may be placed beneath the primary symbols (see Drawing A in Figure 2M-1), where needed.

Standard:

05 Recreational and cultural interest area symbols installed for non-road use shall be placed in accordance with the general sign position requirements of the authority having jurisdiction.

Support:

06 Figure 2M-3 illustrates typical height and lateral mounting positions. Figure 2M-4 illustrates some examples of the placement of symbol signs within a recreational or cultural interest area. Figures 2M-5 through 2M-10 illustrate some of the symbols that can be used.

Guidance:

07 The number of symbols used in a single sign assembly should not exceed four.

Option:

08 The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary signs (see Figure 2D-6) with white arrows on brown backgrounds may be used with recreational and cultural interest area symbol guide signs to create a recreational and cultural interest area directional assembly. The symbols may be used singularly, or in groups of two, three, or four on a single sign assembly (see Figures 2M-1, 2M-3, and 2M-4).

Placement requirements are included in 7 CSR 10-17. Revised Dec. 2025

Section 2M.09 Destination Guide Signs

Standard:

01 When recreational or cultural interest area destinations are displayed on a Supplemental guide sign (see Section 2E.51), the sign shall be rectangular in shape with a white legend on a green or brown background.

~~Option:~~

~~02 Trapezoidal-shaped signs (see Figure 2M-2) may be used to display recreational and cultural interest area destinations on conventional roads.~~

~~**Standard:**~~

~~**03 Whenever the trapezoidal shape is used, the color combination shall be a white legend and border on a brown background. When the trapezoidal shape is used for a sign with a directional arrow, a right-angled trapezoid with the wider dimension of the bases (parallel sides) at the top of the sign shall be used. The diagonal leg of the trapezoid shall be oriented in the same direction as the directional arrow. When the trapezoidal shape is used for an advance sign legend, such as with a distance or action message, an isosceles trapezoid with the wider dimension of the bases at the top of the sign shall be used.**~~

~~Option:~~

~~04 Destination guide signs with a white legend and border on a brown background may be posted at the first point where an access or crossroad intersects a highway where recreational or cultural interest areas are a significant destination along conventional roads, expressways, or freeways. Supplemental guide signs with a white legend and border on a brown background may be used along conventional roads, expressways, or freeways to direct road users to recreational or cultural interest areas. Where access or crossroads lead exclusively to the recreational or cultural interest area, the Advance guide sign (see Section 2E.23) and the Exit Direction sign (see Section 2E.25) may have a white legend and border on a brown background.~~

~~**Standard:**~~

~~**05 All Exit Gore (E5-1 series) signs (see Section 2E.26) shall have a white legend and border on a green background. The background color of the interchange Exit Number (E1-5P or E1-5bP) plaque (see Section 2E.22) shall match the background color of the guide sign above which it is mounted. Design characteristics of conventional road, expressway, or freeway guide signs shall comply with Chapter 2D or 2E except as provided in this Section for color combination.**~~

~~**06 The Advance guide sign and the Exit Direction sign shall retain the white-on-green color combination where the crossroad also leads to a destination other than a recreational or cultural interest area.**~~

~~Support:~~

~~07 Figure 2M-2 illustrates destination guide signs commonly used for identifying recreational or cultural interest areas or facilities.~~

Included in 7 CSR 10-17. Revised Dec. 2025

Section 2M.10 ~~Memorial or Dedication Signing~~Memorial Highway and Bridge Program (M18-1, M18-2, M18-5, M18-6, M18-7, M18-8) [EPG 903.18.2]

Support:

M01 The Missouri Legislature routinely establishes memorial designations on Missouri's State highways and bridges each year.

M02 A highway designated as a memorial is not considered to be a named highway for the purposes of highway signing or road user navigation and orientation.

M03 EPG 903.1.20 contains information regarding excessive use of signs. Because memorial names are not official highway names, memorial signing is not essential to providing navigational guidance.

M04 Under certain conditions, and within specific guidelines, Missouri highways and bridges may be designated after an individual (deceased 2 years), an event, place, or organization. The 2-year waiting period after a death is required by state statute to allow for grieving before memorialization decisions are made.

M05 MoDOT will require the family or its designee to provide verification of the honoree's death. A copy of the death certificate or obituary is an acceptable form of documentation.

M06 Before contacting a member of the General Assembly or completing a MoDOT Application, contact the MoDOT Highway Safety and Traffic Division at (573) 751-7643 or via email at Memorial.Designations@modot.mo.gov to verify availability of the desired section of highway (two-mile-or-less) or bridge location.

M07 MoDOT can help identify an available roadway. The family or its designee will need to provide a general location (e.g., county, route, crossroad) to assist in their research.

MoDOT specific information regarding the MoDOT Memorial Signs program. Revised Dec. 2025

~~01 Legislative bodies will occasionally adopt an act or resolution memorializing or dedicating a highway, bridge, or other component of the highway.~~

~~02 Named highways (see Section 2D.56) 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 memorial or dedication is not considered to be a named highway for the purposes of highway signing or road user navigation and orientation.~~

~~03 Section 2A.20 contains information regarding excessive use of signs. Because memorial or dedication names are not official highway names, memorial and dedication signing is not essential to providing navigational guidance.~~

~~*Guidance:*~~

~~*04 Such memorial or dedication names should not appear on or along a highway, or be placed on bridges or other highway components. If a route, bridge, or highway component is officially designated as a memorial or dedication, and if notification of the memorial or dedication is to be made on the highway right of way, such notification should consist of installing a memorial or dedication marker in a rest area, scenic overlook, recreational area, or other appropriate location where parking is provided with the signing inconspicuously located relative to vehicle operations along the highway.*~~

Paragraph 4 is in conflict with Code of State Regulations, Section 227. Revised Dec. 2025

~~*05 Memorial or dedication signs should have a white legend and border on a brown background. On all such signs, the design should be simple and dignified, devoid of any appearance of advertising, and in general compliance with other signing.*~~

Paragraph 5 is in conflict with Code of State Regulations, Section 227. The content in paragraph 5 is replaced by paragraph M08E. Revised Dec. 2025

~~*06 The lettering for the name of the person or entity being recognized should be composed of a combination of lower-case letters with initial upper-case letters.*~~

Paragraph 6 is replaced by paragraph M08G. Revised Dec. 2025

Standard:

07 Where such memorial ~~or dedication~~ signs are installed on the highway mainline ~~because the provisions of Paragraph 4 of this Section cannot be met~~, (1) memorial ~~or dedication~~ names shall not appear on directional guide signs, (2) memorial ~~or dedication~~ signs shall not interfere with the placement of any other traffic control devices, and (3) memorial ~~or dedication~~ signs shall not compromise the safety or efficiency of traffic flow. ~~The memorial or dedication signing shall be limited to one sign at an appropriate location in each route direction, each as an independent post-mounted sign installation.~~ MoDOT shall determine the exact sign location to ensure safe operation of the state roadway system.

~~08 Memorial or dedication signs shall be rectangular in shape. The legend displayed on memorial or dedication signs shall be limited to the name of the person or entity being recognized and a simple message preceding the name, such as "Dedicated to." Additional legend, such as biographical information, shall not be displayed on memorial or dedication signs. Decorative or graphical elements, pictographs, logos, or symbols shall not be displayed on memorial or dedication signs. All letters and numerals displayed on memorial or dedication signs shall be as provided in the "Standard Highway Signs" publication (see Section 1A.05). The route number or officially mapped name of the highway shall not be displayed on the memorial or dedication sign.~~

Paragraph 8E is replaced by paragraph M06E. Revised Dec. 2025

09 Memorial ~~or dedication~~ signs shall not imply that a highway has been officially renamed. Memorial Designation names shall not replace or alter the official names of state routes with numerals, letters, or city streets. Memorial Designation names are honorary designations only and are not official highway names.

10 Memorial ~~or dedication~~ names shall not appear on supplemental signs or on any other information sign on or along the highway or its intersecting routes.

M10A MoDOT shall erect and maintain signs provided under this policy.

M10B The location of these signs shall be determined by MoDOT.

M10C No bridge or section of a highway on the state roadway system shall be designated more than once. Each event, place, organization or person shall only be eligible for one bridge or highway designation. These are the provisions of Missouri Revisor of Statutes - Revised Statutes of Missouri, RSMo Section 227.299.8.

M10D In the event a bridge or highway has a designated name, another bridge or highway shall be selected.

M10E A total of two signs shall be erected for each highway or bridge designation on the state's roadway system, as specified by the Manual on Uniform Traffic Control Devices (MUTCD).

M10F Signing shall consist of one shoulder post-mounted sign at each end of the bridge or section of highway. Memorial bridge signs will be installed on the roadway carried by the bridge, not on the roadway traveling under the bridge. Memorial signs shall not appear on or be placed on any bridge structure or bridge span over a divided or undivided highway.

M10G The memorial signs shall be rectangular in shape and shall be 6 ft. by 3 ft. The signs shall have a white legend on a green background. The signs shall use MoDOT standard retroreflective sheeting. Legend on the signs shall use 6 in. tall letters with a maximum of 3 lines of text. The legend displayed on memorial signs shall be limited to the name of the individual, event, place, or organization being designated and the required simple message preceding or following the name, such as "MEMORIAL HIGHWAY" or "MEMORIAL BRIDGE". Additional legends, such as biographical information, nicknames, or any appearance of advertising, shall not be displayed on memorial signs. Decorative or graphical elements, pictographs, logos, or symbols shall not be displayed on or attached to memorial signs or posts.

M10H MoDOT shall have the right to modify the proposed legend based on design limitations.

M10I The lettering on memorial signs shall be composed of lower-case letters with initial upper-case letters.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

~~11 Freeways and expressways should not be signed as memorial or dedicated highways.~~

Paragraph 11 is in conflict with Code of State Regulations, Section 227. Revised Dec. 2025

12 When used, memorial or dedication signs should be located in accordance with the provisions for excessive use of signs (see ~~Section 2A.20~~ EPG 903.1.20).

~~Support:~~

~~13 Paragraph 36 of Section 2D.45 contains provisions regarding the use of memorial or dedication signing in conjunction with Street Name signs.~~

CHAPTER 2N. EMERGENCY MANAGEMENT SIGNS [EPG 903.14]

MoDOT does not adopt Chapter 2N as Emergency Management Signs are not used on the state highway system

PART 3 [EPG 620]
MARKINGS
CHAPTER 3A. GENERAL [EPG 620.1]

Section 3A.01 Standardization of Application

Support:

01 Markings are used to supplement other traffic control devices such as signs, signals, and other markings. In other instances, markings are used alone to effectively convey regulations, warnings, or guidance in ways not obtainable by the use of other devices.

02 Markings can take many forms including road surface markings, curb markings, delineators, colored pavements, and channelizing devices.

Standard:

03 Each standard marking shall be used only to convey the meaning prescribed for that marking in ~~this Manual~~ the EPG, including when used for applications not described in ~~this Manual~~ the EPG.

04 Except as provided in Chapter 3H, ~~markings that must be visible at night shall be retroreflective unless the markings are adequately visible under street or highway lighting. A~~ all markings on MoDOT ~~Interstate~~ highways shall be retroreflective.

MoDOT requires all markings to be retroreflective. Revised Dec. 2025

05 Markings that are no longer applicable for roadway conditions or restrictions and that might cause confusion for the road user shall be removed or obliterated to be unidentifiable as a marking as soon as practicable.

~~Option:~~

~~06 Until they can be removed or obliterated, markings that are no longer applicable for roadway conditions or restrictions may be temporarily masked with non-reflective, preformed tape that is approximately the same color as the pavement surface.~~

MoDOT does not use tape for masking markings. Revised Dec. 2025

Section 3A.02 Materials

Guidance:

01 The materials used for markings should provide the specified color throughout their useful life.

02 Consideration should be given to selecting pavement marking materials that will minimize tripping or loss of traction for road users, including pedestrians, bicyclists, and motorcyclists.

~~Option:~~

~~03 Marking systems that consist of clumps or droplets of material with visible open spaces of bare pavement between the material droplets, which can function in a manner that is similar to the marking systems that completely cover the pavement surface, may be used as pavement markings if they meet the other pavement marking requirements of the highway agency.~~

MoDOT does not use the type of marking systems that are described in the Option statement. Revised Dec. 2025

Support:

M04 See EPG 620.11 for additional information regarding MoDOT pavement marking materials.

Section 3A.03 Colors

Standard:

01 Markings shall be yellow, white, red, or blue~~, or purple~~. The colors for markings shall conform to the standard highway colors.

Option:

02 Black markings may be used in combination with the colors mentioned in ~~Paragraph 1 of this Section~~ the previous paragraph to enhance the contrast with a light-colored pavement.

Standard:

03 When used, yellow markings for longitudinal lines shall delineate:

A. The separation of traffic traveling in opposite directions,

B. The left-hand edge of the roadways of divided highways and one-way streets or ramps, or

C. The separation of two-way left-turn lanes ~~and reversible lanes~~ from other lanes.

04 When used, white markings for longitudinal lines shall delineate:

A. The separation of traffic flows in the same direction, or

B. The right-hand edge of the roadway~~, or~~

~~C. Both the right-hand edge and left-hand edge of a reversible roadway~~.

05 When used, red ~~raised~~ inlaid pavement markers or delineators shall delineate:

A. Truck escape ramps, or

B. One-way roadways, ramps, or travel lanes that shall not be entered or used in the direction from which the markers are visible.

There are no reversable lanes on MoDOT facilities. Revised Dec. 2025

06 When used, blue markings shall supplement white markings for parking spaces for persons with disabilities.

~~07 When used, purple markings shall be in accordance with the provisions of Chapter 3F to identify toll plaza approach lanes restricted to use only by vehicles with registered electronic toll collection accounts.~~

There is no toll infrastructure on MoDOT facilities. Revised Dec. 2025

08 When pavement markings that simulate route signs are used (see Section 3B.22), the colors shall be the same as those that are used for the route signs (see Section 2D.11).

Support:

09 Provisions regarding colored pavements are contained in Chapter 3H.

Section 3A.04 Functions, Widths, and Patterns of Longitudinal Pavement Markings

Standard:

01 The general functions of longitudinal lines shall be as follows:

A. A double line indicates maximum or special restrictions.

B. A solid line discourages or prohibits crossing (depending on the specific application).

C. A broken (intermittent) line indicates a permissive condition.

D. A dotted lane line provides warning of a downstream change in lane function.

E. A dotted line used as a lane line or edge line extension guides vehicles through an intersection, a taper area, or an interchange ramp area.

02 The widths and patterns of longitudinal lines shall be as follows:

A. Normal line shall be as indicated in Table 620.1.4: ~~4 to 6 inches wide.~~

Table 620.1.4 Normal Longitudinal Line Widths

Roadway Classification	White Lines	Yellow Lines	Center Lines *
Major Route	6 inch	6 inch	4 inch
Minor Route	4 inch	4 inch	4 inch

* Includes No Passing Zone markings

Table developed using MoDOT specific content from the EPG. Revised Dec. 2025

B. Wide line—~~at least~~ twice the width of a normal line.

C. Double line—two 4-inch parallel lines separated by a ~~discernible space~~4-inch gap. The pavement surface shall be visible between the lines in the same way that it is visible outside the lines, except where contrast markings are used in combination with the double line (see Section 3A.03).

D. Broken (intermittent) line—10-foot normal width line segments separated by 30-foot gaps.

E. Dotted lane line—3-foot line segments separated by 9-foot gaps where a dotted line is used as a lane line (see Section 3B.07) ~~noticeably shorter line segments separated by shorter gaps than used for a broken line~~.

F. Dotted line extension—2-foot line segments separated by 4-foot gaps within an intersection, taper area, or interchange ramp area (see Section 3B.11). The width of a dotted line extension shall be at least the same as the width of the line it extends.

~~*Guidance:*~~

~~*03 To be recognized as a double line rather than two separate, disassociated single lines, the discernible space separating the parallel lines of a double line should not exceed two times the line width of a single line.*~~

~~Support:~~

~~04 The width of the line indicates the degree of emphasis.~~

~~05 Increasing edge line width from 4 inches to 6 inches has been shown to be a beneficial countermeasure to enhance safety at locations with a history of run-off-the-road crashes (see Section 3B.09). Wider normal lines with a 6-inch width instead of the minimum 4-inch width can be beneficial to both human drivers and driving automation systems (see Section 5B.02).~~

~~*Guidance:*~~

~~*06 Broken lines should consist of 10-foot line segments and 30-foot gaps, or dimensions in a similar ratio of line segments to gaps as appropriate for traffic speeds and the need for delineation.*~~

Broken line guidance is included in item D of Standard paragraph 2 above. Revised Dec. 2025

~~*Guidance:*~~

~~*07 A dotted line used as a lane line (see Section 3B.07) should consist of 3-foot line segments and 9-foot gaps. A dotted line for line extensions within an intersection, taper area, or interchange ramp area (see Section 3B.11) should consist of 2-foot line segments and 2-foot to 6-foot gaps.*~~

Dotted line guidance is included in items E and F of Standard paragraph 2 above. Revised Dec. 2025

Support:

08 Section 5B.02 contains information on pavement marking considerations for driving automation systems.

09 See EPG 626.1 and EPG 626.2 for information on edge line and center line rumble strips.

Section 3A.05 Maintaining Minimum Pavement Marking Retroreflectivity

Standard:

~~01 Except as provided in Paragraph 5 of this Section, a method designed to maintain retroreflectivity at or above 50 mcd/m2/lx under dry conditions shall be used for longitudinal markings on roadways with speed limits of 35 mph or greater.~~

MoDOT has developed minimum pavement marking retroreflectivity procedures that exceed MUTCD minimum standards. Revised Dec. 2025

M01A MoDOT shall use an assessment method that is designed to maintain pavement marking retroreflectivity above the minimum standards of the MUTCD. See EPG 620.13 Measurement of Retroreflectivity by Handheld Retroreflectometers for test procedures and minimum retroreflectivity requirements.

M01B Local jurisdictions who maintain sections of state routes and the pavement markings on those sections under maintenance agreements shall maintain those markings in accordance with one of the MUTCD assessment methods.

~~*Guidance:*~~

~~*02 Except as provided in Paragraph 5 of this Section, a method designed to maintain retroreflectivity at or above 100 mcd/m2/lx under dry conditions should be used for longitudinal markings on roadways with speed limits of 70 mph or greater.*~~

~~*03 The method used to maintain retroreflectivity should be one or more of those described in "Methods for Maintaining Pavement Marking Retroreflectivity" (FHWA-SA-22-028), 2022 Edition, FHWA or developed from an engineering study based on the values in Paragraphs 1 and 2 of this Section.*~~

MoDOT has developed minimum pavement marking retroreflectivity procedures that exceed MUTCD minimum standards. Revised Dec. 2025

~~Support:~~

~~04 Retroreflectivity levels for pavement markings are measured with an entrance angle of 88.76 degrees and an observation angle of 1.05 degrees. This geometry is also referred to as 30-meter geometry. The units of pavement marking retroreflectivity are reported in mcd/m2/lx, which means millicandelas per square meter per lux.~~

~~Option:~~

~~05 The following markings may be excluded from the provisions established in Paragraphs 1 and 2 of this Section:~~

~~A. Markings where ambient illumination assures that the markings are adequately visible;~~

~~B. Markings on streets or highways that have an ADT of less than 6,000 vehicles per day;~~

~~C. Dotted extension lines that extend a longitudinal line through an intersection, major driveway, or interchange area (see Section 3B.11);~~

~~D. Curb markings;~~

~~E. Parking space markings; and~~

~~F. Shared-use path markings.~~

Support:

06 The provisions of this ~~Section~~ article do not apply to non-longitudinal pavement markings including, but not limited to, the following:

A. Transverse markings;

B. Word, symbol, and arrow markings;

C. Crosswalk markings; and

D. Chevron, diagonal, and crosshatch markings.

07 Special circumstances will periodically cause pavement marking retroreflectivity to be below the minimum levels. These circumstances include, but are not limited to, the following:

A. Isolated locations of abnormal degradation;

B. Periods preceding imminent resurfacing or reconstruction;

C. Unanticipated events such as equipment breakdowns, material shortages, and contracting problems; and

D. Loss of retroreflectivity resulting from snow maintenance operations.

08 When such circumstances occur, compliance with ~~Paragraphs 1 and 2~~ the first paragraph of this ~~Section~~ article is still considered to be achieved if a reasonable course of action is taken to resume maintenance of minimum retroreflectivity in a timely manner according to MoDOT's ~~the maintaining agency's~~ method(s), policies, and procedures.

CHAPTER 3B. PAVEMENT AND CURB MARKINGS [EPG 620.2]

Section 3B.01 Yellow Center Line Pavement Markings

Standard:

01 Center line pavement markings, when used, shall be the pavement markings used to delineate the separation of traffic lanes that have opposite directions of travel on a roadway and shall be yellow.

~~Option:~~

~~02 Center line pavement markings may be placed at a location that is not the geometric center of the roadway.~~

~~03 On roadways without continuous center line pavement markings, short sections may be marked with center line pavement markings to control the position of traffic at specific locations, such as around curves, over hills, on approaches to grade crossings, at grade crossings, and at bridges.~~

Option paragraph is not consistent with MoDOT policy. Revised Dec. 2025

Standard:

04 The center line markings on two-lane, two-way roadways shall be one of the following as shown in Figure 3B-1:

- **A. Two-direction passing zone markings consisting of a normal width broken (intermittent) yellow line where crossing the center line markings for passing with care is permitted for traffic traveling in either direction;**
- **B. One-direction no-passing zone markings consisting of a double yellow line, one of which is a normal width broken (intermittent) yellow line and the other is a normal width solid yellow line, where crossing the center line markings for passing with care is permitted for the traffic traveling adjacent to the broken (intermittent) line, but is prohibited for traffic traveling adjacent to the solid line; or**
- **C. Two-direction no-passing zone markings consisting of two normal width solid yellow lines where crossing the center line markings for passing is prohibited for traffic traveling in either direction.**

05 A single solid yellow line shall not be used as a center line marking on a two-way roadway.

06 Except where ~~a reversible lane (see Section 3B.04) or~~ a two-way left-turn lane (see Section 3B.05) is present, the center line markings on undivided two-way roadways with four or more lanes for moving motor vehicle traffic always available shall be the two-direction no-passing zone markings consisting of normal width double solid yellow lines separated by 4 in. as shown in Figure 3B-2.

Support: ~~Guidance:~~

M06A MoDOT previously marked center lines using a 2-line or 3-line system. The 3-line system is no longer used by MoDOT.

Standard:

M06B Highways that are currently marked using a 3-line center line marking system shall be maintained using the 3-line system until the center line markings are obliterated.

M06C After a 3-line center line is obliterated from the entire route or a significant portion of the highway, the center line shall be replaced using the 2-line system.

MoDOT policy for addressing highways with a 3-line marking system. Revised Dec. 2025

Support:

07 Section 3B.11 contains information for application of pavement markings through intersections or interchanges.

Guidance:

08 On two-way roadways with an additional climbing/truck lane in the upgrade direction, ~~three through lanes for moving motor vehicle traffic, two lanes should be designated for~~ the opposing directions of traffic ~~in~~

~~*one direction*~~ *should be separated by using one-direction or two-direction no-passing zone markings* ~~*as shown in Figure 3B-3*~~.

Clarification for the marking of two-way three-lane roadways. Revised Dec. 2025

Standard:

M08A On two-way roadways with alternating passing lanes, the opposing directions of traffic shall be separated by using two-direction no-passing zone markings (See Figure 620.2.1.3).

Support:

M08B Examples of markings for alternating passing lanes are shown in Standard Plan 620.

Figure 3B-1. Yellow Center Lines for Two-Lane, Two-Way Applications

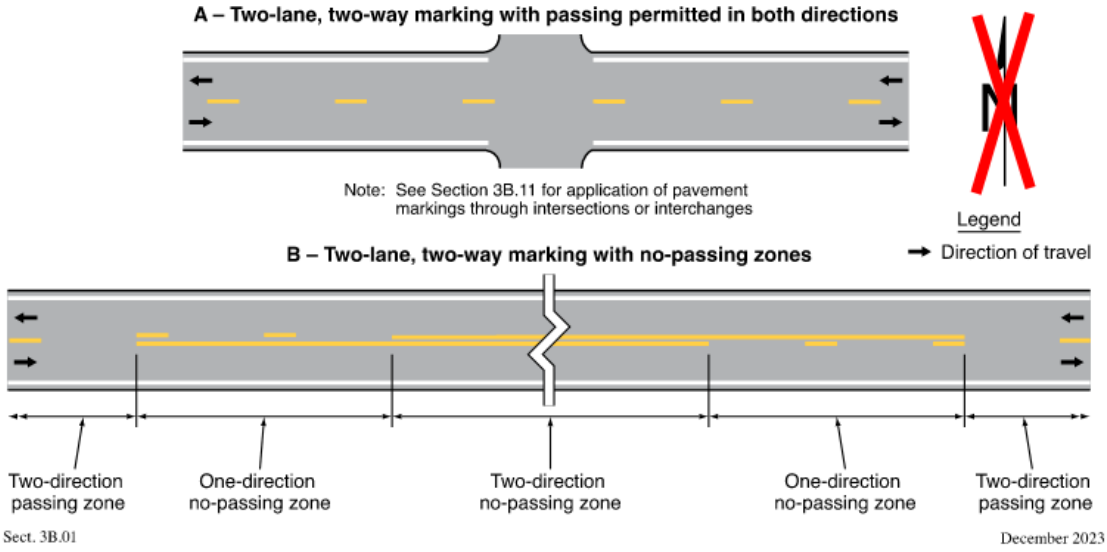


Figure 3B-2. Yellow Center Lines for Four-or-More Lane, Two-Way Applications

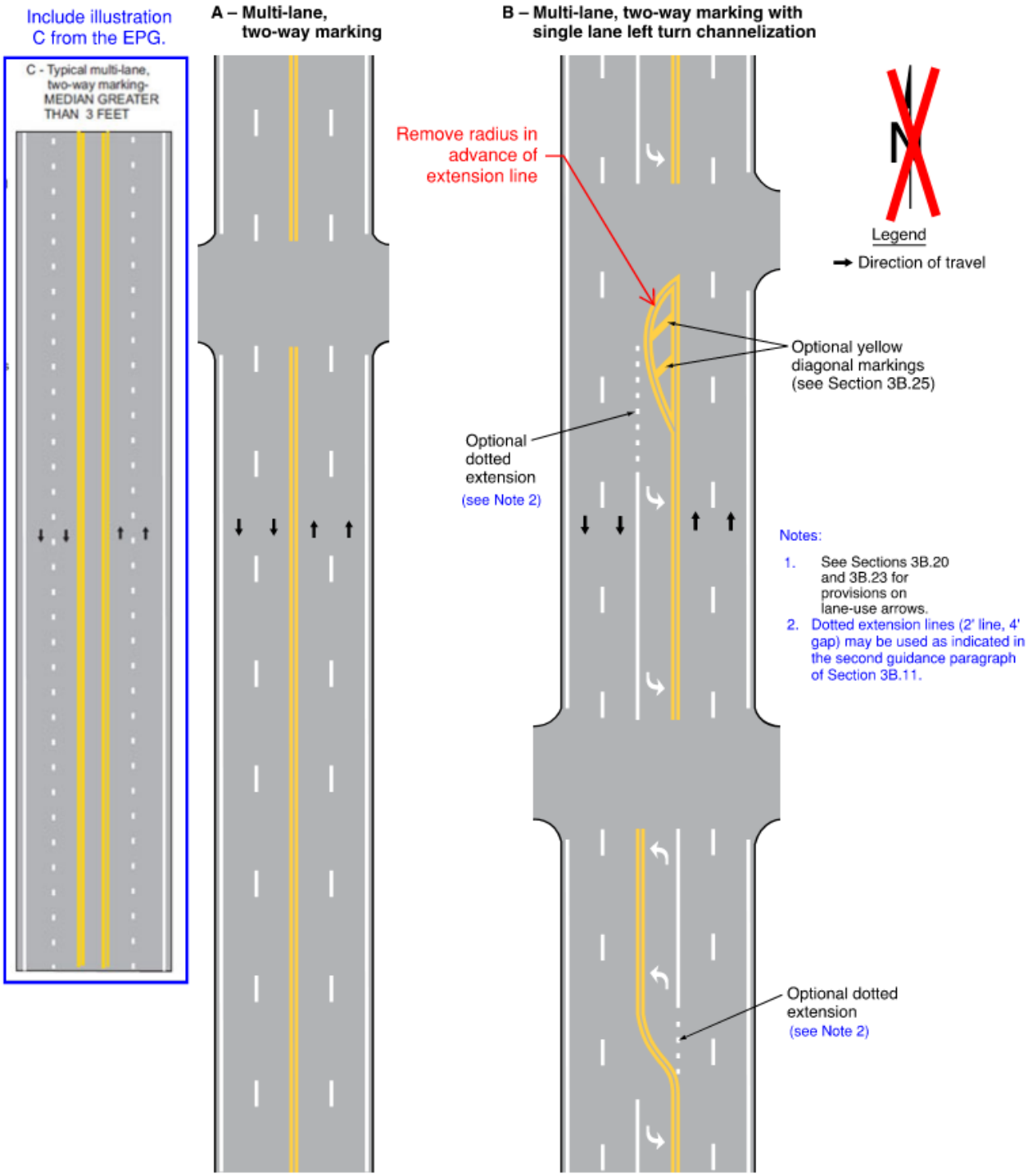
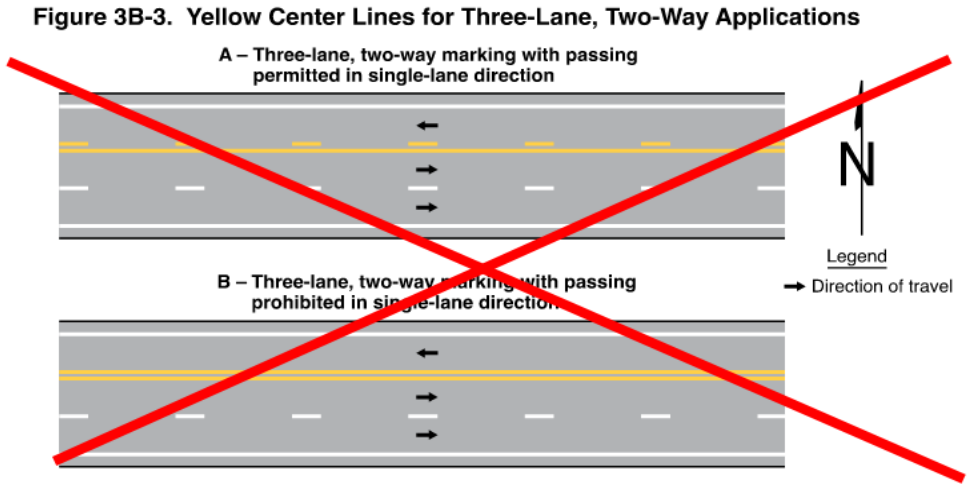


Figure 3B-3. Yellow Center Lines for Three-Lane, Two-Way Applications



Section 3B.02 Warrants for Yellow Center Lines

Standard:

01 Center line markings shall be placed on all paved undivided two-way ~~urban arterials and collectors~~ streets or highways that have a traveled way of 18~~20~~ feet or more in width ~~and an ADT of 6,000 vehicles per day or greater.~~ Center line markings shall also be placed on all paved undivided two-way streets or highways that have three or more lanes for moving motor vehicle traffic.

Guidance:

~~*02 Center line markings should be placed on paved urban arterials and collectors that have a traveled way of 20 feet or more in width and an ADT of 4,000 vehicles per day or greater. Center line markings should also be placed on all rural arterials and collectors that have a traveled way of 18 feet or more in width and an ADT of 3,000 vehicles per day or greater. Center line markings should also be placed on other traveled ways where an engineering study indicates such a need.*~~

03 Engineering judgment should be used in determining whether to place center line markings on traveled ways that are less than 18~~16~~ feet wide because of the potential for traffic encroaching on the pavement edges, traffic being affected by parked vehicles, and traffic encroaching into the opposing traffic lane. Engineering judgment should also be used to determine if the pavement can support center line markings.

~~Option:~~

~~04 Center line markings may be placed on other paved two-way traveled ways that are 16 feet or more in width.~~

~~05 If a traffic count is not available, the ADTs described in this Section may be estimates that are based on engineering judgment.~~

Section modified to indicate MoDOT policy for center line markings on roadways that are at least 18 feet in width. Revised Dec. 2025

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 Figure~~s~~ 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.

E. Approaches to added uphill truck or passing lanes,

F. Approaches to controlled intersections, and

G. Approaches to lane transitions.

M02A No-passing zone marking shall be installed a minimum of 500 feet in advance of conditions as described in the previous paragraph.

Option:

M02B The length of passing zone markings may be increased for sight distance limitations or based on engineering judgement.

MoDOT pavement marking policy. Revised Dec. 2025

Standard:

03 On two-way, two-lane or non-continuous three-lane roadways, such as uphill truck or passing lanes, 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 posted speed limit or the 85th-percentile speed ~~or the speed limit~~.

Table 3B-1. Minimum Passing Sight Distances for No-Passing Zone Markings

85th-Percentile or Speed Limit	Minimum Passing Sight Distance
25 mph	~~450 feet~~ 500 feet
30 mph	500 feet
35 mph	550 feet
40 mph	600 feet
45 mph	700 feet
50 mph	800 feet
55 mph	900 feet
60 mph	1,000 feet
65 mph	1,100 feet
70 mph	1,200 feet

Support:

M04A The values of the minimum passing sight distance that are shown in Table 3B-1 are for operational use in marking no-passing zones and are less than the values that are suggested for geometric design in the "AASHTO Green Book – A Policy On Geometric Design Of Highways And Streets".

MoDOT specific content from the EPG. Revised Dec. 2025

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:*~~ **Standard:**

07 Where the distance between successive no-passing zones is less than ~~*400*~~500 feet, no-passing zone markings ~~*should*~~ shall connect the zones. If the calculated no passing zone is less than 500 feet, an additional length of marking shall be added to the leading end of the zone to lengthen it to the full 500 feet.

MoDOT pavement marking policy. Revised Dec. 2025

~~Support:~~

~~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.~~

Guidance:

M08A No-Passing Zone signs (see Section 2C.53) should not be installed without prior approval from the State Highway Safety and Traffic Engineer.

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.

M10 On multi-lane, undivided roadways with two or more lanes in each direction, a minimum of one double yellow center line shall be used to separate the opposing directions of travel. If pavement width is available, the preferred center line marking would provide a painted median formed by two double yellow center lines separated by a minimum of 12 inches to provide greater separation between opposing lanes of travel.

M11 On continuous three-lane (passing lane) sections of roadway, the center line markings shall consist of two double yellow center lines separated by a minimum of 12 inches to separate the opposing directions of travel. See EPG 903.16.24 Typical Application and EPG 232.2 for additional guidance on passing lanes.

M12 On added uphill truck lanes, a no-passing zone marking shall be provided for the entire length of the ascending direction of travel.

M13 For the descending direction of travel, no-passing zone markings shall be provided for a minimum length of 500 feet or ½ the taper length (L), whichever is greater, in advance of and beyond the location where the uphill truck lane becomes full width (see Figure 620.2.3.1). The length of any no-passing zone related to an uphill truck lane segment shall be increased to address sight distance limitations or based on engineering judgement.

Option:

M14 A passing zone may be provided in the descending direction of travel within the uphill truck lane full-width segment being based on available sight distance and engineering judgement.

Standard:

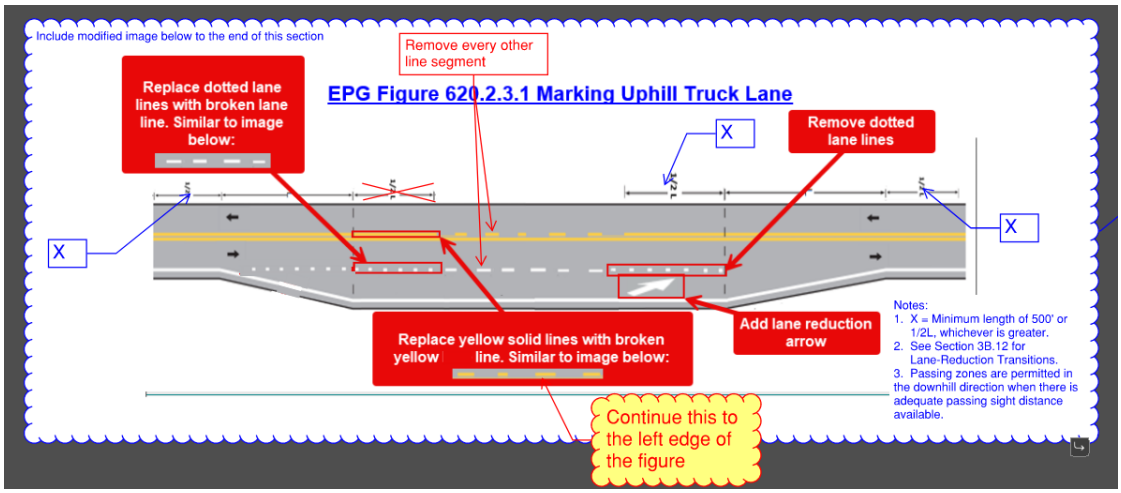
M15 Median bubbles shall be marked using double yellow center lines to form both sides of the bubble at the beginning of a left turn bay where the bubble separates travel in opposite directions. Each installation of these markings will require individual treatment; therefore, no set dimensions have been established for their placement. Additional markings, such as diagonal lines inside the bubble, if used, shall also be yellow in color (See Fig. 620.2.3.2, Marking for Median Islands for Left Turn Bays).

Guidance:

M16 The taper length of transition zones should not be less than the taper length calculated using the equations L = WS or L = $WS^2/60$ as defined in 3B.12 Lane-Reduction Transitions. Installation of these markings should conform to the established general patterns.

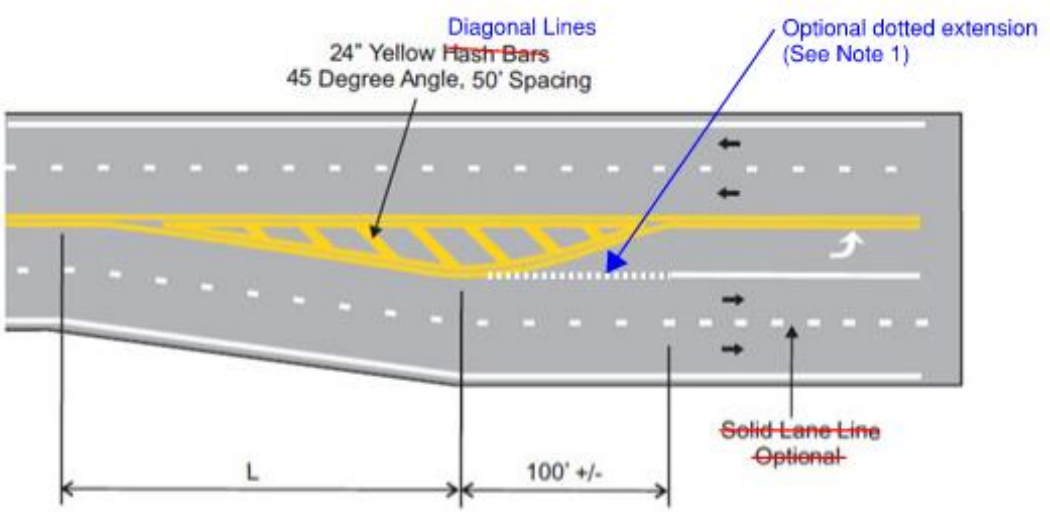
MoDOT policy for no-passing zone markings. Revised Dec. 2025

EPG Figure 620.2.3.1 Marking Uphill Truck Lane

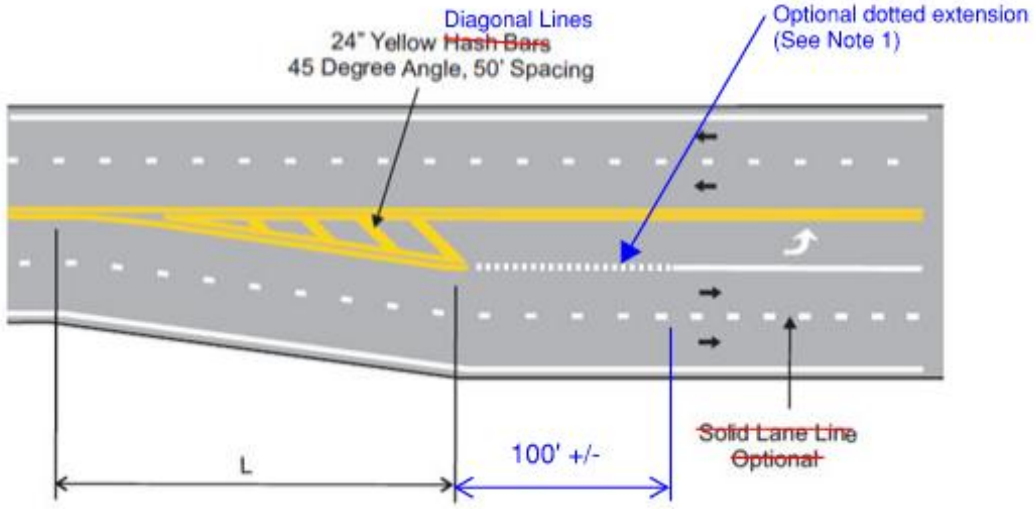


EPG Figure 620.2.3.2 Marking for Median Islands for Left Turn Bays

TRADITIONAL MEDIAN BUBBLE



OPTIONAL MEDIAN BUBBLE



Note:
1. Dotted extension lines (2' line, 4' gap) may be used as indicated in the second guidance paragraph of Section 3B.11.

Figure 3B-4. Method of Locating and Determining the Limits of No-Passing Zones at Curves

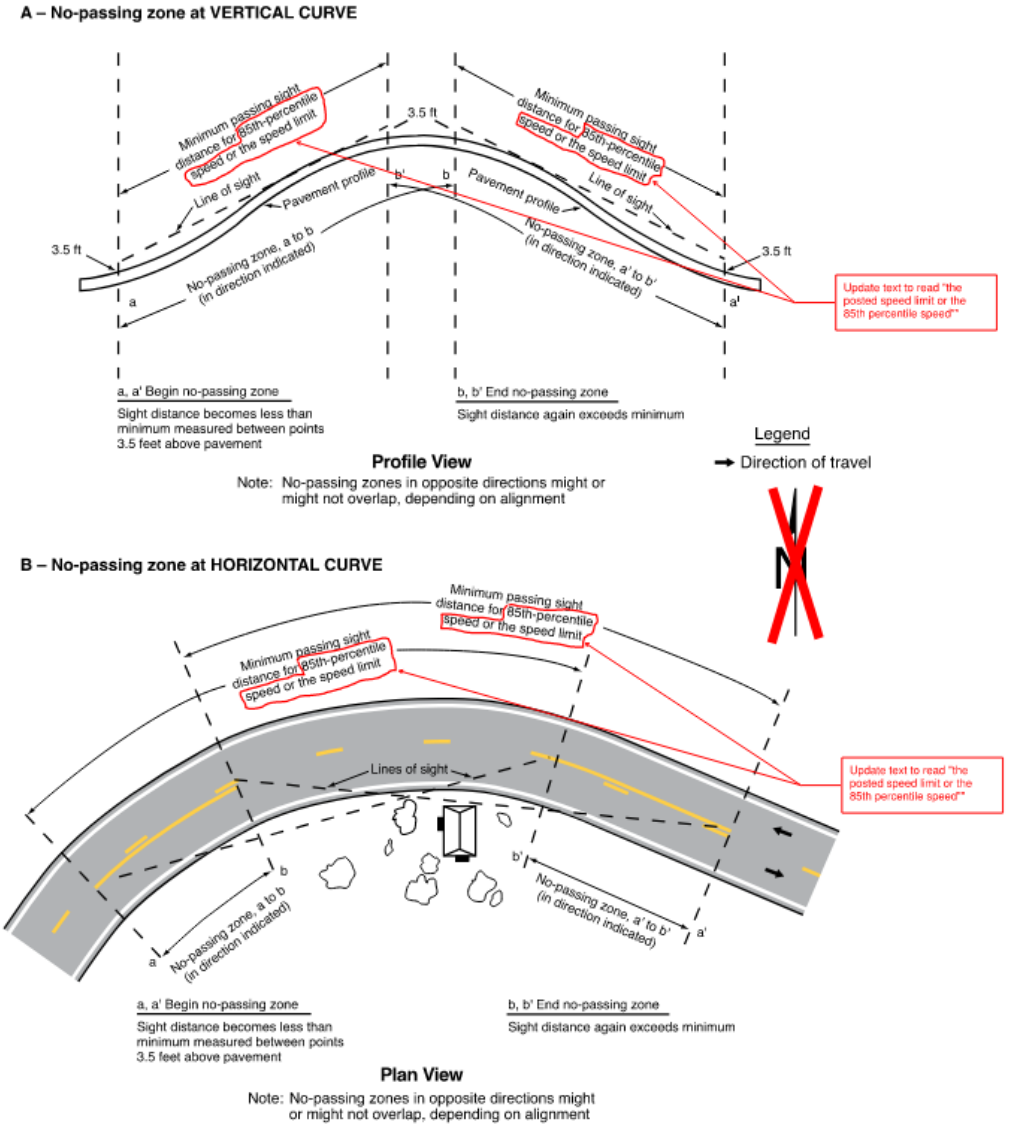


Figure 3B-5. Application of Three-Lane, Two-Way Markings for Changing the Direction of the Center Lane

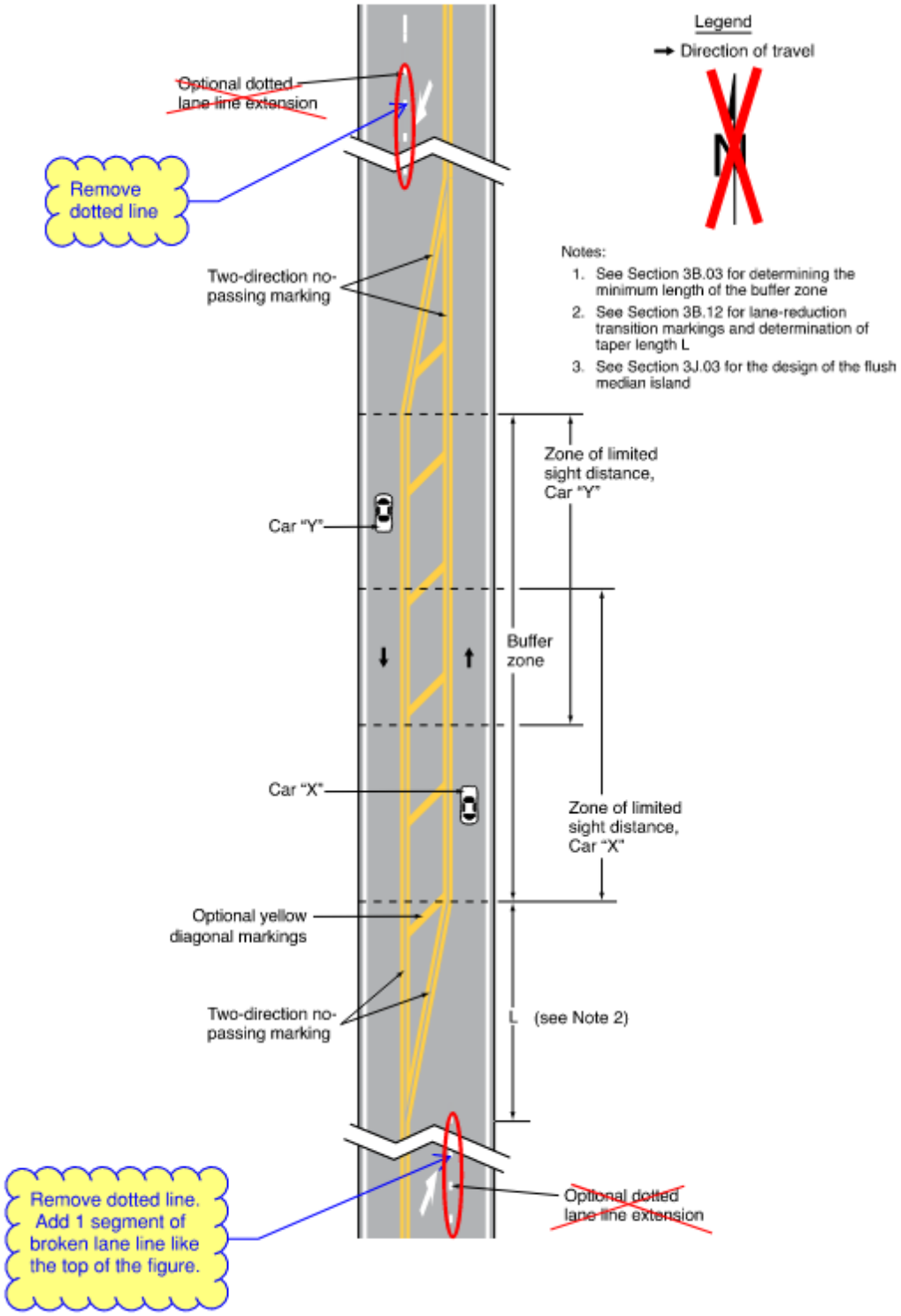


Figure 3B-6. Example of Yellow Pavement Markings for Reversible Lanes

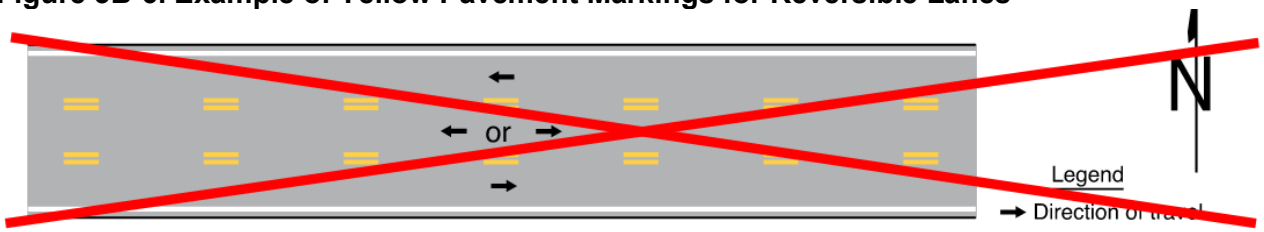


Figure is not adopted by MoDOT. Revised Dec. 2025

Section 3B.03A Establishing and Recording No Passing Zones

Standard:

M01 The establishment of no passing zones shall be accomplished using two vehicles maintaining a predetermined distance. This distance will mark the beginning and end of the no passing zone section where a target 3.5 ft. above the road surface on the lead vehicle is just out of sight of the driver of the trailing vehicle, who's eye level is 3.5 ft. above the road surface. The use of a highly visible target, such as a flashing amber light, is recommended.

M02 The line of sight used by the trailing vehicle observer shall remain within the limits of the pavement and/or shoulder. Due to current mowing practices, sight distance viewed across any other right of way can be obscured at various times of the year due to seasonal vegetation and right of way which has not been mowed. (see Fig. 620.2.2.2.1, Method of Locating and Determining the Limit of No-Passing Zones at Curves).

Guidance:

M03 The distance between the vehicles should be maintained constant and equal to the minimum passing sight distance value being used. A printed log of the no passing zone should be kept by the district office and copies given to the regional maintenance superintendents so no passing zones can be relocated after maintenance operations.

Support:

M04 The most effective way to maintain spacing between vehicles is to space the two vehicles apart the required sight distance and zero out the distance measuring equipment (DME). As the two vehicles move forward, the lead vehicle broadcasts the distance displayed on their DME to the trailing vehicle who works to match the distance on their DME device.

M05 This method of determining no passing zones can be challenging and requires two vehicles, multiple people, and slower travel speeds to be accomplished safely. For longer road segments, on-call contractor-based measurement and reporting systems could be used.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 3B.03B Center Line Markings on Bridges

Standard:

M01 The center line markings on bridges, having a clear roadway width of 16 ft. or greater, shall be the same as that marked on the adjoining roadway.

M02 Center line markings shall not be placed on one lane bridges. When dealing with this type of bridge, the center line markings shall stop a distance of 500 ft. from each edge of the bridge deck. Therefore, the length of surface not receiving center line marking shall be 1,000 ft. plus the length of the bridge deck. These bridges will, however, receive the appropriate one-lane bridge markings (see Edge Line Pavement Markings).

MoDOT specific content from the EPG. Revised Dec. 2025

~~**Section 3B.04 Yellow Pavement Markings for Reversible Lanes**~~

~~**Standard:**~~

~~**01 If reversible lanes are used, the lane line pavement markings on each side of reversible lanes shall consist of a normal width broken double yellow line to delineate the edge of a lane in which the direction of travel is reversed from time to time, such that each of these markings serve as the center line markings of the roadway during some period (see Figure 3B-6).**~~

~~**02 Signs (see Section 2B.34), lane-use control signals (see Chapter 4T), or both shall be used to supplement reversible lane pavement markings.**~~

~~Support:~~

~~03 Section 3E.02 contains additional applications of pavement markings for counter-flow preferential lanes that also operate as reversible lanes.~~

There are no reversable lanes on MoDOT facilities. Revised Dec. 2025

Section 3B.05 Pavement Markings for Two-Way Left-Turn Lanes

Support:

M00 Two-way left turn lanes may be established by the district if the roadway meets all of the guidelines listed in EPG 232.3 Two-Way Left-Turn Lanes.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

01 If a two-way left-turn lane ~~that is never operated as a reversible lane~~ is used, the lane line pavement markings on each side of the two-way left-turn lane shall consist of a normal width broken (intermittent) yellow line and a normal width solid yellow line to delineate the edges of a lane that can be used by traffic in either direction as part of a left-turn maneuver. These markings shall be placed with the broken (intermittent) line toward the two-way left-turn lane and the solid line toward the adjacent traffic lane as shown in Figure 3B-7.

~~*Guidance:*~~

02 White two-way left-turn lane-use arrows ~~*should*~~ shall be used at or just downstream from the beginning of a two-way left-turn lane to indicate the proper use of these lanes. The left-turn arrows shall be installed in pairs, one arrow per direction.

MoDOT specific content from the EPG upgraded to a Standard statement. Revised Dec. 2025

Guidance:

M02A The pairs of arrows should be installed a maximum of 500 ft. apart, with the two arrows in the pair being 8 to 16 ft. apart (See Fig. 620.2.2.2.4, Example of Two-Way, Left-Turn Marking Applications) along a two-way left-turn lane.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Option:~~

~~03 Additional two-way left-turn lane-use arrow markings may be used at other locations along a two-way left-turn lane where engineering judgment determines that such additional markings are needed to emphasize the proper use of the lane.~~

EPG content provides more specific direction than the option statement. Revised Dec. 2025

Standard:

04 A single-direction lane-use arrow shall not be used in a lane bordered on both sides by yellow two-way left-turn lane longitudinal markings.

Guidance:

05 Signs should be used in conjunction with the two-way left-turn markings (see Section 2B.32).

06 Two-way left-turn lane markings should not extend to intersections (see definition in Section 1C.02).

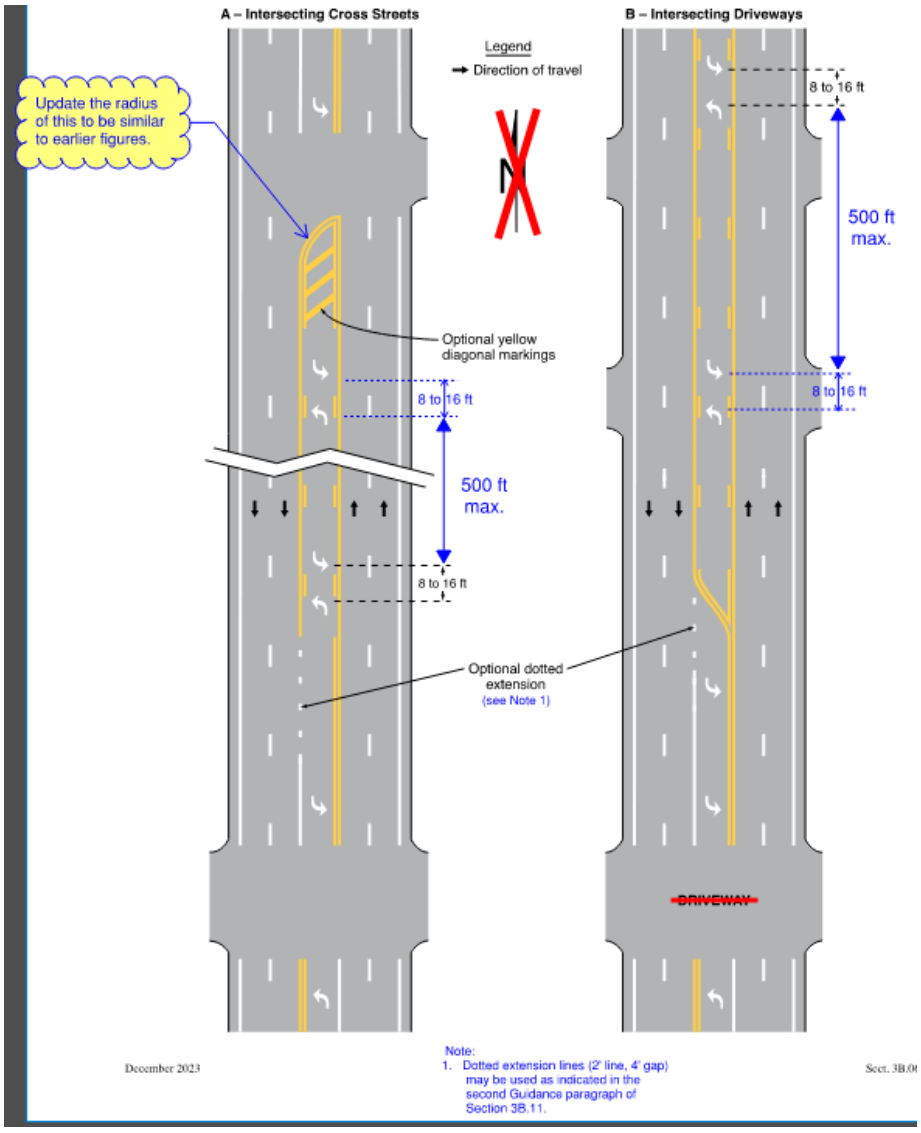
Option:

07 Two-way left-turn lanes may be transitioned to mandatory left-turn lanes as shown in Figure 3B-7 or painted median islands where they approach an intersection.

Support:

08 Section 8A.06 contains guidance information for discontinuing a two-way left-turn lane in the immediate vicinity of a highway-rail or highway-LRT grade crossing.

Figure 3B-7. Examples of Two-Way Left-Turn Lane Marking Applications



Section 3B.06 White Lane Line Pavement Markings

Standard:

01 When used, lane line pavement markings delineating the separation of traffic lanes that have the same direction of travel shall be white.

02 Lane line markings shall be used on all freeways and Interstate highways. Lane line markings shall be used on all roadways that are intended to operate with two or more adjacent traffic lanes in the same direction of travel.

MoDOT modifies item A of paragraph 3 to a Standard statement. Revised Dec. 2025

Guidance:

M02A Lane lines should be offset approximately 2 in. from the longitudinal pavement joint. The 2 in. offset should be the space between the longitudinal joint and the edge of the lane line. See Section 620 of the Missouri Standard Plans for Highway Construction (https://www.modot.org/media/16896)

MoDOT guidance for lane line installation. Revised Dec. 2025

03 Lane line markings should be used~~:~~

~~*A. On all roadways that are intended to operate with two or more adjacent traffic lanes in the same direction of travel, except as otherwise required for reversible lanes.*~~

~~*B. A*~~*at congested locations where the roadway will accommodate more traffic lanes with lane line markings than without the markings.*

M03A The lane width delineated by lane line pavement markings should not be less than 10 feet.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

04 Examples of lane line markings are shown in Figures 3B-2, ~~3B-3,~~ and 3B-7 through 3B-13.

Standard:

05 Except as provided in ~~Paragraph 1~~ the first paragraph of Section 3B.07, where crossing the lane line markings with care is not discouraged or prohibited, the lane line markings shall consist of a normal width broken (intermittent) white line.

M05B Broken (intermittent) white lane line pavement markings and dotted lane line markings on new concrete pavements shall be enhanced by the use of contrast markings (see Section 3A.03).

MoDOT specific content from the EPG. Revised Dec. 2025

06 Where crossing the lane line markings is discouraged, the lane line markings shall consist of a normal width solid white line.

Guidance:

07 A solid white lane line marking should be used on approaches to:

A. Intersections to separate a through lane from a mandatory turn lane.

B. Intersections to separate contiguous mandatory turn lanes from each other.

C. ~~Toll collection points to separate toll lanes, payment methods, c~~Channelized movements~~,~~ or obstructions.

There is no toll infrastructure on MoDOT facilities. Revised Dec. 2025

Option:

08 Solid white lane line markings may be used:

A. On approaches to intersections to separate contiguous through lanes.

B. To separate through traffic lanes from auxiliary lanes, such as an added uphill truck lane.

C. On approaches to crosswalks across multi-lane roadways.

09 Wide solid lane line markings may be used for greater emphasis.

10 A curved transition may be used where an edge line, channelizing line, or dotted extension line changes direction.

Support:

11 Examples of locations where a curved transition can have value include freeway exit and entrance ramps, and turn lanes.

Standard:

12 Where crossing the lane line markings is prohibited, the lane line markings shall consist of a solid double ~~solid~~ white line (DWL) ~~(see Figure 3B-8)~~.

M12A The State Highway Safety and Traffic Engineer must ~~approve~~ the use of a solid DWL.

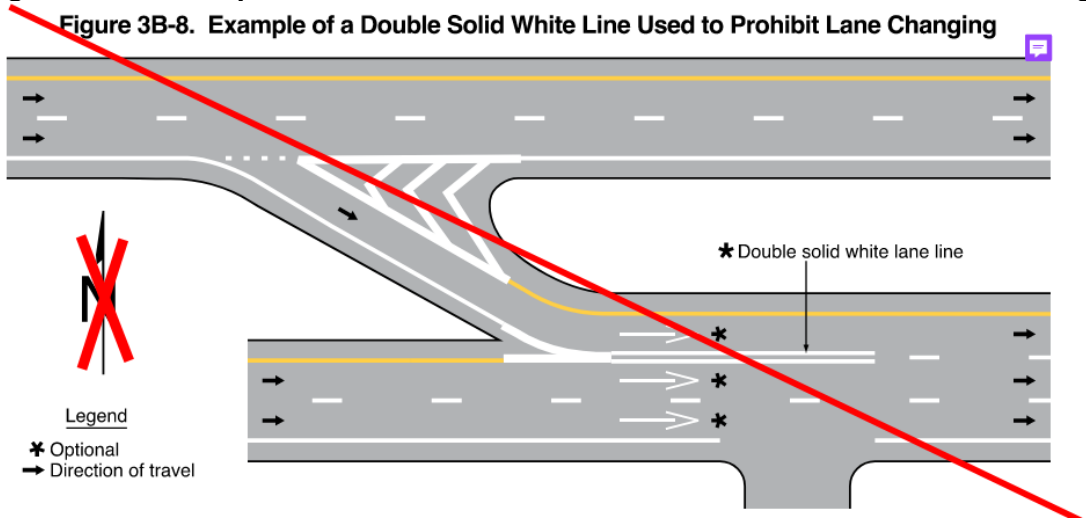
Guidance:

M12B A solid DWL should be used to address an identifiable need.

M12C Use signs in advance of the area delineated by a solid DWL to provide motorists an opportunity to adjust to the condition.

MoDOT policy for the use of double solid white lines. Revised Dec. 2025

Figure 3B-8. Example of a Double Solid White Line Used to Prohibit Lane Changing



Section 3B.07 White Lane Line Markings for Non-Continuing Lanes

Standard:

01 A normal width dotted white line marking shall be used as the lane line to separate a through lane that continues beyond the interchange or intersection from an adjacent deceleration or acceleration lane.

02 For exit ramps with a parallel deceleration lane, a normal width dotted white lane line ~~extension~~ shall be installed from the upstream end of the taper to the theoretical gore or to the upstream end of a solid white lane line, if used, that extends upstream from the theoretical gore as shown in Drawings A and C in Figure 3B-9.

Clarification of the dotted lane line pattern as the intended marking. Revised Dec. 2025

03 For an exit ramp with a tapered deceleration lane, a normal width dotted white line extension shall be installed from the theoretical gore through the taper area such that it meets the edge line at the upstream end of the taper as shown in Drawing B in Figure 3B-9.

04 For entrance ramps with a parallel acceleration lane, a normal width dotted white lane line shall be installed ~~from the theoretical gore or~~ from the downstream end of a solid white lane line, if used, that extends downstream from the theoretical gore, to ~~a point at least one-half the distance from the theoretical gore to the downstream~~ the upstream end of the acceleration taper, as shown in Drawing A in Figure 3B-10.

MoDOT extends the dotted white lane line for a greater distance than the MUTCD language. Revised Dec. 2025

Option:

05 For entrance ramps with a parallel acceleration lane, a normal width dotted white line extension may be installed from the ~~downstream end of the dotted white lane line~~ upstream end of the acceleration taper to the downstream end of the acceleration taper, as shown in Drawing A in Figure 3B-10.

06 For entrance ramps with a tapered acceleration lane, a normal width dotted white line extension may be installed from the downstream end of the channelizing line adjacent to the through lane to the downstream end of the acceleration taper, as shown in Drawing~~s~~ B ~~and C~~ in Figure 3B-10.

Standard:

07 A wide dotted white lane line shall be used:

- **A. As a lane drop marking in advance of lane drops at exit ramps to distinguish a lane drop from a normal exit ramp (see Drawings A, B, and C in Figure 3B-11),**
- **B. In advance of freeway route splits with dedicated lanes (see Drawing D in Figure 3B-11),**
- **C. In advance of freeway route splits with an option lane (see Drawing E in Figure 3B-11),**
- **D. To separate a through lane that continues beyond an interchange from an adjacent continuous auxiliary lane between an entrance ramp and an exit ramp (see Drawing F in Figure 3B-11),**
- **E. As a lane drop marking in advance of lane drops at intersections to distinguish a lane drop from an intersection through lane (see Drawing A in Figure 3B-12), and**
- **F. To separate a through lane that continues beyond an intersection from an adjacent auxiliary lane between two intersections (see Drawing B in Figure 3B-12).**

M07A The dotted white lane lines that are used for lane drop markings and that are used as a lane line separating through lanes from auxiliary lanes shall consist of line segments that are 3 feet in length separated by 9-foot gaps.

Paragraph 11 guidance is upgraded to a standard statement and relocated to be Paragraph 7A. Revised Dec. 2025

Guidance:

08 Lane drop markings used in advance of lane drops at freeway and expressway exit ramps should begin at least ½ mile in advance of the theoretical gore.

Option:

09 On the approach to a multi-lane exit ramp having an optional exit lane that also carries through traffic, lane line markings ~~*should*~~ may be used as illustrated in Drawing B in Figure 3B-11.

MoDOT has concerns about the long-term maintenance of this marking and has chosen to make this statement an Option. Revised Dec. 2025

Guidance:

10 Lane drop markings used in advance of lane drops at intersections should begin a distance in advance of the intersection that is determined by engineering judgment as suitable to enable drivers who do not desire to make the mandatory turn to move out of the lane being dropped prior to reaching the queue of vehicles that are waiting to make the turn. The lane drop markings should begin no closer to the intersection than the most upstream regulatory or warning sign associated with the lane drop.

~~*11 The dotted white lane lines that are used for lane drop markings and that are used as a lane line separating through lanes from auxiliary lanes should consist of line segments that are 3 feet in length separated by 9-foot gaps.*~~

Paragraph 11 guidance is modified to a standard statement and relocated to be Paragraph 7A. Revised Dec. 2025

Support:

12 Sections 3B.21 and 3B.23 contain information regarding other markings that are associated with lane drops, such as ONLY word pavement markings and lane-use arrows.

13 Section 3B.12 contains information about the lane line markings that are to be used for transition areas where the number of through lanes is reduced at a location that is not at an interchange or intersection.

Option:

14 In the case of a lane drop at an exit ramp or intersection, a solid white line may replace a portion, but not all of the length, of the wide dotted white lane line (See Figure 3B-11).

Figure 3B-9. Examples of Dotted Line and Channelizing Line Applications for Exit Ramp Markings (Sheet 1 of 2)

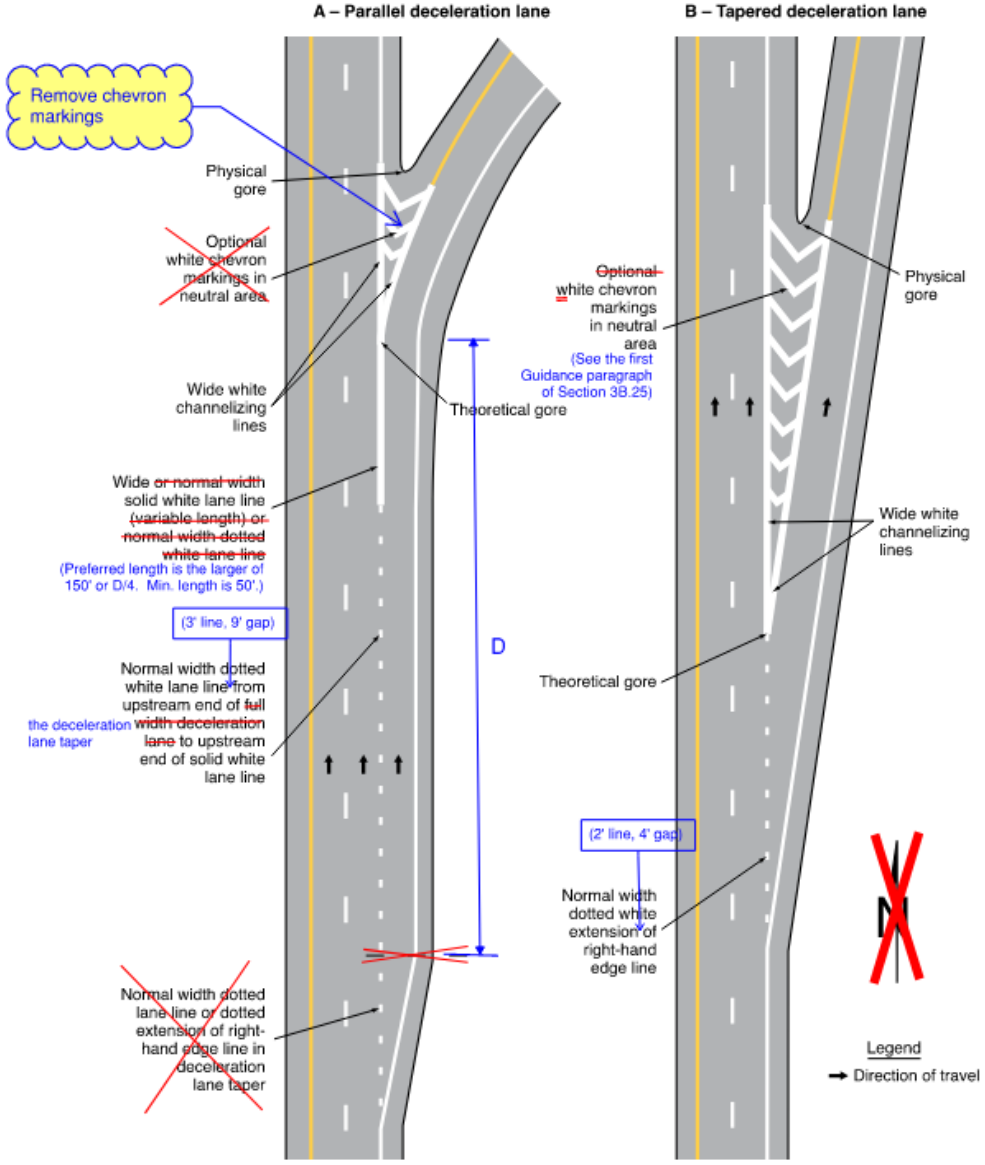
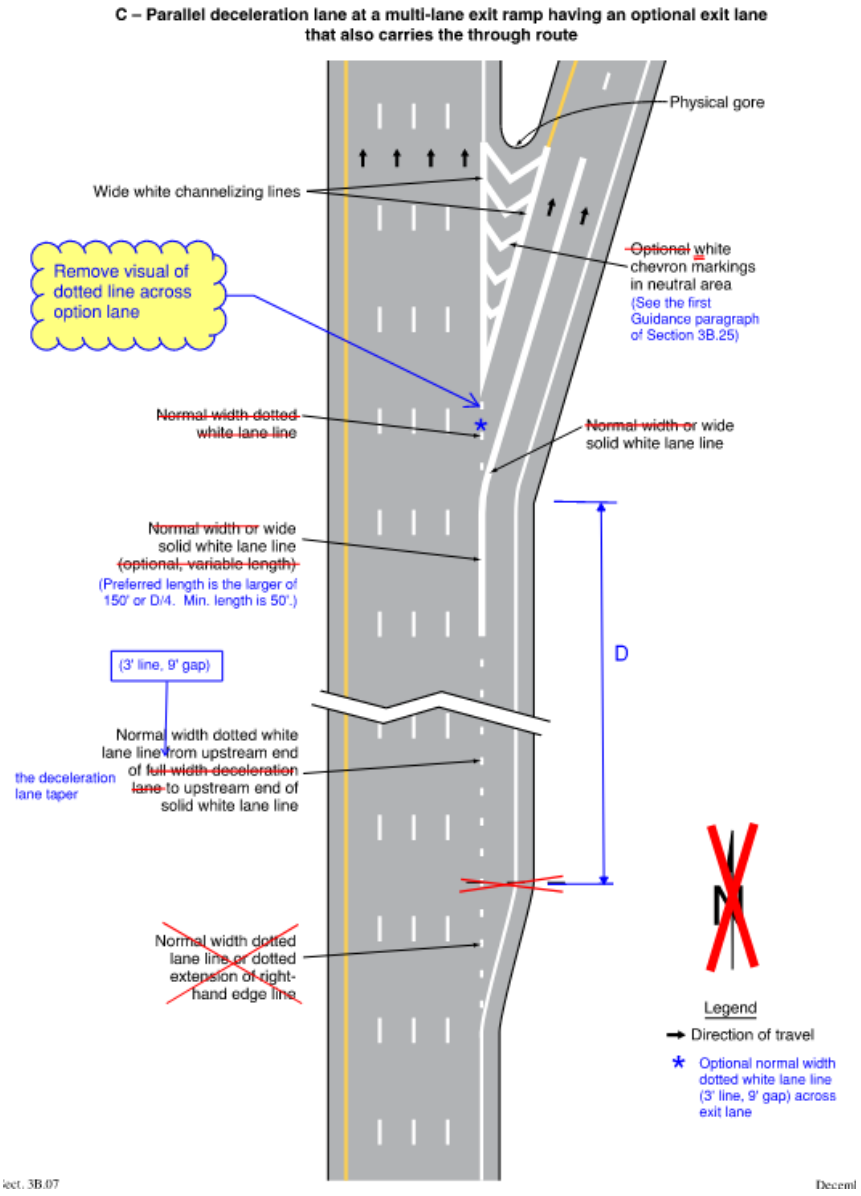


Figure 3B-9. Examples of Dotted Line and Channelizing Line Applications for Exit Ramp Markings (Sheet 2 of 2)



Section 3B.08 Channelizing Lines

Support:

01 Channelizing lines are used to form neutral areas where traffic traveling in the same general direction is permitted on both sides including entrance and exit ramps, access and egress points to and from managed lanes, ~~toll plaza bypasses,~~ and left-turn lanes separated from through lanes. Channelizing lines are also sometimes used to alter travel paths for speed management or other purposes.

02 Chapter 3J contains information for the application of channelizing lines used in conjunction with islands.

Standard:

03 Except as provided in ~~Section 3E.04 and Paragraph 6~~ the third Option paragraph of Section 3J.05, a channelizing line shall be a solid wide ~~or double solid~~ white line.

M03A Channelizing lines used to mark gores shall be wide solid white lines.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

04 Examples of channelizing line applications are shown in Figures 3B-9, 3B-10, 3B-11, Drawing C in Figure 3B-15, and Figures 3J-1 through 3J-5~~, and Drawing B in Figure 3J-6~~.

Standard:

05 For all exit ramps and for entrance ramps with parallel acceleration lanes, channelizing lines shall be placed on both sides of the neutral area (see Figures 3B-9 and 3B-11 and Drawing A in Figure 3B-10).

~~**06 For entrance ramps with tapered acceleration lanes, channelizing lines shall be placed along both sides of the neutral area to a point at least one-half of the distance to the theoretical gore (see Drawing C in Figure 3B-10).**~~

MoDOT does adopt Drawing C of Figure 3B-10. Revised Dec. 2025

~~**07 Channelizing lines shall be placed on both sides of the neutral area for bifurcations created from open-road tolling lanes that bypass a conventional toll plaza.**~~

~~**08 Where neutral areas are formed at access and egress points to and from a managed lane facility, channelizing lines shall be placed on both sides of the neutral area (see Figures 2G-8, 2G-10, 2G-13, 2G-16, 2G-22, 2G-23, 2G-27, and 2G-28).**~~

MoDOT does not have toll or managed lane infrastructure on the state highway system. Revised Dec. 2025

~~Option:~~ **Standard:**

09 For entrance ramps with tapered acceleration lanes, the channelizing lines ~~may~~ shall extend to the theoretical gore as shown in Drawing B in Figure 3B-10.

~~**Standard:**~~

10 Other pavement markings in the neutral area shall be white.

Support:

11 Pavement markings within the neutral area include chevron markings (see Section 3B.25)~~, retroreflective raised pavement markers (see Section 3B.16), and internally illuminated raised pavement markers (see Section 3B.16)~~.

MoDOT does not use raised pavement markers in neutral areas. Revised Dec. 2025

Figure 3B-10. Examples of Dotted Line and Channelizing Line Applications for Entrance Ramp Markings (Sheet 1 of 2)

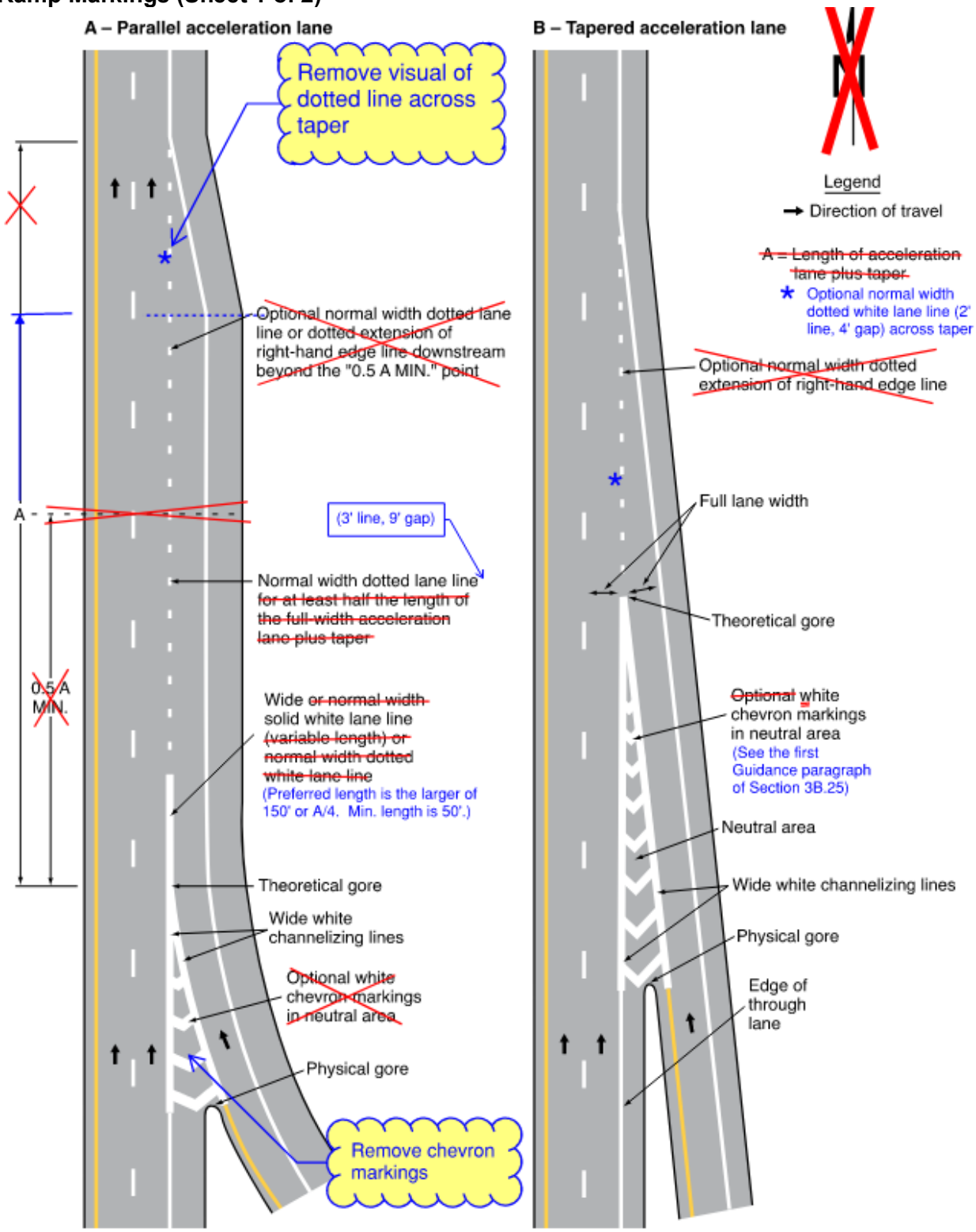


Figure 3B-10. Examples of Dotted Line and Channelizing Line Applications for Entrance Ramp Markings (Sheet 2 of 2)

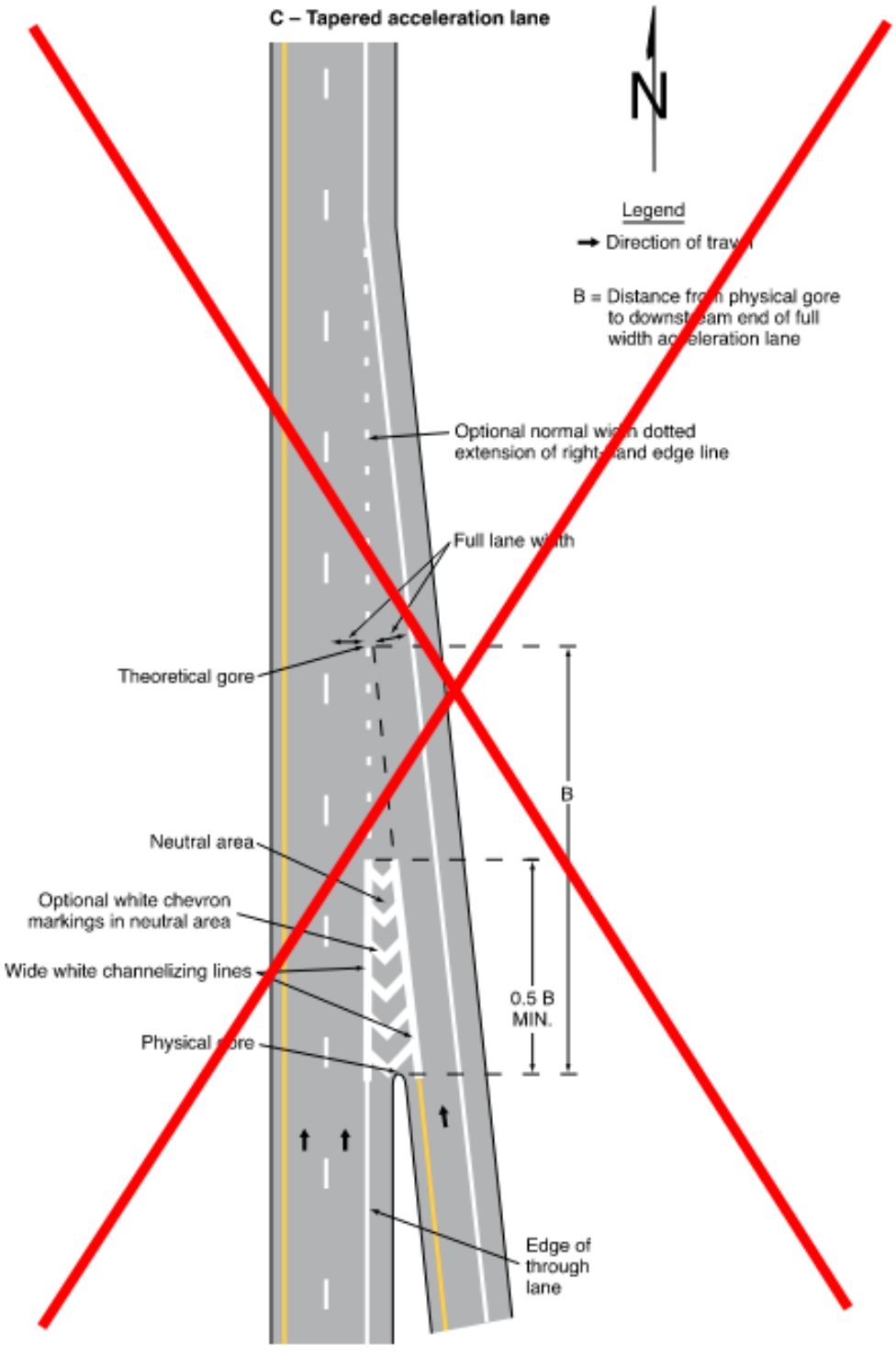


Figure 3B-11. Examples of Applications of Freeway and Expressway Lane-Drop Markings
(Sheet 1 of 6)

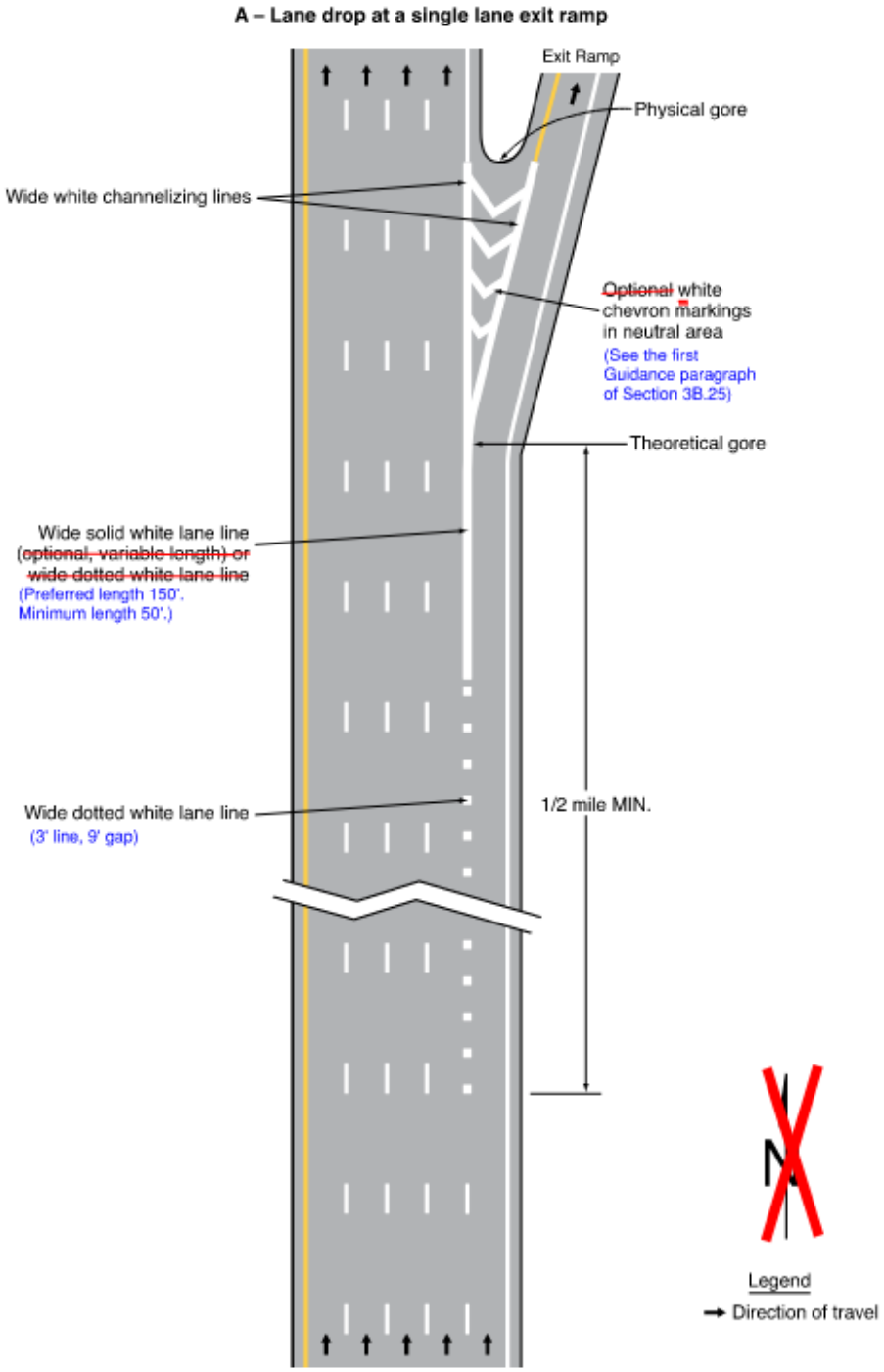


Figure 3B-11. Examples of Applications of Freeway and Expressway Lane-Drop Markings (Sheet 2 of 6)

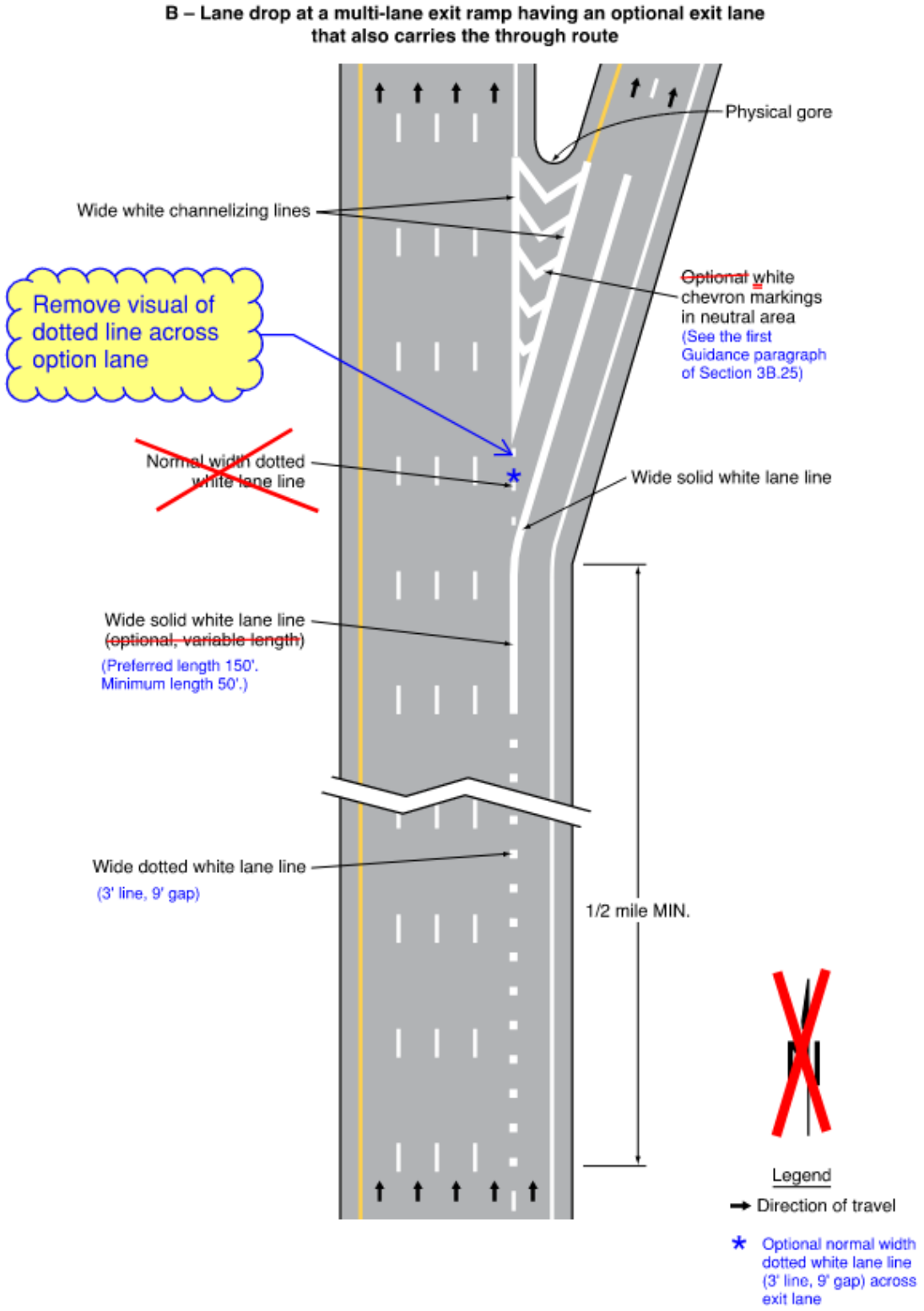


Figure 3B-11. Examples of Applications of Freeway and Expressway Lane-Drop Markings (Sheet 3 of 6)

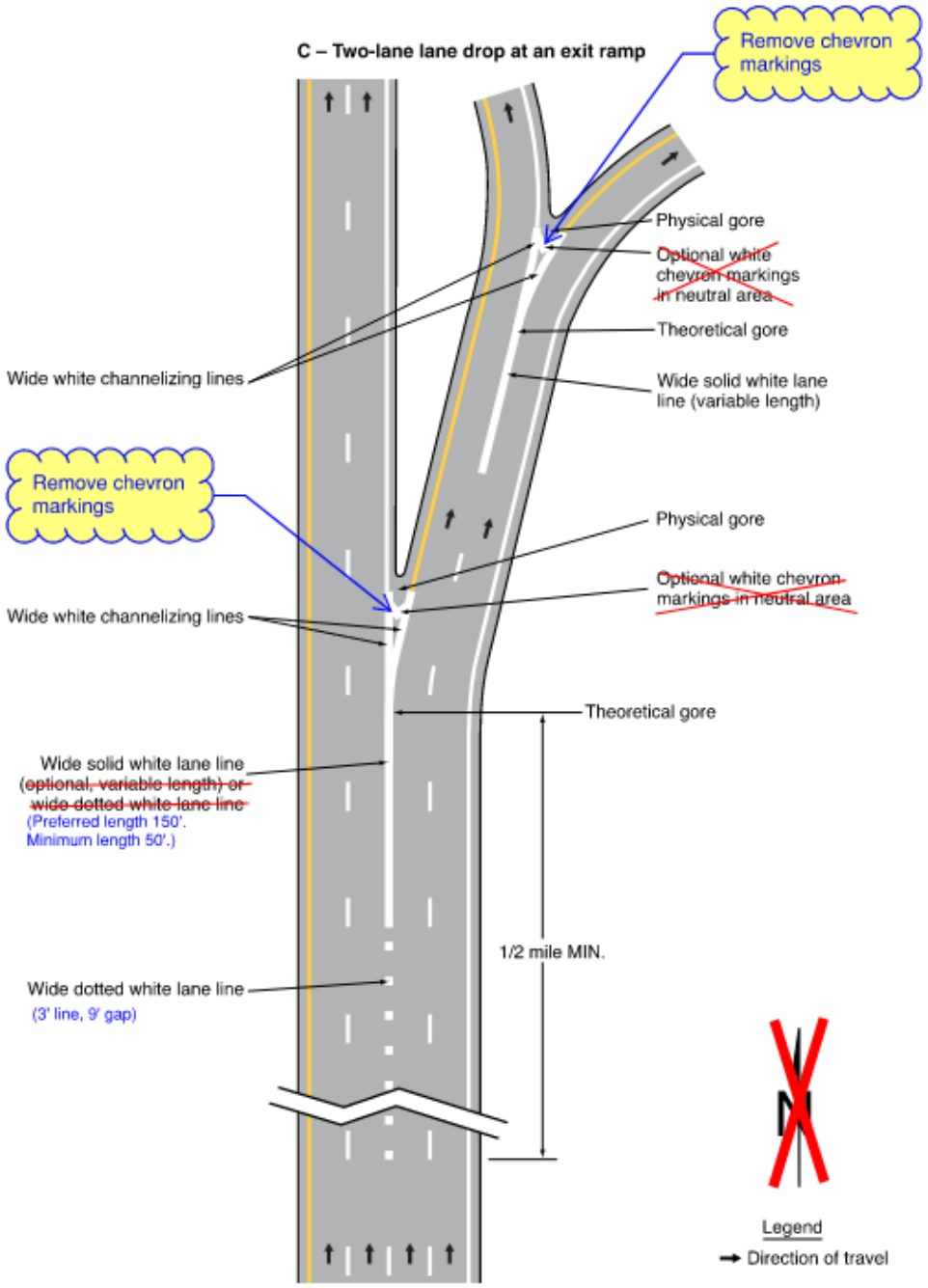


Figure 3B-11. Examples of Applications of Freeway and Expressway Lane-Drop Markings (Sheet 4 of 6)

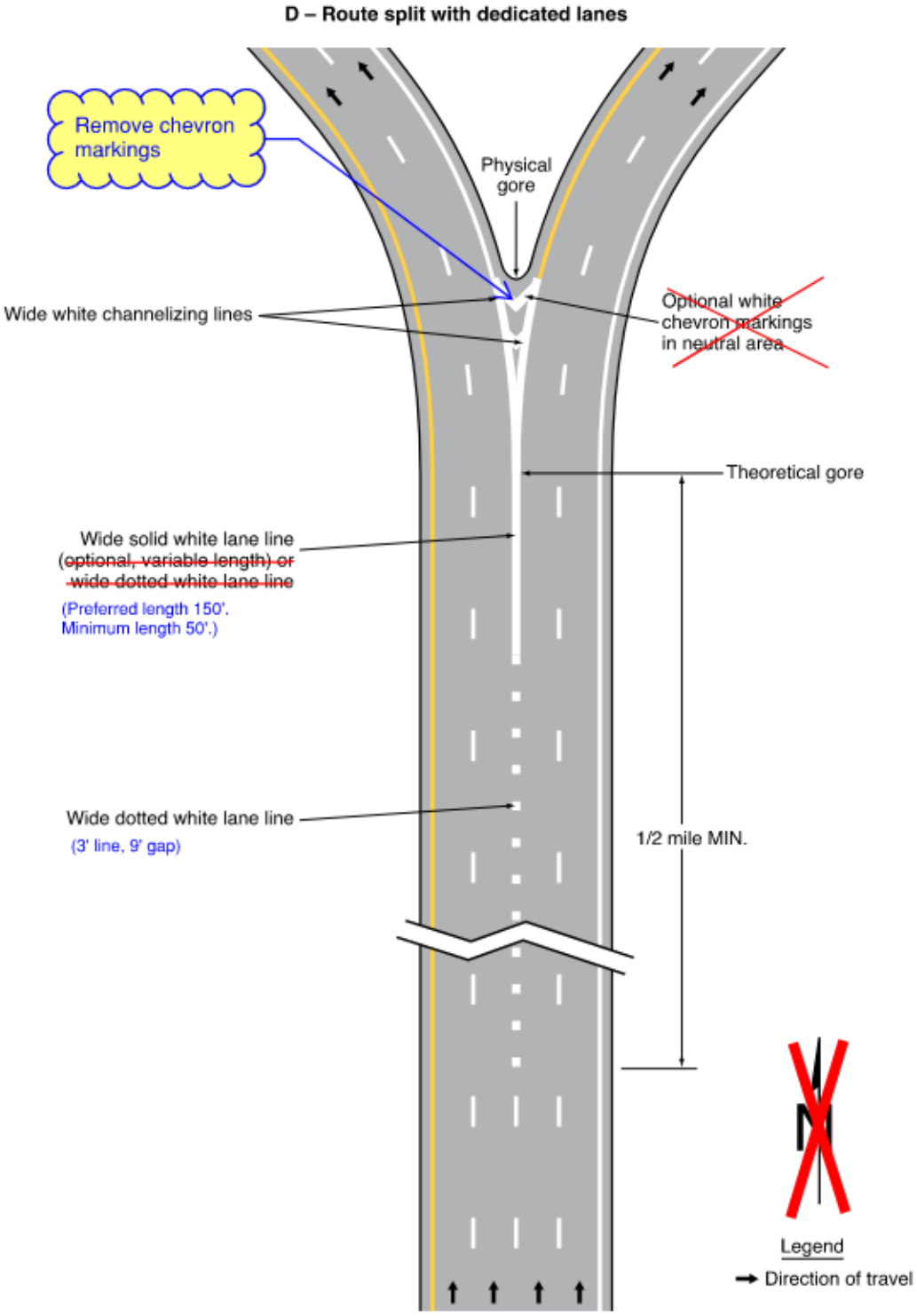
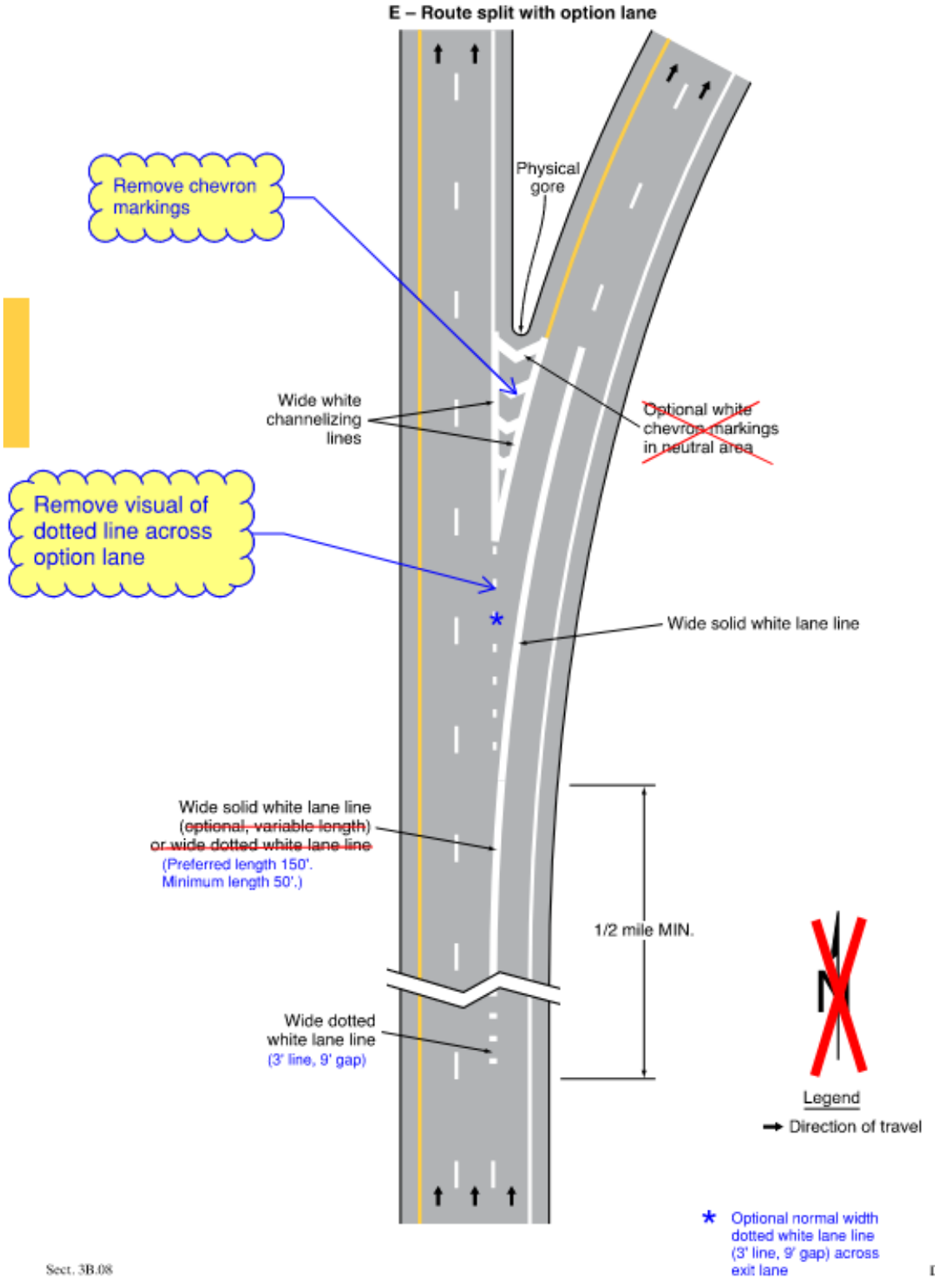


Figure 3B-11. Examples of Applications of Freeway and Expressway Lane-Drop Markings (Sheet 5 of 6)



Sect. 3B.08

Figure 3B-11. Examples of Applications of Freeway and Expressway Lane-Drop Markings (Sheet 6 of 6)

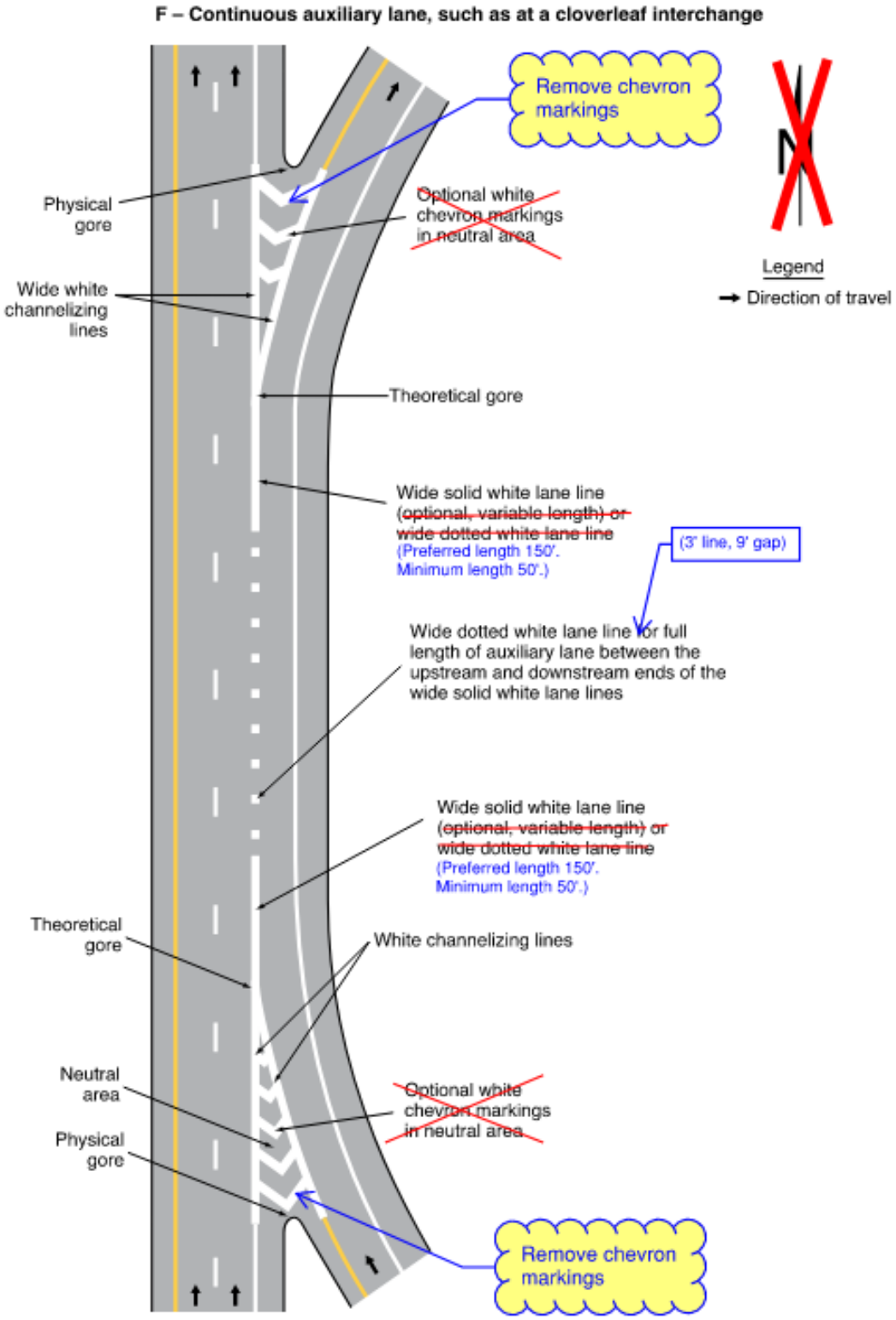


Figure 3B-12. Examples of Applications of Conventional Road Lane-Drop Markings (Sheet 1 of 2)

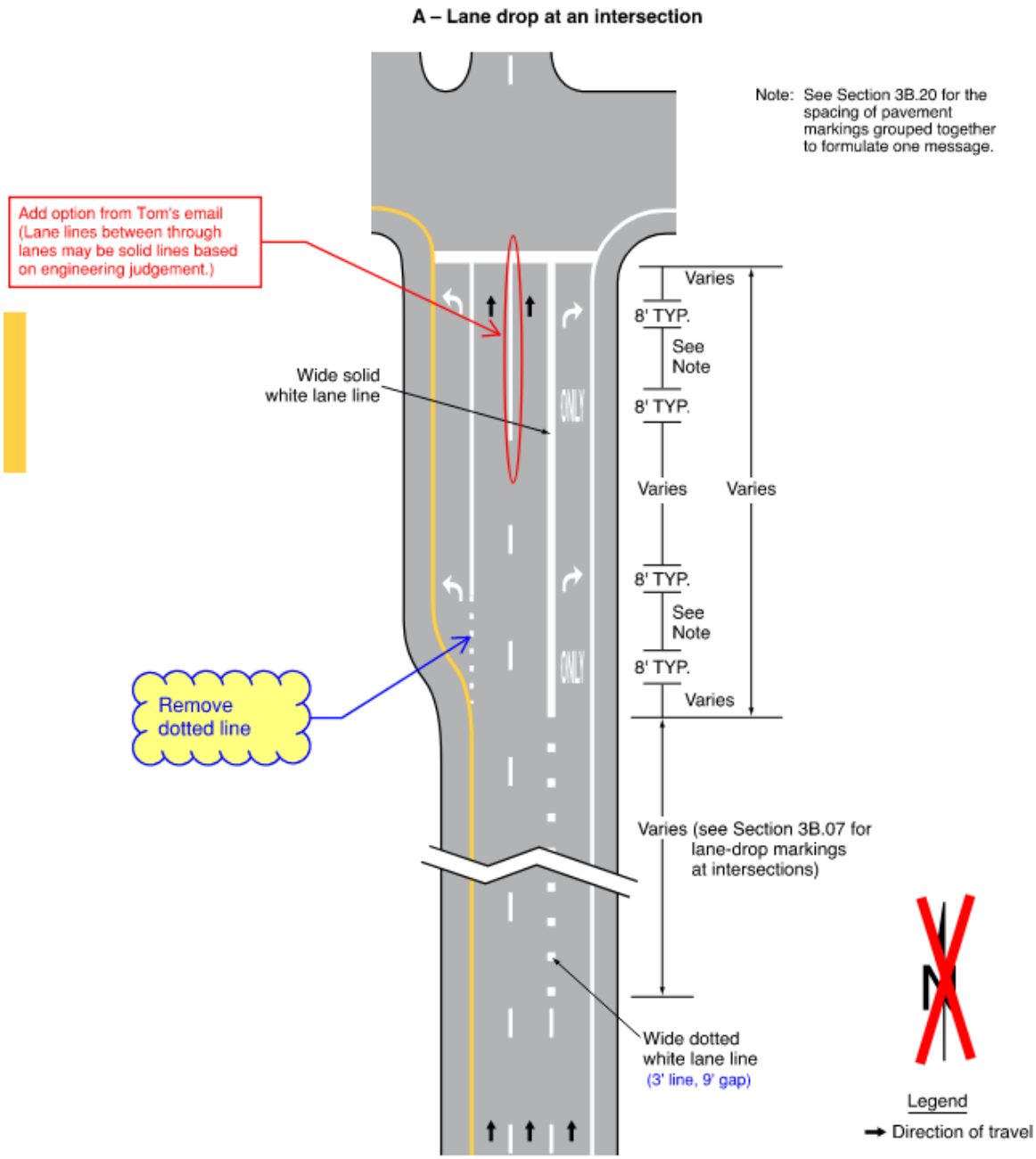
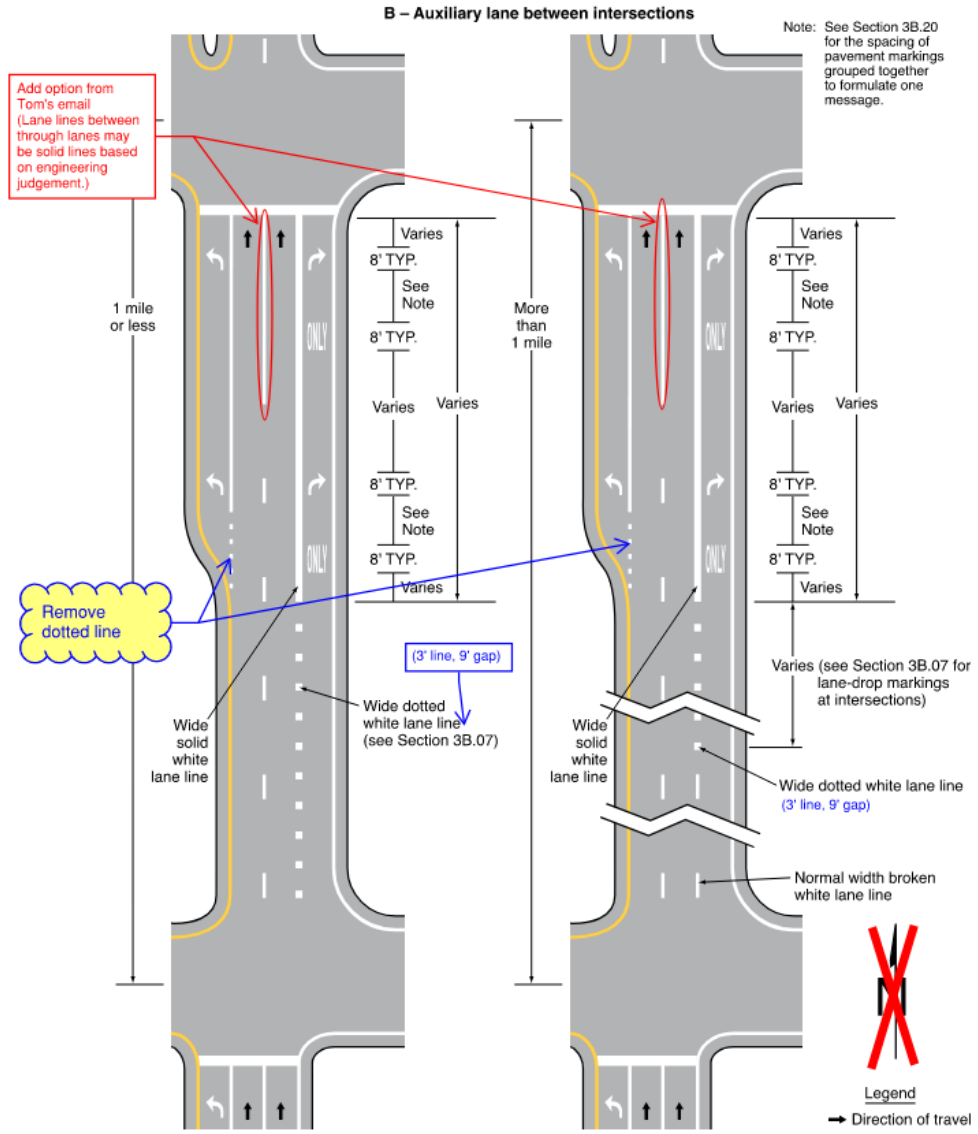


Figure 3B-12. Examples of Applications of Conventional Road Lane-Drop Markings (Sheet 2 of 2)



Section 3B.09 Edge Line Pavement Markings

Standard:

01 If used, edge line pavement markings shall delineate the right or left edges of a roadway.

02 Except as provided in Section 3E.04, right edge line pavement markings, if used, shall consist of a normal width solid white line to delineate the right-hand edge of the roadway.

03 If used on the roadways of divided highways or one-way streets, or on any ramp in the direction of travel, left edge line pavement markings shall consist of a normal width solid yellow line to delineate the left-hand edge of a roadway or to indicate driving or passing restrictions left of these markings, except as provided in Section 3E.04.

Guidance:

M03A When solid wide lines are used at entrance or exit ramps, the additional width of the wide line should encroach on the through lane of the highway (see Figure 620.9).

MoDOT specific direction for striping wide solid white lines. Revised Dec. 2025

Support:

04 Edge line markings provide visual references to guide road users during adverse weather and visibility conditions.

~~Option:~~

~~05 Wide solid edge line markings may be used for greater emphasis.~~

~~Support:~~

~~06 Increasing edge line width from 4 inches to at least 6 inches can be a beneficial countermeasure on all facility types in both urban and rural areas.~~

MoDOT edge line widths are provided in Section 3A.04. Revised Dec. 2025

Guidance:

07 Edge line markings should not be continued through intersections, except for the following situations:

- *A. Dotted edge line extensions (see Section 3B.11), or*
- *B. Through that part of an intersection with no intersection approach (such as the far side of a T-intersection).*

Support:

08 Section 3B.11 contains information on the use and application of edge lines through intersections, interchanges, and driveways.

Section 3B.10 Warrants for Use of Edge Lines

Standard:

01 Edge line markings shall be placed on paved streets or highways with the following characteristics:

- **A. Freeways,**
- **B. Expressways, and**
- **C. ~~Rural arterials~~ Routes with a traveled way of 20 feet or more in width and an ADT of ~~6,000~~ 400 vehicles per day or greater.**

Modified to reflect MoDOT policy. Revised Dec. 2025

~~*Guidance:*~~

~~*02 Edge line markings should be placed on paved streets or highways with the following characteristics:*~~

- ~~*A. Rural arterials and collectors with a traveled way of 20 feet or more in width and an ADT of 3,000 vehicles per day or greater.*~~
- ~~*B. On other paved streets and highways where an engineering study indicates a need for edge line markings.*~~

~~*03 Edge line markings should not be placed where an engineering study or engineering judgment indicates that providing them is likely to decrease safety for all road users.*~~

Option:

~~04 Edge line markings may be placed on streets and highways with or without center line markings.~~

Modified to reflect MoDOT policy. Revised Dec. 2025

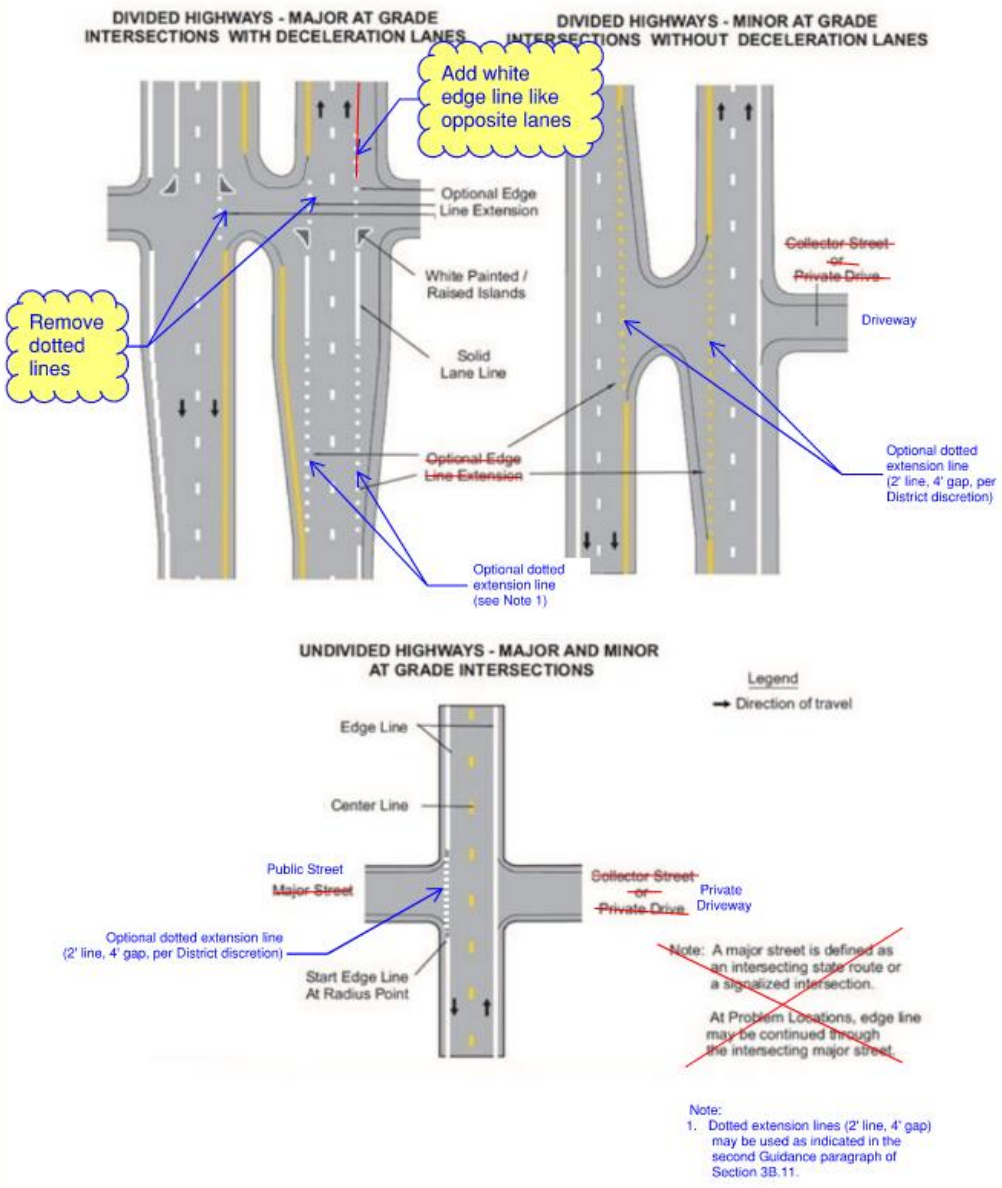
05 Edge line markings may be excluded, based on engineering judgment, for reasons such as if the traveled way edges are delineated by curbs, parking, or other markings.

06 If a bicycle lane is marked on the outside portion of the traveled way, the edge line that would mark the outside edge of the bicycle lane may be omitted.

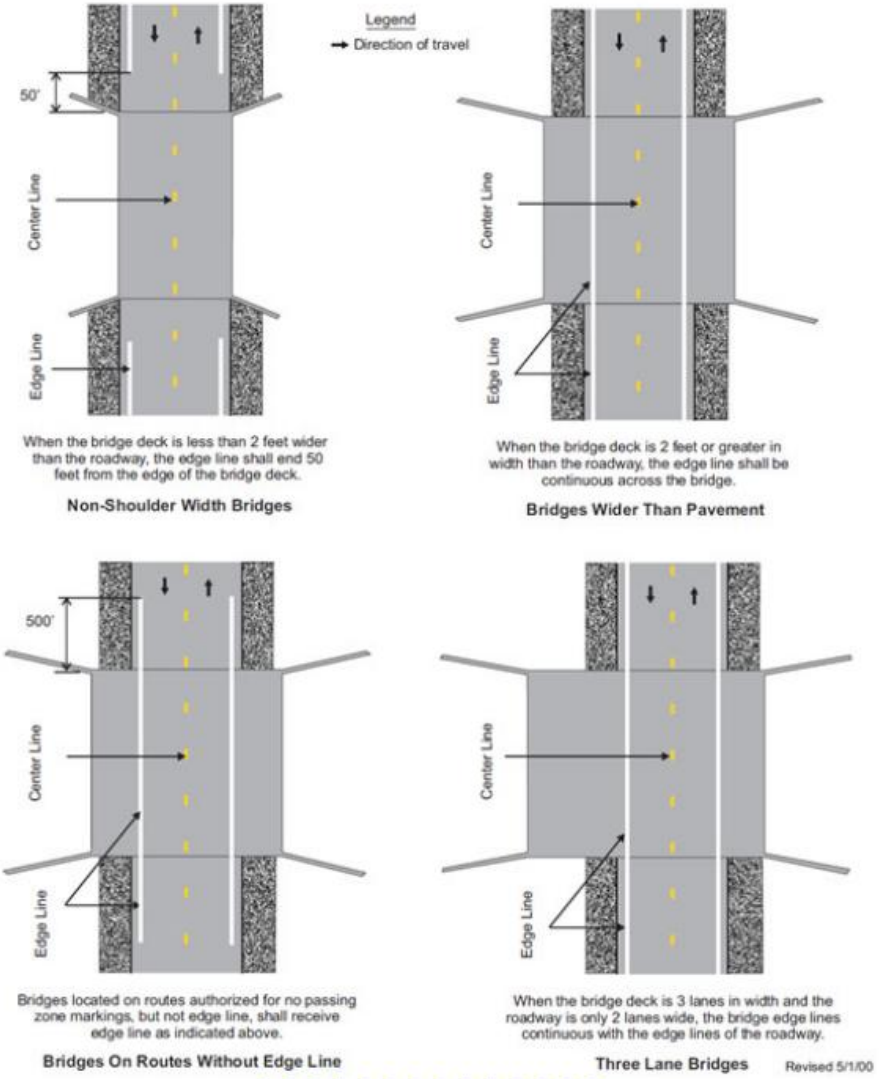
07 Edge line markings may be used where edge delineation is desirable to minimize unnecessary driving on paved shoulders or on refuge areas that have lesser structural pavement strength than the adjacent roadway.

EPG Figure 620.2.7. Edge Line Striping for At Grade Intersection

this is an EPG figure so we do not have a file for it. you can use MUTCD Figure 2B-20 as a starting point

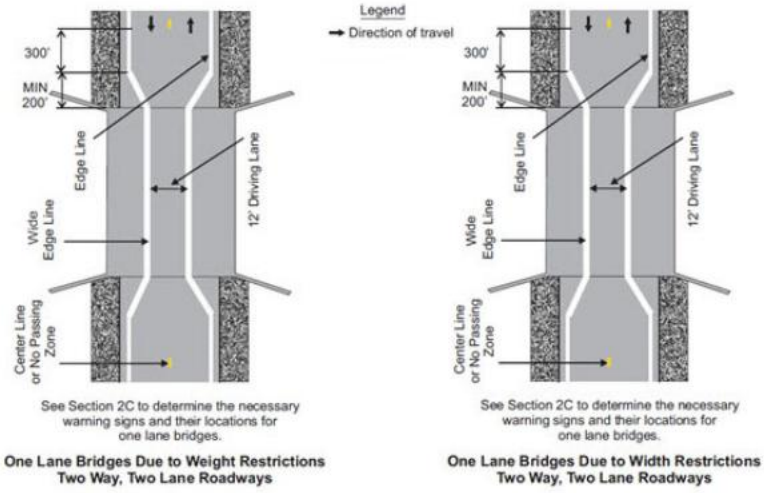


EPG Figure 620.2.7.1. Edge Line Striping for Two-Lane, Two-Way Bridges



EPG figure that will be included as is

EPG Figure 620.2.7.2. Edge Line Striping for Single Lane Bridges



EPG figure that will be included as is

Section 3B.10A Bridge Edge Lines

Standard:

M01 Bridges that are located on routes authorized for edge lines shall be striped in accordance with the following classifications (see Fig. 620.2.7.1.1 and Fig. 620.2.7.1.2, Bridge Edge line Striping):

- **A. Non-shoulder width bridges that have been constructed with a deck less than 2 ft. wider than the adjacent roadway on each side of the pavement shall not have the edge line placed on the bridge deck. The edge line shall end on the adjacent roadway 50 ft. from the bridge deck.**
- **B. Bridges wider than the roadway pavement by more than 2 ft. on each side shall receive edge line that will be continuous with that of the adjoining roadway.**
- **C. Three lane bridges designed and constructed with an additional lane for future use shall be marked as a two lane bridge. The edge line in these cases shall not be offset to provide for the usage of the third lane and the edge line will be continuous across the bridge.**
- **D. One lane, weight restricted bridges have a reduced driving surface due to an inability to carry the weight of two lanes of traffic. These bridges shall be marked using a wide white edge line that forms a 12 ft. travel lane on the bridge deck. These edge lines shall then taper from the edge of the bridge deck 200 ft. to the edge of the roadway pavement. The center line marking, if applicable, shall end 500 ft. from the end of the bridge deck.**
- **E. One lane bridges with width restrictions, having a clear traveling surface 16 ft. or less shall be marked using a wide white edge line that forms a 12 ft. travel lane on the bridge deck. These edge lines shall then taper from the edge of the bridge deck 200 ft. to the edge of the roadway pavement. The center line marking, if applicable, shall end 500 ft. from the end of the bridge deck.**

Guidance:

M02 Special attention should be given to all bridges whose shoulders are 2 ft. or wider than the shoulders of the adjacent roadway.

Standard:

M03 If bridges whose shoulders are 2 ft. or wider than the shoulders of the adjacent roadway are on routes authorized for center line marking, but not edge line marking, a segment of edge line shall be marked to delineate the travel way of the bridge. The edge line marking for these bridges shall begin 500 ft. ahead of, and end 500 ft. beyond, the bridge deck. These markings are intended to guide vehicles from the wider bridge deck to the narrower adjacent roadway. (See Fig. 620.2.7.1.1 and Fig. 620.2.7.1.2).

MoDOT specific content from the EPG. Revised Dec. 2025

Section 3B.11 Application of Pavement Markings Through Intersections or Interchanges

Standard:

01 Pavement markings extended into or continued through an intersection or interchange area shall be the same color as the line markings they extend (see Figure 3B-13).

M01A Intersections that provide more than one turn lane per movement shall have dotted extension lines for traffic to follow through the intersection, except as provided in the following Option paragraph. These lines shall be marked with dotted extension lines (2-foot line segments separated by 4-foot gaps), and shall follow the appropriate turning radius of the intersection. This line shall begin at the solid white lane line of the left turn bay and end at the lane line delineating the lanes the traffic is being channelized to. Dotted extension lines shall not be marked within crosswalks.

Option:

M01B Exceptions will be allowed when the dotted extension lines for opposing dual left-turn movements overlap in a manner that may cause driver confusion.

MoDOT policy for marking extension lines for more than one lane per turning movement. Revised Dec. 2025

Guidance:

02 Pavement markings extended into or continued through an intersection or interchange area should be at least the same width as the line markings they extend.

03 Where highway design or reduced visibility conditions make it desirable to provide control or to guide vehicles through an intersection or interchange, such as at offset, skewed, complex, or multi-leg intersections, on curved roadways, where multiple turn lanes are used, or where offset left-turn lanes might cause driver confusion, dotted lane line extension markings consisting of 2-foot line segments and 2~~4~~-foot ~~to 6 foot~~ gaps should be used to extend longitudinal line markings through an intersection or interchange area.

M03A In areas of limited sight distance due to vertical and/or horizontal curves, an edge line extension may be used to delineate acceleration and deceleration lanes.

MoDOT specific content from the EPG. Revised Dec. 2025

~~*04 Where greater restriction is preferred, solid lane lines or channelizing lines should be extended into or continued through intersections.*~~

MoDOT does not extend solid lane lines or channelizing lines through intersections. Revised Dec. 2025

Standard:

05 Extensions of center lines through intersections shall be dotted lines.

Guidance:

06 Where a double line is extended through an intersection, a single line of equal width to one of the lines of the double line should be used.

Standard:

07 Solid lines shall not be used to extend edge lines into or through intersections except through that part of an intersection with no intersecting approach (such as at the far side of a T-intersection).

Guidance:

08 Edge line markings should be discontinued across intersecting approaches at intersections or interchanges.

09 Driveways that do not meet the definition of an intersection (see Section 1C.02) should have edge line markings maintained across the intersecting approach of the driveway.

Option:

10 Dotted edge line extensions may be placed through intersections.

M10A Edge line extension lines may be used at the district's discretion.

Guidance:

M10B Durable pavement markings should be used for edge line extensions. An attempt should be made to keep the painted portion of this line out of the wheel tracks to promote longer life.

M10C For a divided highway, the edge line at an intersection should begin and end at the taper points when the intersection has no deceleration lanes. Where deceleration lanes are present, the edge line should continue along the outside of the deceleration lane to the beginning of the turn radius (see Fig. 620.2.7).

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

11 Section 3B.31 contains information about edge lines through diverging diamond interchanges with a transposed alignment crossroad.

12 Section 3D.03 provides information for edge lines through roundabouts.

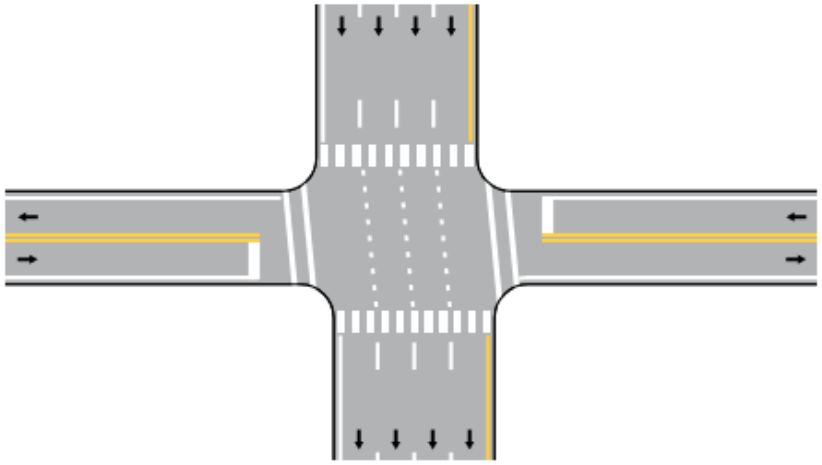
13 Section 5B.02 contains information on edge line extensions for driving automation system considerations.

14 Section 8C.05 contains information about the extension of edge lines through grade crossing areas.

15 Section 9E.03 contains information for the extensions of bicycle lanes through intersections.

Figure 3B-13. Examples of Line Extensions through Intersections (Sheet 1 of 2)

A – Typical pavement markings with offset lane lines continued through the intersection



B – Typical pavement markings with line extensions into intersection for double turns

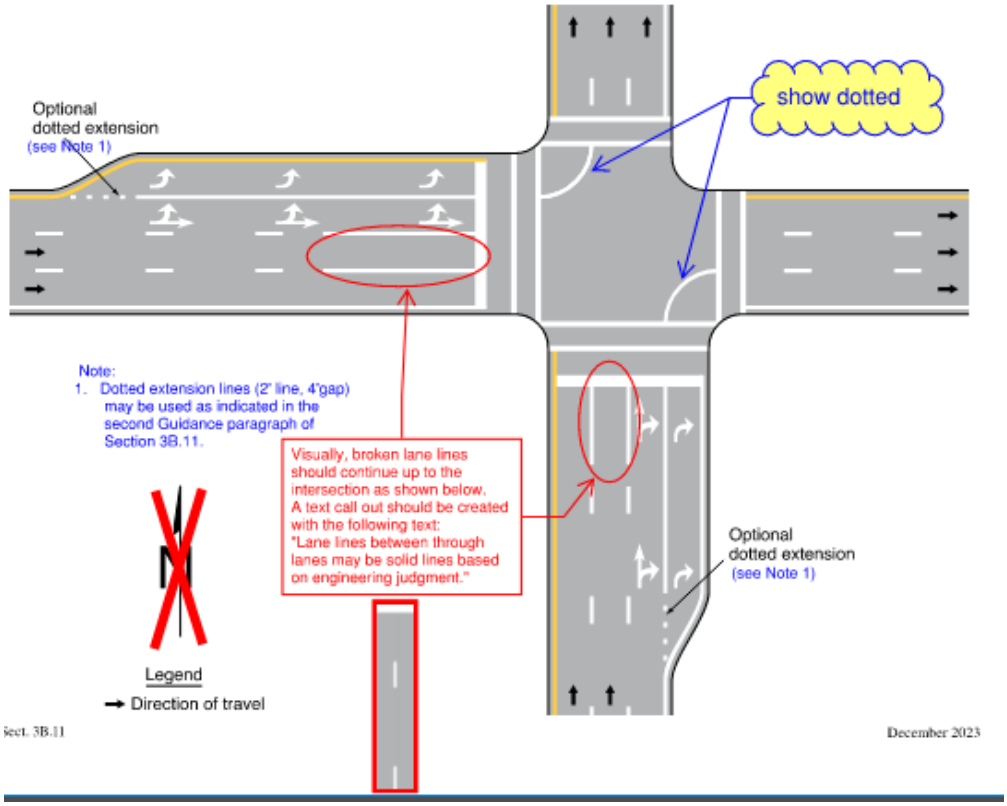
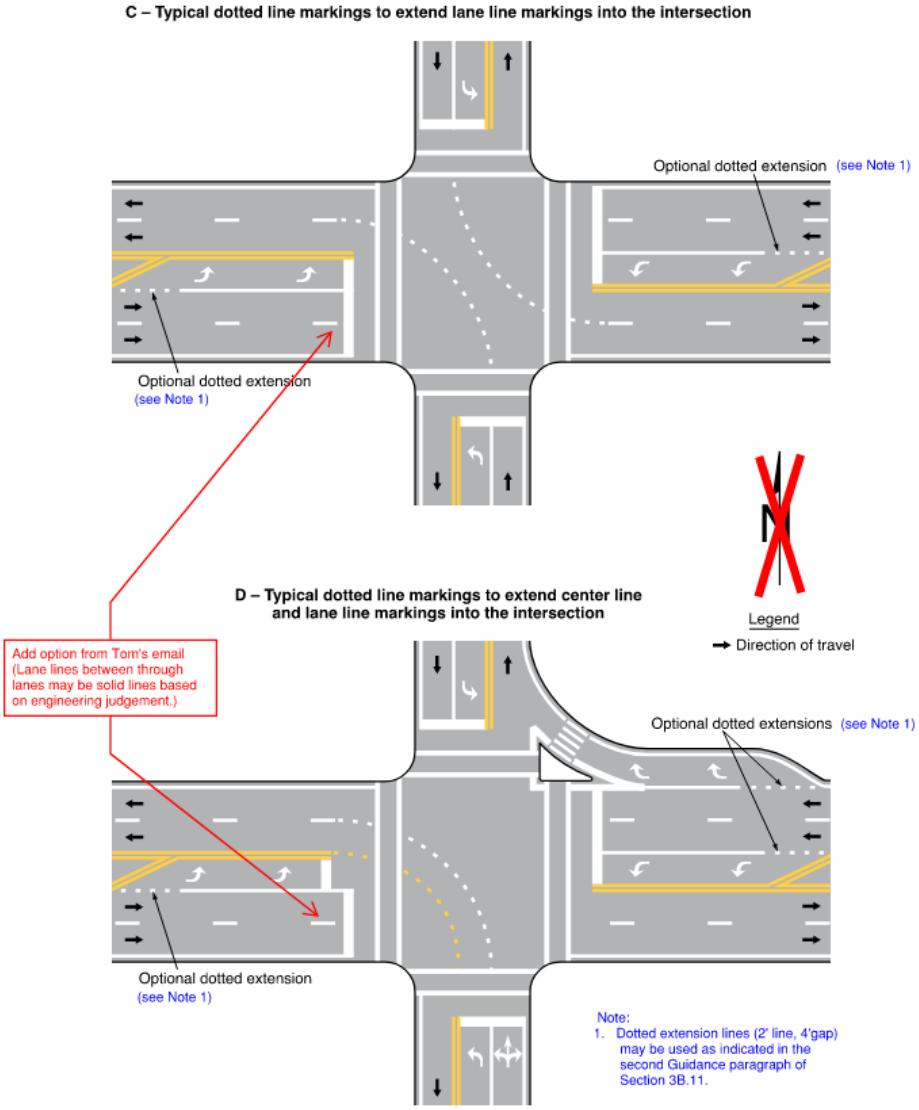


Figure 3B-13. Examples of Line Extensions through Intersections (Sheet 2 of 2)



Section 3B.12 Lane-Reduction Transitions

Support:

01 A lane-reduction is where the number of through lanes is reduced at a location that is not at an interchange, ramp, or intersection because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane.

02 Section 3B.07 contains information on pavement markings for lane drops and splits.

03 Section 2C.47 contains information for warning signing used for lane reductions.

Standard:

04 Lane-reduction transitions (see Figure 3B-14) shall include the following elements:

- **A. A no-passing zone (see Section 3B.03) to prohibit passing in the direction of the convergence and through the transition area except where not applicable such as one-way streets, expressways, and freeways; and**
- **B. An edge line (see Section 3B.09) in the direction of the convergence and through the transition area, except as provided in ~~Paragraph 6 of this Section~~ the following Option paragraph.**

Guidance:

05 Except as provided in ~~Paragraph 6 of this Section~~, the following Option paragraph the edge line marking should be installed from the location of the Lane Ends warning sign to beyond the beginning of the narrower roadway.

Option:

06 On roadways with operating speeds less than 25 mph where curbs clearly define the roadway edge in the lane-reduction transition, or where a through lane becomes a parking lane, the edge line may be omitted as determined by engineering judgment.

Guidance:

07 Lane-reduction transitions should include the following elements:

A. *Delineators installed adjacent to the lane or lanes reduced for the full length of the transition and should be so placed and spaced (see Section 3G.04) to show the reduction except as provided in ~~Paragraph 13 of this Section~~ the third Option paragraph below and except as provided in ~~Paragraph 2~~ the second paragraph of Section 3G.03 for freeways and expressways,*

B. *Lane-reduction arrow markings (see Drawing ~~f~~H in Figure 3B-21) on the roadway with a speed limit of 45 mph or more, and*

C. *A termination of the broken (intermittent) white lane line at a point that is ¼ of the advance placement distance (see Section 2C.04) between the Lane Ends sign (see Section 2C.47) and the point where the transition taper begins.*

08 For roadways having a speed limit of 45 mph or greater, the transition taper length for a lane-reduction transition should be computed by the formula L = WS, where L equals the taper length in feet, W equals the width of the offset distance in feet, and S equals the 85th-percentile speed or the speed limit in mph, whichever is higher. For roadways where the speed limit is less than 45 mph, the formula $L = WS^2/60$ should be used to compute the taper length.

MoDOT modifies the first sentence of paragraph 8 to be a standard statement. Revised Dec. 2025

09 The minimum lane reduction transition taper length should be 100 feet in urban areas and 200 feet in rural areas.

10 Where observed speeds exceed speed limits, longer tapers should be used.

Option:

11 The minimum taper length may be less than 100 feet on roadways where the operating speed is less than 25 mph.

12 On new construction, where no speed limit has been established, the design speed may be used in the transition taper length formula.

13 On low-speed urban roadways where curbs clearly define the roadway edge in the lane-reduction transition, or where a through lane becomes a parking lane, delineators may be omitted as determined by engineering judgment.

14 Where a lane-reduction transition occurs on a roadway with a speed limit of less than 45 mph, lane-reduction arrow markings may be used.

15 Lane-reduction arrow markings may be used in long acceleration lanes based on engineering judgment.

~~16 A dotted white line may be used between the point where the broken white lane line is terminated to the point where the transition taper begins.~~

MoDOT does not use dotted lines for this application. Revised Dec. 2025

EPG Figure 620.2.9.2 Standard Pavement Markings for Climbing Lanes

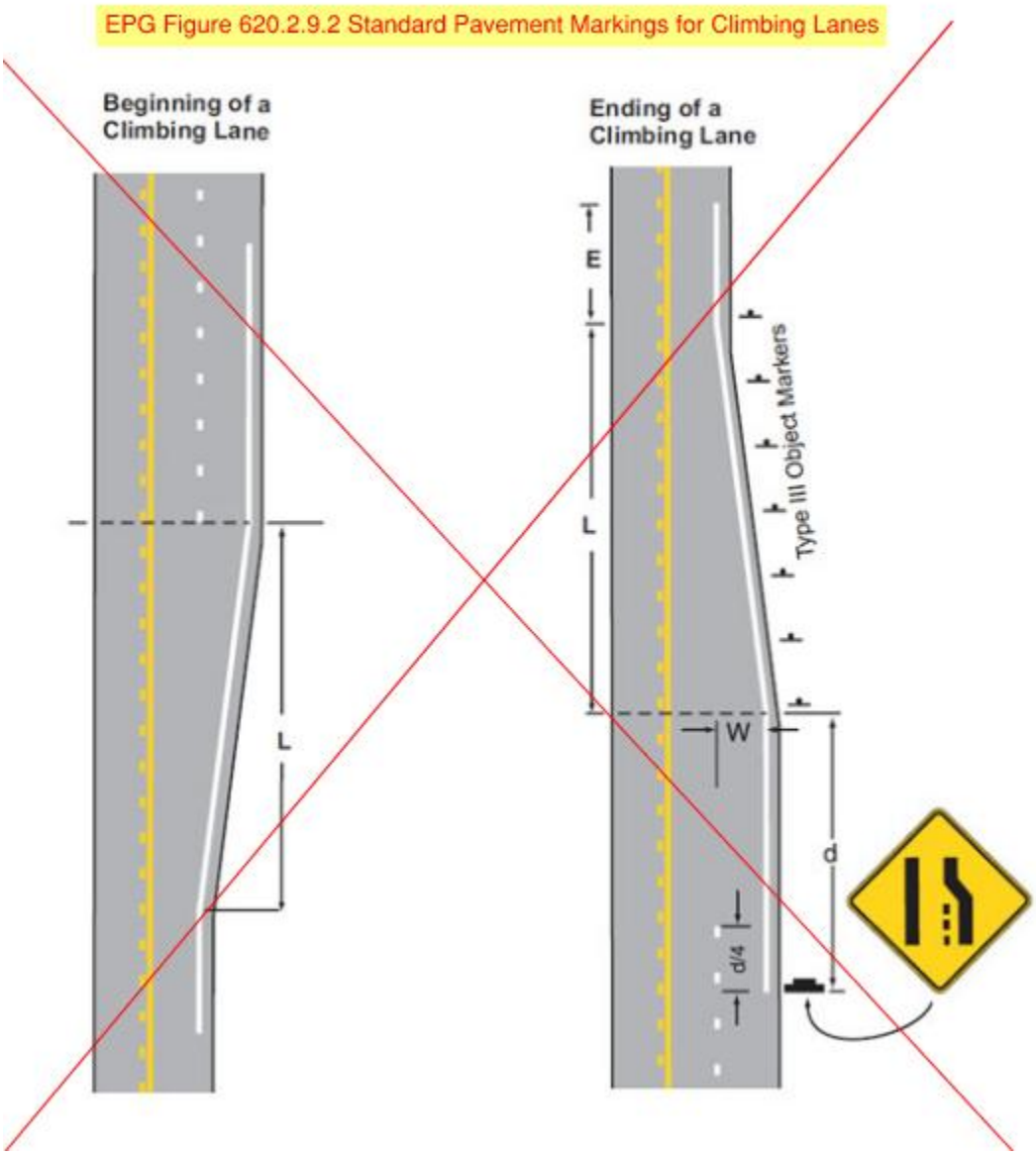
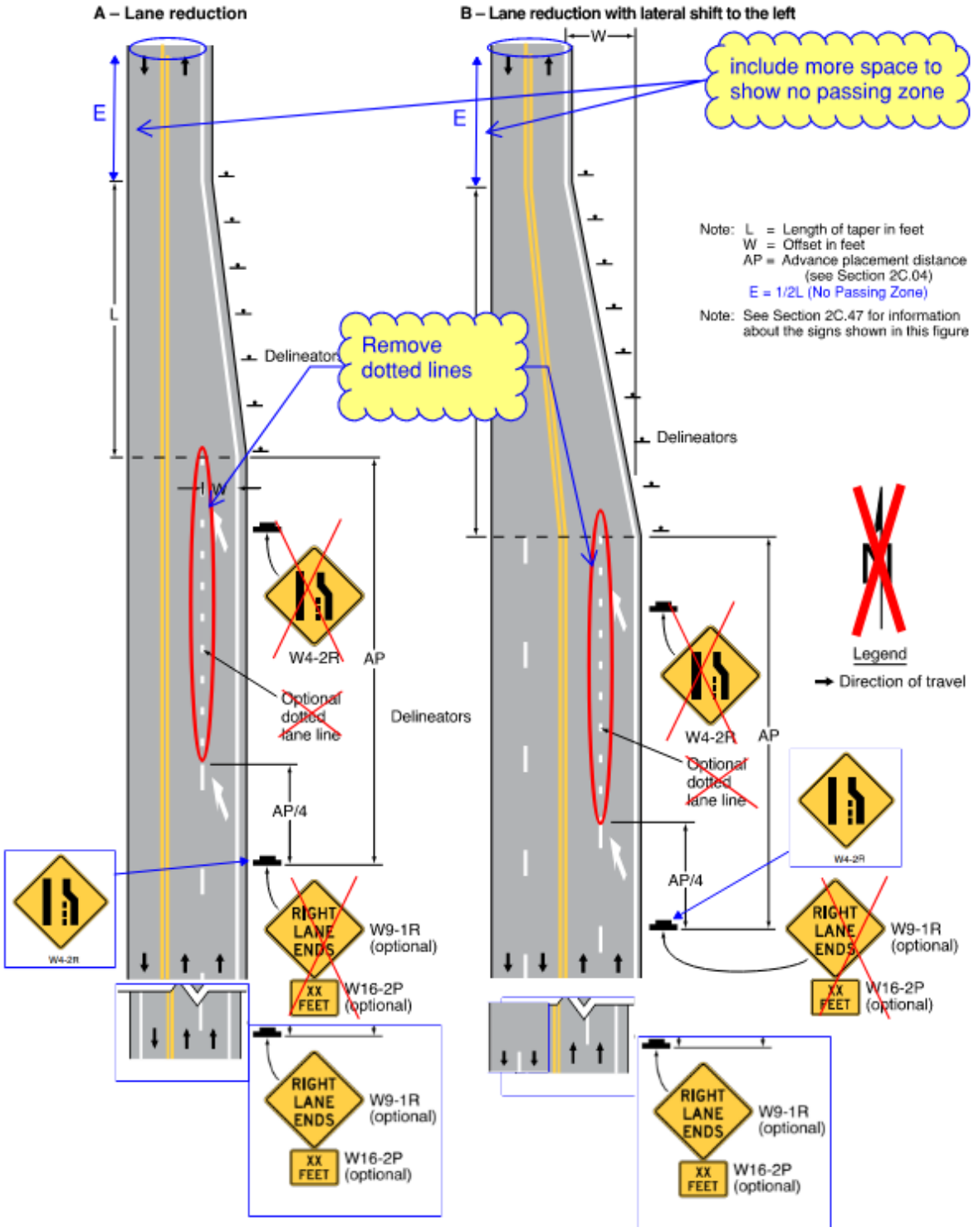


Figure 3B-14. Examples of Applications of Lane-Reduction Transition Markings



Section 3B.13 Approach Markings for Obstructions

Standard:

01 Pavement markings shall be used to guide traffic away from fixed obstructions within a paved roadway. Approach markings for bridge supports, refuge islands, median islands, ~~toll plaza islands,~~ and raised channelization islands shall consist of a tapered line or lines extending from the center line or the lane line to a point 1 to 2 feet to the right-hand side, or to both sides, of the approach end of the obstruction (see Figure 3B-15).

There is no toll infrastructure on MoDOT facilities. Revised Dec. 2025

Guidance:

02 For roadways having a speed limit of 45 mph or greater, the taper length of the tapered line markings should be computed by the formula L = WS, where L equals the taper length in feet, W equals the width of the offset distance in feet, and S equals the 85th-percentile speed or the speed limit, whichever is higher. For roadways where the speed limit is less than 45 mph, the formula $L = WS^2/60$ should be used to compute the taper length.

MoDOT modifies the first sentence of paragraph 2 to be a standard statement. Revised Dec. 2025

03 The minimum taper length should be 100 feet in urban areas and 200 feet in rural areas.

Option:

04 The minimum taper length may be less than 100 feet on roadways where the operating speed is less than 25 mph.

M04A Observed speeds may be used to determine the taper length when the observed speed exceeds the posted or statutory speed limits.

M04B Unique situations may require special markings or warning devices.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

05 If traffic is required to pass only to the right of the obstruction, the markings shall consist of a two-direction no-passing zone marking at least twice the length of the diagonal portion as determined by the appropriate taper formula (see Drawing A in Figure 3B-15).

Option:

06 If traffic is required to pass only to the right of the obstruction, yellow diagonal markings (see Section 3B.25) may be placed in the flush median islands (see Section 3J.03) between the no-passing zone markings as shown in Drawings A and B in Figure 3B-15.

Standard:

07 If traffic can pass either to the right or left of the obstruction, the markings shall consist of two channelizing lines diverging from the lane line, one to each side of the obstruction. In advance of the point of divergence, a wide solid white line ~~or normal width double solid white line~~ shall be extended in place of the broken (intermittent) lane line for a distance equal to the length of the diverging lines (see Drawing C in Figure 3B-15).

Option:

08 If traffic can pass either to the right or left of the obstruction, additional white chevron markings (see Section 3B.25) may be placed in the flush neutral area between the channelizing lines as shown in Drawing C in Figure 3B-15. Other markings, such as white delineators, white channelizing devices, ~~white raised pavement markers,~~ and white crosswalk markings may also be placed in the flush neutral area.

MoDOT does not use raised pavement markers in neutral areas. Revised Dec. 2025

M09 The obstruction and marking may, if possible, be illuminated by overhead lighting that will adequately light the object without directing glare toward road users approaching from either direction.

Support:

M10 Section 2C.71 contains information regarding object markers for obstructions within the roadway.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 3B-15. Examples of Applications of Lane-Reduction Transition Markings (Sheet 1 of 2)

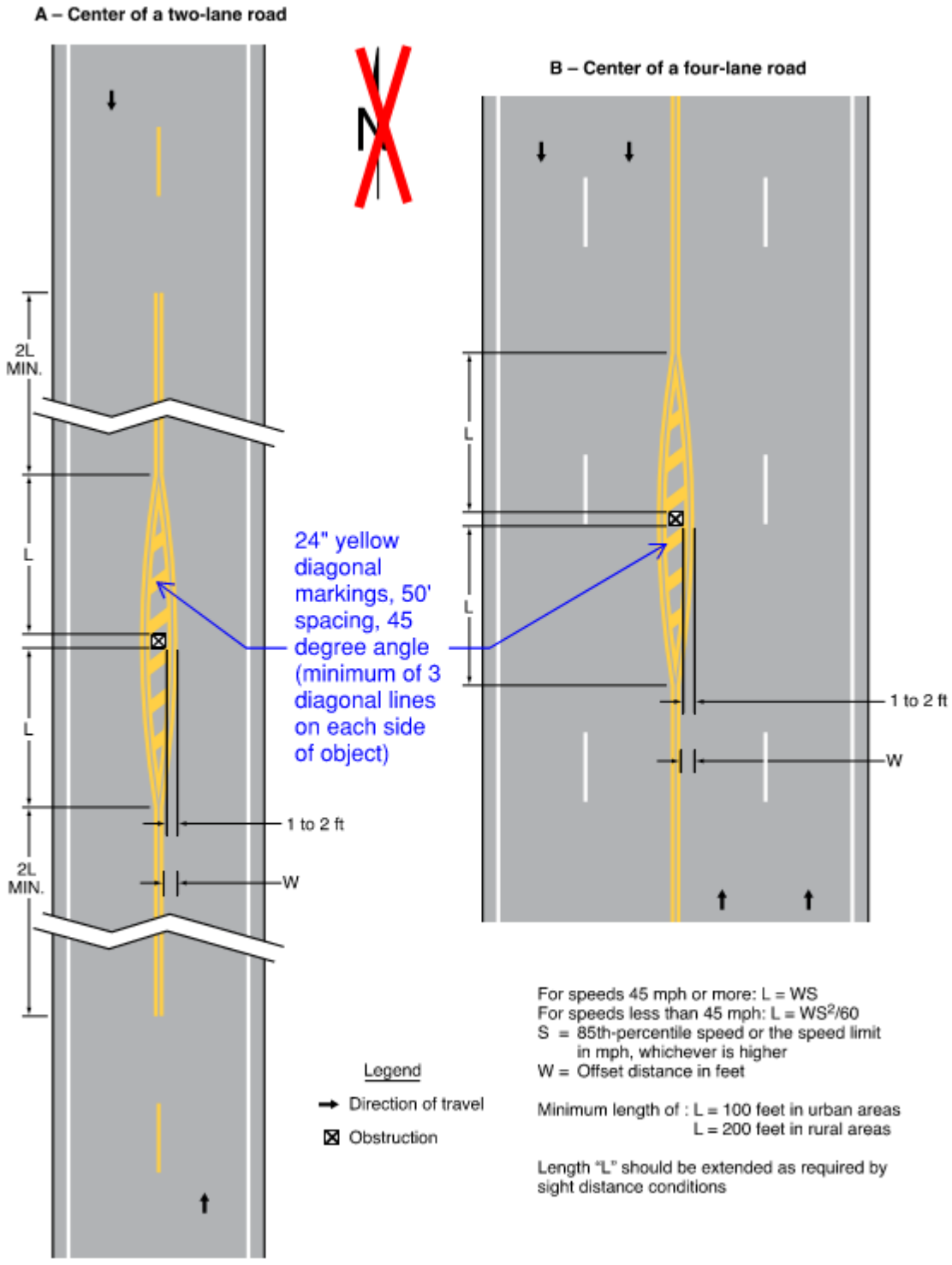
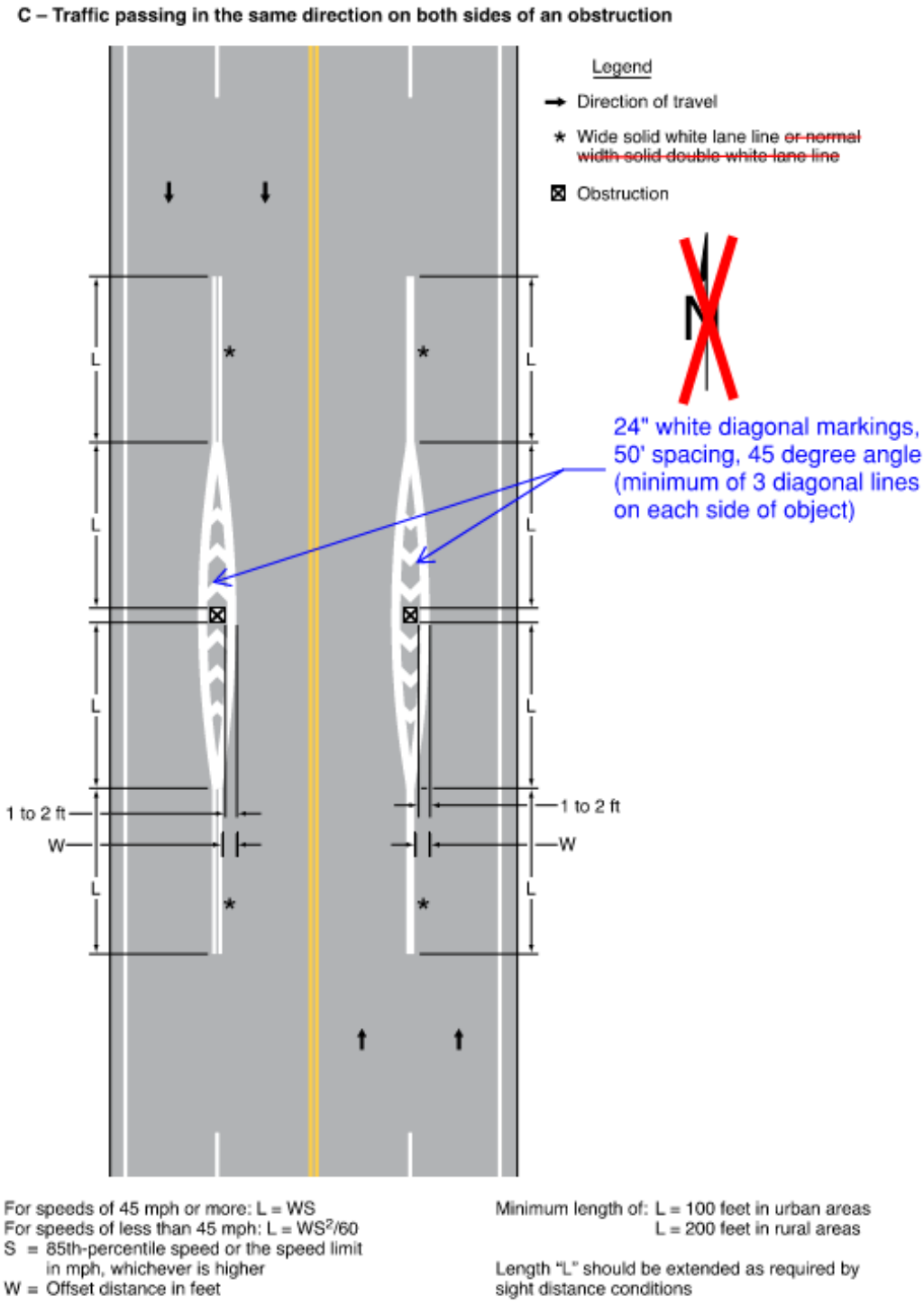


Figure 3B-15. Examples of Applications of Lane-Reduction Transition Markings (Sheet 2 of 2)



Section 3B.14 ~~Raised~~ Inlaid Pavement Markers – General

Section is renamed Inlaid Pavement Markers because MoDOT does not use raised pavement markers. Revised Dec. 2025

~~**Standard:**~~

~~**01 The color of raised pavement markers under both daylight and nighttime conditions shall conform to the color of the marking for which they serve as a positioning guide, or for which they supplement or substitute.**~~

~~Option:~~

~~02 The side of a raised pavement marker that is visible to traffic proceeding in the wrong direction may be red (see Section 3A.03).~~

~~03 Retroreflective or internally illuminated raised pavement markers may be used in the roadway immediately adjacent to curbed approach ends of raised medians and curbs of islands, or on top of such curbs (see Section 3J.06).~~

~~**Standard:**~~

~~**04 When used, internally illuminated raised pavement markers shall be steadily illuminated and shall not be flashed.**~~

~~Support:~~

~~05 Flashing raised pavement markers are considered to be In-Roadway Lights (see Chapter 4U).~~

~~*Guidance:*~~

~~*06 The spacing of raised pavement markers used to supplement or substitute for other types of longitudinal markings should correspond with the pattern of broken lines for which the markers supplement or substitute.*~~

~~**Standard:**~~

~~**07 The value of N cited in Sections 3B.15 through 3B.17 for the spacing of raised pavement markers shall equal the length of one line segment plus one gap of the broken lines used on the highway.**~~

~~Option:~~

~~08 For additional emphasis, retroreflective raised pavement markers may be spaced closer than described in Sections 3B.15 through 3B.17, as determined by engineering judgment or engineering study.~~

~~Support:~~

~~09 Section 9A.03 contains information for the application of raised pavement markers to bicycle facilities.~~

MoDOT does not use raised pavement markers. MoDOT policy for inlaid pavement markers is used instead. Revised Dec. 2025

Support:

M01 MoDOT has utilized a series of various pavement marking systems to enhance wet night visibility over the decades, including snow plowable raised pavement markers, rumble stripe edge lines, grooved in durable markings with wet reflective elements, grooved in waterborne markings with wet elements and the current marking system using an enhanced ASTM Type III glass bead (MoDOT Type L) on all pavement markings on major roads. The MoDOT Type L / high build waterborne pavement marking and edge line rumble stripes are the predominate wet nighttime marking system, with inlaid pavement markers being an optional supplement to this system.

M02 Inlaid pavement markers (ILPMs) offer benefits over traditional pavement markings in heavy rain conditions, and in conditions where ambient light creates a sheen on the wet pavement at night making it more difficult to see traditional pavement markings. However, ILPMs are only a supplement to traditional pavement markings, which must be maintained at the highest standards possible. ILPMs only serve as a supplement as they provide no guidance during daylight hours, and pavement markers provide no guidance to the machine vision systems that are being deployed in today's vehicle fleet.

M03 ILPMs can provide a safety benefit during wet-night conditions where they are warranted. However, research indicates ILPMs can have a negative safety impact if applied in areas where they are not warranted, providing too much guidance resulting in drivers overdriving the wet-night conditions. The research found the markers to offer the greatest safety impact in urban areas on divided highways with three or more lanes in one direction and areas where ambient light creates a sheen on the pavement obscuring normal pavement markings. With MoDOT's direction to use rumble stripes for all its major roadways, roads with only two lanes in each direction offer the enhanced edge line guidance to all lanes of traffic compared to a three lane section where the middle lane has no edge line rumble stripe to reference.

M04 Installations are being limited to the cradle system of ILPMs at this time as they have proven to provide the longest service life compared to other systems which have been evaluated. The reflectors are installed in pairs to provide redundancy and increase the service life of the installation.

M05 ILPMs are not without limitations, these devices are recessed below the pavement surface to protect the reflectors from snowplow damage. On roadway segments with a grade or super elevation in a curve, the grooves the markers are installed in will typically drain keeping the reflectors visible. However, on roadway segments which have a flat grade these grooves can fill up with water covering the reflectors rendering them ineffective in heavier rain events.



An example of ambient light obscuring pavement markings, but also an example of ILPMs also not working due to the flat grade of the highway not allowing the grooves the ILPMs are installed in to drain, resulting in the markers becoming submerged and rendered ineffective.

MoDOT's Implementation of ILPMs

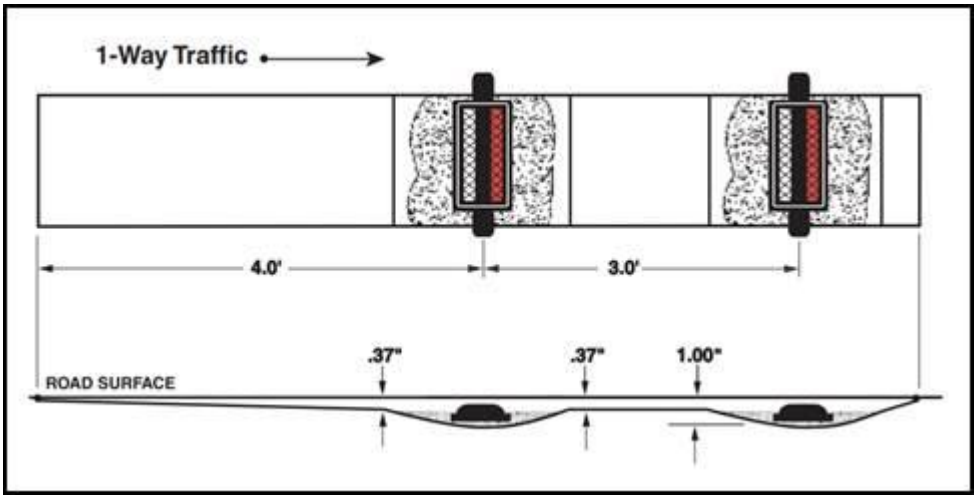
Standard:

M06 If used, ILPMs shall be installed according to the following conditions:

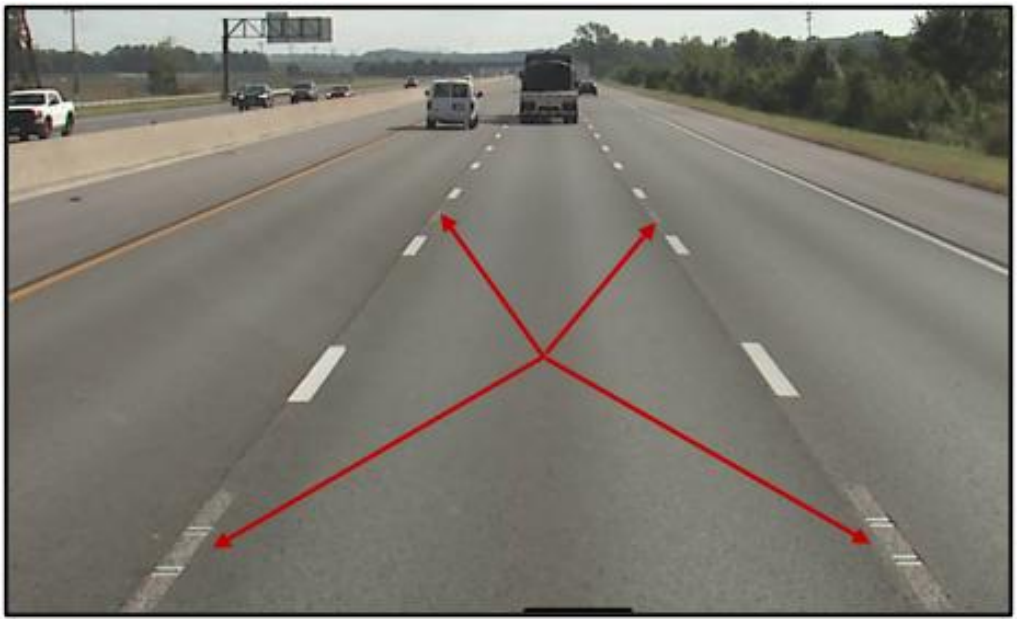
- **A. ILPMs are limited to freeways with three or more through lanes in one direction.**
- **B. The cradle system of ILPMs shall be the marker style used. ILPMs shall comply with the current approved vendor list.**
- **C. ILPMs shall be installed in pairs, placed in every other gap between the skips of broken (intermittent) lane line markings only**
    1. **Installed in accordance with manufactures' installation guidance.**

2. **Special attention needs to be given to installations on concrete as ILPM installations in concrete have historically had high failure rates. The selected manufacturer must demonstrate they have corrected this issue with an appropriate installation procedure.**

D. **The ILPMs shall contain a white reflector visible to oncoming traffic and a red reflector on the reverse side of the marker, providing a wrong way deterrent. The color of the ILPMs shall conform to the color of the marking they supplement, under both daylight and nighttime conditions. When used, ILPMs shall require approval from the State Highway Safety and Traffic Engineer.**



ILPM installation in pavement groove



Paired ILPM installation and spacing



Newly installed cradle ILPM, cradle tabs still in place which hold the marker at the proper elevation until the epoxy cures

Cradle ILPM, Top View

Support:

M07 ILPMs do have a limited life expectancy, when installed in accordance with the guidance above, the service life is approximately 4 to 5 years or roughly half the life of a typical asphalt overlay. Failure modes can include damage / missing reflector lenses from the cradle, or the loss of the entire reflector installation from the pavement. Loss of the entire marker installation results in a cavity in the pavement which could accelerate pavement deterioration.



Missing reflector from cradle, new reflector can be reinstalled to maintain



Complete loss of marker installation, these sites need to be patched with asphalt or new markers installed in the same location

Guidance:

M08 Maintenance and impacts to pavement should be taken into account when considering the installation of ILPMs. A maintenance program should be implemented to maintain the marker's performance. This maintenance should take place approximately halfway through the asphalt's overlay cycle, assuming an 8 to 10 year cycle.

Support:

M09 Concrete installation maintenance requirements can be significantly different due to the service life of a concrete surface. Based on maintenance cycles from other states, this would typically result in maintenance beginning 4 years after the initial installation, a second maintenance cycle 2-3 years later and then annually from that point forward. This cycle accounts for the varying ages of markers that results from the lack of an overlay replacement. The actual maintenance cycle may vary based on inspections. The use of MoDOT's mobile retroreflectivity contract could also be used to measure ILPM performance to determine the maintenance needs.

Option:

M10 Maintenance of ILPMs in asphalt may be accomplished in two typical fashions:

A. Install new ILPMs in the gaps between lane lines which did not receive markers initially, allowing the original markers to fade out of service. This is the more efficient and cost effective method, however, milling new markers into a midlife asphalt could accelerating the asphalt joint failure depending on pavement condition.

B. Inspection and replace ILMPs individually in their original locations. This method is more labor intensive and costly; however, it could reduce the risk of accelerated pavement failure by eliminating new milling operations. Reinstalling markers in the cavities left by old, dislodged markers could also help seal and preserve the pavement.

Guidance:

M11 When districts consider the use of ILPMs, they should answer the following questions:

A. Does the route in question have a documented wet-night crash history that is tied to visibility and not surface condition to warrant the installation?

B. Will the installations be planned to be maintained or will the initial installation be allowed to fade out of service?

C. If the installation will be allowed to fade out of service, what ramifications would a district expect in terms of failing to meet customer expectations for the presence of the markers and/or increases in wet-night crashes as markers fade away?

D. Will the benefits of installing ILPMs offset the impacts to the pavement and its long term maintenance?

MoDOT policy for inlaid pavement markings. Revised Dec. 2025

~~**Section 3B.15 Raised Pavement Markers as Vehicle Positioning Guides with Other Longitudinal Markings**~~

~~Option:~~

~~01 Retroreflective or internally illuminated raised pavement markers may be used as positioning guides with longitudinal line markings without necessarily conveying information to the road user about passing or lane-use restrictions. In such applications, markers may be positioned in line with or immediately adjacent to a single line marking, or positioned between the two lines of a double center line or double lane line marking.~~

~~*Guidance:*~~

~~*02 Except as otherwise provided in Paragraphs 3 and 4 of this Section, the spacing for such applications should be 2N (see Section 3B.14).*~~

~~Option:~~

~~03 Where it is desired to alert the road user to changes in the travel path, such as on sharp curves or on transitions that reduce the number of lanes or that shift traffic laterally, the spacing may be reduced to N or less.~~

~~04 On freeways and expressways, the spacing may be increased to 3N for relatively straight and level roadway segments where engineering judgment indicates that such spacing will provide adequate delineation under wet night conditions.~~

MoDOT has developed a policy for the use of inlaid pavement markers. Revised Dec. 2025

~~**Section 3B.16 Raised Pavement Markers Supplementing Other Markings**~~

~~*Guidance:*~~

~~*01 The use of retroreflective or internally illuminated raised pavement markers for supplementing longitudinal line markings should comply with the following:*~~

~~*A. Lateral Positioning*~~

~~*1. When supplementing double line markings, pairs of raised pavement markers placed laterally in line with or immediately outside of the two lines should be used.*~~

2. When supplementing wide line markings, pairs of raised pavement markers placed laterally adjacent to each other should be used.

B. Longitudinal Spacing

1. When supplementing solid line markings, raised pavement markers at a spacing no greater than N (see Section 3B.14) should be used, except that when supplementing channelizing lines or edge line markings, a spacing of no greater than N/2 should be used.

2. When supplementing broken line markings, a spacing no greater than 3N should be used. However, when supplementing broken line markings identifying reversible lanes, a spacing of no greater than N should be used.

3. When supplementing dotted lane line markings, a spacing appropriate for the application should be used.

4. When supplementing longitudinal line extension markings through at-grade intersections, one raised pavement marker for each short line segment should be used.

5. When supplementing line extensions through freeway interchanges, a spacing of no greater than N should be used.

02 Raised pavement markers should not supplement right-hand edge lines unless an engineering study or engineering judgment indicates the benefits of enhanced delineation of a curve or other location would outweigh possible impacts on bicyclists using the shoulder, and the spacing of raised pavement markers on the right-hand edge does not simulate a broken line during wet night conditions.

Option:

03 Raised pavement markers also may be used to supplement other markings such as channelizing islands, gore areas, approaches to obstructions, or wrong-way arrows.

04 To improve the visibility of horizontal curves, center lines may be supplemented with retroreflective or internally illuminated raised pavement markers for the entire curved section as well as for a distance in advance of the curve that approximates 5 seconds of travel time.

MoDOT has developed a policy for the use of inlaid pavement markers. Revised Dec. 2025

Section 3B.17 Raised Pavement Markers Substituting for Pavement Markings

Option:

01 Retroreflective or internally illuminated raised pavement markers, or non-retroreflective raised pavement markers supplemented by retroreflective or internally illuminated markers, may be substituted for markings of other types.

Guidance:

02 If used, the pattern of the raised pavement markers should simulate the pattern of the markings for which they substitute.

Standard:

03 Non-retroreflective raised pavement markers shall not be used alone, without supplemental retroreflective or internally illuminated markers, as a substitute for other types of pavement markings.

Support:

04 Section 6J.02 contains information for flexible temporary pavement markers used during surface treatment paving operations.

Standard:

05 If raised pavement markers are used to substitute for broken line markings, a group of three to five markers equally spaced at a distance no greater than N/8 (see Section 3B.14) shall be used. If N is other than 40 feet, the markers shall be equally spaced over the line segment length (at ½ points for three markers, at ⅓ points for four markers, and at ¼ points for five markers). At least one retroreflective or internally illuminated marker per group shall be used or a retroreflective or internally illuminated marker shall be installed midway in each gap between successive groups of non-retroreflective markers.

~~**06 When raised pavement markers substitute for solid line markings, the markers shall be equally spaced at no greater than N/4, with retroreflective or internally illuminated units at a spacing no greater than N/2.**~~

~~*Guidance:*~~

~~*07 Raised pavement markers should not substitute for right-hand edge line markings unless an engineering study or engineering judgment indicates the benefits of enhanced delineation of a curve or other location would outweigh possible impacts on bicyclists using the shoulder, and the spacing of raised pavement markers on the right-hand edge line does not simulate a broken line during wet night conditions.*~~

~~**Standard:**~~

~~**08 When raised pavement markers substitute for dotted lines, they shall be spaced at no greater than N/4, with not less than one raised pavement marker per dotted line segment. At least one raised marker every N shall be retroreflective or internally illuminated.**~~

~~Option:~~

~~09 When substituting for wide lines, raised pavement markers may be placed laterally adjacent to each other to simulate the width of the line.~~

~~Support:~~

~~10 Section 5B.02 contains information on raised pavement marker considerations for driving automation systems.~~

MoDOT has developed a policy for the use of inlaid pavement markers. Revised Dec. 2025

Section 3B.18 Curb Markings for Delineation ~~Parking Regulations~~

Option:

M00A Barrier curbs on the outside shoulder with a minimum height of 6 inches may be marked for the purpose of delineation.

Guidance:

M00B Barrier curbs which are located in the line of traffic flow where the curb serves to channel traffic should be marked, even in cases in which they otherwise would not be marked as indicated in the following paragraph.

M00C Curbs should not be marked in the following cases:

A. *Where the posted speed limit is 40 mph or less.*
B. *Curbs that diverge from the normal traffic flow for commercial and private entrances.*
C. *Curbs that are mountable (see Missouri Standard Plans for Highway Construction https://www.modot.org/media/16880).*

Option:

M00D The first 200 ft. of a barrier curb may also be painted in the above cases to mark the beginning of these barriers (See Fig. 620.2.16).

MoDOT policy for curb marking. Revised Dec. 2025

Guidance:

01 ~~Except as provided in Paragraph 4 of this Section,~~ since yellow and white curb markings are ~~frequently~~ used for curb delineation and visibility, parking regulations should be established through the installation of standard signs (see Sections 2B.53 and 2B.54).

~~*02 Where curbs are marked to convey parking regulations in areas where curb markings are frequently obscured by snow and ice accumulation, signs should be used with the curb markings except as provided in Paragraph 4 of this Section.*~~

~~*03 Except as provided in Paragraph 4 of this Section, when curb markings are used without signs to convey parking regulations, a legible word marking regarding the regulation (such as "No Parking" or "No Standing") should be placed on the curb.*~~

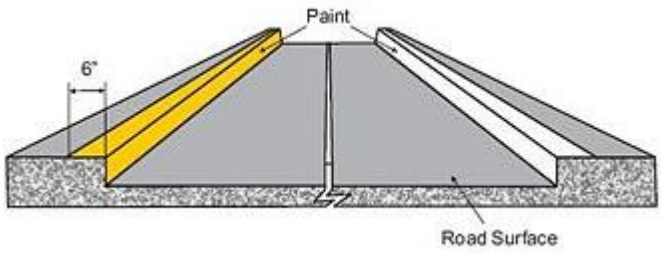
~~Option:~~

~~04 Curb markings without word markings or signs may be used to convey a general prohibition by statute of parking within a specified distance of a stop sign, YIELD sign, driveway, fire hydrant, or crosswalk.~~

~~05 Local highway agencies may prescribe special colors for curb markings to supplement standard signs for parking regulation.~~

MoDOT marks curbs for delineation, not to convey parking regulations. Revised Dec. 2025

Figure 620.2.16 Painted Curb Marking for Barrier Curbs



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.

MoDOT does not use R1-5b, R1-5c, or R1-5e signs. Revised Dec. 2025

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).

Standard:

05 Stop lines ~~*should*~~ shall be ~~*12 to*~~ 24 inches wide.

MoDOT uses only 24-inch stop lines. Revised Dec. 2025

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 (R1-5e) sign~~, a traffic control signal, or some other traffic control device.

MoDOT does not use R1-5b, R1-5c, or R1-5e signs. Revised Dec. 2025

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.

M10A The individual triangles comprising the yield line shall have a base of 24 inches wide and a height of 36 inches. The space between the triangles shall be 8 to 12 inches. The spacing of triangles in a yield line shall be consistent for that marking. See Section 620 of the Missouri Standard Plans for Highway Construction (https://www.modot.org/media/16896).

MoDOT requirements for yield lines. Revised Dec. 2025

Option:

M10B Yield lines may be considered for those locations where a channelized right turn lane is developed but there is not an acceleration lane on the intersecting road.

M10C Yield lines may also be used where engineering judgment indicates a need.

MoDOT specific content from the EPG. Revised Dec. 2025

~~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.~~

MoDOT does not use R9-6 signs. Revised Dec. 2025

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.*~~

Yield triangle size upgraded to a Standard statement in paragraph 10A. Revised Dec. 2025

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. Stop lines can be adjusted using engineering judgement to accommodate pedestrian facilities or improve safety, but the stop line in the lane closest to the right-hand edge of the roadway should be placed a maximum of 10 feet in advance of the nearest crosswalk. 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.

Statement added to provide flexibility in stop bar location to enhance safety for vulnerable road users. Revised Dec. 2025

M13A Stop lines should be placed to allow sufficient sight distance to all other approaches to an intersection.

M13B When a stop line is used in conjunction with the STOP sign it should be placed adjacent to, or in line with, the STOP sign.

M13C When a yield line is used in conjunction with the YIELD sign it should be placed adjacent to, or in line with, the YIELD sign.

MoDOT specific content from the EPG. Revised Dec. 2025

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.

MoDOT does not use Stop Here for Pedestrians signs. Revised Dec. 2025

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).

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.

~~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.

MoDOT does not use Stop Here for Pedestrians signs. Revised Dec. 2025

Support:

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

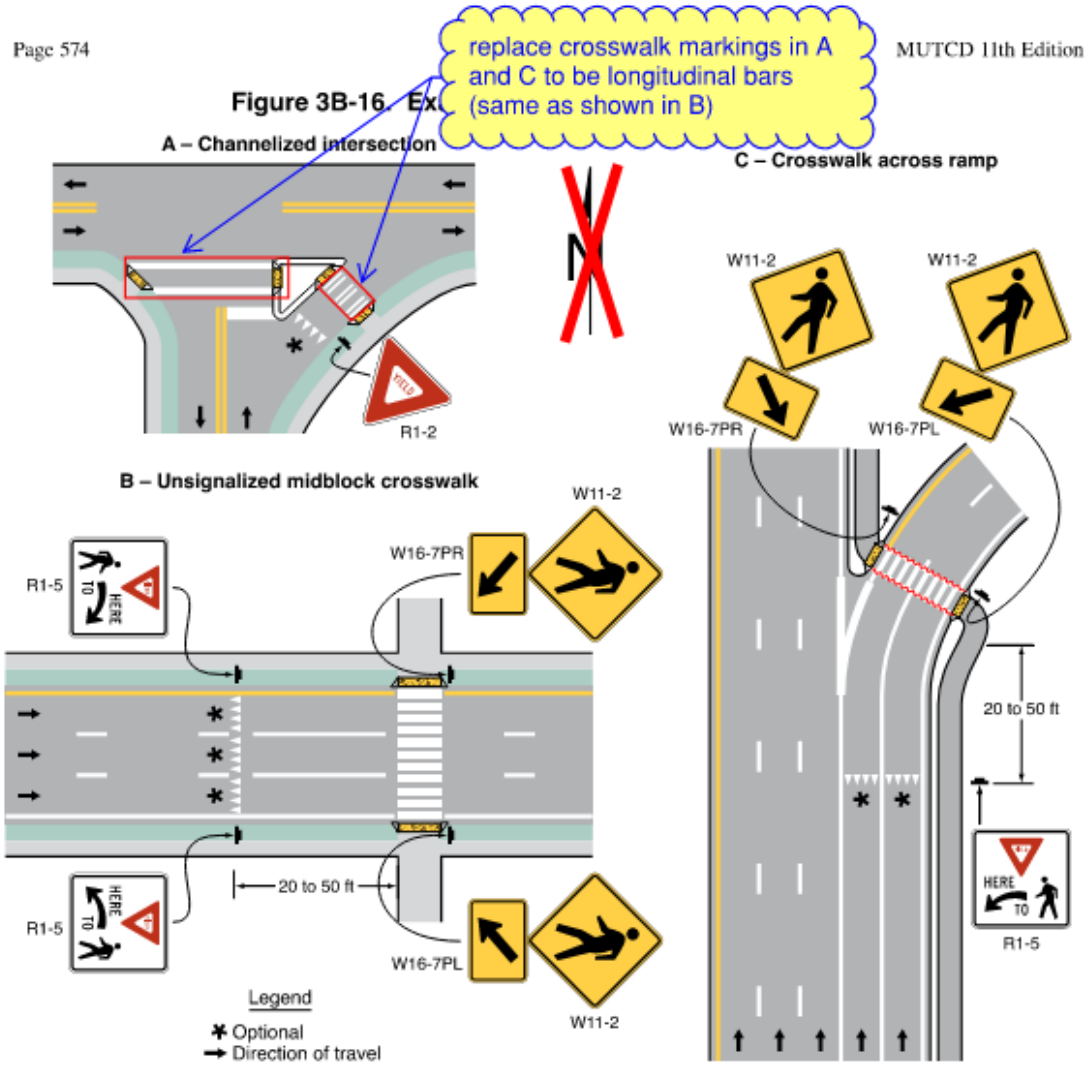
Option:

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.

Figure 3B-16. Examples of Yield Line Applications



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

Support:

01 Word, symbol, and arrow markings on the pavement are used for the purpose of regulating, warning, or guiding traffic. These pavement markings can be helpful to road users in some locations by supplementing signs and providing additional emphasis for important regulatory, warning, or guidance messages, because the markings do not require diversion of the road user's attention from the roadway surface. Symbol messages are preferable to word messages. Examples of standard word and arrow pavement markings are shown in Figures 3B-17 and 3B-21, respectively. See Section 620 of the Missouri Standard Plans for Highway Construction (https://www.modot.org/media/16896).

Option:

02 Word, symbol, and arrow pavement markings may be used as determined by engineering judgment to supplement signs and/or to provide additional emphasis for regulatory, warning, or guidance messages provided by other devices.

Support:

03 Section 8C.04 contains information for arrow pavement markings in the vicinity of grade crossings.

Standard:

04 Word, symbol, and arrow markings shall be white and retroreflective, except as otherwise provided in this ~~Section~~ article.

Option:

M04A Black contrast markings may be used in combination with white pavement markings on light-colored pavements, such as concrete, to enhance visibility.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

05 Pavement marking letters, numerals, symbols, and arrows shall be installed in accordance with the design details in the Pavement Markings chapter of the FHWA's "Standard Highway Signs" publication (see Section 1A.05).

Guidance:

06 Word, symbol, and/or arrow markings that are grouped together to formulate one interrelated message should not exceed three lines of information.

07 Except for the two opposing white arrows of a two-way left-turn lane marking (see Figure 3B-7) ~~and the pavement word marking messages described in Items B and D of Paragraph 2 of Section 3B.26~~, the longitudinal space between word, symbol, and/or arrow markings that are used together to formulate one interrelated message should be ~~at least~~ four times the height of the characters ~~for low-speed roads, but not more than ten times the height of the characters under any conditions~~.

M07A When conveying mandatory messages, these markings should only be used as supplementary devices to the standard signs.

MoDOT specific content from the EPG. Revised Dec. 2025

08 ~~Except for the SCHOOL word marking (see Section 7C.02),~~ pavement word, symbol, and arrow markings should be no more than one lane in width.

MoDOT does not use the SCHOOL pavement marking. Revised Dec. 2025

09 Pavement word, symbol, and arrow markings should be proportionally scaled to fit within the width of the facility upon which they are applied.

Option:

10 On narrow, low-speed shared-use paths, the pavement words, symbols, and arrows may be smaller than suggested, but to the relative scale.

~~11 On roadways where the operating speed is less than 25 mph, word, symbol, and arrow markings may be proportionally reduced by 25 percent.~~

Section 3B.21 Word Pavement Markings

Guidance:

01 Letters and numerals should be 6 feet or more in height, except as provided in Section 9E.01 for the BIKE LANE word pavement marking ~~and in Section 9E.15 for a bicycle detector symbol and WAIT HERE FOR GREEN word pavement marking~~.

MoDOT does not use the bicycle detector symbol or the WAIT HERE FOR GREEN pavement marking. Revised Dec. 2025

M01A The spacing between pavement word and symbol markings is approximate and should be adjusted as field conditions warrant.

MoDOT specific content from the EPG. Revised Dec. 2025

02 If a pavement marking word message consists of more than one line of information, it should read in the direction of travel. The first word of the message should be nearest to the road user.

Standard:

03 The word STOP shall not be placed on the pavement in advance of a stop line, unless every vehicle is required to stop at all times.

Guidance:

04 Where through lanes approaching an intersection become mandatory turn lanes, ONLY word pavement markings (see Figure 3B-17) should be used in addition to signs (see Sections 2B.27 and 2B.28) and the required lane-use arrow markings (see Section 3B.23).

Modified to a Standard statement to reflect MoDOT policy. Revised Dec. 2025

Option:

05 The ONLY word marking may be used to supplement the lane-use arrow markings in lanes that are designated for the exclusive use of a single movement such as turn bays.

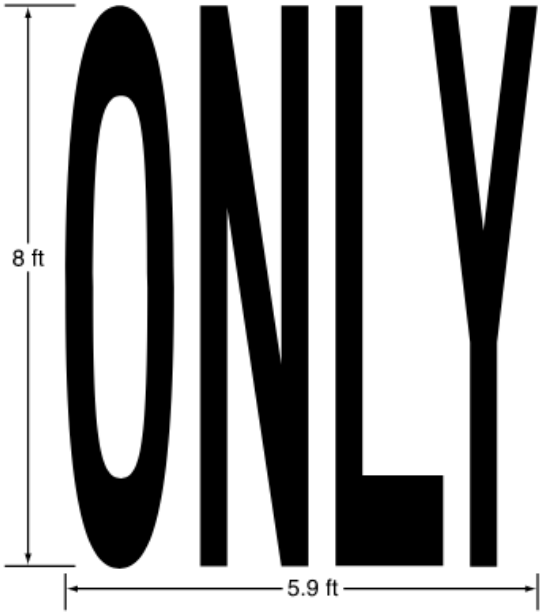
06 The ONLY word marking may be used to supplement a preferential lane word or symbol marking (see Section 3E.03).

~~07 On roadways where the operating speed is less than 25 mph, word markings may be proportionally reduced by 25 percent.~~

Standard:

08 The ONLY word marking shall not be used in a lane that is shared by more than one movement.

Figure 3B-17. Example of Elongated Letters for Word Pavement Markings



Section 3B.22 Symbol Pavement Markings

Support:

~~01 Section 3E.03 contains information on the diamond-shaped symbol for high-occupancy vehicle (HOV) lanes.~~

02 Chapter 9E contains information on symbol markings that can be used for bicycle lanes.

Option:

03 Pavement markings simulating Interstate, U.S., State, and ~~County~~ other official highway route signs (see Figure 2D-4) with appropriate route numbers, but elongated for proper proportioning when viewed as a marking, may be used to guide road users to their destinations (see Figure 3B-18).

The MoDOT system includes lettered routes. County route markers are not used in Missouri. Therefore the Option language from the 2009 Edition of the MUTCD is included in this statement. Revised Dec. 2025

Guidance:

04 If route sign markings are provided to guide road users, those route sign markings should be provided in option lanes if markings are provided in any lanes.

05 If two route sign markings are provided in an option lane, they should be placed in sequence and not divided around an optional lane arrow.

Support:

06 Section 3A.03 provides information on route sign colors.

~~07 Section 9E.14 contains information on route markers for designated bicycle routes that can be used on shared-use paths.~~

MoDOT does not adopt Section 9E.14. Revised Dec. 2025

Guidance:

08 The International Symbol of Accessibility parking space marking (see Figure 3B-19) should be placed in each parking space designated for use by persons with disabilities.

Option:

09 A blue background with white border may supplement the wheelchair symbol as shown in Figure 3B-19.

10 A yield-ahead triangle symbol or YIELD AHEAD word pavement marking may be used on approaches to intersections where the approaching traffic will encounter a YIELD sign at the intersection.

Standard:

11 The yield-ahead triangle symbol or YIELD AHEAD word pavement marking shall not be used unless a YIELD sign (see Section 2B.05) is in place at the intersection. The yield-ahead triangle symbol marking shall be as shown in Figure 3B-20.

Option:

12 A pedestrian symbol pavement marking may be used on portions of facilities that are reserved exclusively for pedestrian use, such as where a shared-use path transitions to become separate facilities for different types of users.

Figure 3B-18. Examples of Elongated Route Shields and Markers Applied as Pavement Markings

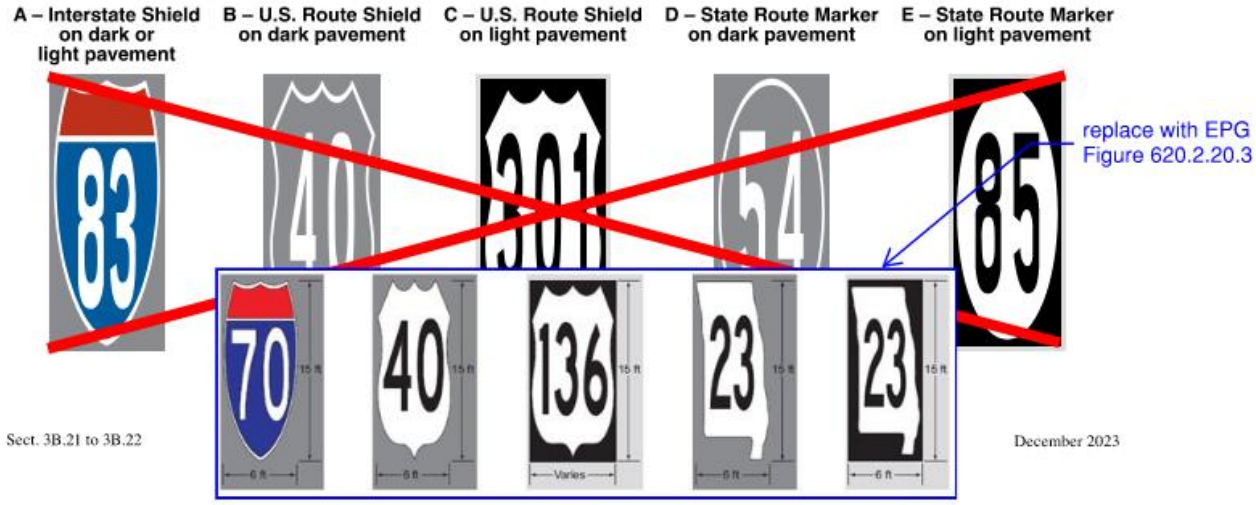


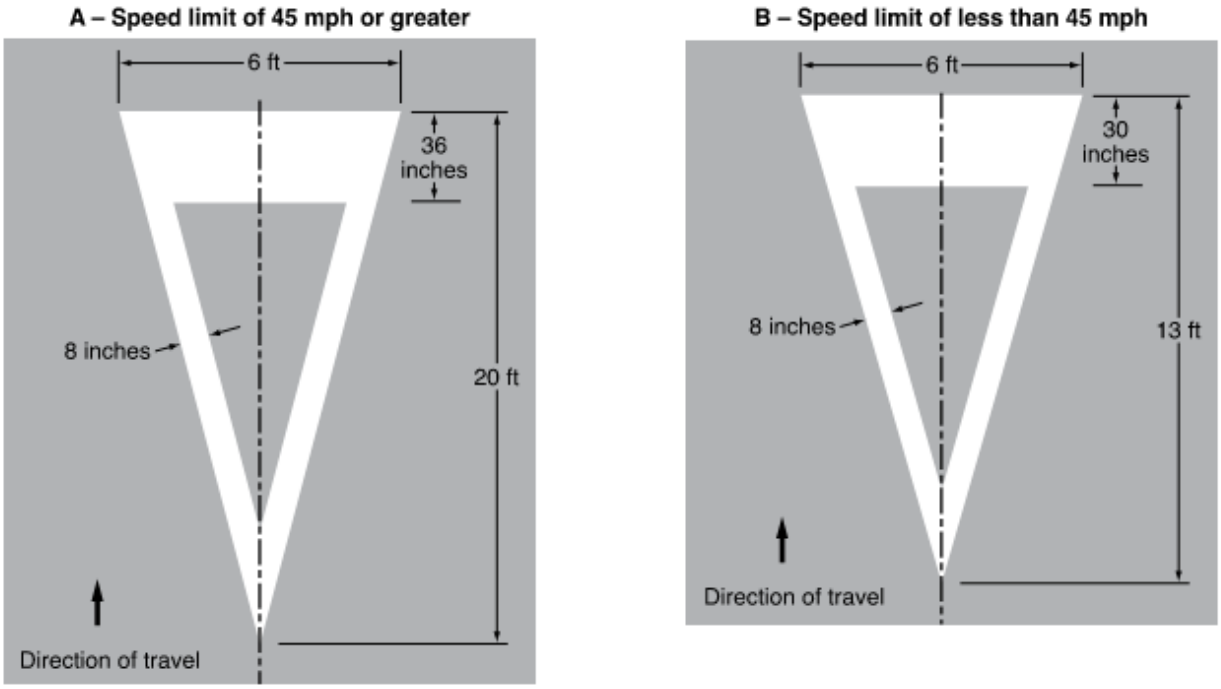
Figure 3B-19. International Symbol of Accessibility Parking Space Markings



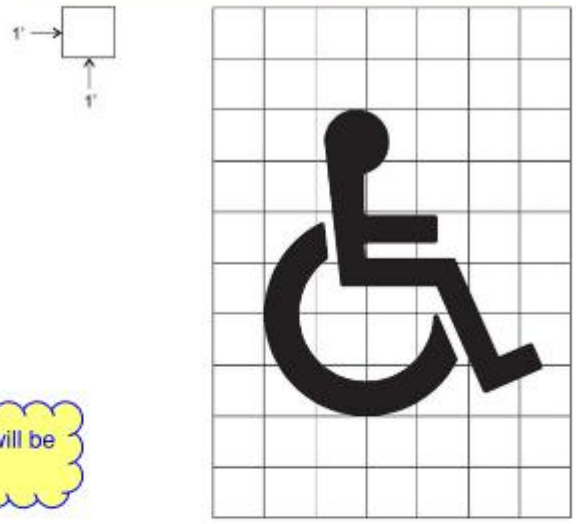
Notes:

1. See the "Standard Highway Signs" publication for sizes and details
2. The blue-colored background with white border is optional

Figure 3B-20. Yield Ahead Triangle Symbols

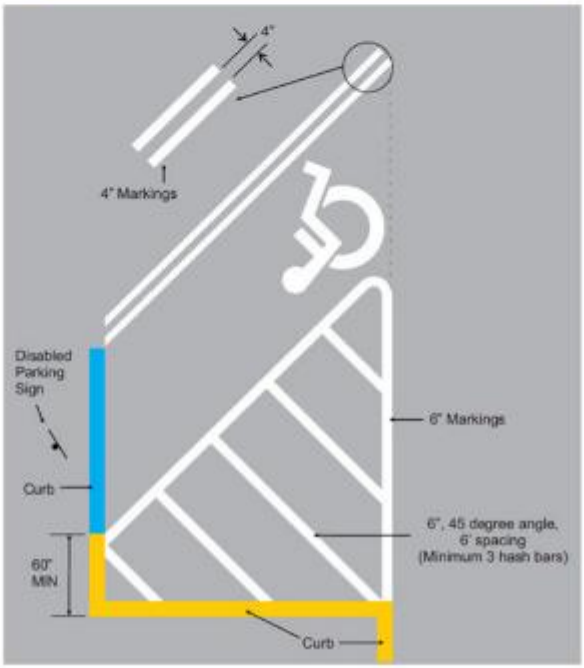


EPG Figure 620.2.19.3 Disabled Symbol Detail



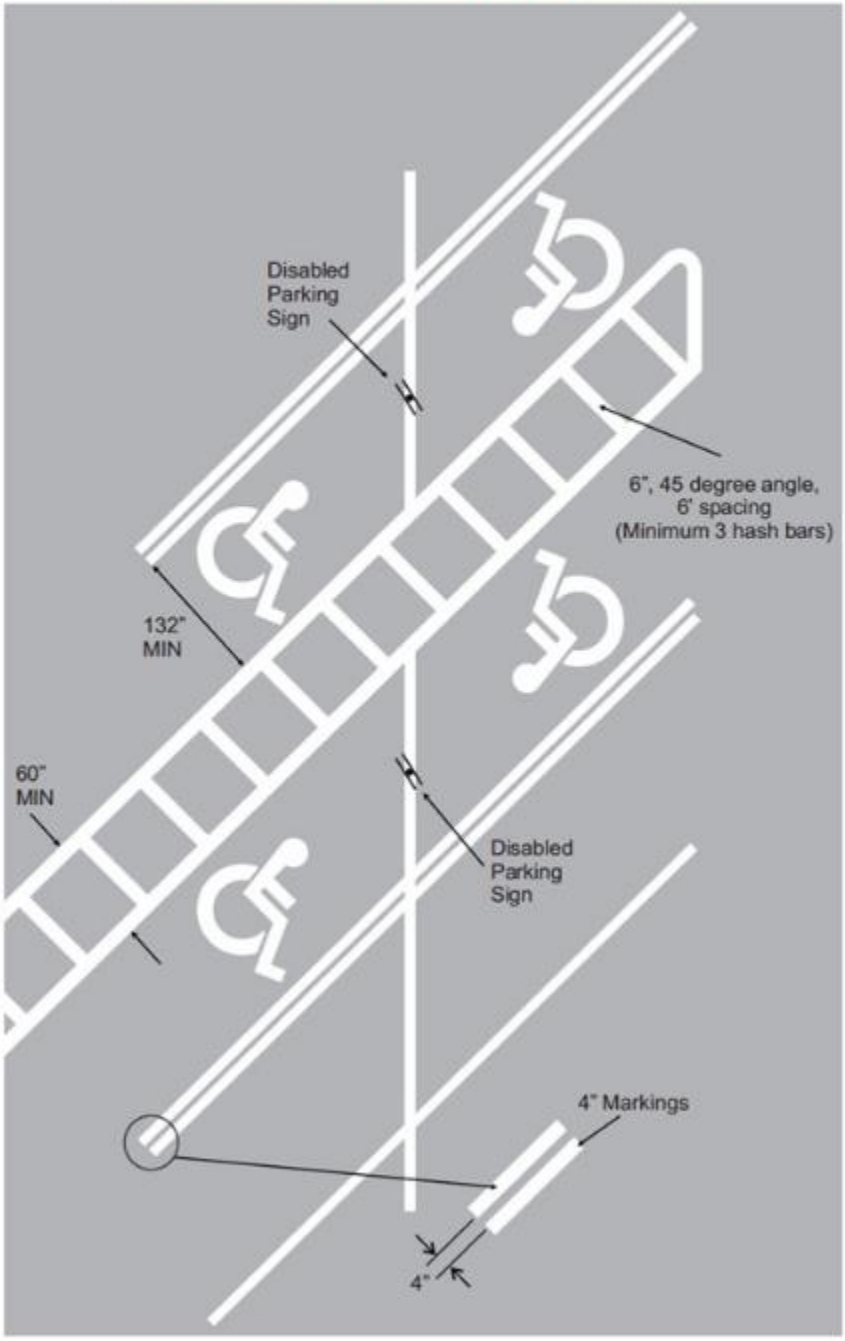
EPG figures that will be included as is

EPG Figure 620.2.19.4 Disabled Parking Area



EPG figure that will be included as is

EPG Figure 620.2.19.5 Disabled Parking Area Multiple



Section 3B.23 Lane-Use Arrows

Support:

01 Lane-use arrow markings (see Figure 3B-21) are used to indicate the mandatory or permissible movements in certain lanes (see Figure 3B-22) and in two-way left-turn lanes (see Figure 3B-7).

02 Section 8C.04 contains information about the placement of lane-use arrow markings in the vicinity of grade crossings.

Guidance:

03 Lane-use arrow markings should be used in lanes and turn bays designated for the exclusive use of a turning movement, except where engineering judgment determines that physical conditions or other markings (such as a dotted extension of the lane line through the taper into the turn bay) clearly discourage unintentional use of a turn bay by through vehicles. Lane-use arrow markings should also be used in lanes from which movements are allowed that are contrary to the normal rules of the road (see Drawing B in Figure 3B-13).

~~*04 When used in turn lanes, at least two arrows should be used, one at or near the upstream end of the full-width turn lane and one an appropriate distance upstream from the stop line or intersection (see Drawing A in Figure 3B-12).*~~

M04A The placement of arrows in channelizing lanes should be determined by the length of the lane and the following criteria (see Fig. 620.2.20.4 Spacing of Arrows in Left Turn Lanes):

A. The first arrow should be placed 75 ft. in advance of the stop line.

B. The second arrow should be placed 200 ft. in advance of the stop line.

C. Any additional arrows should be placed in 200 ft. increments.

MoDOT specific content from the EPG. Revised Dec. 2025

05 Where opposing offset channelized left-turn lanes exist, lane-use arrow markings should be placed near the downstream terminus of the offset left-turn lanes to reduce wrong-way movements ~~**(see Figure 2B-20)**~~.

~~Option:~~

~~06 An additional arrow or arrows may be used in a turn lane. When arrows are used for a short turn lane, the second (downstream) arrow may be omitted based on engineering judgment.~~

MoDOT policy above determines the number and location of arrows in a turn lane. Revised Dec. 2025

M06A The distances between arrows may be adjusted if there are special circumstances that warrant the change.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

07 An arrow at the downstream end of a turn lane can help to prevent wrong-way movements.

Standard:

08 Where through lanes approaching an intersection become mandatory turn lanes, turn lane-use arrow markings (see Drawing A in Figure 3B-12 and Figure 3B-21) shall be used and shall be accompanied by standard signs (see Section 2B.28) and the required ONLY word pavement markings (see Section 3B.21).

Standard:

M08A If used, the ONLY word pavement marking shall be placed in advance of each lane-use arrow for mandatory turn lanes or in advance of a preferential lane word or symbol marking.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

09 Where through lanes approaching an intersection become mandatory turn lanes, the required ONLY word markings (see Figure 3B-17) ~~*should be used in addition to*~~*, signs (see Sections 2B.27 and 2B.28),* *and* ~~*the required*~~ *turn lane-use arrow markings.* ~~*These signs and markings*~~ *should be placed well in advance of the*

turn and should be repeated as necessary to provide the through motorist advance notification to vacate the lane prior to reaching a point where roadway geometrics or a queue of waiting vehicles forces the motorist to make an unintended turn.

M09A Spacing between the arrow and the ONLY should be four times the height of the ONLY. The use of ONLY should not apply to exit ramps.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

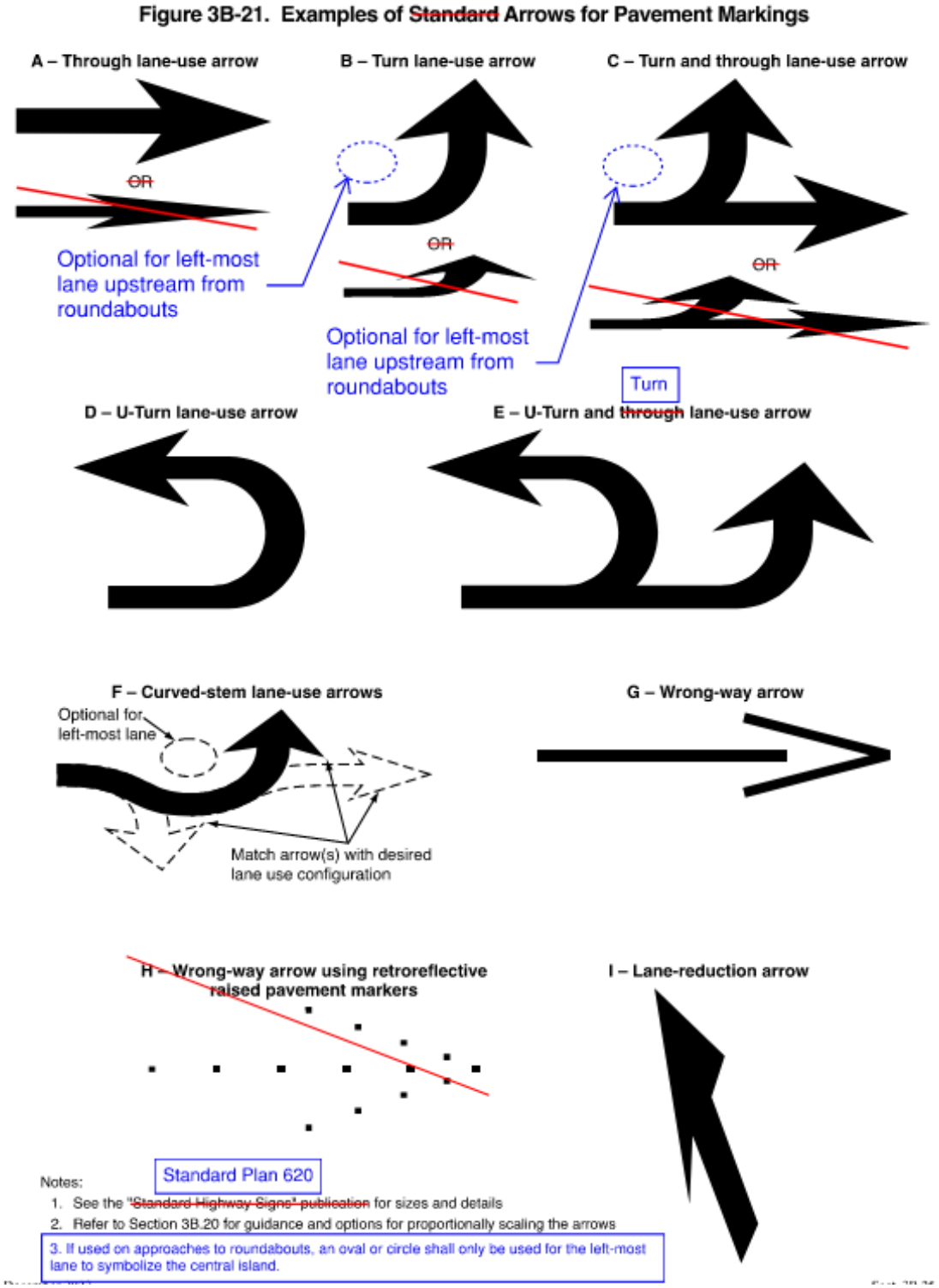
10 On freeways or expressways where a through lane becomes a mandatory exit lane, lane-use arrow markings may be used on the approach to the exit in the dropped lane and in an adjacent optional through-or-exit lane if one exists.

Guidance:

M11 The use of straight arrows should be reserved for special cases, such as, locations where crashes have occurred as a result of vehicles making turns from the through lanes.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 3B-21. Examples of Standard Arrows for Pavement Markings



EPG Figure 620.2.20.4 Spacing of Arrow in Left-Turn and Right-Turn Lanes

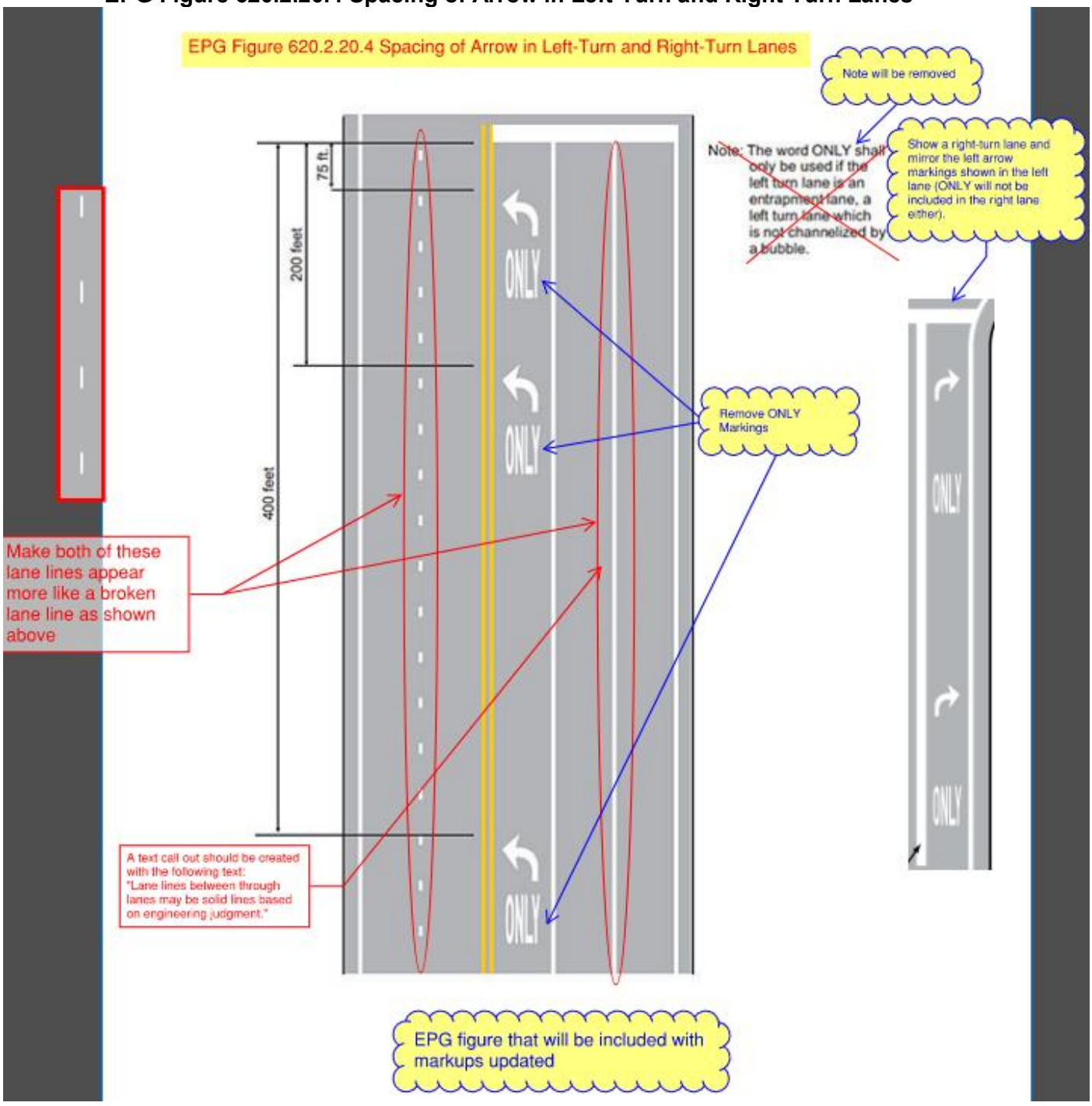
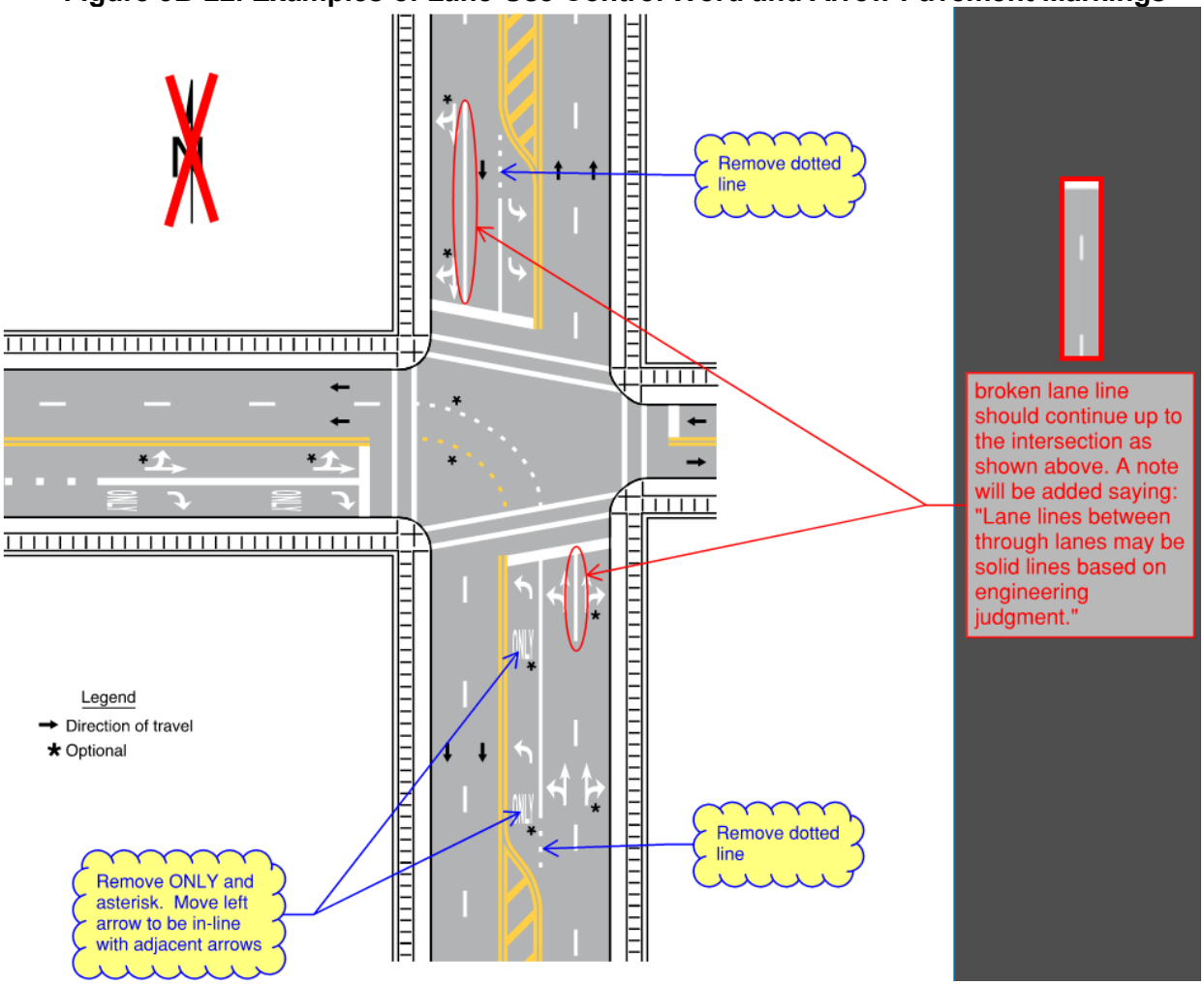


Figure 3B-22. Examples of Lane-Use Control Word and Arrow Pavement Markings



Section 3B.24 Wrong-Way Arrows

Guidance:

01 Where crossroad channelization or ramp geometrics do not make wrong-way movements difficult, the appropriate lane-use arrow should be placed in each lane of an exit ramp near the crossroad terminal where it will be clearly visible to a potential wrong-way road user (see Figure 2B-15).

Option:

02 The wrong-way arrow markings shown in Drawing G in Figure 3B-21 may be placed near the downstream terminus of a ramp as shown in Figure 2B-15 and in Drawing A in Figure 2B-16, or at other locations where lane-use arrows are not appropriate, to indicate the correct direction of traffic flow and to discourage drivers from traveling in the wrong direction.

M03 Directional pavement arrows may be used as a substitute for the wrong-way arrows when wrong-way arrows are required.

M04 A maximum of two wrong-way arrows may be provided on a ramp, the placement of the second arrow is dependent upon the design and length of the ramp. Exit ramps that do not contain islands at the intersection of the exit ramp and the crossroad may receive one wrong-way pavement arrow at the top of the ramp. Ramps constructed with islands at the intersection of the exit ramp and the crossroad may receive two wrong-way arrows at the top of the ramp, one arrow on each side of the island.

M05 Wrong-way pavement arrows may be placed on one way outer roads to further indicate the proper direction to travel.

Standard:

M06 In the case of two lane ramps where wrong-way pavement arrows are used, one arrow shall be provided for each lane.

Guidance:

M07 If used, the point of the wrong-way arrow should be located a distance of 25 ft. from the end of the ramp and the intersecting crossroad. When wrong-way arrows are used on one-way outer roads, the arrows should be installed 25 ft. in advance of the point where the edge of the crossroad and the outer road meet. Where a stop line has been provided, the arrow should be placed 25 ft. in advance of this marking.

M08 On ramps where directional pavement arrows have been provided to aid the motorist in proper lane usage, the wrong-way pavement arrows should not be used.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 3B.25 Chevron and Diagonal Markings

Support:

01 Chevron or diagonal markings are used to discourage travel on certain paved areas, such as shoulders, neutral areas, and flush median islands.

Guidance:

M01A Chevrons should be installed in the neutral area of gores when the following conditions are present:

- *A. A gore length of 250 ft or greater; and*
- *B. Exit lanes depart from through lanes at a low angle leaving a long distance between the theoretical and physical gore (See drawing B in Figure 3B-9).*

M01B Chevrons installed in the neutral area of gores should include a minimum of 3 chevron lines with 50 ft spacing consistent with the note on Standard 620.00 sheet 1.

M01C Chevrons should not be used when there is less than 6 feet of distance between channelizing lines to avoid markings that are not identifiable as a chevron.

Option:

02 Chevron and diagonal markings may be used:

- A. On approaches to obstructions in the roadway (see Sheet 2 of Figure 3B-15),
- B. For channelized travel paths on approaches to intersections,

C. In buffer spaces between preferential lanes and general-purpose lanes (see Drawing A in Figure 3E-2), and

~~D. In the neutral area gores (see Figures 3B-9 through 3B-11),~~

~~E. In the neutral area of bifurcations created from open-road tolling lanes that bypass a conventional toll plaza,~~

~~F. In the neutral areas at access and egress points to and from a managed-lane facility (see Figures 2G-8, 2G-10, 2G-22, and 2G-23), and~~

G. In the neutral areas of islands.

~~03 Chevron markings may be supplemented with white retroreflective or internally illuminated raised pavement markers (see Section 3B.16) for enhanced nighttime visibility.~~

MoDOT does not use pavement markers to supplement chevron markings. Revised Dec. 2025

Support:

04 Section 5B.02 contains information on chevron markings for driving automation system considerations.

Standard:

05 Chevron markings shall be white, with the point of each chevron facing toward approaching traffic, as shown in Figures 3B-9 through 3B-11, and Drawing C in Figure 3B-15.

Option:

06 Diagonal markings for opposing directions of traffic may be used:

A. On approaches to obstructions in the roadway (see Drawings A and B in Figure 3B-15),

B. In flush median islands between double solid yellow center line markings (see Figure 3B-5), and

C. In buffer spaces between preferential lanes and general-purpose lanes (see Drawing D in Figure 3E-4).

07 Diagonal markings may be used on paved shoulders or in no-parking zones, or other locations for special emphasis.

Standard:

08 When diagonal markings are used between opposing directions of traffic or on the left shoulder of a one-way or divided roadway, they shall be yellow and slant away from traffic in the adjacent travel lanes, as shown in Figures 3B-2 and 3B-5, and Drawings A and B in Figure 3B-15.

09 When diagonal markings are used on the right shoulder or in no-parking zones (see Figure 3B-23), they shall be white and slant away from traffic in the adjacent travel lane.

~~*Guidance:*~~

10 Except as provided in ~~*Paragraph 11 of this Section*~~ the second Option paragraph below, chevrons and diagonal markings ~~*should be at least 12*~~ shall be 24 inches wide ~~*for roadways having a speed limit of 45 mph or greater, and at least 8 inches wide for roadways having a speed limit of less than 45 mph.*~~ The longitudinal spacing of the chevrons or diagonal lines ~~*should*~~ shall be 50 feet, with a minimum of three chevron or diagonal markings being used per application ~~*determined by engineering judgment considering factors such as speeds and desired visual impacts*~~. The chevrons and diagonal lines ~~*should*~~ shall form an angle of approximately ~~30 to~~ 45 degrees with the longitudinal lines that they intersect.

Modify paragraph to a Standard and include MoDOT specific content from the EPG. Revised Dec. 2025

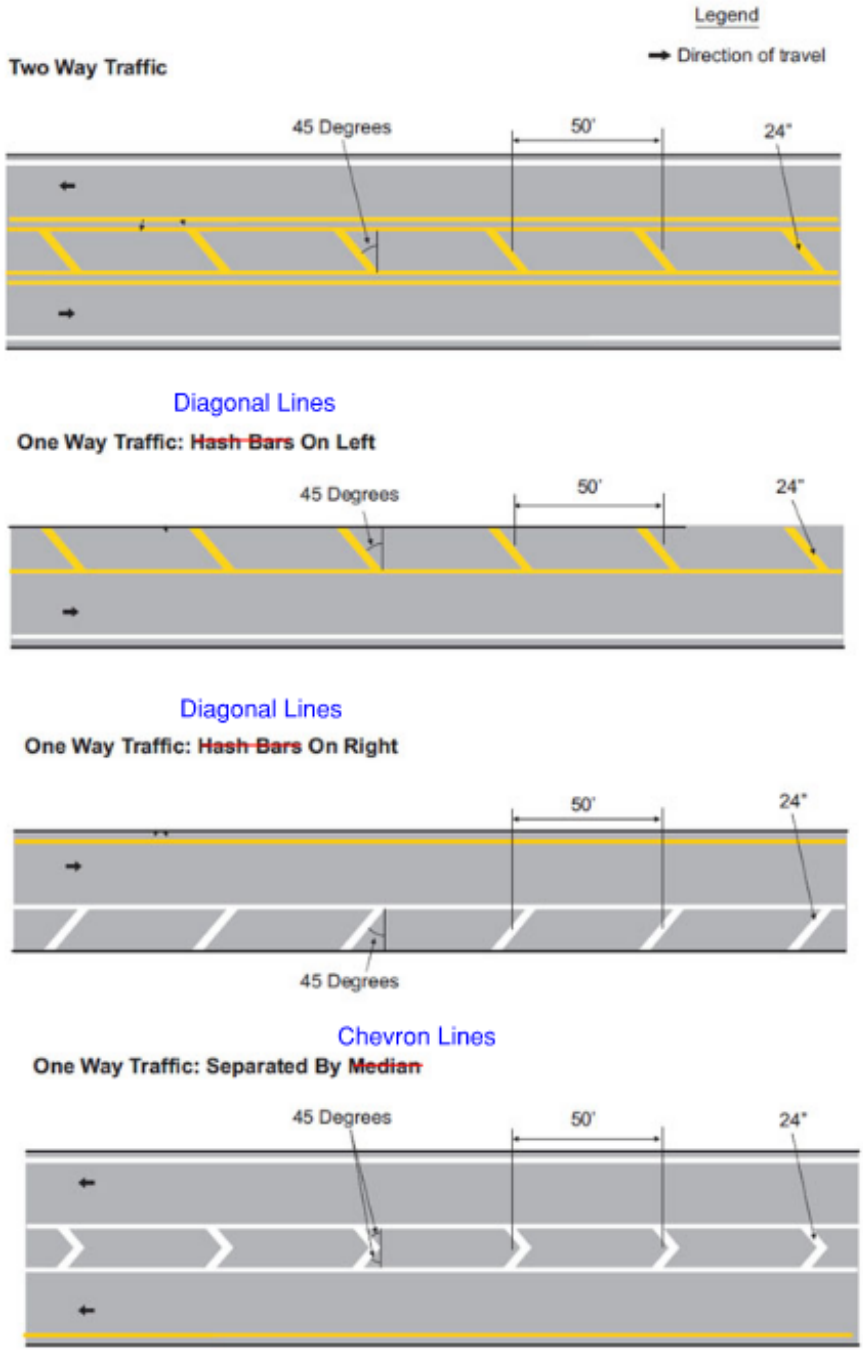
Option:

M10A If there is insufficient space to install a minimum of three chevron or diagonal markings at 50 foot longitudinal spacing, the longitudinal spacing may be reduced.

MoDOT specific content from the EPG. Revised Dec. 2025

11 Diagonal markings used in no-parking zones or on roadways with operating speeds of less than 25 mph may be 4 inches wide (see Figure 3B-23).

EPG Figure 620.2.23. Typical Chevron and Diagonal Markings



Section 3B.26 Do Not Block Intersection Markings

Option:

01 Do Not Block Intersection markings may be used to mark the edges of an intersection area that is in close proximity to a signalized intersection, railroad crossing, or other nearby traffic control that might cause vehicles to stop within the intersection and impede other traffic entering the intersection. If authorized by law, Do Not Block Intersection markings with appropriate signs may also be used at other locations.

Standard:

02 If used, Do Not Block Intersection markings (see Figure 3B-24) shall consist of ~~one of the following alternatives:~~

~~**A. Wide solid white lines that outline the intersection area that vehicles must not block;**~~

~~**B. Wide solid white lines that outline the intersection area that vehicles must not block and a white word message such as DO NOT BLOCK or KEEP CLEAR;**~~

~~**C.** **Wide solid white lines 8 to 12 inches wide that outline the intersection area that vehicles must not block and white cross-hatching 4 in. to 6 in. wide within the intersection area~~~~; or~~**

~~**D. A white word message, such as DO NOT BLOCK or KEEP CLEAR, within the intersection area that vehicles must not block.**~~

MoDOT specific content from the EPG. Revised Dec. 2025

03 Do Not Block Intersection markings shall be accompanied by one or more DO NOT BLOCK INTERSECTION (DRIVEWAY) (CROSSING) (R10-7) signs (see Section 2B.59), one or more DO NOT STOP ON TRACKS (R8-8) signs (see Section 8B.07), or one or more similar signs.

Section 3B.27 Parking Space Markings

Standard:

01 On-street parking space markings shall be white.

Support:

02 Examples of on-street parking space markings are shown in Figure 3B-23.

~~Option:~~

~~03 Blue lines may supplement white parking space markings of each parking space designated for use only by persons with disabilities (see Figure 3B-23).~~

Support:

04 Additional parking space markings for the purpose of designating spaces for use only by persons with disabilities are discussed in Section 3B.22 and illustrated in Figure 3B-19.

EPG Figure 620.2.19.1 Examples of Parking Space Markings

Figure 3B-23. Examples of Parking Space Markings

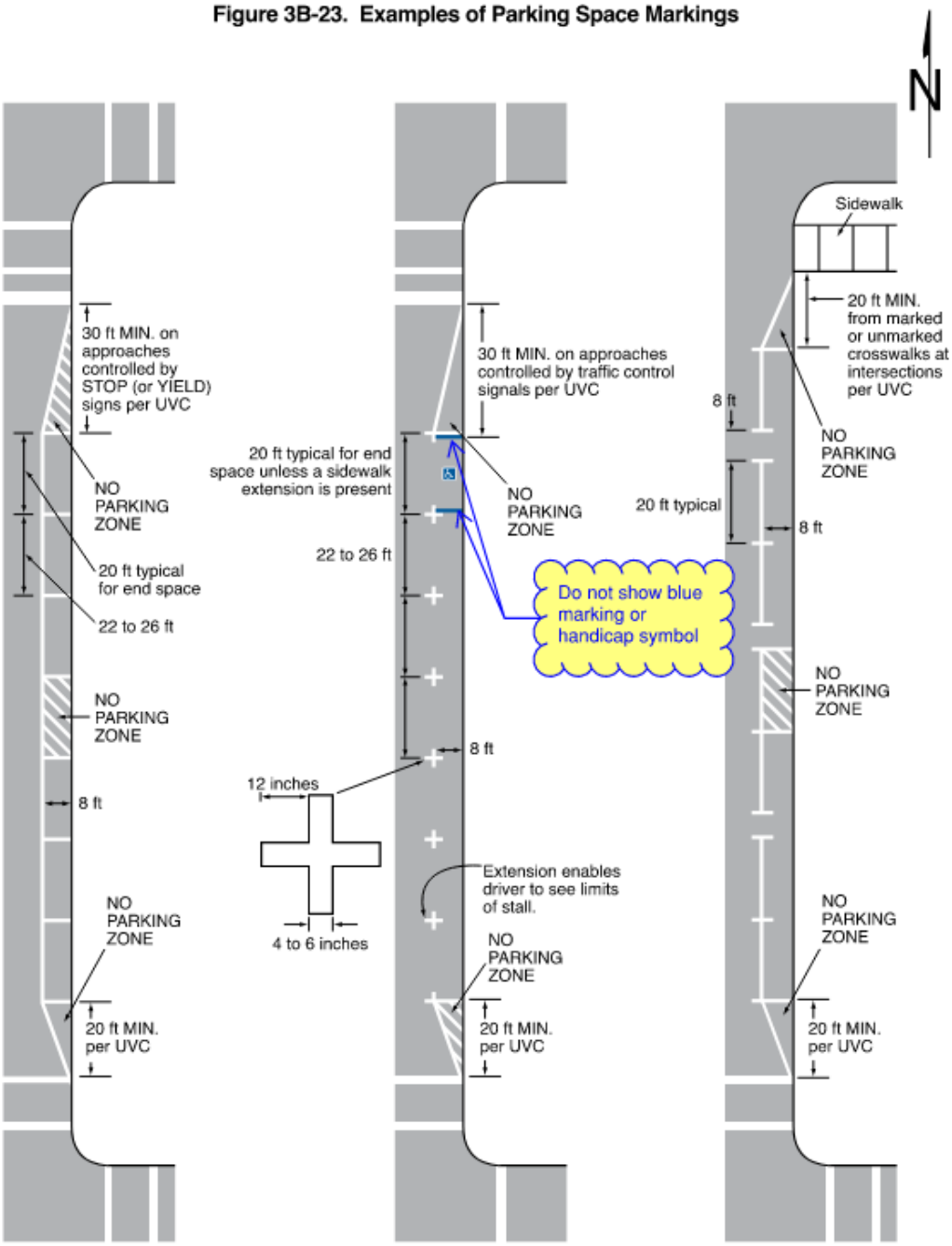
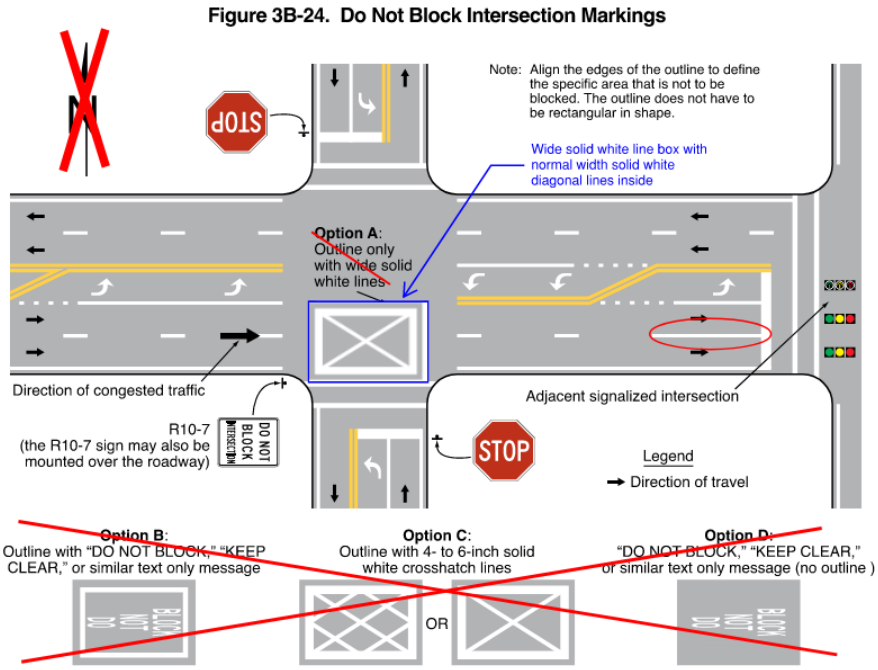


Figure 3B-24. Do Not Block Intersection Markings



~~Section 3B.28 Speed Reduction Markings~~

~~Support:~~

~~01 Speed reduction markings (see Figure 3B-25) are transverse markings that are placed on the roadway within a lane (along both edges of the lane) in a pattern of progressively reduced spacing to give drivers the impression that their speed is increasing.~~

~~02 Speed reduction markings have been shown to enhance safety around curves and locations with a history of run-off-the-road crashes when applied in combination with horizontal alignment warning signs (see Section 2C.05).~~

~~Option:~~

~~03 Speed reduction markings may be placed in advance of an unexpectedly severe horizontal or vertical curve or other roadway feature where drivers need to decelerate prior to reaching the feature and where the desired reduction in speeds has not been achieved by the installation of warning signs and/or other traffic control devices.~~

~~*Guidance:*~~

~~*04 If used, speed reduction markings should be reserved for unexpected curves or other usages based on engineering judgment. Speed reduction markings should not be used on long tangent sections of roadway or in areas frequented mainly by local or familiar drivers, such as school zones. If used, speed reduction markings should supplement the appropriate warning signs and other traffic control devices and should not substitute for these devices.*~~

~~**Standard:**~~

~~**05 Speed reduction markings shall be a series of white transverse lines on both sides of the lane that are perpendicular to the center line, edge line, or lane line.**~~

~~*Guidance:*~~

~~*06 The longitudinal spacing between the markings should be progressively reduced from the upstream to the downstream end of the marked portion of the lane.*~~

~~*07 Speed reduction markings should not be greater than 12 inches in width, and should not extend more than 18 inches into the lane.*~~

~~**Standard:**~~

~~**08 Speed reduction markings shall be used only in lanes that have a longitudinal line (center line, edge line, or lane line) on both sides of the lane.**~~

Speed reduction markings are not use by MoDOT. Revised Dec. 2025

Figure 3B-25. Example of the Application of Speed Reduction Markings

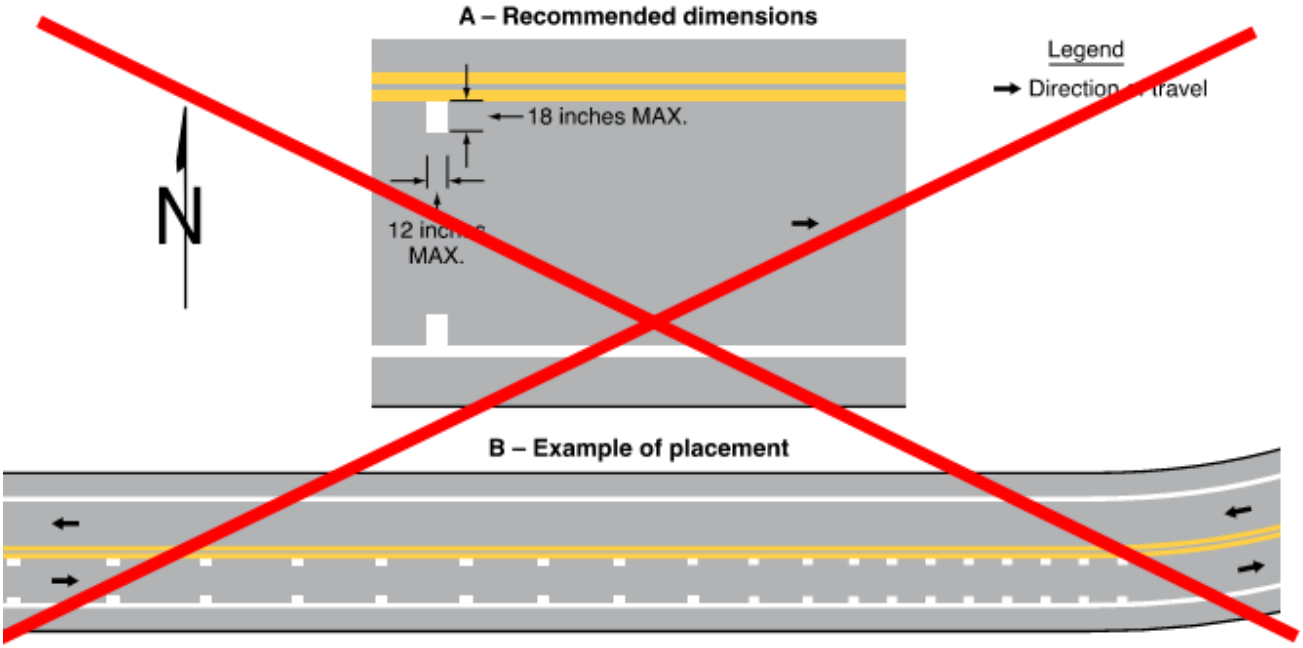


Figure is not adopted by MoDOT. Revised Dec. 2025

Section 3B.29 Speed Hump and Speed Table Markings

Guidance:

M00 Speed humps and speed tables are generally not used on MoDOT-maintained facilities. Districts should contact the State Highway Safety and Traffic Engineer for approval prior to installation.

Standard:

01 If speed hump markings are used, they shall be a series of white markings placed on a speed hump to identify its location. If markings are used for a speed hump that does not also function as a crosswalk or speed table, the markings shall comply with Option A, B, or C shown in Figure 3B-26. If markings are used for a speed hump that also functions as a crosswalk or speed table, the markings shall comply with Option A or B shown in Figure 3B-27.

Option:

02 Where used, center line markings, lane line markings, and edge lines may be discontinued on the profile of the speed hump.

Standard:

03 Where a speed hump or a speed table specifically incorporates a crossing movement for pedestrians, bicyclists, or equestrians, and functions as a raised crosswalk, crosswalk markings (see Chapter 3C) shall be provided.

Figure 3B-26. Pavement Markings for Speed Humps without Crosswalks

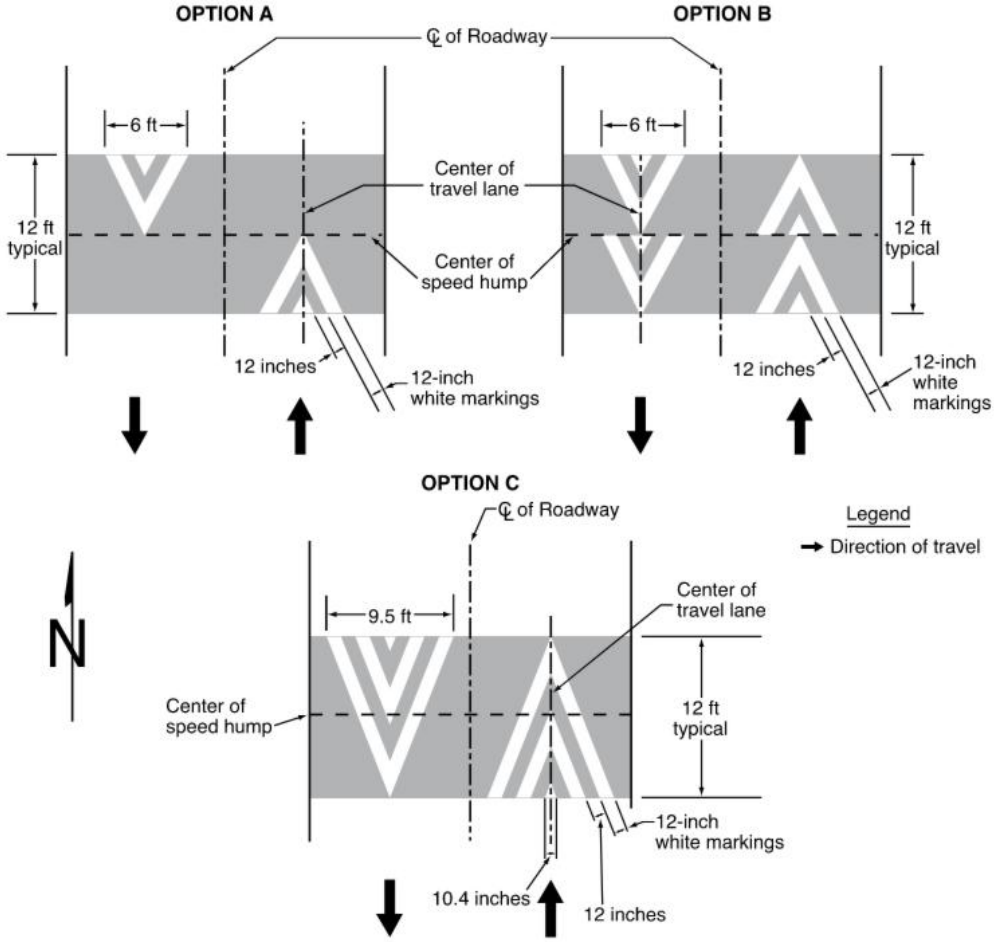
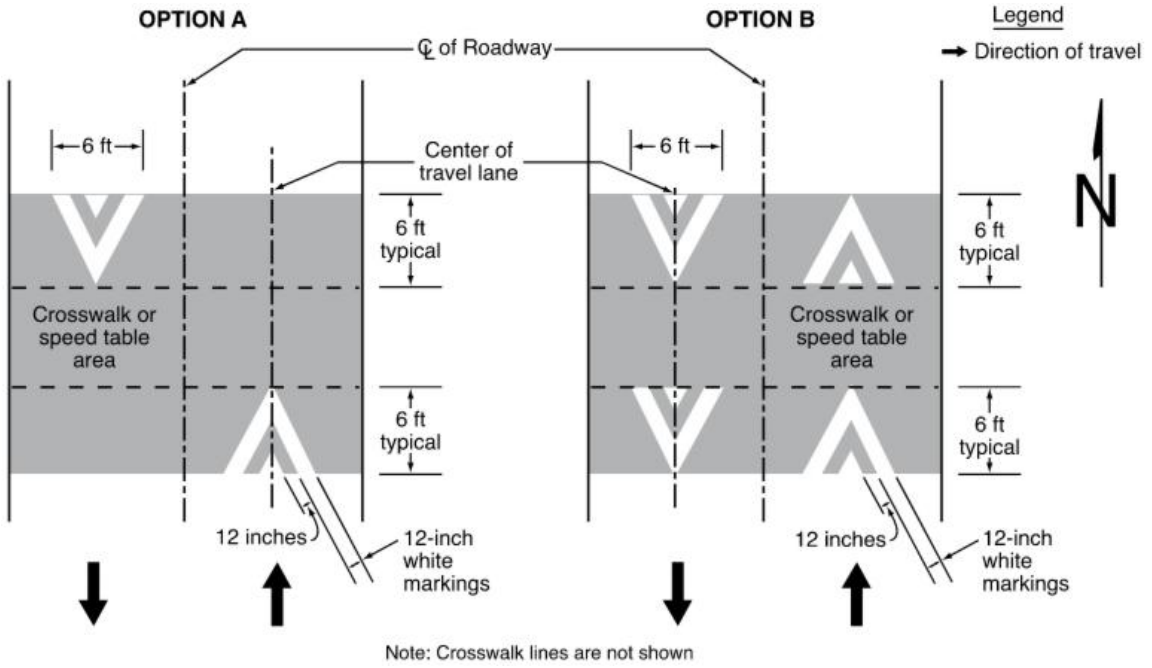


Figure 3B-27. Pavement Markings for Speed Tables or Speed Humps with Crosswalks



Section 3B.30 Advance Speed Hump and Speed Table Markings

Guidance:

M00A Advance speed hump markings are generally not used on MoDOT-maintained facilities. Districts should contact the State Highway Safety and Traffic Engineer for approval prior to installation.

Option:

01 Advance speed hump markings (see Figure 3B-28) may be used in advance of speed humps or other engineered vertical roadway deflections such as dips where added visibility is desired or where such deflection is not expected.

02 Advance word pavement markings such as BUMP or HUMP (see Section 3B.20) may be used on the approach to a speed hump either alone or in conjunction with advance speed hump markings. Appropriate advance warning signs may be used in compliance with Section 2C.27.

Standard:

03 If advance speed hump or speed table markings are used, they shall be a series of eight white 12-inch transverse lines that become longer and are spaced closer together as the vehicle approaches the speed hump or other deflection. ~~**If advance markings are used, they shall comply with the detailed design shown in Figure 3B-28.**~~

Guidance:

04 If used, advance speed hump markings should be installed in each approach lane.

Figure 3B-28. Advance Warning Markings for Speed Humps or Speed Tables

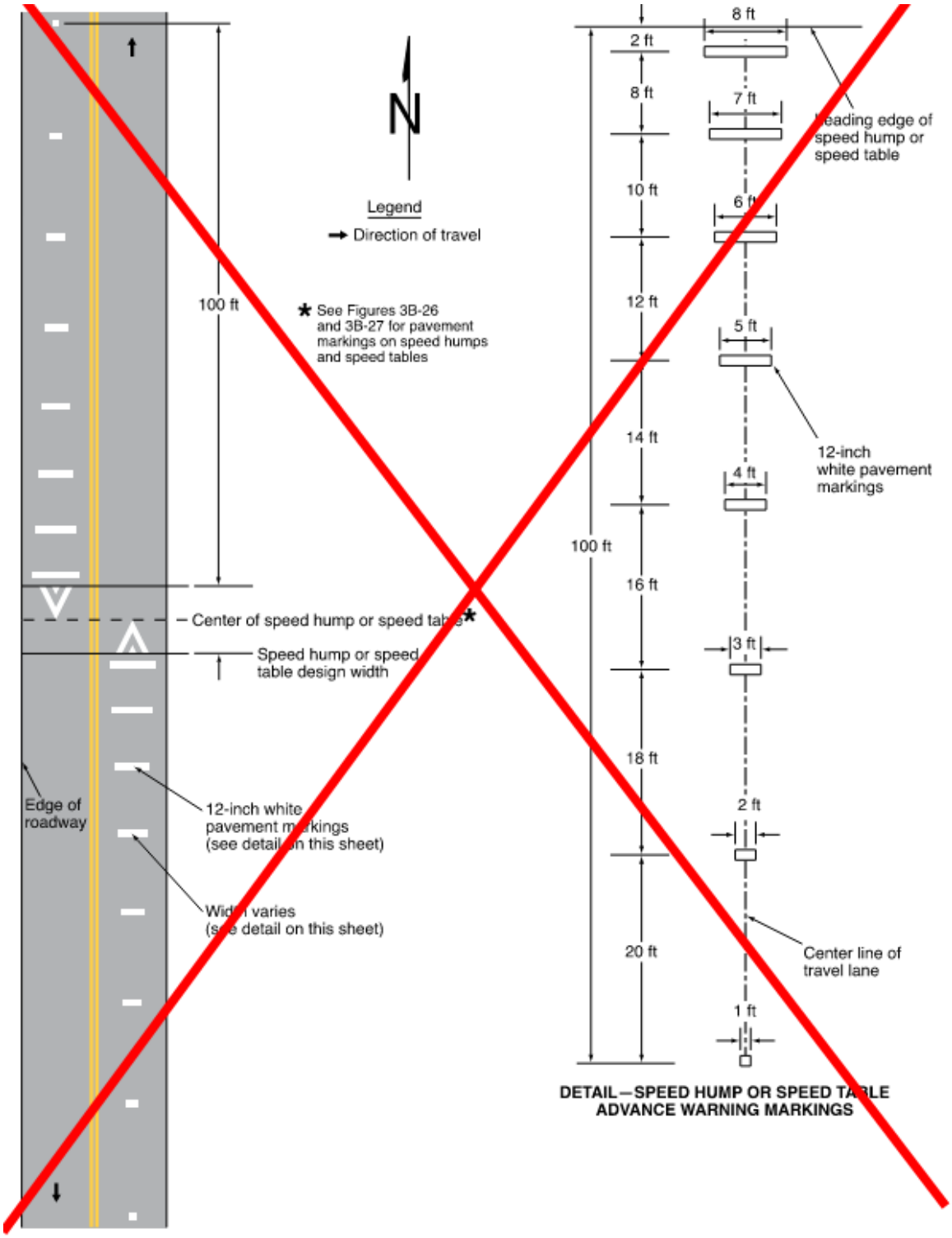


Figure is not adopted by MoDOT. Revised Dec. 2025

Section 3B.30A Aircraft Speed Measurement Markings

Support:

M01 An aircraft speed measurement marking is a transverse marking placed on the roadway to assist the enforcement of speed regulations.

Standard:

M02 Aircraft speed check markings shall only be installed after the District Engineer or the District Engineer's representative receives a request from the Missouri State Highway Patrol. A member of the Highway Patrol shall be present when these stations are placed to verify their location and spacing for legal purposes.

M03 Speed measurement markings, if used, shall be white, and shall be 24 in. x 24 in. and the distance between the block shall be 660 ft., measured from the leading edge of the first block to the leading edge of the second block. This distance shall be measured on the actual pavement surface and is the same for all posted speeds (See Fig. 620.2.21, Pavement Marking for Aircraft Speed Check Stations).

M04 The markings shall be reflective, and are to be placed on the center of each driving lane.

M05 Those markings, which have been improperly installed shall be removed.

Option:

M06 A third block may be installed at the special request of the Highway Patrol.

M07 If the Highway Patrol wishes to only check traffic flowing in one direction, these markings may be omitted from the opposing lanes.

Guidance:

M08 Aircraft speed check markings should receive periodic inspection to ensure they are maintained in an acceptable and functional manner. Existing aircraft speed check markings that are no longer in use should be allowed to deteriorate.

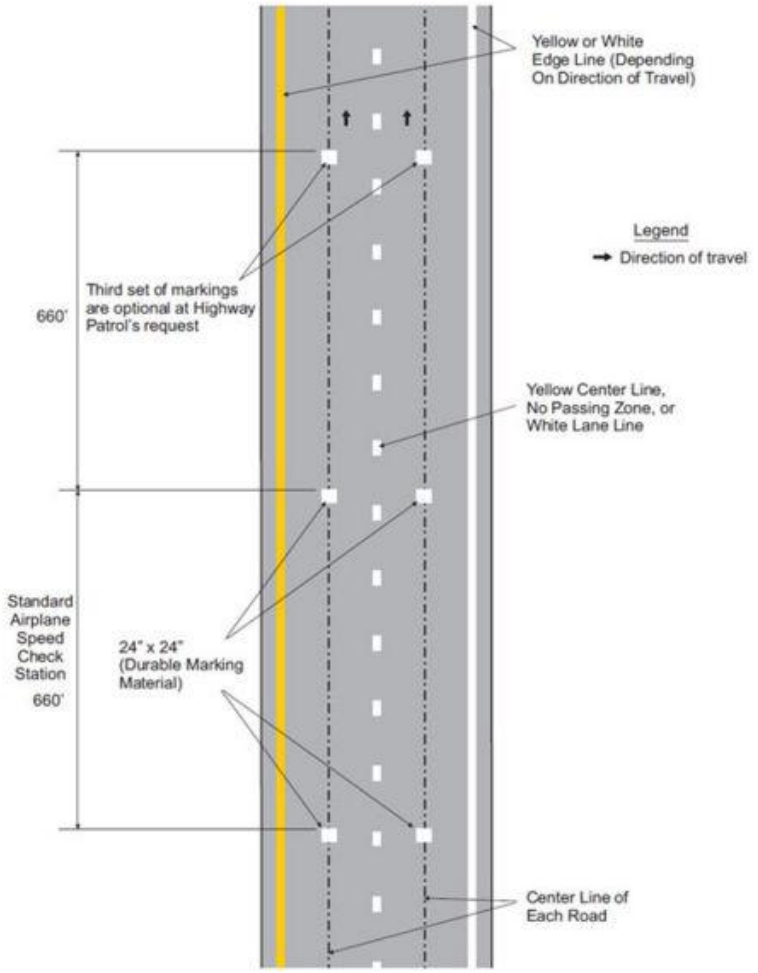
M09 The application of any material should be done following the manufacturer's recommendations for installation.

Option:

M10 On concrete surfaces, black may be used to provide contrast of the speed blocks.

MoDOT specific content from EPG. Was included in 2009 Edition of the MUTCD. Revised Dec. 2025

EPG Figure 620.2.21 Pavement Marking for Aircraft Speed Check Stations



Section 3B.31 Markings for a Diverging Diamond Interchange with a Transposed Alignment Crossroad

Support:

01 Markings used in a diverging diamond interchange with a transposed alignment crossroad can be advantageous for minimizing wrong-way movements. The potential for wrong-way movements is greatest at the crossover intersections where the alignment becomes transposed.

Standard:

02 On the transposed alignment, each direction shall be considered a one-way roadway whereas the edge line convention shall be in accordance with Section 3B.09. Both yellow and white edge lines shall be used.

03 A lane-use arrow (see Section 3B.23) shall be used in each approach lane at the crossover intersection.

Support:

04 Section 3C.11 contains information on crosswalks and pedestrian movements for diverging diamond interchanges with a transposed alignment crossroad.

Standard:

05 Flush median islands (see Section 3J.03) shall not be used to divide the inverted flow of traffic.

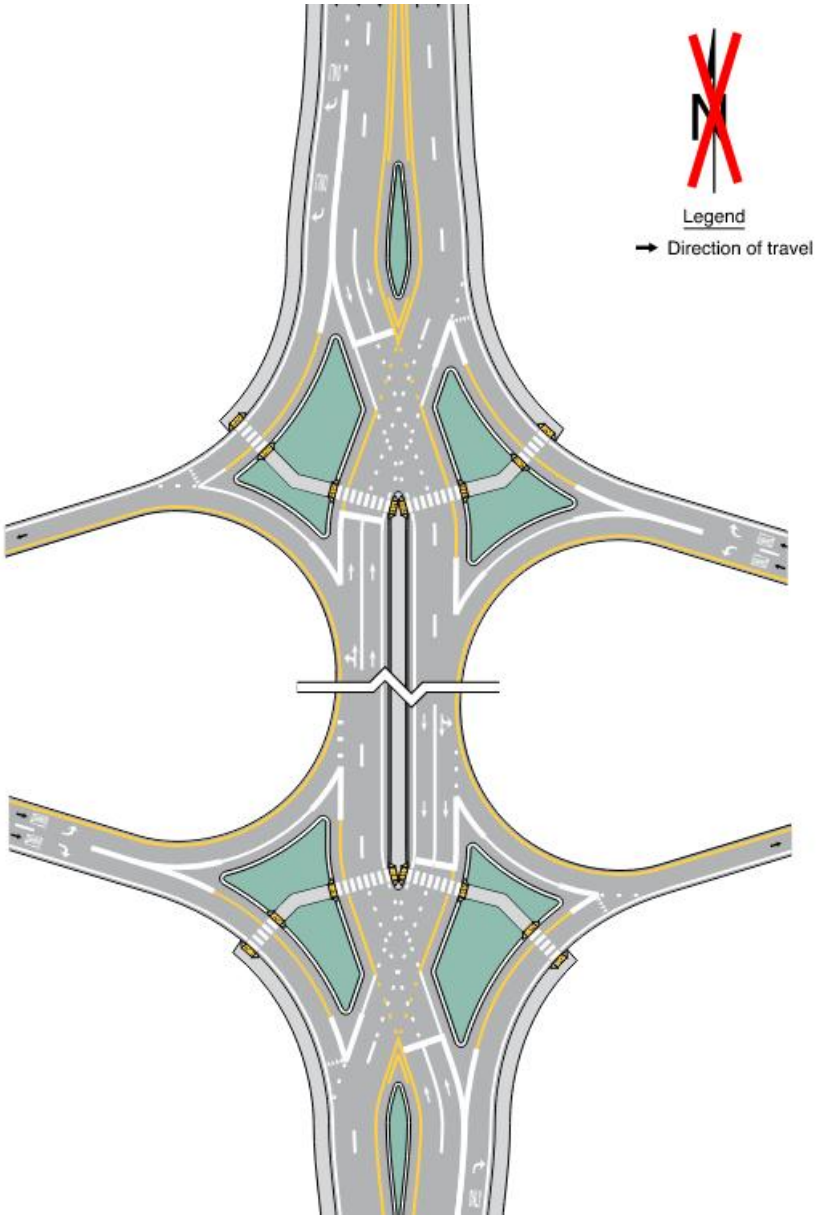
Guidance:

06 Edge line and lane line extensions (see Section 3B.11) should be provided through the crossing points.

Support:

07 Figure 3B-29 illustrates an example of pavement markings for a diverging diamond interchange with a transposed alignment crossroad.

Figure 3B-29. Example of Pavement Markings for a Diamond Interchange with a Transposed Alignment Crossroad (Diverging Diamond Interchange)



CHAPTER 3C. CROSSWALK MARKINGS [EPG 620.3]

Section 3C.01 General

Support:

01 Crosswalk markings provide guidance for pedestrians who are crossing roadways by defining and delineating paths on approaches to and within signalized intersections, and on approaches to other intersections where traffic stops.

02 In conjunction with signs and other measures, crosswalk markings help to alert road users of a designated pedestrian crossing point across roadways at locations that are not controlled by traffic control signals or STOP or YIELD signs.

03 At non-intersection locations, crosswalk markings legally establish the crosswalk.

04 Detectable warning surfaces mark boundaries between pedestrian and vehicular ways where there is no raised curb. Detectable warning surfaces are typically installed where curb ramps are constructed at the junction of sidewalks and the roadway or shoulder, for marked and unmarked crosswalks. Detectable warning surfaces contrast visually with adjacent walking surfaces, either light-on-dark, or dark-on-light. The U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990 contains specifications for the design of detectable warning surfaces.

Section 3C.02 Application of Crosswalk Markings

Guidance:

01 At locations controlled by traffic control signals, crosswalk markings should be installed.

Option:

02 Crosswalk markings may be omitted if engineering judgment indicates they are not needed to direct pedestrians to the proper crossing path(s).

Guidance:

03 On approaches controlled by STOP or YIELD signs, crosswalk markings should be installed where engineering judgment indicates they are needed to direct pedestrians to the proper crossing path(s).

04 At uncontrolled approaches, an engineering study should be performed before a marked crosswalk is installed. The following criteria should be considered:

A. Total number of approach lanes,
B. The presence of a median,
C. The distance from adjacent signalized intersections or other controlled crossings,
D. Projected pedestrian and bicyclist volumes,
E. Pedestrian and bicyclist paths of travel,
F. Pedestrian ages and abilities,
G. Pedestrian and bicyclist delays,
H. Location or frequency of public transit stops,
I. Average daily traffic (ADT),
J. Speed limit or the 85th-percentile speed,
K. The horizontal and vertical geometry of the crossing location,
L. The possible consolidation of multiple crossing points,
M. The availability of street lighting, and
N. Other appropriate factors.

Standard:

05 Crosswalk markings shall be provided at legally established crosswalks at non-intersection locations.

M05A Where a shared-use path crosses a roadway, crosswalk markings shall be used.

Standard paragraph relocated from Section 9E.13. Revised Dec. 2025

Guidance:

06 The installation of other traffic control devices and other measures designed to reduce traffic speeds, shorten crossing distances, enhance driver awareness of the crossing, and/or provide active warning of pedestrian presence, should be considered in addition to a new marked crosswalk and signs across an uncontrolled roadway where any of the following conditions exist:

A. The roadway has four or more lanes of travel without a raised median or pedestrian refuge island and an ADT of 12,000 vehicles per day or greater; or

B. The roadway has four or more lanes of travel with a raised median or pedestrian refuge island and an ADT of 15,000 vehicles per day or greater, or

C. The posted speed limit is 40 mph or greater, or

D. A crash study reveals that multiple-threat crashes are the predominant crash type on a multi-lane approach, or

E. When adequate visibility cannot be provided by parking prohibitions.

Support:

07 Chapter 4J contains information on pedestrian hybrid beacons.

08 Chapter 4L contains information on rectangular rapid flashing beacons.

09 Section 4S.03 contains information regarding Warning Beacons to provide active warning of a pedestrian's presence.

10 Section 4U.02 contains information regarding In-Roadway Warning Lights at crosswalks.

11 Chapter 7C contains information on school crosswalks.

12 Chapter 7D contains information regarding school crossing supervision.

~~13 Section 9E.13 contains information on crosswalk markings for shared-use path crossings.~~

Section 3C.03 Design of Crosswalk Markings

Support:

01 Section 3B.19 contains information regarding placement of stop line markings and yield line markings near crosswalk markings.

02 Crosswalk markings are classified as either transverse line or high-visibility. Transverse crosswalk markings consist of two transverse lines. High-visibility markings consist of longitudinal lines parallel to traffic flow ~~with or~~ without transverse lines. Figure 3C-1 presents crosswalk marking designs.

Standard:

03 Crosswalk markings shall be white. When used, transverse lines shall ~~not~~ be ~~less than~~ 6 inches ~~or greater than 24 inches~~ in width.

~~Support:~~

~~04 The allowable upper limit approaching 24 inches for the width of the transverse lines is normally applied where no stop or yield line is used in advance of the crosswalk or when approach speeds exceed 35 miles per hour.~~

MoDOT uses 6-inch lines for transverse crosswalk markings. Revised Dec. 2025

Standard:

05 Except as provided in ~~Paragraph 6 of this Section~~ the following paragraph, the minimum width of a marked crosswalk shall be 6 feet.

06 At a non-intersection crosswalk where the posted speed limit is 40 mph or greater, the minimum width of the crosswalk shall be 8 feet.

Guidance:

07 High-visibility crosswalk markings (such as shown in Figure 3C-1) and warning signs (see Section 2C.55) should be installed for all crosswalks at non-intersection locations.

08 Added visibility should be provided by parking prohibitions on the approach to marked crosswalks at non-intersection locations.

Standard:

09 Where curb ramps are provided, crosswalk markings shall be located so that the curb ramps are within the extension of the crosswalk markings.

Guidance:

10 Transverse line crosswalk markings should extend across the full width of pavement or to the edge of the intersecting crosswalk to discourage diagonal walking between crosswalks.

Support:

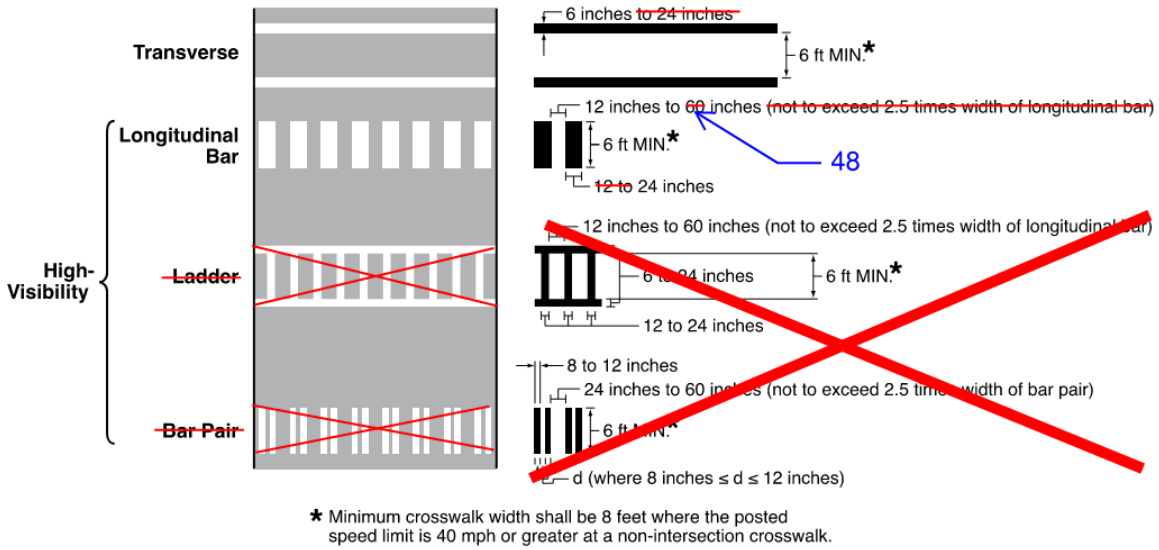
11 Provisions for aesthetic treatments for the interior portion of a legally-established crosswalk are contained in Section 3H.03.

~~**Standard:**~~

~~**12 If paving materials are used to function as the white transverse lines to establish a marked crosswalk, white additives shall be part of the mixture to produce a white surface. The white paving materials shall be retroreflective.**~~

MoDOT does not use retroreflective paving materials. Revised Dec. 2025

Figure 3C-1. Crosswalk Markings



Section 3C.04 Transverse Line Crosswalks

Guidance:

01 Transverse line crosswalk markings should be limited to locations controlled by traffic control signals or on approaches controlled by STOP or YIELD signs.

Support:

02 Transverse line crosswalk marking design consists of two parallel transverse lines (see Figure 3C-1).

03 Transverse line crosswalk markings can provide benefits to crosswalk operations including:

A. Define where the channelization of pedestrians or other non-motorized users is necessary to facilitate crossing the roadway.

B. Alert motorists to the location of where pedestrians and other non-motorized users might be expected when crossing the roadway.

C. Emphasize a crosswalk at a controlled intersection.

D. Fulfill a legal need to mark the crosswalk.

Section 3C.05 High-Visibility Crosswalks

Option:

01 High-visibility crosswalk markings may be used where additional conspicuity is desired for a crosswalk over transverse line crosswalk markings.

Support:

02 High-visibility crosswalk markings include the longitudinal bar~~, ladder, and bar pair~~ design~~s~~ (see Figure 3C-1).

03 High-visibility crosswalk markings can provide benefits to crosswalk operations including:

A. Providing greater detection distances for the approaching motorist.
B. Emphasizing a crosswalk where substantial numbers of pedestrians cross without any other traffic control device.
C. Emphasizing a crosswalk at an uncontrolled approach.
D. Emphasizing the location where a high number of conflicts between turning motorists and users of the crosswalk are expected.
E. Improving visibility of the crosswalk location for otherwise difficult to detect pedestrians or other non-motorized users of the crosswalk.
F. Emphasizing a school crossing.

Standard:

04 The minimum number of individual longitudinal elements to establish a high-visibility crosswalk shall be three. ~~For the bar pair crosswalk design (see Section 3C.08), a coupling set of two longitudinal bars shall be considered to be one individual longitudinal element.~~

MoDOT does not use bar pair crosswalk markings. Revised Dec. 2025

Guidance:

05 The dimensions of the individual longitudinal element and the lateral spacing between subsequent individual longitudinal elements for a high-visibility crosswalk should be uniform when establishing the crosswalk.

06 The dimensions of the individual longitudinal element and the lateral spacing between subsequent individual longitudinal elements for a high-visibility crosswalk should be uniform when establishing separate crosswalks on multiple approaches to the same intersection and on both sides of a median refuge if one is present.

07 The individual longitudinal elements of a high-visibility crosswalk should be angled such that they are parallel to the travel path of approaching traffic.

Option:

08 The lateral spacing between longitudinal elements may be staggered to avoid wheel paths, center lines, and lane lines.

Section 3C.06 Longitudinal Bar Crosswalks

Support:

01 The longitudinal bar crosswalk marking design (see Figure 3C-1) provides for improved detection and recognition over the transverse line crosswalk for people with low vision and cognitive impairments.

Standard:

02 The width of an individual longitudinal bar shall ~~not~~ be ~~less than 12 inches or greater than~~ 24 inches.

03 The lateral spacing between subsequent longitudinal bars shall not be less than 12 inches or greater than 48 inches. ~~60 inches. The lateral spacing of the longitudinal bars shall not exceed 2.5 times the width of a longitudinal bar.~~

MoDOT uses 24” bars spaced no greater than 48” apart. Revised Dec. 2025

~~Section 3C.07 Ladder Crosswalks~~

~~Support:~~

~~01 Ladder crosswalks (see Figure 3C-1) implement a pattern where interior longitudinal bars and transverse lines are used to define the limits of the crosswalk.~~

~~02 The ladder crosswalk marking design provides for improved detection and recognition over the transverse crosswalk for people with low vision and cognitive impairments.~~

~~03 Since the longitudinal component of the ladder crosswalk marking design is similar to the benefits provided by the longitudinal bar crosswalk design, the ladder crosswalk design is normally used to discourage or prohibit diagonal walking between crosswalks.~~

~~**Standard:**~~

~~**04 The transverse lines used to establish the limits of the ladder crosswalk shall not be less than 6 inches or greater than 24 inches in width.**~~

~~**05 The width of an individual interior longitudinal bar shall not be less than 12 inches or greater than 24 inches.**~~

~~**06 The lateral spacing between subsequent interior longitudinal bars shall not be less than 12 inches or greater than 60 inches. The lateral spacing of the interior longitudinal bars shall not exceed 2.5 times the width of an interior longitudinal bar.**~~

~~Option:~~

~~07 Where it might be necessary to alleviate a parallax phenomenon due to approaching roadway geometry that curves or to accommodate low approach angles of the approaching motorist, the interior longitudinal bars may be rotated up to 45 degrees to the transverse lines to remain parallel to approaching traffic.~~

MoDOT does not use ladder crosswalk markings. Revised Dec. 2025

~~Section 3C.08 Bar Pair Crosswalks~~

~~Support:~~

~~01 Bar pair crosswalks (see Figure 3C-1) can provide the same benefits as other high-visibility crosswalk designs with the opportunity for less maintenance.~~

~~02 Bar pair crosswalks can be useful in locations that are susceptible to slip and fall incidents exacerbated by extreme or inclement weather, or in locations where high motorcycle or bicycle use is expected in order to maximize wheel traction with the road surface.~~

~~**Standard:**~~

~~**03 The width of an individual longitudinal bar that establishes one-half of the bar pair shall not be less than 8 inches or greater than 12 inches. The lateral spacing between successive individual longitudinal bars within the same bar pair shall be equal to the width of one longitudinal bar.**~~

~~**04 The lateral spacing between subsequent longitudinal bar pairs shall not be less than 24 inches or greater than 60 inches, or 2.5 times the width of the total width of a bar pair.**~~

~~**05 Longitudinal bar pair crosswalks shall not be installed with accompanying transverse lines.**~~

MoDOT does not use bar pair crosswalk markings. Revised Dec. 2025

Section 3C.09 Crosswalk Markings at Circular Intersections

Standard:

01 Crosswalk markings shall not be provided to or from the central island of a roundabout.

Guidance:

02 If pedestrian facilities are provided, crosswalks should be marked across roundabout entrances and exits to indicate where pedestrians are intended to cross.

03 On an approach to a circular intersection controlled by a YIELD sign and at uncontrolled exits, crosswalks should be a minimum of 20 feet from the edge of the circulatory roadway.

Support:

04 Chapter 3D provides figures that illustrate examples of crosswalk markings for roundabouts.

Section 3C.10 Crosswalks for Exclusive Pedestrian Phases that Permit Diagonal Crossings

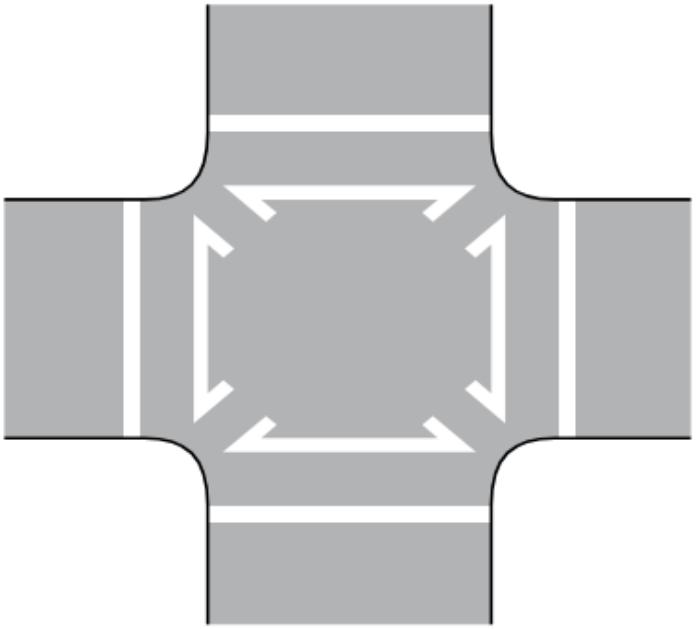
Option:

01 When an exclusive pedestrian phase that permits diagonal crossing of an intersection is provided at a traffic control signal, a marking as shown in Figure 3C-2 may be used for the crosswalk.

Guidance:

02 The segments of the crosswalk marking that facilitate the diagonal crossing should not use high-visibility crosswalk markings.

Figure 3C-2. Example of Crosswalk Markings for an Exclusive Pedestrian Phase that Permits Diagonal Crossings



Note: High-visibility crosswalks can be used for the crosswalks around the perimeter of the intersection

Section 3C.11 Crosswalks at Diverging Diamond Interchanges with a Transposed Alignment Crossroad

Support:

01 Diverging diamond interchanges, also known as double-crossover diamond interchanges, include directional crossovers on either side of the interchange that transpose the crossroad which results in vehicles traveling on the left-hand side of the street or highway between the crossover intersections. The potential for altered travel paths for pedestrians and the associated, unique, operational aspects such as traffic approaching from unexpected directions and unfamiliar signal phasing schemes are important considerations.

Guidance:

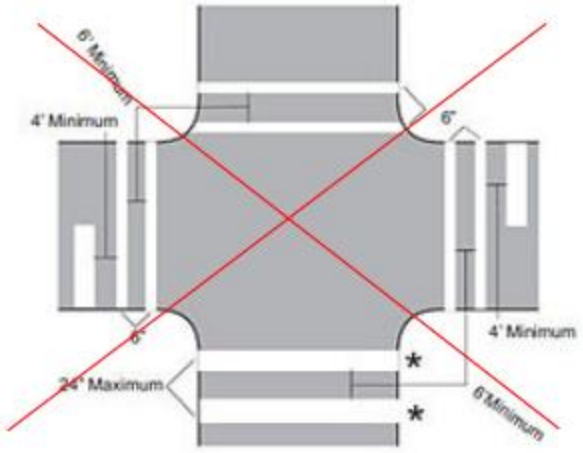
02 If pedestrian facilities are provided, pedestrian crossing movements of the crossroads at a diverging diamond interchange should be marked at the crossover intersections where motor vehicle traffic becomes transposed.

03 If pedestrian facilities are provided, crosswalks should be marked across ramp terminals at diverging diamond interchanges to indicate where pedestrians are intended to cross.

04 Crosswalks across diverging diamond interchange ramps with yield controlled vehicle movements should be located a minimum of 20 feet from the edge of an intersecting ramp. This is similar to crosswalks on the approaches to circular intersections (see Section 3C.09).

EPG Figure 620.2.18 Examples of Crosswalk Markings

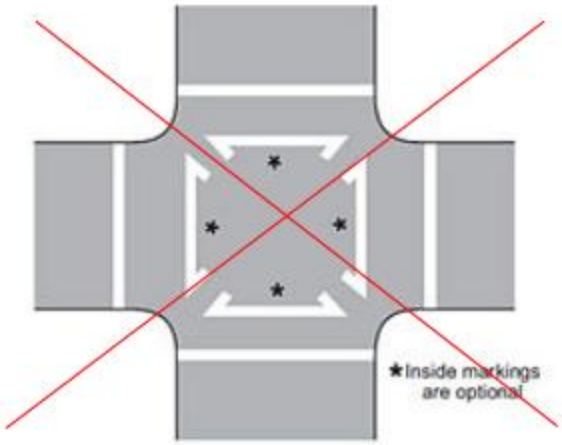
EPG Figure 620.2.18 Examples of Crosswalk Markings



*Option
For Locations where stop bars are not provided, Speeds exceed 35 mph or crosswalk in a unexpected location, the width of the crosswalk may be increased to 24 inches.

EPG figure that will be removed

Example of Crosswalk Markings
for an Exclusive Pedestrian Phase
that Permits Diagonal Crossing



Support:

05 Section 3B.31 contains information on markings, such as edge lines, lane lines, and lane-use arrows, for diverging diamond interchanges.

06 Figure 3B-29 shows an example of pedestrian crossing locations at a diverging diamond interchange.

Section 3C.12 Pedestrian Islands and Medians

Support:

01 Raised islands or raised medians of sufficient width that are placed in the center area of a street or highway can serve as a place of refuge for pedestrians who are attempting to cross at a midblock or intersection location. Center islands or medians allow pedestrians to find an adequate gap in one direction of traffic at a time, as the pedestrians are able to stop, if necessary, in the center island or median area and wait for an adequate gap in the other direction of traffic before crossing the second half of the street or highway. The U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990 contains specifications for the design of detectable warning surfaces and provides technical requirements that can be used to determine the minimum width for accessible refuge islands.

CHAPTER 3D. CIRCULAR INTERSECTION MARKINGS [EPG 620.4]

Section 3D.01 General

Guidance:

01 Pavement markings and signing for a circular intersection should be integrally designed to correspond to the geometric design and intended lane use of a circular intersection.

02 Markings on the approaches to a circular intersection and on the circulatory roadway should be compatible with each other to provide a consistent message to road users. The markings should supplement the signing, both conveying the optional and mandatory movements such that road users will know to choose the proper lane in the approach to the circular intersection and remain in that lane throughout departure from the circulatory roadway.

Support:

03 Common circular intersection types include roundabouts, rotaries, and traffic circles (see definitions in Section 1C.02). Traffic circles and rotaries are often much larger than roundabouts. Modern roundabouts feature channelized, curved approaches that reduce vehicle speed. Traffic calming circles are smaller and are typically used on urban or suburban neighborhood streets.

04 Figure 3D-1 provides an example of the pavement markings for approach and circulatory roadways at a roundabout. Figures 3D-2 through 3D-8 illustrate examples of markings for roundabouts of various geometric and lane-use configurations.

05 Actuated LED pedestrian warning signs (see Section 2A.12), traffic control signals, pedestrian hybrid beacons, and rectangular rapid flashing beacons (see Part 4) are sometimes used at roundabouts to facilitate the crossing of pedestrians or to meter traffic.

06 Section 8A.12 provides information about circular intersections that contain or are in close proximity to grade crossings.

07 Section 9E.05 contains information regarding bicycle lane markings at circular intersections.

08 Section 3C.09 contains information regarding crosswalks at circular intersections.

Figure 3D-1. Example of Markings for Approach and Circulatory Roadways at a Roundabout

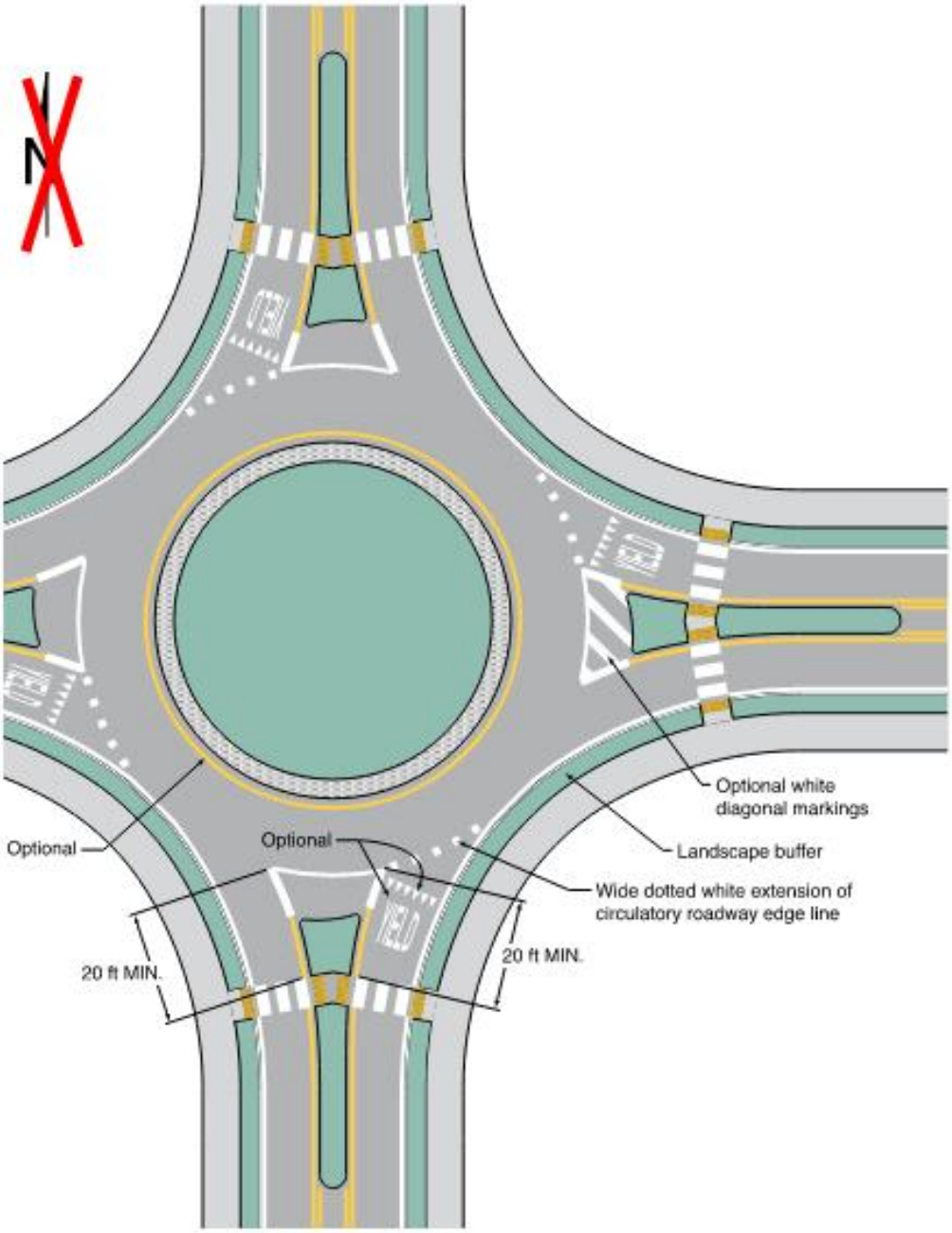


Figure 3D-2. Example of Markings for a One-Lane Roundabout

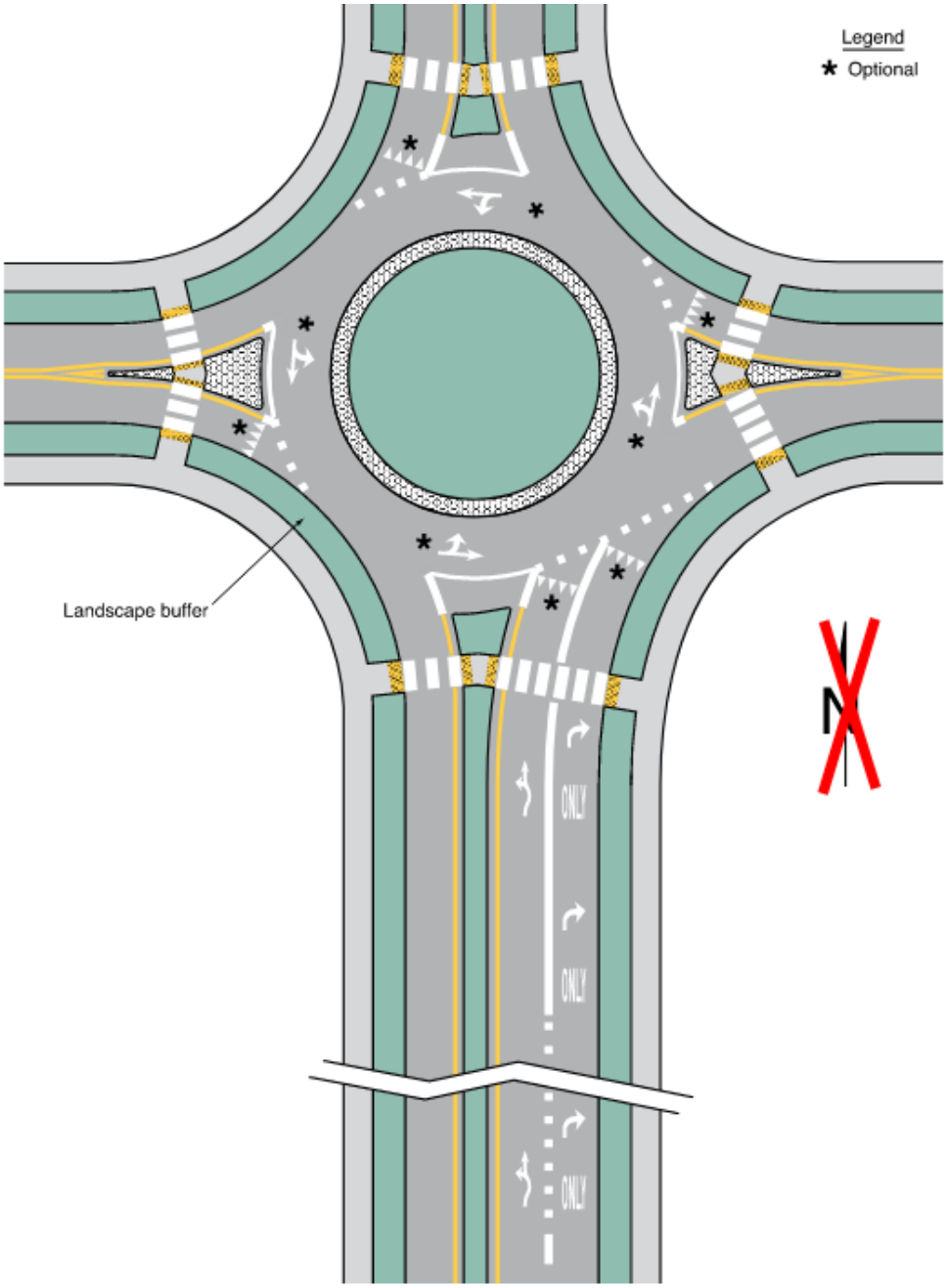


Figure 3D-3. Example of Markings for a Two-Lane Roundabout with One-Lane and Two-Lane Approaches (Sheet 1 of 2)

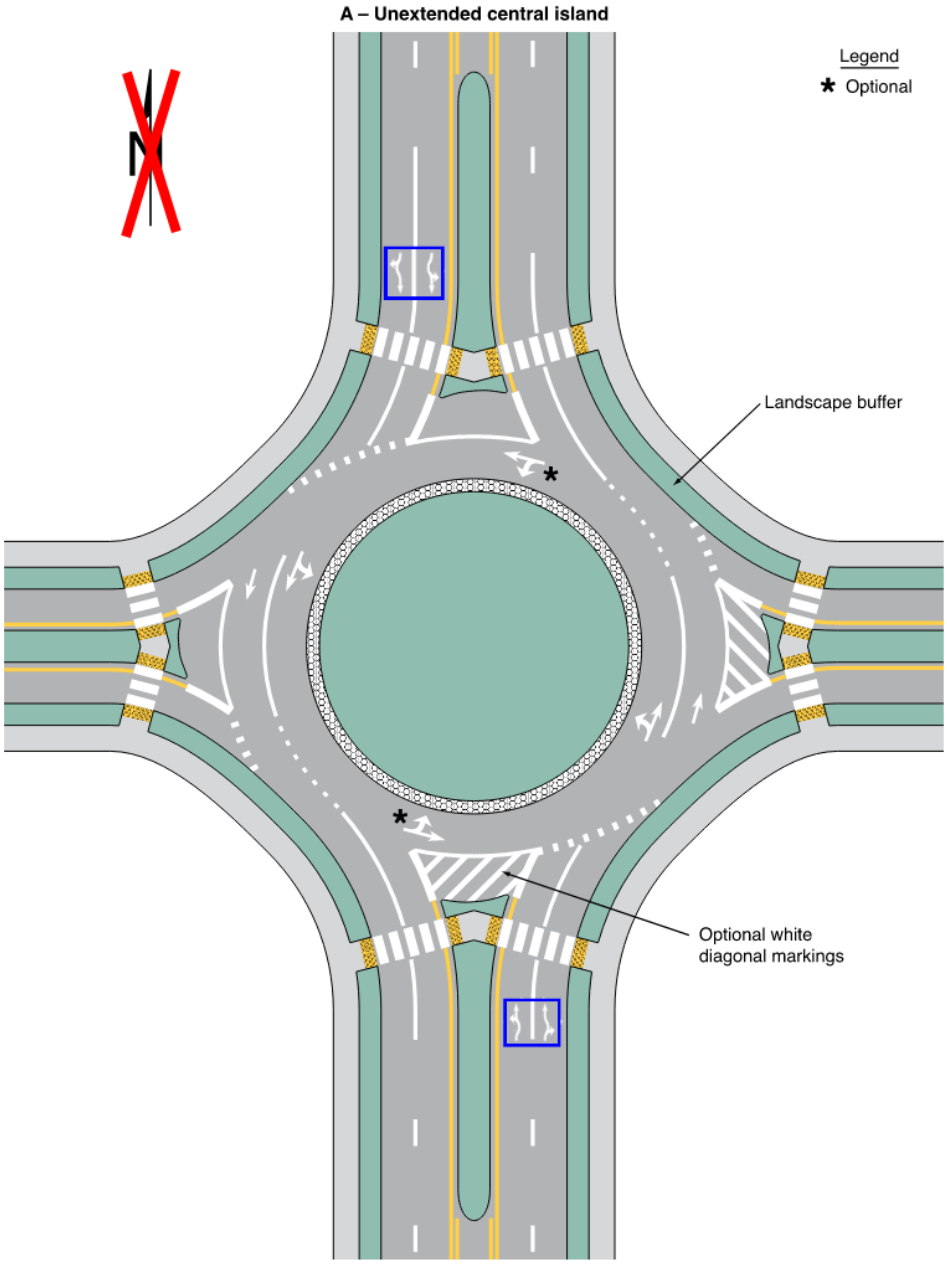


Figure 3D-3. Example of Markings for a Two-Lane Roundabout with One-Lane and Two-Lane Approaches (Sheet 2 of 2)

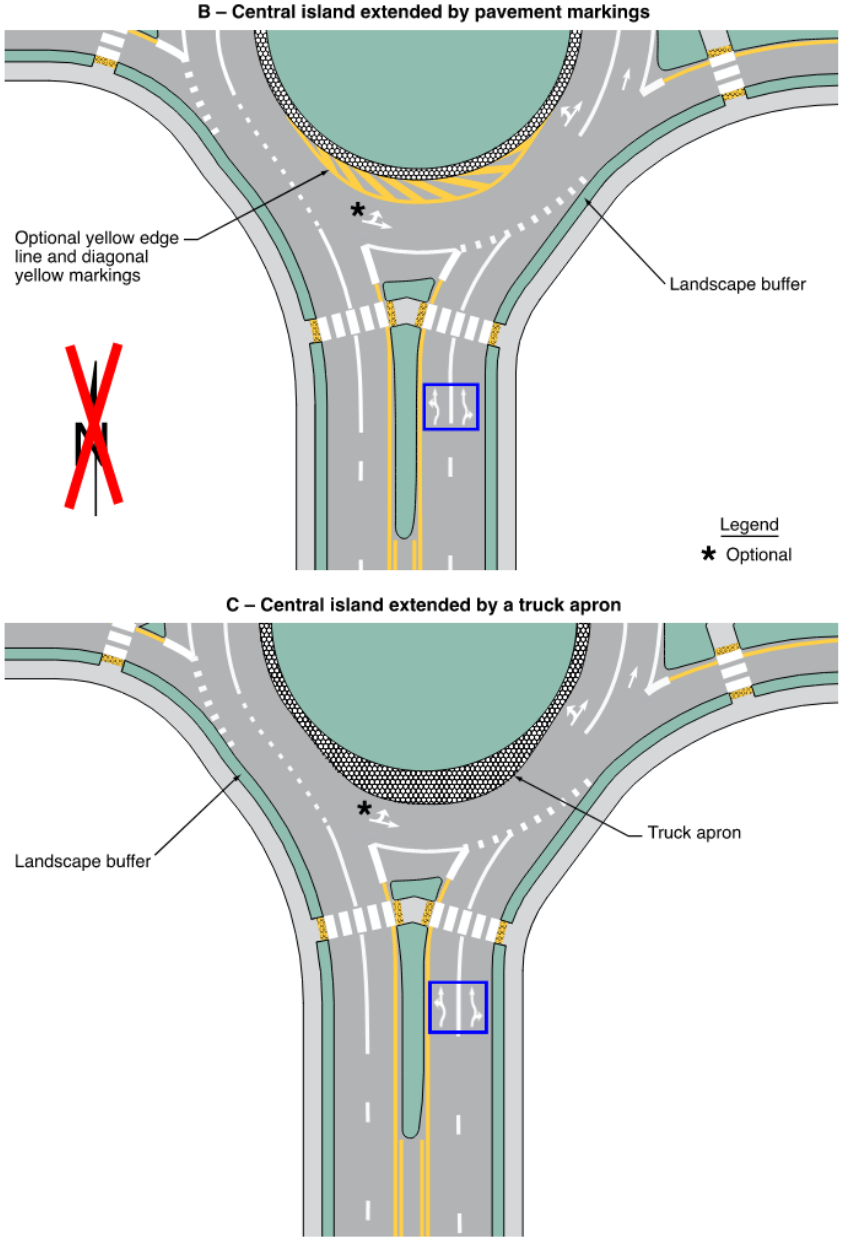


Figure 3D-4. Example of Markings for a Two-Lane Roundabout with One-Lane Exits

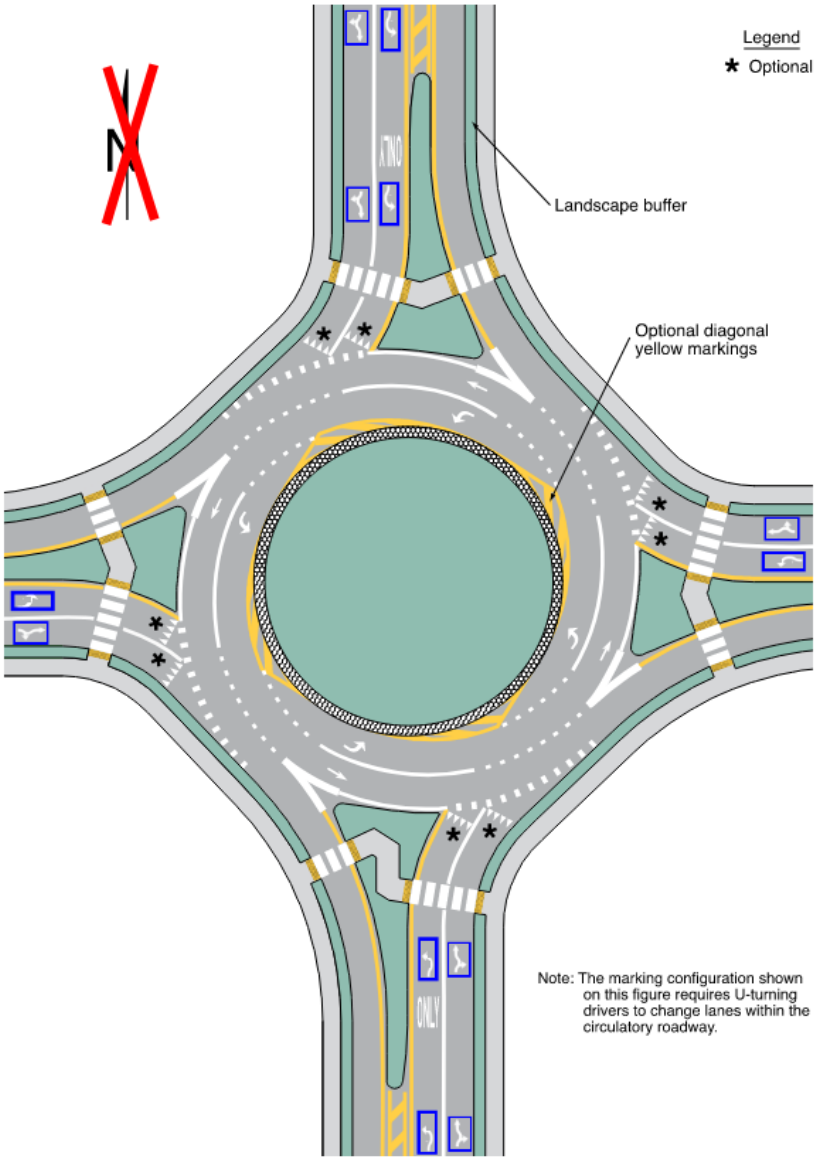


Figure 3D-5. Example of Markings for a Two-Lane Roundabout with Two-Lane Exits

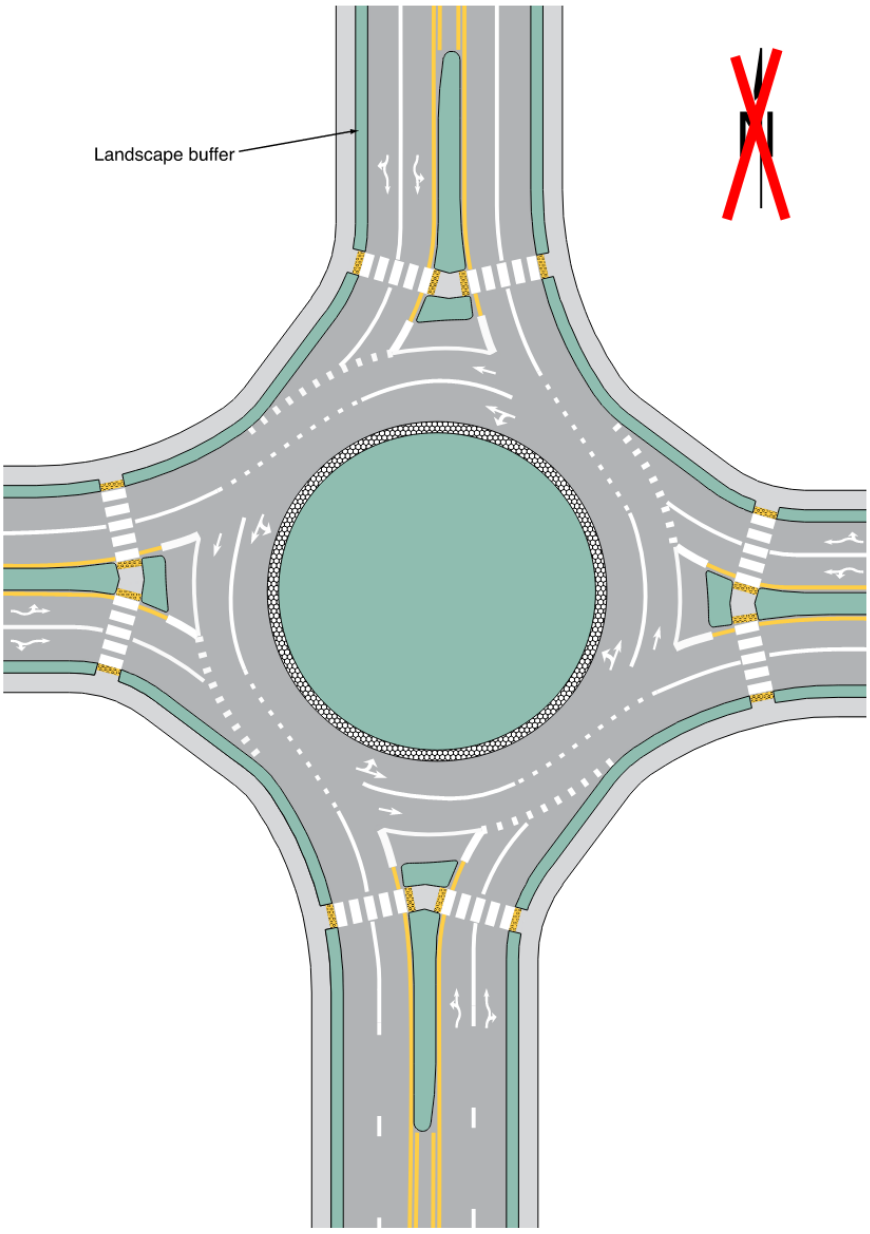


Figure 3D-6. Example of Markings for a Two-Lane Roundabout with a Double Left Turn

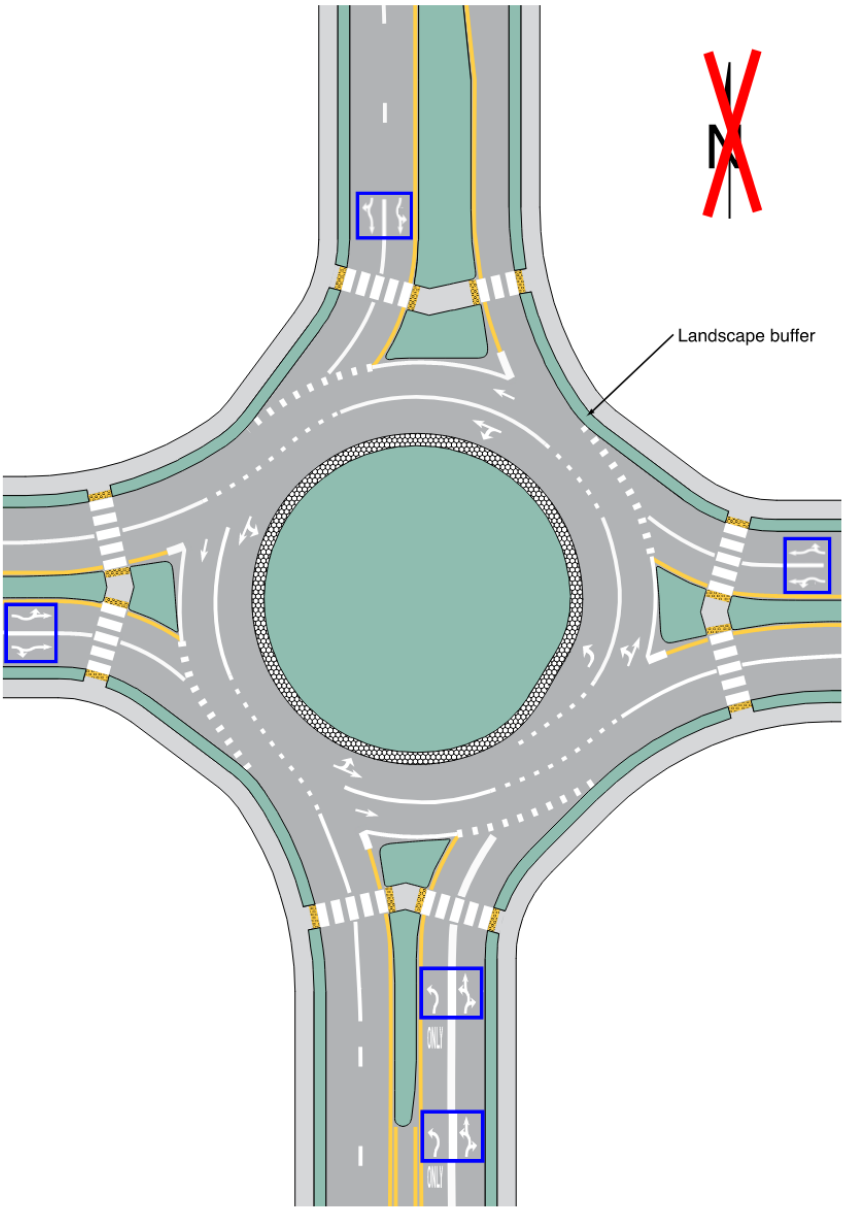


Figure 3D-7. Example of Markings for a Two-Lane Roundabout with a Double Right Turn

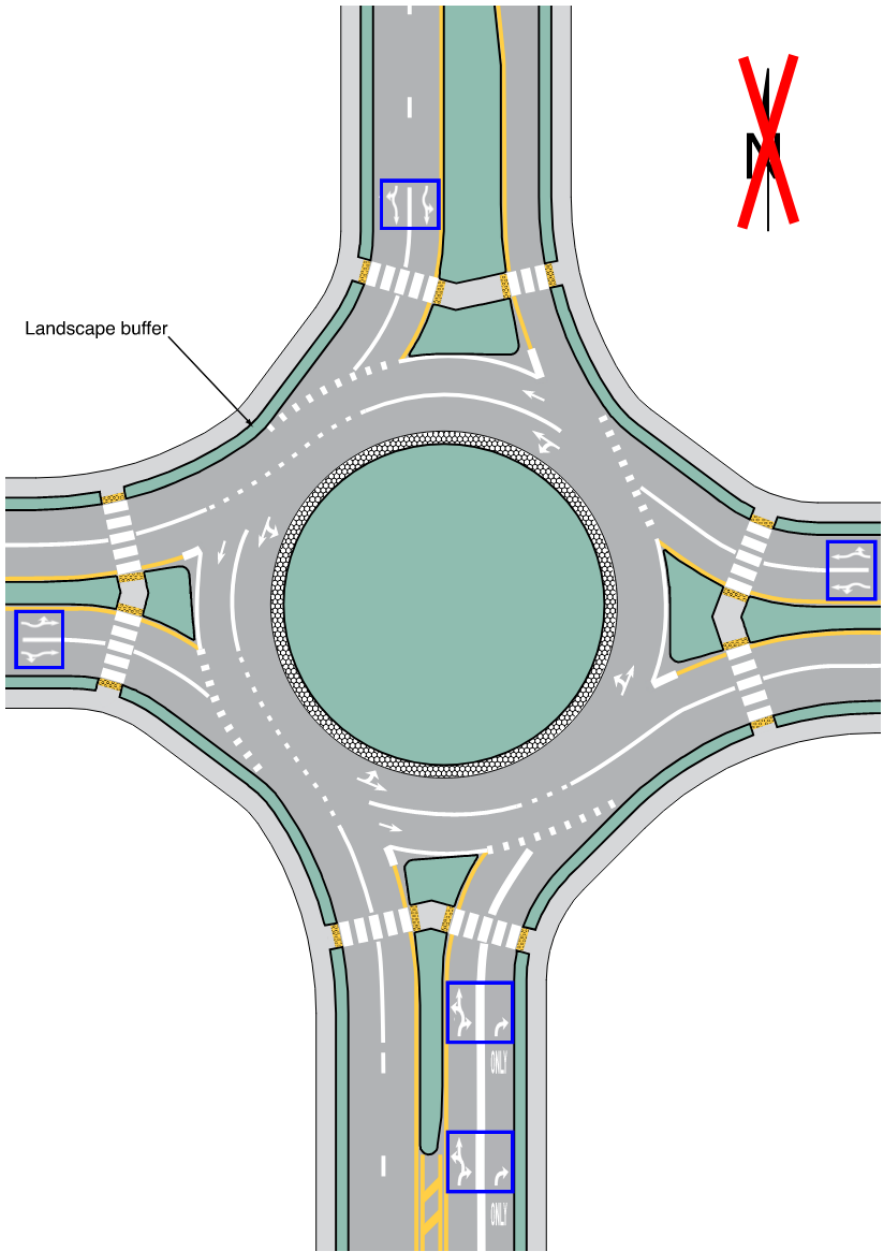
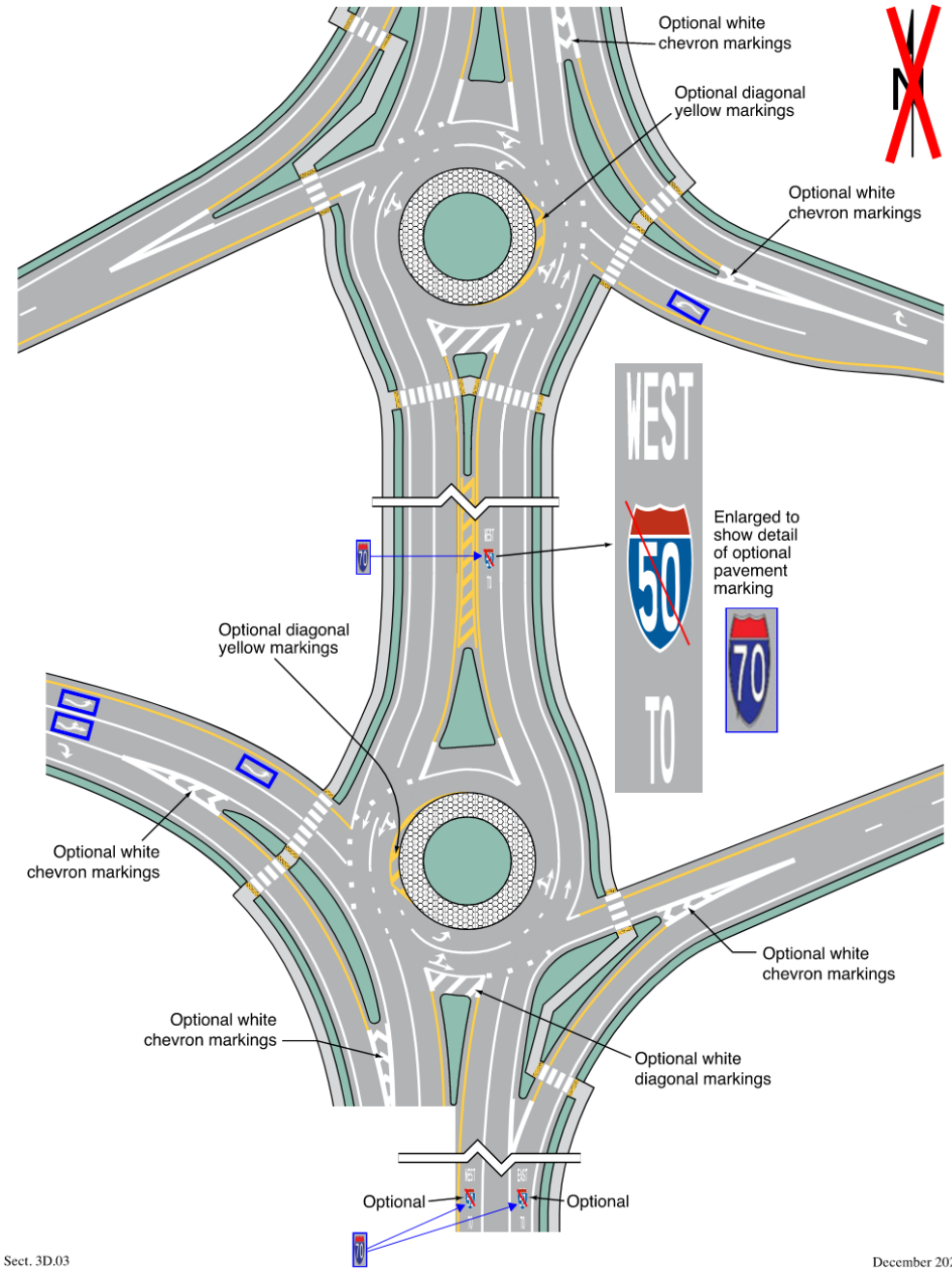


Figure 3D-8. Example of Markings for a Diamond Interchange with Two Circular-Shaped Roundabout Ramp Terminals



Section 3D.02 White Lane Line Pavement Markings for Roundabouts

Standard:

01 Multi-lane approaches to roundabouts shall have lane lines.

02 A through lane on a roadway that becomes a dropped lane (mandatory left-turn or right-turn lane) at a roundabout shall be marked with a dotted white lane line in accordance with Section 3B.07.

Guidance:

03 Multi-lane roundabouts should have lane line markings within the circulatory roadway to continuously channelize traffic in the circulatory roadway and through the departure movement.

Standard:

04 Continuous concentric lane lines shall not be used within the circulatory roadway of a roundabout.

Option:

05 Channelizing lines (see Section 3B.08) and chevron and diagonal markings (see Section 3B.25) may be used on the approaches to and within the circulatory roadway of multi-lane roundabouts to separate traffic lanes, discourage lane changing, and/or compensate for off-tracking of larger trucks and vehicles.

Support:

06 Reducing the spacing between lines of a broken (intermittent) lane line allows better delineation of the lower-radius curves typically found in circular intersections.

Section 3D.03 Edge Line Pavement Markings for Roundabout Circulatory Roadways

Guidance:

01 A white edge line should be used on the outer (right-hand) edge of the circulatory roadway.

02 Where a white edge line is used for the circulatory roadway, it should be as follows (see Figure 3D-1):

A. A solid line adjacent to the splitter island, and

B. A wide dotted white extension line (2-foot line segments separated by 4-foot gaps) across the lane(s) entering the roundabout.

Clarification of line type. Revised Dec. 2025

Standard:

03 Edge lines and edge line extensions shall not be placed across the exits from the circulatory roadway at roundabouts.

Option:

04 A yellow edge line may be placed around the inner (left-hand) edge of the circulatory roadway (see Figure 3D-1) and may be used to channelize traffic (see Drawing B in Figure 3D-3).

Section 3D.04 Yield Lines for Roundabouts

~~Support:~~

~~01 Section 2B.18 contains information regarding the TO ALL LANES (R1-2cP) plaque that can be used beneath the YIELD sign.~~

MoDOT does not use the R1-2cP plaque. Revised Dec. 2025

Option:

02 A yield line (see Section 3B.19) may be used to indicate the point behind which vehicles are required to yield at the entrance to a roundabout (see Figures 3D-1 and 3D-2).

Section 3D.05 Word and Symbol Pavement Markings for Roundabouts

Option:

01 YIELD (word) (see Figure 3D-1) and YIELD AHEAD (symbol or word) pavement markings may be used on approaches to roundabouts.

02 Word and/or route shield pavement markings may be used on an approach to or within the circulatory roadway of a roundabout to provide route and/or destination guidance information to road users (see Figure 3D-8).

Section 3D.06 Arrow Pavement Markings for Roundabouts

Guidance:

01 Lane-use arrow pavement markings should not be used on single-lane approaches to circular intersections.

02 Lane-use arrows should be used on approaches to circular intersections with ~~double left or double right turns~~ multi-lane approaches.

Standard:

03 Lane-use arrow pavement markings shall not be provided between a crosswalk and a wide dotted line across the lane(s) entering the circular roadway.

~~Option~~ **Standard:**

04 Except as provided in the following Option paragaraph, ~~W~~where lane-use arrows are used on the approaches to a roundabout, they ~~may~~ shall be ~~either normal or~~ curved-stem (see Drawing F in Figure 3B-21).

Option:

M04A Normal-stem lane-use arrows may be used on the approaches to roundabouts where they more effectively indicate road geometry based on engineering judgment.

05 An oval or circle may be used with the lane-use arrows in the left-most lane to symbolize the central island (see Drawings B, C, and F in Figure 3B-21).

Standard:

M05A If used, an oval or circle shall only be used with lane-use arrows in the left-most lane to symbolize the central island.

Paragraphs 4, 4A, and 5 are modified to match edits made for lane-use signs in Chapter 2B related to MoDOT policy for roundabout pavement marking and signing. Revised Dec. 2025

Guidance:

06 If lane-use arrows are used on the approaches to a roundabout, the style used should match the style of the lane-use arrows (normal-stem or curved-stem) used on the regulatory lane-use signs on the approach.

07 If lane-use arrow pavement markings are used within the circulatory roadway of multi-lane roundabouts, normal-stem lane-use arrows (see Section 3B.23 and Figure 3B-21) should be used.

Support:

08 Details and sizes of the standard and curved-stem arrows that can be used for circular intersections are contained in the FHWA's "Standard Highway Signs" publication (see Section 1A.05).

Section 3D.07 Markings for Other Circular Intersections

Option:

01 The markings shown in this Chapter may be used at other circular intersections if engineering judgment indicates that their presence will benefit drivers, pedestrians, or other road users. Figure 2B-21 provides an example of markings at a mini-roundabout.

CHAPTER 3E. PREFERENTIAL LANE MARKINGS FOR MOTOR VEHICLES

[EPG 620.5]

Section 3E.01 General

Guidance:

M00 Preferential lane markings are not currently used on MoDOT facilities. The Highway Safety and Traffic Division should be contacted for guidance when considering the use of preferential lane markings.

Support:

01 Preferential lanes are established for one or more of a wide variety of special uses, including, but not limited to, ~~high-occupancy vehicle (HOV) lanes, electronic toll collection (ETC) lanes, price-managed lanes,~~ bus only lanes, taxi only lanes, and light rail transit only lanes.

There is no toll infrastructure on MoDOT facilities. Revised Dec. 2025

02 This ~~Chapter~~ article contains the pavement marking provisions for preferential lanes used by motor vehicles and light rail transit. Part 9 contains information for pavement markings for bicycle lanes.

03 Chapter 3H contains information for the use and application of colored pavement that can be used in preferential lanes to supplement the pavement markings described in this Chapter.

Section 3E.02 Longitudinal Markings

Support:

01 Preferential lanes can take many forms depending on the level of usage and the design of the facility. They might be barrier-separated or buffer-separated from the adjacent general-purpose lanes, or they might be contiguous with the adjacent general-purpose lanes. Barrier-separated preferential lanes might be operated in a constant direction or be operated as reversible lanes. ~~Some reversible preferential lanes on a divided highway might be operated counter-flow to the direction of traffic on the immediately adjacent general-purpose lanes.~~ Section 1C.02 contains definitions of these terms.

02 Preferential lanes might be operated full-time (24 hours per day on all days), for extended periods of the day, part-time (restricted usage during specific hours on specified days), or on a variable basis (such as a strategy for a managed lane).

Standard:

03 The left-hand and right-hand edge lines and lane lines used for preferential lanes that are adjacent to general-purpose lanes where traffic is flowing in the same direction shall be in accordance with Table 3E-1.

04 If there are two or more preferential lanes for traffic moving in the same direction, the lane lines between the preferential lanes shall be normal width broken (intermittent) white lines.

05 Preferential lanes for motor vehicles shall have appropriate regulatory signs in accordance with MUTCD Sections 2G.03 through 2G.07.

Support:

06 Figure 3E-1 illustrates pavement markings used for barrier-separated preferential lanes. Figure 3E-2 illustrates pavement markings used for buffer-separated preferential lanes. Figure 3E-3 illustrates pavement markings used for contiguous preferential lanes.

Guidance:

07 Engineering judgment should determine the need for supplemental devices such as tubular markers~~, traffic cones,~~ or other channelizing devices (see Chapter 3I).

08 Where preferential lanes and other travel lanes are separated by a buffer space wider than 4 feet and crossing the buffer space is prohibited, chevron markings (see Section 3B.25) should be placed in the buffer area (see Drawing A in Figure 3E-2).

09 The buffer space for a conventional road should be designed so that it is not misinterpreted as on-street parking, a bicycle lane, or any other type of lane.

Option:

10 If a full-time ~~or part-time~~ contiguous preferential lane is separated from the other travel lanes by a wide broken (intermittent) single white line (see Drawing C in Figure 3E-3), the spacing or skip pattern of the line may be reduced and the width of the line may be increased.

Standard:

11 At direct exits from a preferential lane, dotted white line markings shall be used to separate the tapered or parallel deceleration lane for the direct exit (including the taper) from the adjacent continuing preferential through lane, to reduce the chance of unintended exit maneuvers.

~~**12 Signs (see Section 2B.34), lane-use control signals (see Chapter 4T), or both shall be used to supplement the reversible lane markings on a divided highway where a part-time counter-flow preferential lane is present.**~~

Reversible lanes are not used on MoDOT facilities. Revised Dec. 2025

13 The longitudinal pavement markings used for preferential lanes that are adjacent to general-purpose lanes where traffic is flowing in the opposite direction (see Figure 3E-4) shall be in accordance with Table 3E-2.

Support:

14 Figure 3E-4 illustrates pavement markings used for counter-flow preferential lanes on divided highways or on transitions to and from other divided highways such as bridges and crossovers.

Option:

15 ~~Cones, t~~Tubular markers~~,~~ or other channelizing devices (see Chapter 3I) may also be used in addition to longitudinal markings to separate the opposing lanes when a counter-flow preferential lane operation is in effect.

Table 3E-1. Standard Edge Line and Lane Line Markings for Preferential Lanes

Type of Preferential Lane	Left-Hand Line	Right-Hand Line
Barrier-Separated, Non-Reversible	A normal solid single yellow edge line	A normal solid single white edge line (see Drawing A in Figure 3E-1)
~~Barrier-Separated, Reversible~~	~~A normal solid single white edge line~~	A normal solid single white edge line (see Drawing B in Figure 3E-1)
Buffer-Separated, Left-Hand Side	A normal solid single yellow edge line	A wide solid double white line along both edges of the buffer space where crossing is prohibited (see Drawing A in Figure 3E-2) A wide solid single white line along both edges of the buffer space where crossing is discouraged (see Drawing B in Figure 3E-2) A wide broken single white line along both edges of the buffer space, or a wide broken single white line within the buffer space (resulting in wider lanes), where crossing is permitted (see Drawing C in Figure 3E-2)
Buffer-Separated, Right-Hand Side	A wide solid double white line along both edges of the buffer space where crossing is prohibited, or a wide solid single white line along both edges of the buffer space where crossing is discouraged (see Drawing D in Figure 3E-2) A wide broken single white line along both edges of the buffer space, or a wide broken single white line within the buffer space (resulting in wider lanes), where crossing is permitted (see Drawing D in Figure 3E-2) A wide dotted single white line within the buffer space (resulting in wider lanes) where crossing is permitted for any vehicle to perform a right-turn maneuver (see Drawing D in Figure 3E-2)	A normal solid single white edge line (if warranted)
Contiguous, Left-Hand Side	A normal solid single yellow edge line	A wide solid double white lane line where crossing is prohibited (see Drawing A in Figure 3E-3) A wide solid single white lane line where crossing is discouraged (see Drawing B in Figure 3E-3) A wide broken single white lane line where crossing is permitted (see Drawing C in Figure 3E-3)
Contiguous, Right-Hand Side	A wide solid double white lane line where crossing is prohibited (see Drawing D in Figure 3E-3) A wide solid single white lane line where crossing is discouraged (see Drawing D in Figure 3E-3) A wide broken single white lane line where crossing is permitted (see Drawing D in Figure 3E-3) A wide dotted single white lane line where crossing is permitted for any vehicle to perform a right-turn maneuver (see Drawing D in Figure 3E-3)	A normal solid single white lane line (if warranted)

Notes: 1. If there are two or more preferential lanes, the lane lines between the preferential lanes shall be normal broken white lines.
2. The standard lane markings listed in this table are provided in a tabular format for reference.

Figure 3E-1. Markings for Barrier-Separated Preferential Lanes

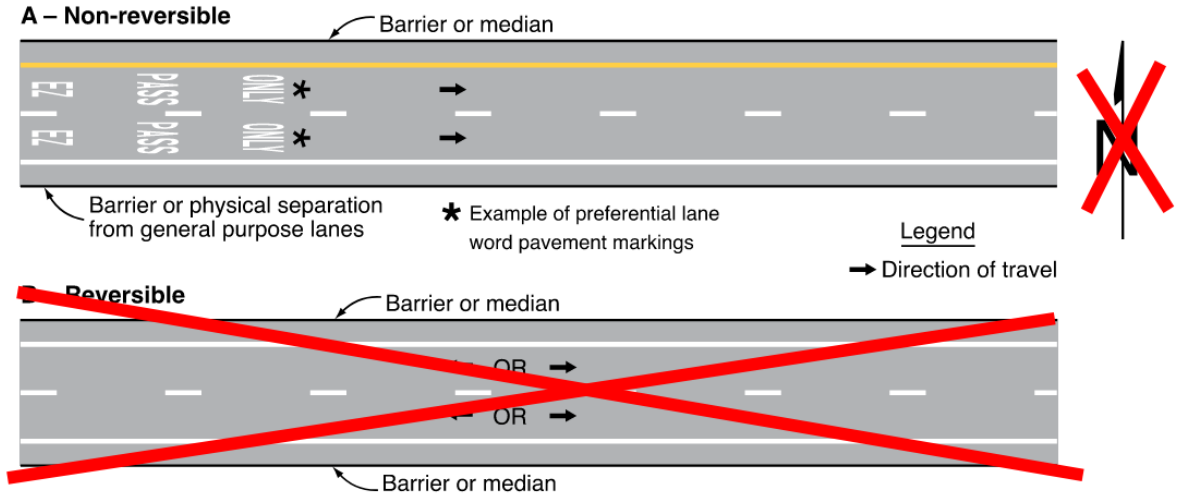


Figure 3E-2. Markings for Buffer-Separated Preferential Lanes (Sheet 1 of 2)

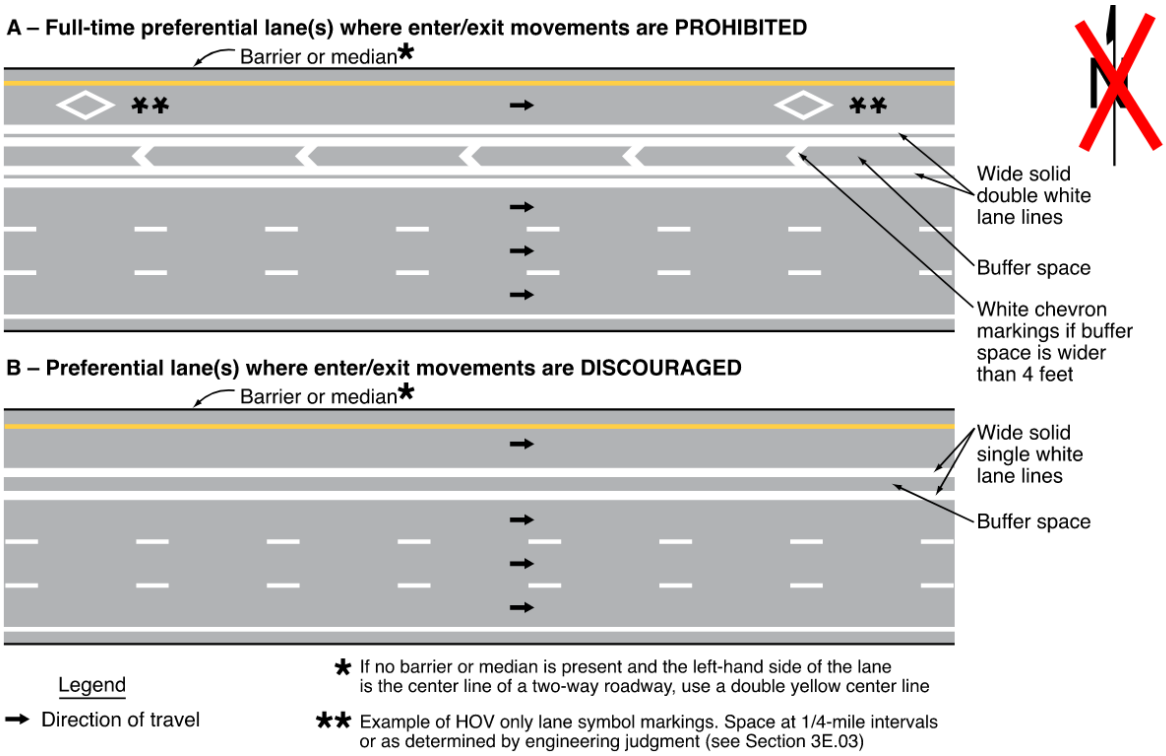


Figure 3E-2. Markings for Buffer-Separated Preferential Lanes (Sheet 2 of 2)

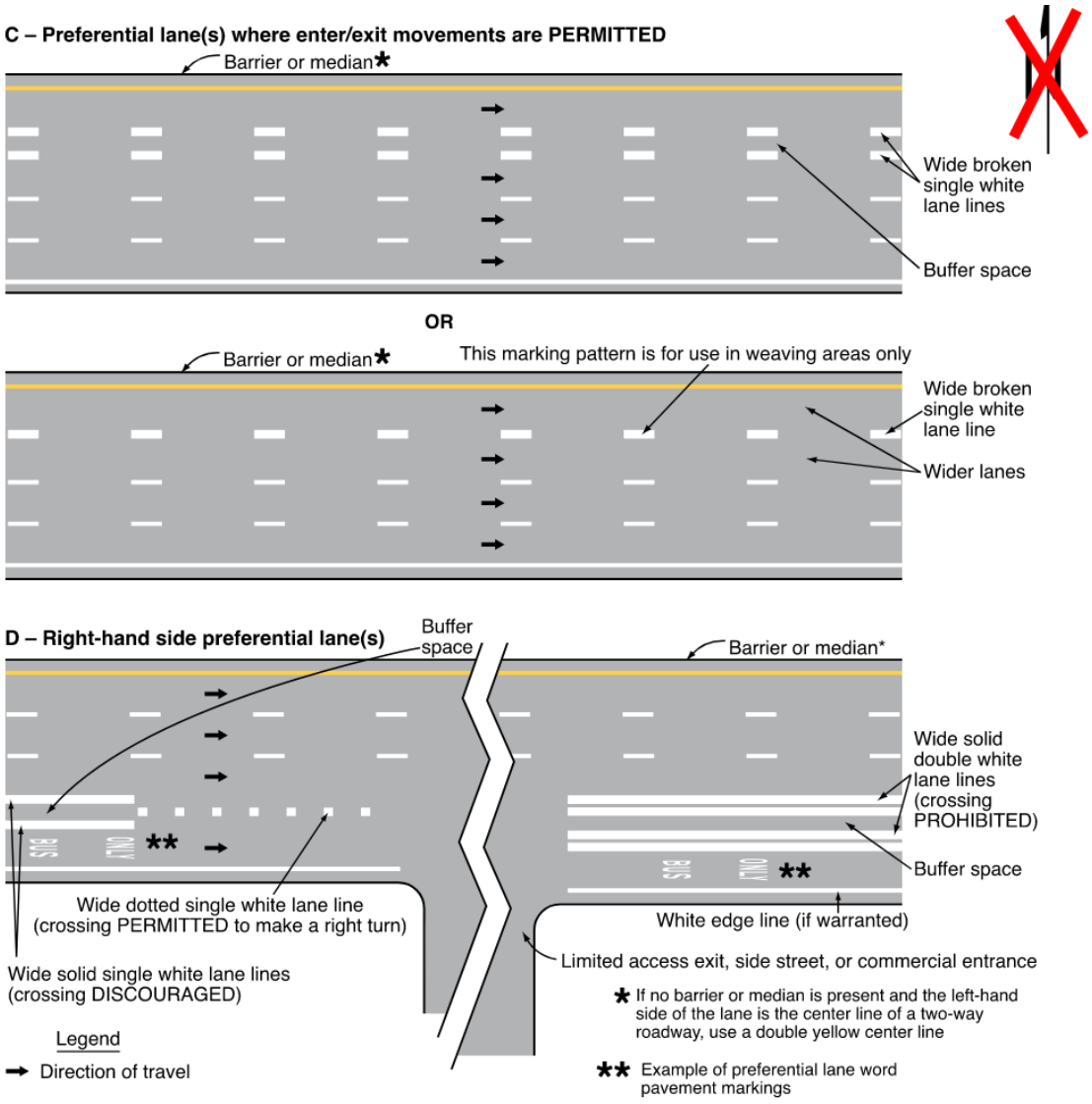


Table 3E-2. Standard Center Line and Edge Line Markings for Counter-Flow Preferential Lanes on Divided Highways

Type of Preferential Lane	Center Line on Left-Hand Side	Edge Line on Left-Hand Side
Part-Time Contiguous	A normal width broken double yellow line	A normal solid single white line (if warranted)
Part-Time Buffer-Separated	A normal width solid double yellow line along both edges of the buffer space	A normal solid single white line (if warranted)
Full-Time Contiguous	A normal width solid double yellow line	A normal solid single white line (if warranted)
Full-Time Buffer-Separated	A normal width solid double yellow line along both edges of the buffer space	A normal solid single white line (if warranted)

Figure 3E-3. Markings for Contiguous Preferential Lanes

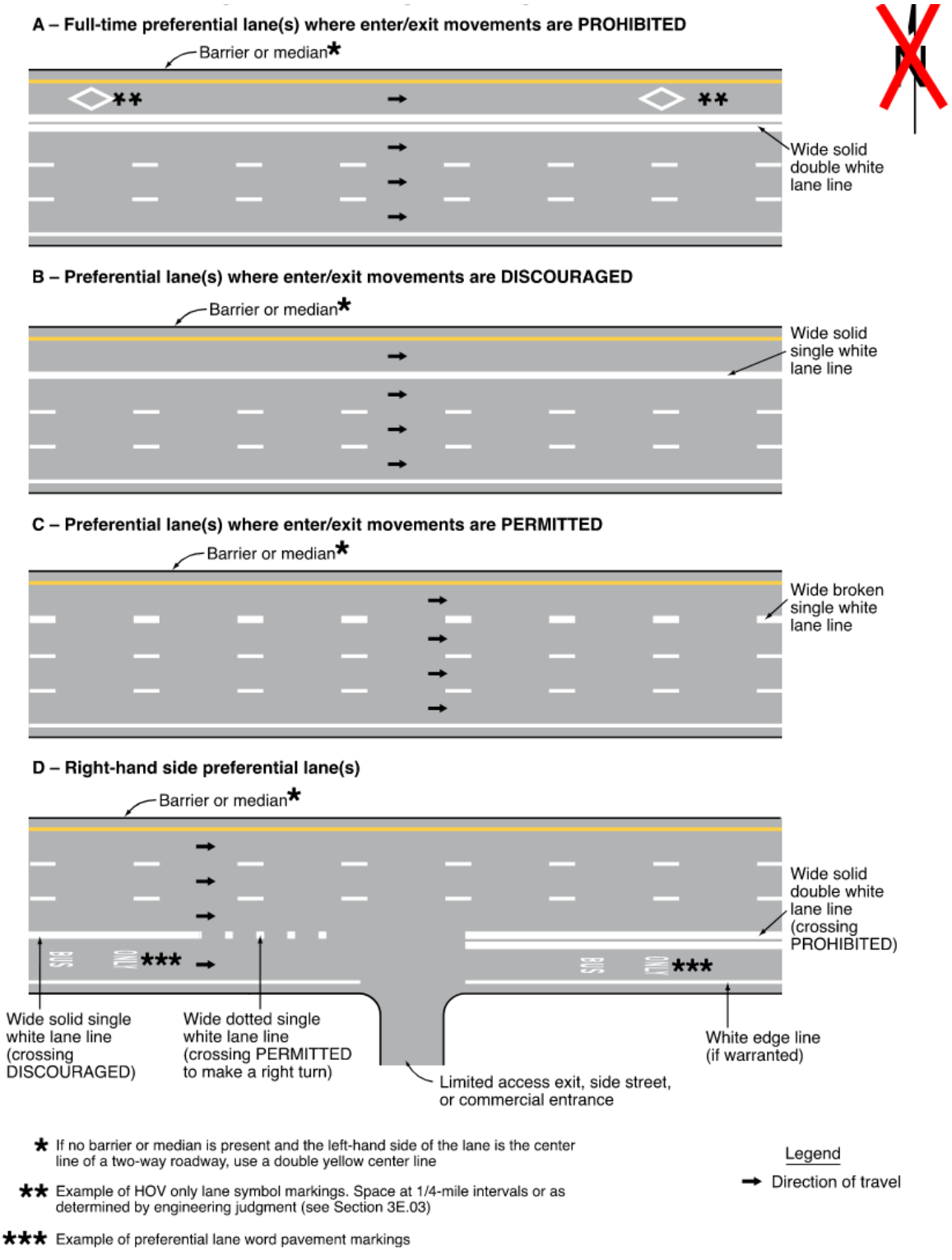
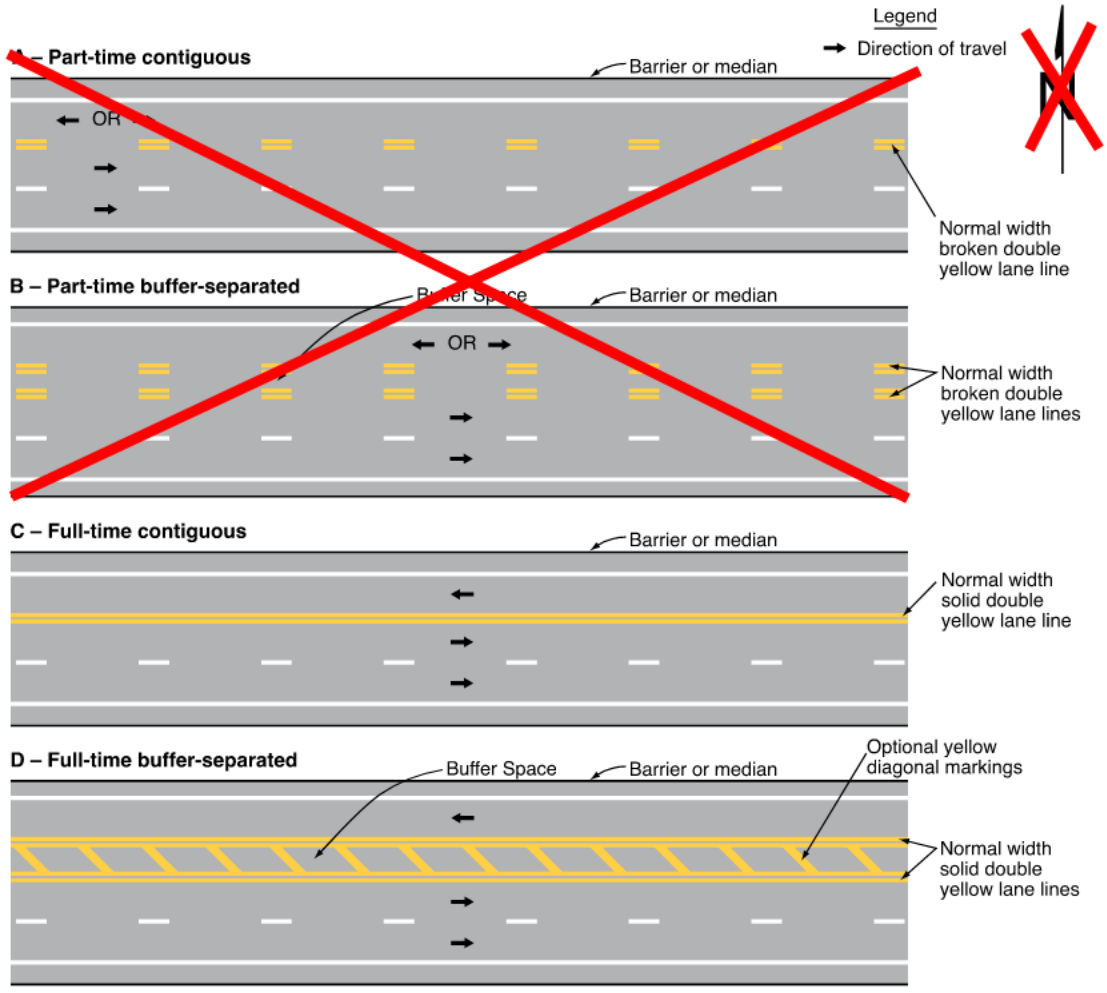


Figure 3E-4. Markings for ~~Contra~~ Counter-Flow Preferential Lanes on Divided Highways



Section 3E.03 Preferential Lane Word and Symbol Markings

Support:

01 Sections 3B.20 through 3B.22 contain information on general applications of word and symbol markings.

Standard:

02 When a preferential lane is established, the preferential lane shall be marked with one or more of the following word or symbol markings for the preferential lane use specified:

~~A. HOV lane—white lines formed in a diamond-shaped symbol or the word message HOV. The diamond shall be at least 2.5 feet wide and 12 feet in length. The lines shall be at least 6 inches in width.~~

~~B. ETC Account-Only lane—except as provided in Paragraph 8 of this Section, a word marking or pictograph using the name of the ETC payment system required for use of the lane, such as E-Z PASS ONLY.~~

~~C. Price-managed lane—the word marking EXPRESS or EXPRESS LANE(S) (see Section 2G.17).~~

D. Bus only lane or bus stop—the word marking BUS ONLY or BUS STOP.

E. Taxi only lane or taxi stand —the word marking TAXI ONLY or TAXI STAND.

F. Light rail transit lane—the word marking LRT ONLY.

G. Other type of preferential lane—a word marking appropriate to the restriction.

There is no toll infrastructure on MoDOT facilities. Revised Dec. 2025

Guidance:

03 If multiple preferential lane uses are allowed in a single lane, the word or symbol marking for each preferential lane should be used.

Standard:

04 Pavement word or symbol markings for motorcycles and Inherently Low Emission Vehicles (ILEV) shall not be used to mark the preferential lane if motorcycles and ILEVs are allowed to use the preferential lane.

~~Support:~~

~~05 Motorcycles and Inherently Low Emission Vehicles (ILEV) that are allowed to use a preferential lane are granted an exception such as through an established High-Occupancy Vehicle (HOV) regulation. Communicating that motorcycles and ILEVs are allowed to use the preferential lane is accomplished through regulatory signing (see Sections 2G.03 and 2G.04) that complements HOV signing.~~

Standard:

06 Static or changeable message regulatory signs (see MUTCD Sections 2G.03 through 2G.07) shall be used with preferential lane word or symbol markings.

07 All preferential lane word and symbol markings shall be white and shall be positioned laterally in the approximate center of the preferential lane.

Option:

~~08 Preferential lane-use symbol or word markings may be omitted at toll plazas where physical conditions preclude the use of the markings.~~

09 Lane-use arrow markings may be placed on the curb lanes on approaches to intersections to signify non-preferential road users can use the lane for turning movements.

Guidance:

10 All longitudinal pavement markings, as well as word and symbol pavement markings, associated with a preferential lane should end at approximately where the Preferential Lane Ends (R3-12a or R3-12c) sign (see MUTCD Section 2G.07) designating the downstream end of the preferential only lane restriction is installed.

11 The spacing of the markings should be based on engineering judgment that considers the operating speed, block lengths, distance from intersections, and other factors that affect clear communication to the road user.

12 In addition to a regular spacing interval, the preferential lane marking should be placed at strategic locations such as major decision points, direct exit ramp departures from the preferential lane, and along access openings to and from adjacent general-purpose lanes. At decision points, the preferential lane marking should be placed on all applicable lanes and should be visible to approaching traffic for all available departures. At direct exits from preferential lanes where extra emphasis is needed, the use of word markings (such as "EXIT" or "EXIT ONLY") in the deceleration lane for the direct exit and/or on the direct exit ramp itself just beyond the exit gore should be considered.

~~Option:~~

~~13 A numeral indicating the vehicle occupancy requirements established for a high-occupancy vehicle lane may be included in sequence after the diamond symbol or HOV word message.~~

Section 3E.04 Markings for Part-Time Travel on a Shoulder

Support:

01 Shoulders are sometimes used to add capacity to a roadway in peak hour conditions to provide for transit ~~or HOV priority~~ or to provide higher throughput when open to all traffic.

02 A shoulder that has been opened to travel on a permanent, rather than a part-time basis is considered to be a travel lane and is signed and marked in accordance with other provisions of ~~this Manual~~ the EPG.

Standard:

03 When part-time travel on a shoulder is open to all traffic, pavement word and symbol markings shall not be used in the shoulder.

04 When a shoulder is assigned part-time to a particular class or classes of vehicles, the shoulder shall be marked with one or more pavement word markings that identify the special use of the shoulder such as BUS ONLY, TRANSIT ONLY, ~~HOV,~~ or ~~instead of the HOV pavement word marking,~~ white lines formed in a diamond-shaped symbol (see Section 3E.03). A pavement word or symbol marking shall be provided in the shoulder immediately after exit and entry ramps (see Figure 3E-5) or immediately departing an intersection at the full-width shoulder (see Figure 3E-6). Appropriate regulatory signing (see MUTCD Section 2G.03) shall be installed with the pavement word or symbol markings.

05 The channelizing line emanating from the entrance ramp shall be a wide dotted line through the intersecting alignment of the shoulder to the theoretical gore (see Drawings A and B in Figure 3E-5). At exit ramps, the channelizing line proceeding from the theoretical gore across the intersecting alignment of the shoulder shall be a wide dotted line (see Figure 3E-5).

06 If used, the extension of the channelizing line at entrance ramps proceeding from the theoretical gore across the opening of the on-ramp alignment shall be a wide dotted line (see Drawing C in Figure 3E-5) where it is demonstrated that traffic entering from an on-ramp stops or yields to traffic on the shoulder of the highway mainline.

07 An additional outside solid edge line shall be provided on the shoulder in accordance with Sections 3B.09 and 3B.10.

Guidance:

08 Changes in edge line pattern or direction should occur at appropriate regulatory signs.

Option:

09 At locations where traffic is allowed to enter, exit, or merge with the shoulder, a dotted edge line may be used either in a continuous manner or angled to the pavement edge (see Figure 3E-6).

10 Red-colored pavement (see Section 3H.07) may be used on shoulders that allow only transit vehicles.

Standard:

11 If used, red-colored pavement shall be discontinued on the shoulder through the influence area of the ramp (see Figure 3E-5).

Figure 3E-5. Markings for Part-Time Travel on Shoulder and Application of Pavement Word Markings (Sheet 1 of 3)

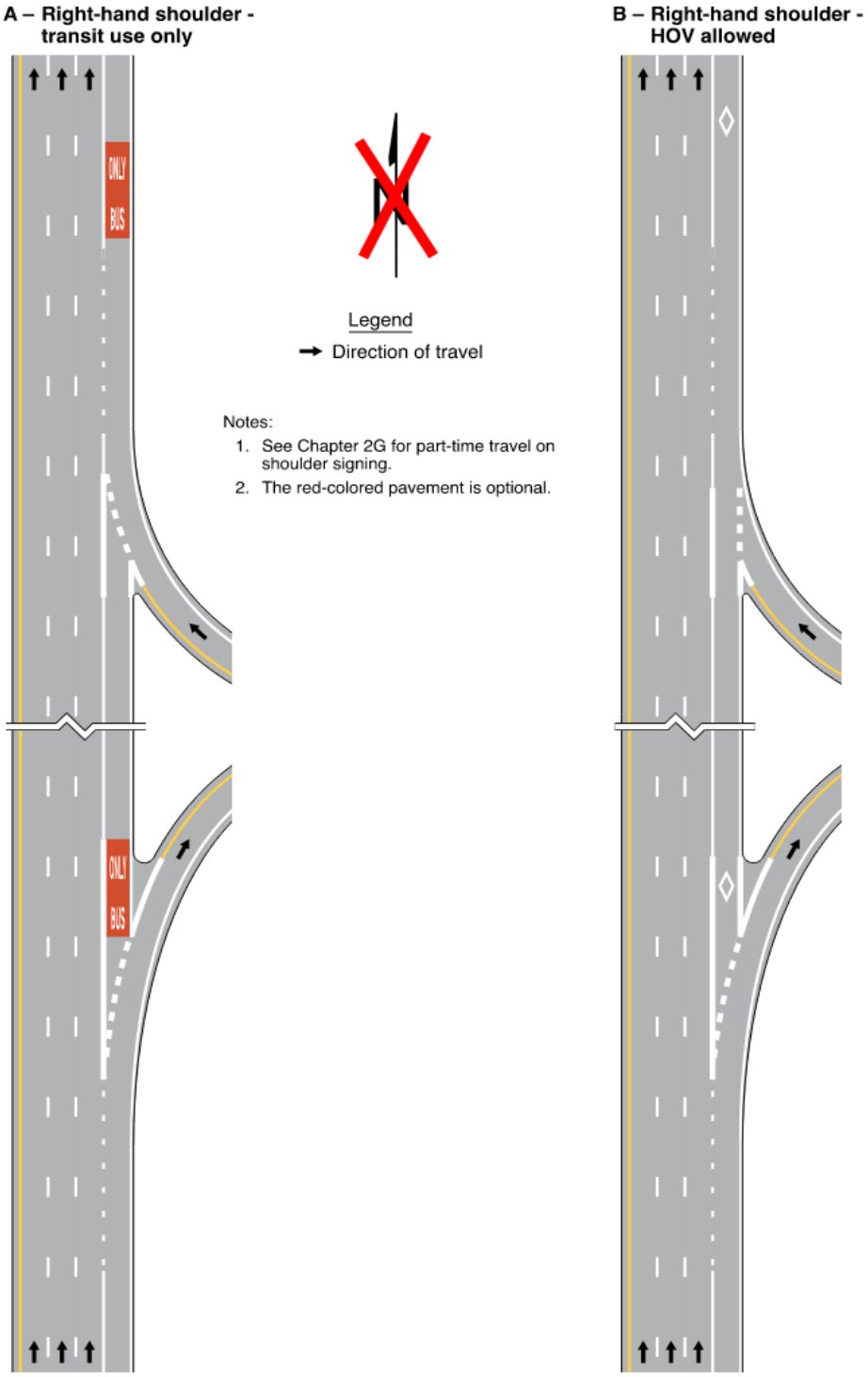


Figure 3E-5. Markings for Part-Time Travel on Shoulder and Application of Pavement Word Markings (Sheet 2 of 3)

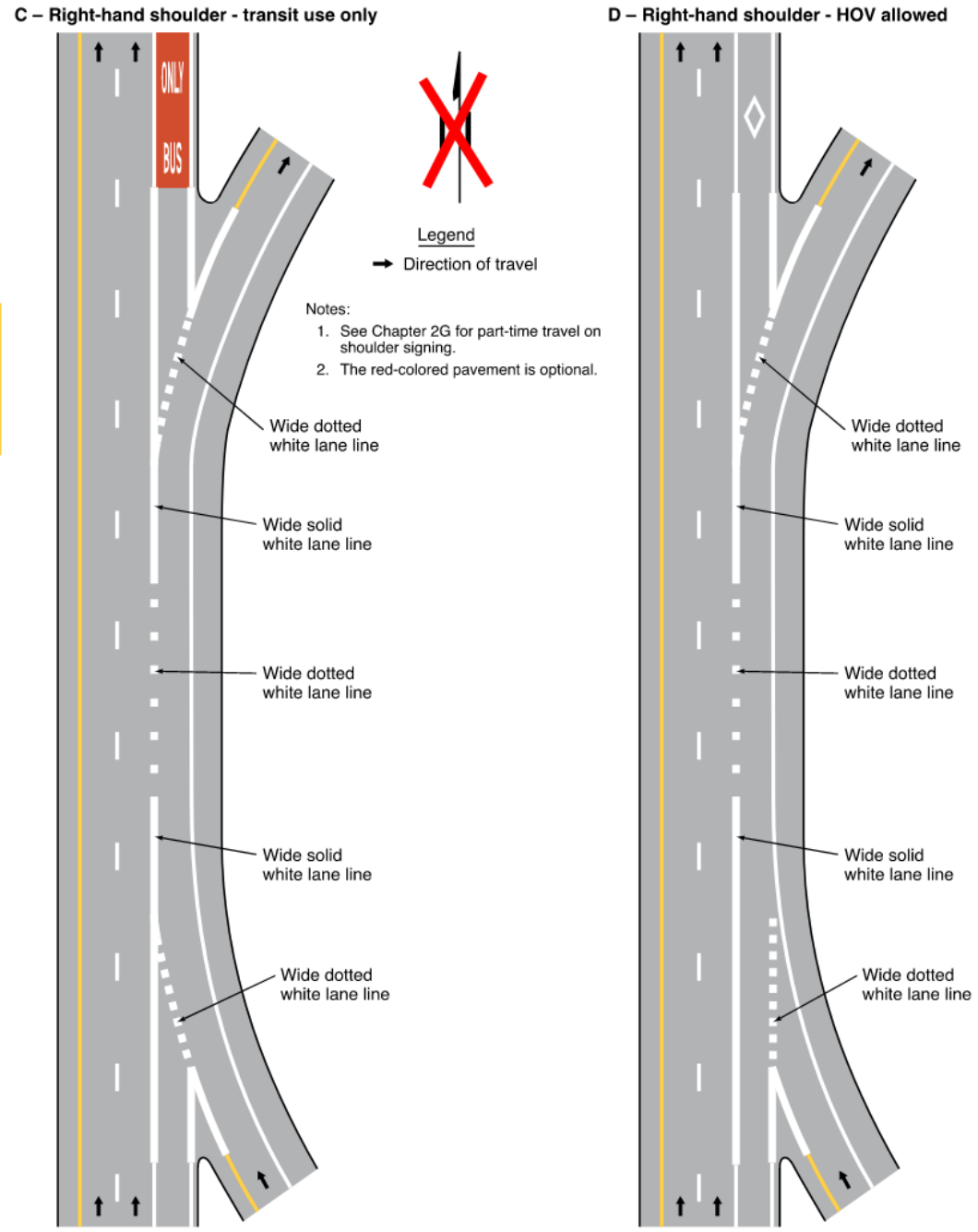


Figure 3E-5. Markings for Part-Time Travel on Shoulder and Application of Pavement Word Markings (Sheet 3 of 3)

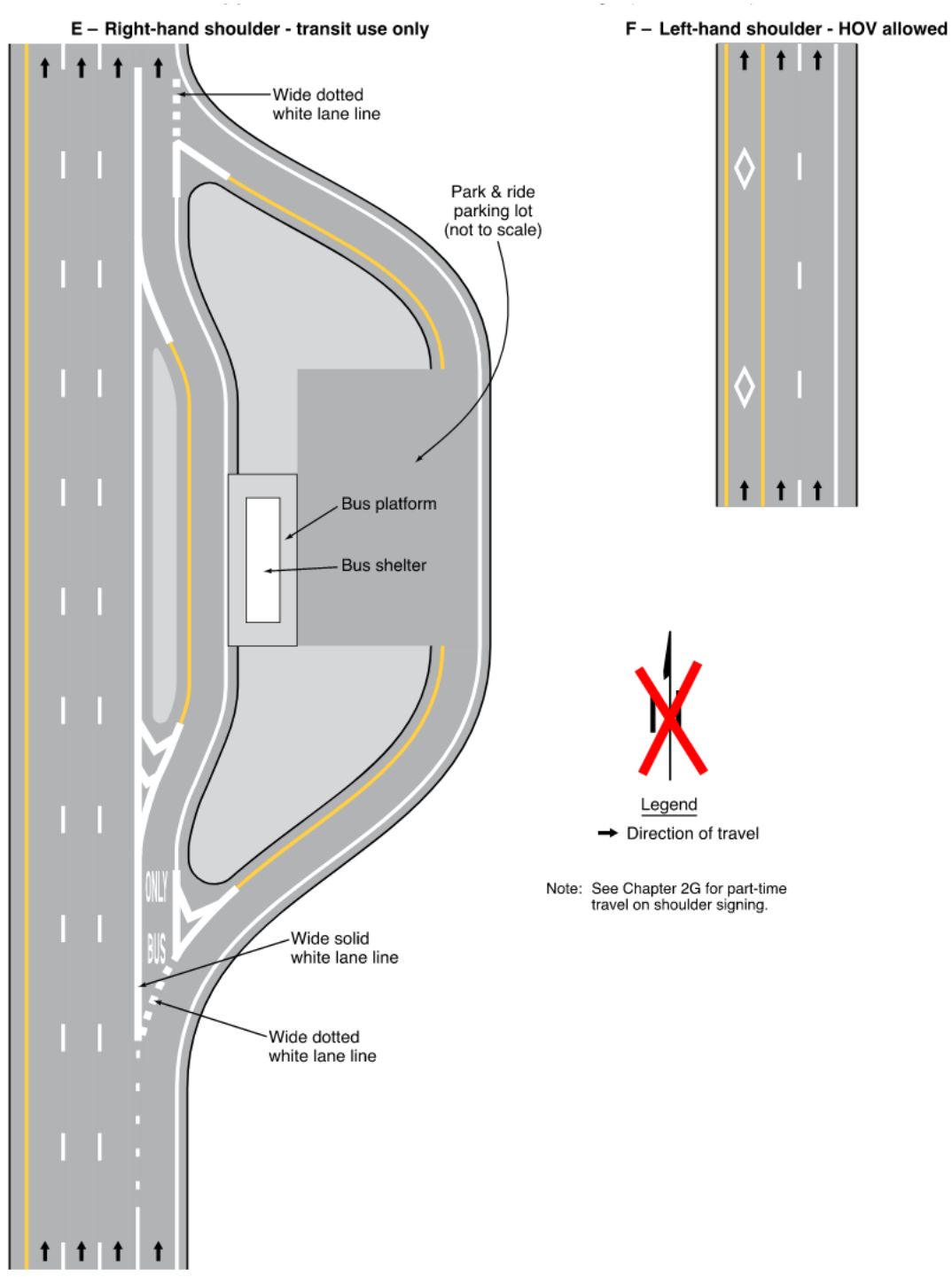
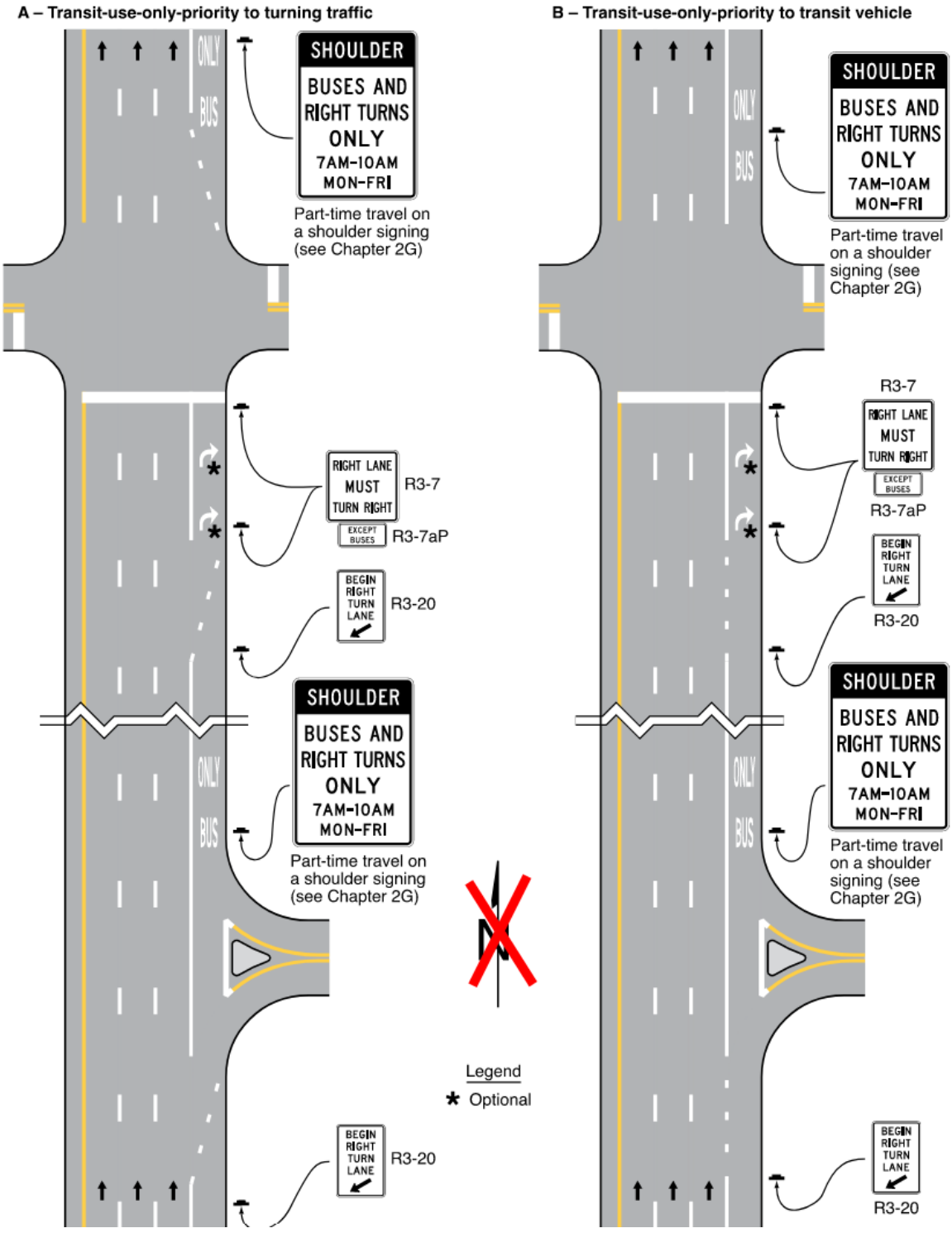


Figure 3E-6. Markings for Part-Time Travel on a Shoulder through an Intersection



CHAPTER 3F. MARKINGS FOR TOLL PLAZAS

There is no toll infrastructure on MoDOT facilities. Revised Dec. 2025

Section 3F.01 General

Support:

01 At toll plazas, pavement markings help road users identify the proper lane(s) to use for the type of toll payment they plan to use, to channelize movements into the various lanes, and to delineate obstructions in the roadway.

02 Section 3H.08 contains information on the use and application of purple-colored pavement at toll plazas for vehicles with registered electronic toll collection (ETC) accounts.

Section 3F.02 Longitudinal Markings

Guidance:

01 Solid white lane line markings should be used to separate toll lanes, payment methods, or to channelize movements at toll plazas.

02 Solid white lane line markings should begin at the upstream end of the full-width toll lane and be continued to the toll plaza.

Option:

03 For a toll plaza approach lane that is restricted to use only by vehicles with registered ETC accounts, the solid white lane line or edge line on the right-hand side of the ETC Account-Only lane and the solid white lane line or solid yellow edge line on the left-hand side of the ETC Account-Only lane may be supplemented with purple solid longitudinal markings placed contiguous to the inside edges of the lines defining the lane.

Standard:

04 If the purple solid longitudinal markings described in Paragraph 3 of this Section are used, the purple markings shall be at least 3 inches wide.

Guidance:

05 If the purple solid longitudinal markings described in Paragraph 3 of this Section are used, the purple markings should not be wider than the line they supplement.

Standard:

06 Toll booths and the islands on which they are located are considered to be obstructions in the roadway and they shall be provided with markings that comply with the provisions of Section 3B.13 and Chapter 3J.

Option:

07 Longitudinal pavement markings may be omitted alongside toll booth islands between the approach markings and any departure markings.

Section 3F.03 Pavement Word and Symbol Markings

Support:

01 Section 3E.03 contains information on the use of pavement word and symbol markings for ETC Account-Only lanes not specific to toll plazas.

Standard:

02 Except as provided in Paragraph 4 of this Section, when a lane on the approach to a toll plaza is restricted to use only by vehicles with registered ETC accounts, the ETC Account-Only lane word markings or pictograph described in Section 3E.03 shall be used (see Drawing A in Figure 3H-6).

03 When one or more open-road tolling (ORT) lanes that are restricted to use only by vehicles with registered ETC accounts bypass a mainline toll plaza on a separate alignment, pavement word markings or pictographs shall be used on the approach to the point where the ORT lanes diverge from the lanes destined for the mainline toll plaza (see Drawings B and C in Figure 3H-6).

Option:

04 Preferential lane-use markings may be omitted at toll plazas where physical conditions preclude the use of the markings.

Guidance:

05 If an ORT lane that is immediately adjacent to a mainline toll plaza is not separated from adjacent cash payment toll plaza lanes by a curb or barrier, then channelizing devices (see Section 3I.01), and/or longitudinal pavement markings that discourage or prohibit lane changing should be used to separate the ORT lane from the adjacent cash payment lane. This separation should begin on the approach to the mainline toll plaza at approximately the point where the vehicle speeds in the adjacent cash lanes drop below 30 mph during off-peak periods and should extend downstream beyond the toll plaza approximately to the point where the vehicles departing the toll plaza in the adjacent cash lanes have accelerated to 30 mph.

CHAPTER 3G. DELINEATORS [EPG 620.6]

Section 3G.01 General

Support:

01 Delineators are particularly beneficial at locations where the alignment might be confusing or unexpected, such as at lane-reduction transitions and curves. Delineators are effective guidance devices at night and during adverse weather. An important advantage of delineators in certain locations is that they remain visible when the roadway is wet or covered by snow.

02 Delineators are considered guidance devices to help road users navigate the roadway alignment, rather than warning devices.

Option:

03 Delineators may be used on long continuous sections of highway or through short stretches where there are changes in horizontal alignment.

Section 3G.02 Design

Standard:

01 Delineators shall consist of retroreflective devices that are capable of clearly retroreflecting light under normal atmospheric conditions from a distance of 1,000 feet when illuminated by the high beams of standard automobile lights. They shall be mounted on crashworthy (see definition in Section 1C.02) supports.

02 Retroreflective elements for delineators shall have a minimum vertical and horizontal dimension of 3 inches, or a minimum diameter dimension of 3 inches when circular.

Support:

03 Within a series of delineators along a roadway, delineators for a given direction of travel at a specific location are referred to as single delineators if they have one retroreflective element for that direction, double delineators if they have two identical retroreflective elements for that direction mounted together, or vertically-elongated delineators if they have a single retroreflective element with an elongated vertical dimension to approximate the vertical dimension of two separate single delineators.

Option:

04 A vertically-elongated delineator of appropriate size may be used in place of a double delineator.

Section 3G.03 Application

Standard:

01 The color of delineators shall comply with the color of edge lines stipulated in Sections 3A.03 and 3B.09.

02 A series of single delineators shall be provided on the right-hand side of freeways and expressways and on at least one side of interchange ramps, except when either Condition A, ~~or~~ Condition B, or Condition C is met, as follows:

A. On tangent sections of freeways and expressways when both of the following conditions are met:

1. **~~Raised~~ Inlaid pavement markers are used continuously on lane lines throughout all curves and on all tangents to supplement pavement markings, and**
2. **Roadside delineators are used to lead into all curves, or**

B. On sections of roadways where continuous lighting is in operation between interchanges.

C. On interstate or other highways with Emergency Reference Markers (D10-5) (See EPG 903.9.4) installed on the right-hand side of the roadway.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

03 Delineators may be provided on other classes of roads.

04 A series of single delineators may be provided on the left-hand side of roadways.

05 Chevron Alignment (W1-8) signs may be used instead of or in addition to standard delineators, as provided in Section 2C.08.

Standard:

06 Delineators on the left-hand side of a two-way roadway shall be white (see Figure 3G-1).

Guidance:

07 A series of single delineators should be provided on the outside of curves on interchange ramps.

08 Where median crossovers are provided for official or emergency use on divided highways and where these crossovers are to be marked with pavement markings, a double yellow delineator should be placed on the left-hand side of the through roadway on the far side of the crossover for each roadway.

09 Double or vertically-elongated delineators should be installed at approximately 100-foot intervals along acceleration and deceleration lanes.

10 A series of delineators should be used wherever guardrail or other longitudinal barriers are present along a roadway or ramp.

Option:

M10A A strip of retroreflective material may be used to enhance delineation at intersections. The retroreflective material may be installed on a sign support for signs located within the corner radius that face the intersecting road.

Standard:

M10B If a strip of retroreflective material is used on the sign support for delineation, it shall be at least 4 inches in width, it shall be placed for the full length of the support from the bottom of the sign and extending down the length of the post, with the bottom of the retroreflective strip not being taller than 2 feet above the edge of the roadway, and its color shall match the color of the adjacent edge line. The retroreflective strip for delineation shall be installed facing the direction of travel on the highway, not facing the intersecting road. The retroreflective strip shall not display any legend or other information. MoDOT's standard for this application uses a 4" x 72" aluminum panel with the retroreflective material applied to it where the panel can then be attached to the sign post using the same types of fasteners used to attach signs. These panels are available from MoDOT's third party sign fabricator.

MoDOT policy for delineating intersections using retroreflective strips. Revised Dec. 2025

Option:

M10C Installation of delineators may be provided on public roads as defined in Section 1C.02. A maximum of three delineators can be installed per approach as indicated in Fig. 620.5.4.2, Installation of Delineators on Public Side Roads and Private Entrances. Delineation of the right-hand side of the radius may be provided by the use of a strip of retroreflective material installed on the STOP sign post if the post is located appropriately.

MoDOT policy for delineating public road intersections. Revised Dec. 202

M10D A property owner may request the delineation of a private entrance.

Support:

M10E When delineation is used at a private entrance the preference of the department is to have the property owners use white reflective tape, but other colors are permitted.

Standard:

M10F When delineation is used at a private entrance the owner shall be responsible for the installation and maintenance of such delineation. MoDOT will allow the installation of one lightweight post such as a metal fence post at each end of the pipe crossing or within the radius of the entrance. If reflectors are used rather than tape, one reflector on each side of the post, or a total of four reflectors, will be permitted.

MoDOT policy for delineating private drive intersections. Revised Dec. 2025

Option:

11 Red delineators may be used on the reverse side of any delineator where it would be viewed by a road user traveling in the wrong direction on that particular ramp or roadway.

Standard:

M11A Red delineators shall be used on the back side of delineators at off ramps to discourage wrong way driving. The red delineators shall be used starting at the crossroad and extending to the start of the deceleration lane on the main line.

MoDOT policy for delineating public road and private drive intersections. Revised Dec. 202

Guidance:

12 Except as provided in ~~Paragraph 13~~ the fourth Option paragraph of Section 3B.12, delineators of the appropriate color should be used to indicate a lane-reduction transition where either an outside or inside lane merges into an adjacent lane.

13 When used for lane-reduction transitions, the delineators should be installed adjacent to the lane or lanes reduced for the full length of the transition and should be so placed and spaced to show the reduction (see Section 3B.12 and Figure 3B-14).

14 On a highway with continuous delineation on either or both sides, delineators should be carried through transitions.

~~**Standard:**~~

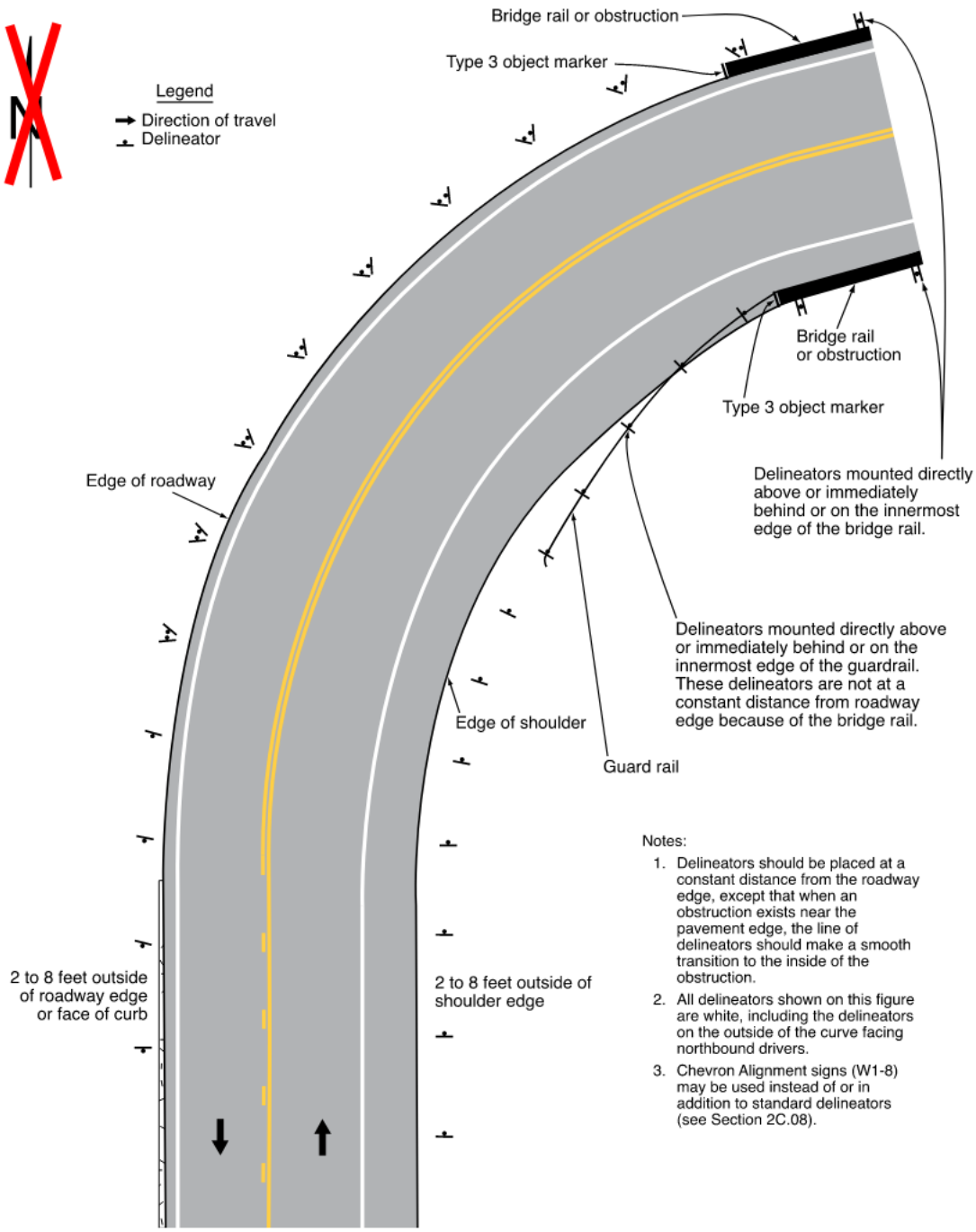
~~**15 When used on a truck escape ramp, delineators shall be red.**~~

~~Guidance:~~

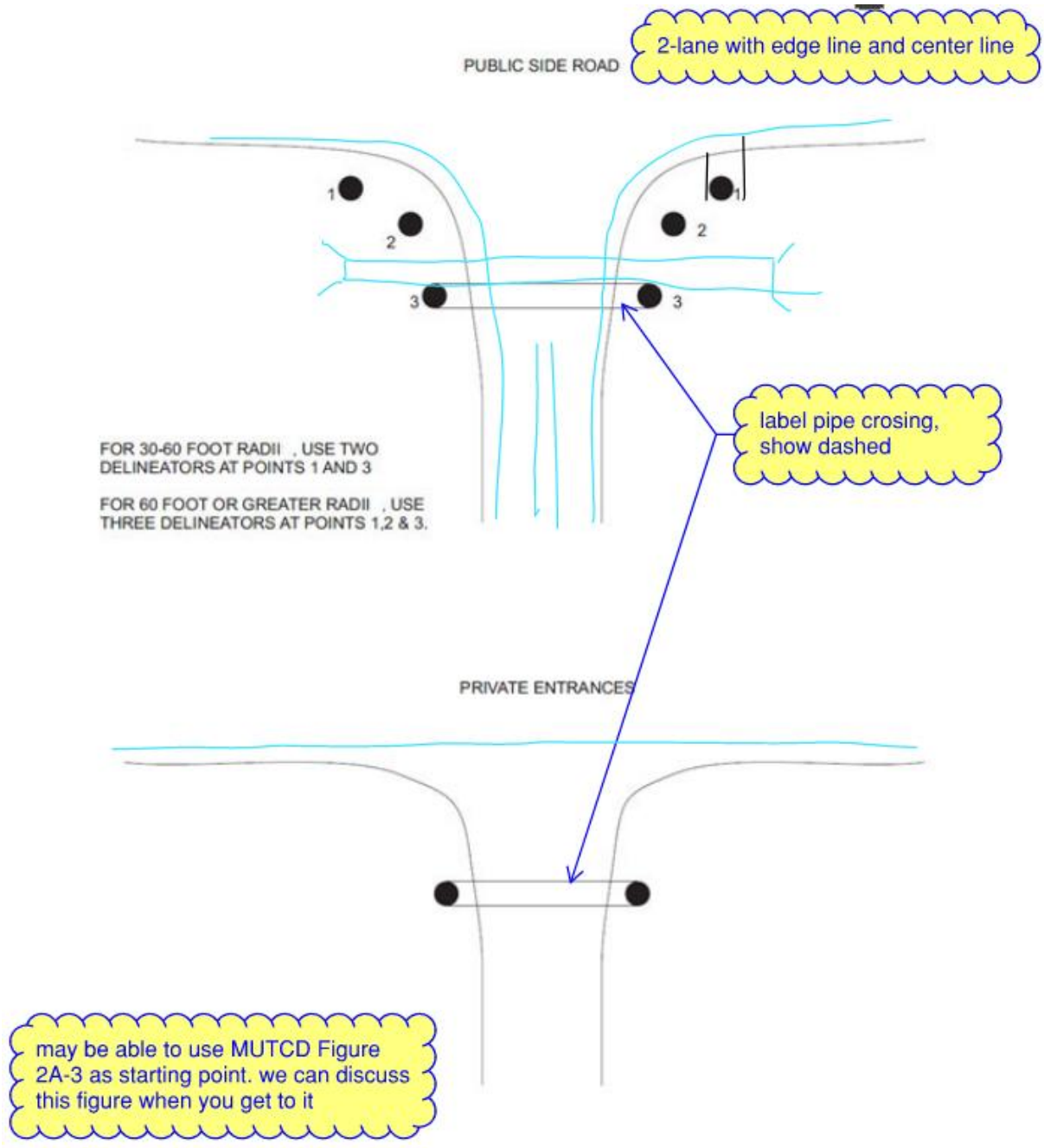
~~16 Red delineators should be placed on both sides of truck escape ramps.~~

There are no truck escape ramps on MoDOT facilities. Revised Dec. 2025

Figure 3G-1. Examples of Delineator Placement



EPG Figure 620.5.4.2. Installation of Delineators on Public Side Roads and Private Entrances



Section 3G.04 Placement and Spacing

Guidance:

01 Except as provided in ~~Paragraph 2 of this Section~~ the following paragraph, delineators should be mounted at a height, measured vertically from the bottom of the lowest retroreflective device to the elevation of the near edge of the roadway, of approximately 4 feet.

Option:

02 When mounted on the face of or on top of guardrails or other longitudinal barriers, delineators may be mounted at a lower elevation than the normal delineator height recommended in ~~Paragraph 1 of this Section~~ the previous paragraph.

Guidance:

03 Delineators should be placed 2 to 8 feet outside the outer edge of the shoulder, or if appropriate, in line with the roadside barrier that is 8 feet or less outside the outer edge of the shoulder.

04 Delineators should be placed at a constant distance from the edge of the roadway, except where a guardrail or other longitudinal barrier is present. ~~that w~~Where an obstruction intrudes into the space between the pavement edge and the extension of the line of the delineators, the delineators should be transitioned to be in line with or inside the innermost edge of the obstruction. ~~If the obstruction is a guardrail or other longitudinal barrier, the delineators should be transitioned to be just behind, directly above (in line with), or on the innermost edge of the guardrail or longitudinal barrier.~~ Post mounted delineators should not be installed behind guardrail or barrier wall if guardrail delineation is present.

MoDOT policy for guardrail delineation. Revised Dec. 2025

05 Delineators should not present a vertical or horizontal clearance obstacle for pedestrians.

06 Delineators should be spaced ~~200 to 530~~528 feet apart on mainline tangent sections. Delineators should be spaced 100 feet apart on ramp tangent sections.

Option:

07 On a highway with continuous delineation on either or both sides, the spacing between a series of delineators may be closer.

08 When uniform spacing is interrupted by such features as driveways and intersections, delineators which would ordinarily be located within the features may be relocated in either direction for a distance not exceeding ¼ of the uniform spacing. Delineators still falling within such features may be eliminated.

09 Delineators may be transitioned in advance of a lane transition or obstruction as a guide for oncoming traffic.

Guidance:

10 The spacing of delineators should be adjusted on approaches to and throughout horizontal curves so that several delineators are always simultaneously visible to the road user. The approximate spacing shown in Table 3G-1 should be used.

~~*11 The spacing between red delineators that are placed on both sides of a truck escape ramp should not exceed 50 feet for a distance that is sufficient to identify the ramp entrance. The spacing between red delineators that are placed beyond the ramp entrance should be such that adequate guidance is provided based on the length and design of the escape ramp.*~~

Option:

12 When needed for special conditions, delineators of the appropriate color may be mounted in a closely-spaced manner on the face of or on top of guardrails or other longitudinal barriers to form a continuous or nearly-continuous "ribbon" of delineation.

Support:

13 Examples of delineator installations are shown in Figure 3G-1.

Section 3G.05 Guardrail Delineation

Standard:

M01 All guardrail shall be delineated in accordance with Section 606.10.2.3 of the Standard Specifications. The design of the guardrail delineators shall be in accordance with Standard Plans 903.00 and Standard Specification Sec 1065. The color of the retroreflective sheeting used shall match the color of the adjacent edge line. If no edge line is present, white shall be used on the right-hand side facing approaching traffic.

M02 On two-lane roads with two-way traffic the guardrail shall be delineated with white retroreflecitve sheeting on both sides of the delineator, including at bridge approaches.

M03 If guardrail is present at off ramps, the back side of the guardrail delineator shall be red retroreflective sheeting. The red sheeting is used on the back side of guardrail delineators from the crossroad to the start of the deceleration lane on the main line.

Option:

M04 The use of the red sheeting on the back side of guardrail delineators may be used wherever there is a need to discourage wrong way driving.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 3G.06 Barrier Wall Delineation

Standard:

M01 Permanent barrier walls and bridge barrier walls shall be delineated in accordance with Section 617.30 of the Standard Specifications. The design of the barrier wall delineators shall be in accordance with Standard Plans 903.00 and Standard Specification Sec 1065. The color of the retroreflective sheeting used shall match the color of the adjacent edge line.

Guidance:

M02 Where there is traffic on both sides of a barrier wall, a two-sided delineator with retroreflective sheeting on both sides, should be used. On two-lane roads the bridge barrier walls should be delineated with white retroreflective sheeting on both sides of the delineator.

Standard:

M03 If barrier wall is present at off ramps, the back side of the barrier wall delineator shall be red retroreflective sheeting. The red sheeting is used on the back side of barrier wall delineators from the crossroad to the start of the deceleration lane on the main line.

Option:

M04 The use of the red sheeting on the back side of guardrail delineators may be used wherever there is a need to discourage wrong way driving.

MoDOT specific content from the EPG. Revised Dec. 2025

Table 3G-1. Approximate Spacing for Delineators on Horizontal Curves

Radius (R) of Curve	Approximate Spacing (S) on Curve
50 feet	20 feet
115 feet	25 feet
180 feet	35 feet
250 feet	40 feet
300 feet	50 feet
400 feet	55 feet
500 feet	65 feet
600 feet	70 feet
700 feet	75 feet
800 feet	80 feet
900 feet	85 feet
1,000 feet	90 feet

Notes: 1. Spacing for specific radii may be interpolated from table.

2. The minimum spacing should be 20 feet.
3. The spacing on curves should not exceed 300 feet.
4. In advance of or beyond a curve, and proceeding away from the end of the curve, the spacing of the first delineator is 2S, the second 3S, and the third 6S, but not to exceed 300 feet.
5. S refers to the delineator spacing for specific radii computed from the formula $S=3\sqrt{R-50}$.
6. The distances for S shown in the table above were rounded to the nearest 5 feet.

CHAPTER 3H. COLORED PAVEMENT [EPG 620.7]

Section 3H.01 Standardization of Application

Guidance:

M00 Colored pavements are not currently used on MoDOT facilities. The Highway Safety and Traffic Division should be contacted for guidance when considering the use of colored pavements.

Support:

01 Colored pavements consist of differently-colored road paving materials, such as colored asphalt or concrete. Other surface treatments can be applied to the surface of a road, island, or area outside the traveled way to simulate a colored pavement.

02 If non-retroreflective colored pavement is used as a purely aesthetic surface treatment (see Section 3H.03) within the provisions of this Chapter and are not intended to communicate regulations, warnings, guidance, or other information to road users, the colored pavement is not considered to be a traffic control device, even if it is located between the lines of a crosswalk.

Standard:

03 If colored pavement is used within the traveled way, on flush or raised islands, or on shoulders to communicate regulations, warnings, guidance, or other information to road users, or if retroreflectivity is used, the colored pavement shall be considered a traffic control device and shall be limited to the colors and applications specified in this Chapter.

04 Except as provided in ~~Paragraph 5~~ the first Option paragraph of Section 3H.07, colored pavement shall only be used if the corresponding regulations, warnings, or guidance are applicable at all times.

Guidance:

05 Colored pavements used as traffic control devices should only be used where the color pavement contrasts significantly with adjoining paved areas.

Support:

06 The chromaticity coordinates that define the ranges of acceptable colors for traffic control devices are found in the Appendix to Subpart F of 23 CFR 655.

Standard:

07 If used, colored pavement shall only be used to supplement other markings as provided in ~~this Manual~~ the EPG.

Support:

08 Longitudinal pavement markings, crosswalks, pavement marking symbols, and elongated route markers are not considered colored pavements.

Section 3H.02 Materials

Option:

01 Colored pavements may be either retroreflective or non-retroreflective, in accordance with the provisions of this Chapter for specific applications.

Guidance:

02 If surface treatments are applied to the surface of a road, island, or other area outside the traveled way to simulate a colored pavement, pavement marking materials should be selected that will minimize loss of traction for road users (see ~~Paragraph 2~~ the second paragraph of Section 3A.02).

Support:

03 Providing for retroreflectivity, such as incorporating glass beads, can affect the skid resistance of pavement markings.

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

Section 3H.03 Aesthetic Surface Treatments

Support:

01 Aesthetic surface treatments are sometimes used between the transverse lines within a crosswalk, in islands, in medians, in shoulders, within sidewalk extensions designated by pavement markings, or in other areas outside of the traveled way.

02 Common examples of materials used as aesthetic surface treatments include brick, paving bricks, paving stones, or other materials designed to simulate such paving. Some examples of geometries for aesthetic surface treatments include honeycomb, lattice, mesh, grid, and regular polygon patterns.

03 Surfaces with individual units laid out of plane and those that are heavily-textured, rough, or chamfered, could increase rolling resistance and subject pedestrians who use wheelchairs to the effects of vibration; it is desirable to minimize surface discontinuities.

04 Common examples of colors for aesthetic surface treatments incorporated into the material or geometry are brick red, rust, brown, burgundy, clay, tan, or similar earth-tone equivalents (see Figure 3H-1).

Standard:

05 Aesthetic surface treatments shall not interfere with traffic control devices.

06 Aesthetic surface treatments shall not be of a surface that can confuse pedestrians with vision disabilities that rely on tactile treatments or cues for navigation.

07 Colors used for aesthetic surface treatments shall be outside the chromaticity coordinates that define the ranges of acceptable colors for traffic control devices.

08 Patterns that constitute a purely aesthetic surface treatment shall be devoid of advertising and shall not contain elements of retroreflectivity.

09 Patterns that constitute a purely aesthetic surface treatment for the interior area of a crosswalk shall not be designed to encourage road users to remain in the crosswalk, engage or interact with the pattern, or otherwise inhibit users from crossing the street in a safe and efficient manner.

Guidance:

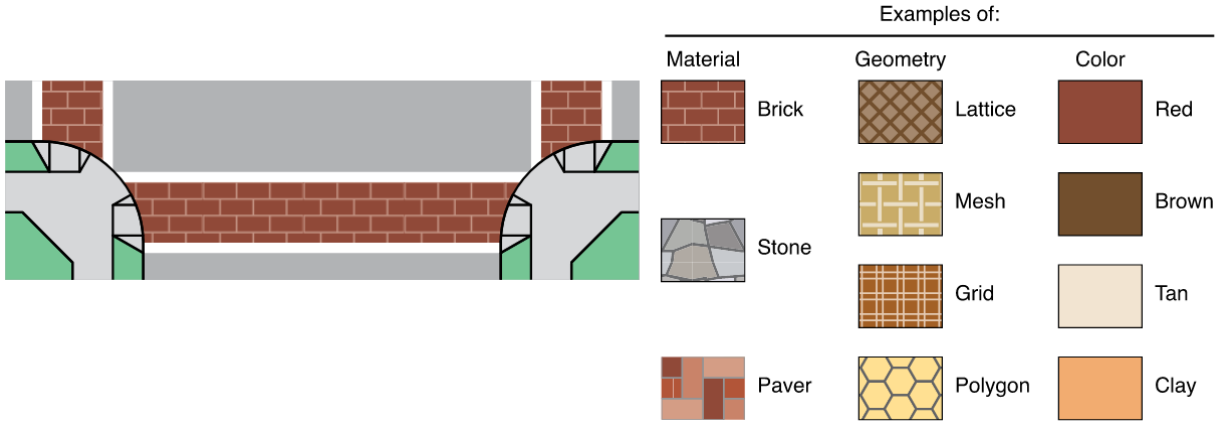
10 Aesthetic surface treatments should not use colors or patterns that degrade the contrast of markings used to delineate an area, or that might be mistaken by road users as a traffic control application.

11 To provide contrast, a gap of at least one-half the width of the white transverse line used to establish the crosswalk, but not less than 6 inches, should be used between the white crosswalk lines and the aesthetic surface treatment, such as unmarked pavement or a black contrast line (see Section 3A.03).

12 To provide contrast, a gap of at least the width of the longitudinal line used to establish the area should be used between the longitudinal line and the aesthetic surface treatment, such as unmarked pavement or a black contrast line (see Section 3A.03). If the longitudinal line is a double line, the gap should be at least the width of one of the lines that makes up the double line.

13 Aesthetic surface treatments should not contain pictographs, illustrations, or symbols.

Figure 3H-1. Aesthetic Treatments for Transverse Crosswalks



Section 3H.04 Yellow-Colored Pavement

Support:

01 Yellow-colored pavement is used to enhance the conspicuity of areas separating traffic traveling in opposite directions of travel and the left-hand edge of the roadway.

Standard:

02 If used, yellow-colored pavement shall be limited to:

A. Flush or raised median islands separating traffic flows in opposite directions,

B. Left-hand shoulders of divided highways, and

C. Left-hand shoulders of one-way streets or ramps.

03 Yellow-colored pavement shall not be incorporated into elements of the roadway that function as ~~reversible lanes or~~ two-way left-turn lanes.

Reversible lanes are not used on MoDOT facilities. Revised Dec. 2025

04 Yellow-colored pavement shall not be used on channelizing islands where traffic travels in the same general direction on both sides.

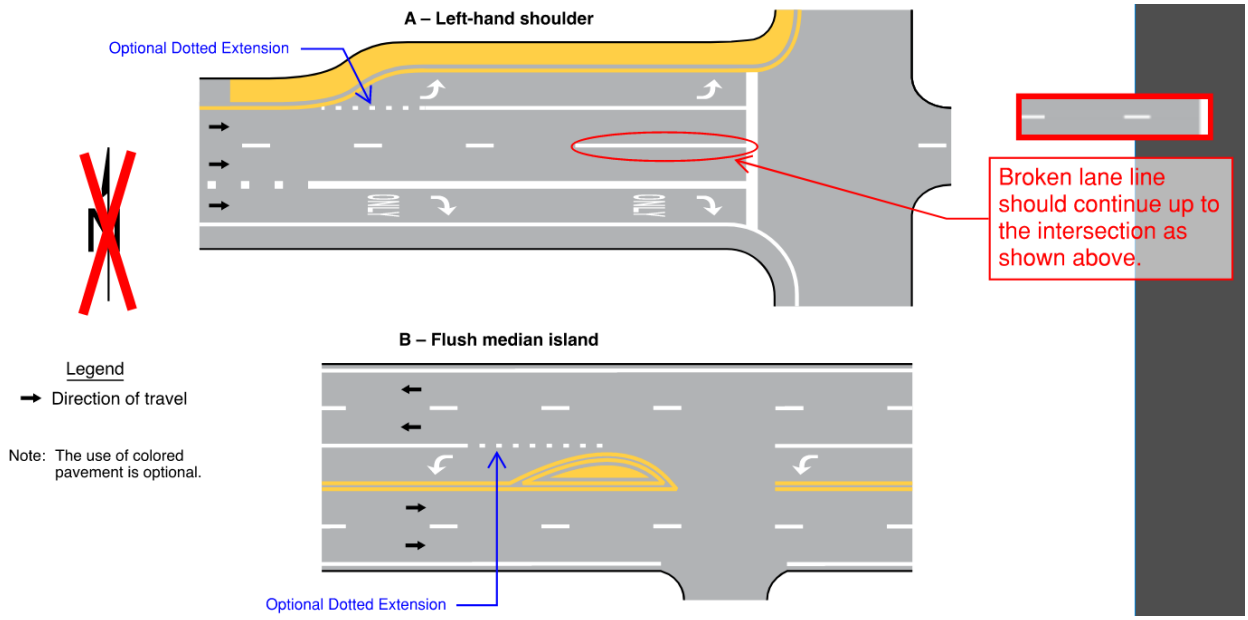
Option:

05 Yellow-colored pavement may be installed for the entire length of the roadway, island, or shoulder, or for only a portion or portions of the roadway, island, or shoulder.

Support:

06 An example of an application of yellow-colored pavement is shown in Figure 3H-2.

Figure 3H-2. Examples of Yellow-Colored Pavement Applications



Section 3H.05 White-Colored Pavement

Support:

01 White-colored pavement is used to enhance the conspicuity of areas separating traffic traveling in the same direction of travel and the right-hand edge of the roadway.

Standard:

02 If used, white-colored pavement shall be limited to:

- **A. Flush or raised channelizing islands where traffic passes on both sides in the same general direction,**
- **B. Right-hand shoulders,**
- **C. Exit gore areas, and**
- **D. Entrance gore areas.**

Guidance:

03 When used on right-hand shoulders, white-colored pavement should be limited to areas not intended for use by motor vehicle traffic except those shoulders designated for emergency use.

Option:

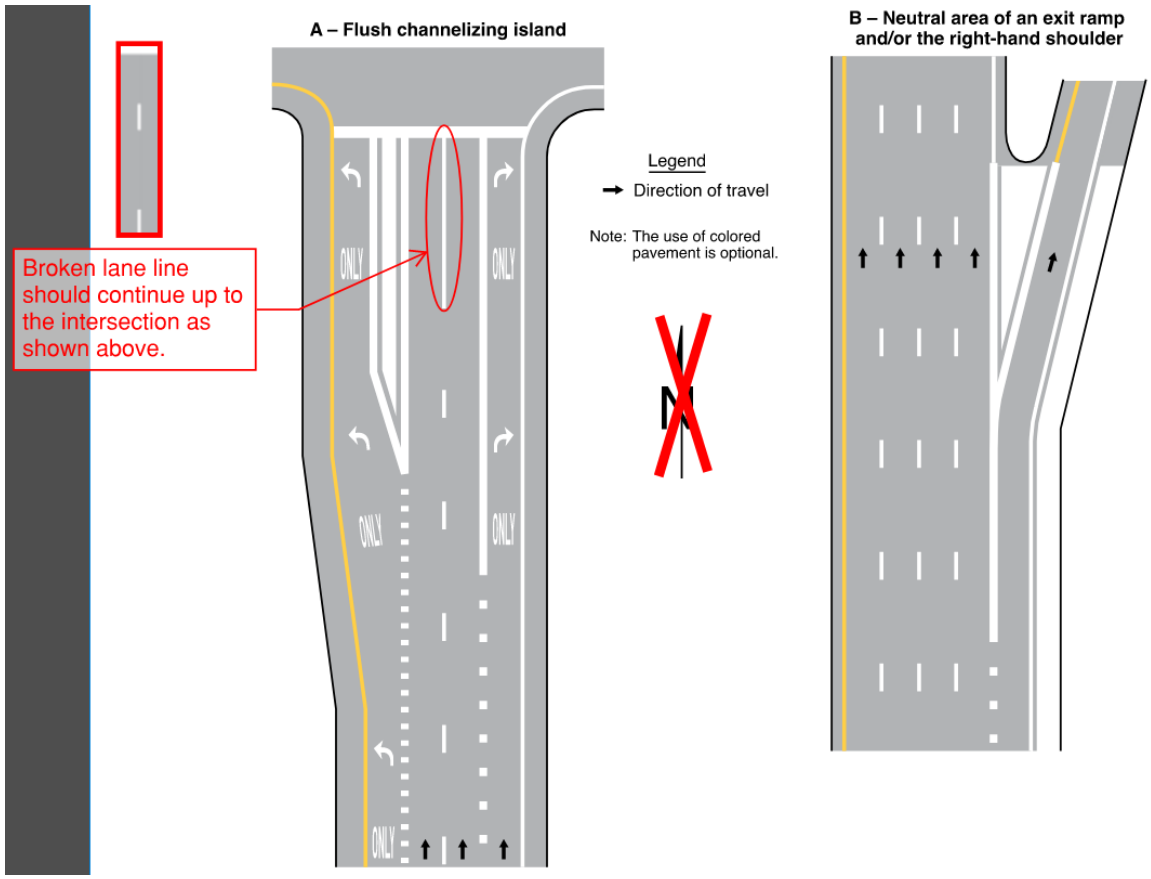
04 White-colored pavement may be installed for the entire length of the roadway, island, or shoulder, or for only a portion or portions of the roadway, island, or shoulder.

05 White-colored pavement may be used instead of chevron markings (see Sections 3B.13 and 3B.25) in neutral areas.

Support:

06 An example of an application of white-colored pavement is shown in Figure 3H-3.

Figure 3H-3. Examples of White-Colored Pavement Applications



Section 3H.06 Green-Colored Pavement for Bicycle Facilities

Support:

01 Green-colored pavement is used to enhance the conspicuity of locations where bicyclists are expected to operate, and areas where bicyclists and other traffic might have potentially conflicting, weaving, or crossing movements. Green-colored pavement is also used to enhance the conspicuity of word, symbol, and/or arrow pavement markings when these markings are used in certain bicycle facilities.

M01A MoDOT does not typically install or maintain green-colored pavement for bicycle facilities.

Guidance:

M01B If green-colored pavement is installed on a MoDOT route, an agreement should be in place with the local agency that will maintain the green-colored pavement.

MoDOT policy for green colored pavement. Revised Dec. 2025

Standard:

02 If used, green-colored pavement shall be limited to the applications described in Chapter 9E of the MUTCD.~~:~~

~~**A. Bicycle lanes (see Sections 9E.01, 9E.06, 9E.07, and 9E.08),**~~

~~**B. Extensions of bicycle lanes through intersections (see Section 9E.03),**~~

~~**C. Extensions of bicycle lanes through areas where motor vehicles enter a mandatory turn lane in which motor vehicles must weave across bicyclists in bicycle lanes (see Section 9E.02),**~~

~~**D. Two-stage bicycle turn boxes (see Section 9E.11),**~~

~~**E. Bicycle Boxes (see Section 9E.12), and**~~

~~**F. As a background for bicycle detector symbols (see Section 9E.15).**~~

MoDOT does not include MUTCD sections for green-colored pavement markings in EPG 914.4 (Chapter 9E). Revised Dec. 2025

03 Green-colored pavement shall not be:

A. Incorporated into electric-vehicle parking stations or parking stalls,

B. Incorporated into crosswalks (see Chapter 3C),

C. Used as a background for shared-lane markings (see Section 9E.09), or

D. Used instead of the required markings for bicycle facilities (see Chapter 9E).

04 If used, the pattern of the green-colored pavement supplementing dotted extension lines shall match the pattern of the dotted lines, thus filling in only the areas that are directly between a pair of dotted line segments. If used, the pattern of the green-colored pavement supplementing a dotted longitudinal line, which defines a bicycle lane (see ~~Paragraph 11~~ the third Guidance paragraph of Section 9E.02), shall match the pattern of the dotted line, thus filling in only the areas that are directly between a line segment and the curb, or, in the absence of a curb, the edge of the roadway.

Guidance:

05 If green-colored pavement is used within separated bicycle lanes on an independent alignment, it should be used only at the entrances to those facilities from roadways open to public travel or at conflict, weaving, or crossing locations.

06 If green-colored pavement is used within shared-use paths, it should be used only where pedestrian and bicyclist movements are separated and for only a portion (or portions) of the path designated for bicyclist use.

Option:

07 Green-colored pavement may be installed for the entire length of a bicycle lane or bicycle lane extension or for only a portion (or portions) of the bicycle lane or bicycle lane extension.

08 Green-colored pavement may be installed for the entire length of a physically-separated bikeway within the roadway or for only a portion (or portions) of the physically-separated bikeway within the roadway.

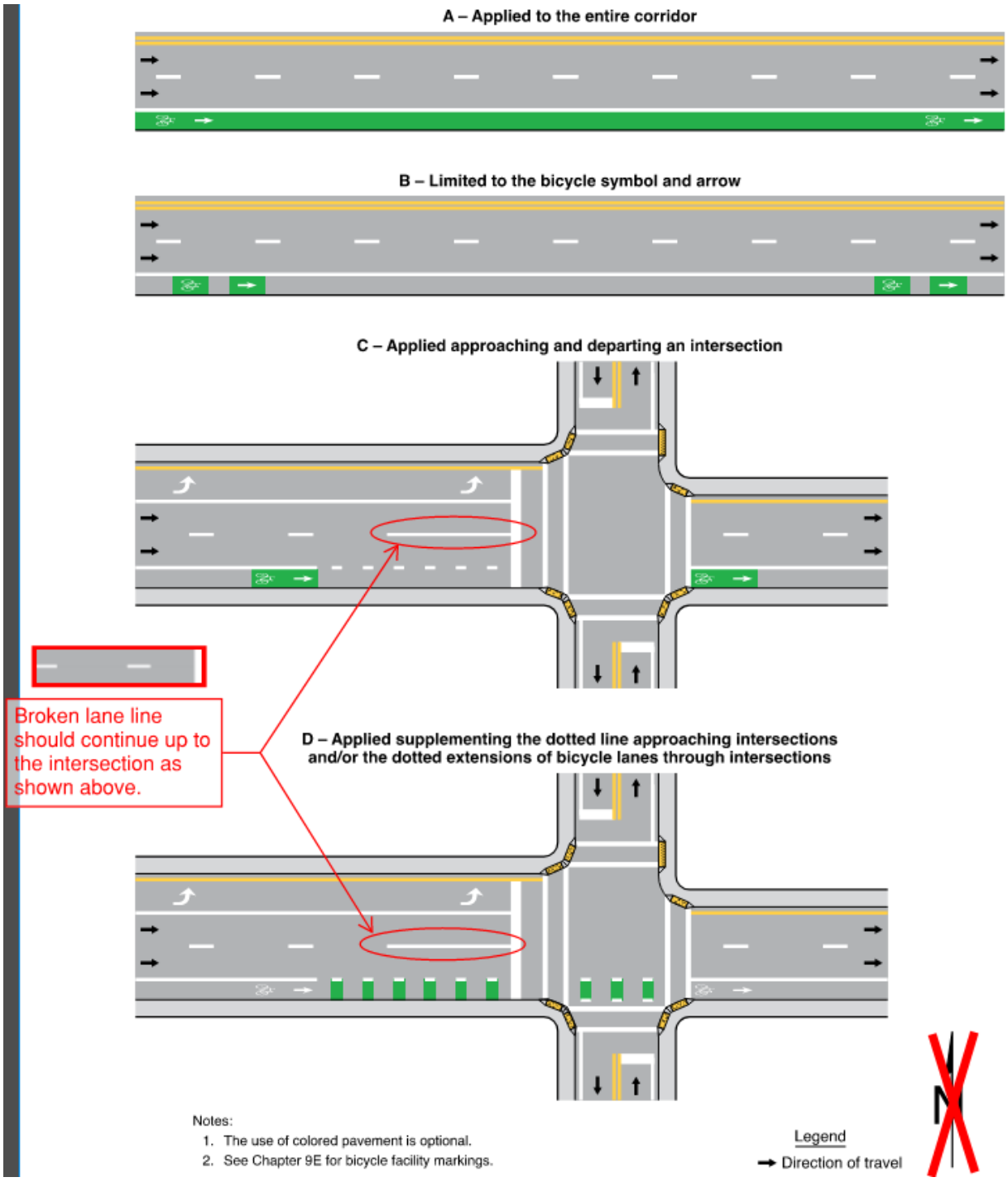
Guidance:

09 Appropriate regulatory (see Chapter 9B) or guide signing (see Chapter 9D) should be installed to provide related information to the presence of the colored pavement.

Support:

10 Examples of applications of green-colored pavement are shown in Figure 3H-4.

Figure 3H-4. Examples of Green-Colored Pavement Applications



Section 3H.07 Red-Colored Pavement for Public Transit Systems

Support:

01 Red-colored pavement is used to enhance the conspicuity of locations, station stops, or travel lanes in the roadway exclusively reserved for vehicles of public transit systems or multi-modal facilities

where public transit is the primary mode. These public transit vehicles include buses, streetcars, trolleys, light-rail trains, and rapid transit fleets.

Option:

02 Red-colored pavement may be used where engineering judgment determines that one or more of the following conditions are expected to result from its application:

A. Increased travel speeds will be expected by the public transport vehicle after an exclusive lane or facility is provided,
B. Reduced overall service time through the corridor will be expected by the public transport vehicle,
C. Decreased rates of illegal parking or occupation of the transit or multi-mode lane or facility will be expected.

Standard:

03 If used, red-colored pavement shall be applied only in lanes, areas, or locations where general-purpose traffic is not allowed to use, queue, wait, idle, or otherwise occupy the lane, area, or location where red-colored pavement is used.

04 Red-colored pavement shall be installed for the full width of the lane.

Option:

05 Red-colored pavement may be used for full-time or part-time operations.

06 Red-colored pavement may be installed for the entire length of a restricted lane or for only a portion (or portions) of the restricted lane.

07 Red-colored pavement may be installed in a broken (intermittent) or dotted pattern where entrance into the transit lane is permitted by general traffic, for example where general traffic is allowed in a transit lane in advance of a turn.

Standard:

08 Regulatory signs (see Sections 2B.02 and 2G.03) shall be used to establish the allowable use of the lane, area, or location. Regulatory signs shall also be used when it is determined that other vehicles will be allowed to enter the lane to turn or bypass queues.

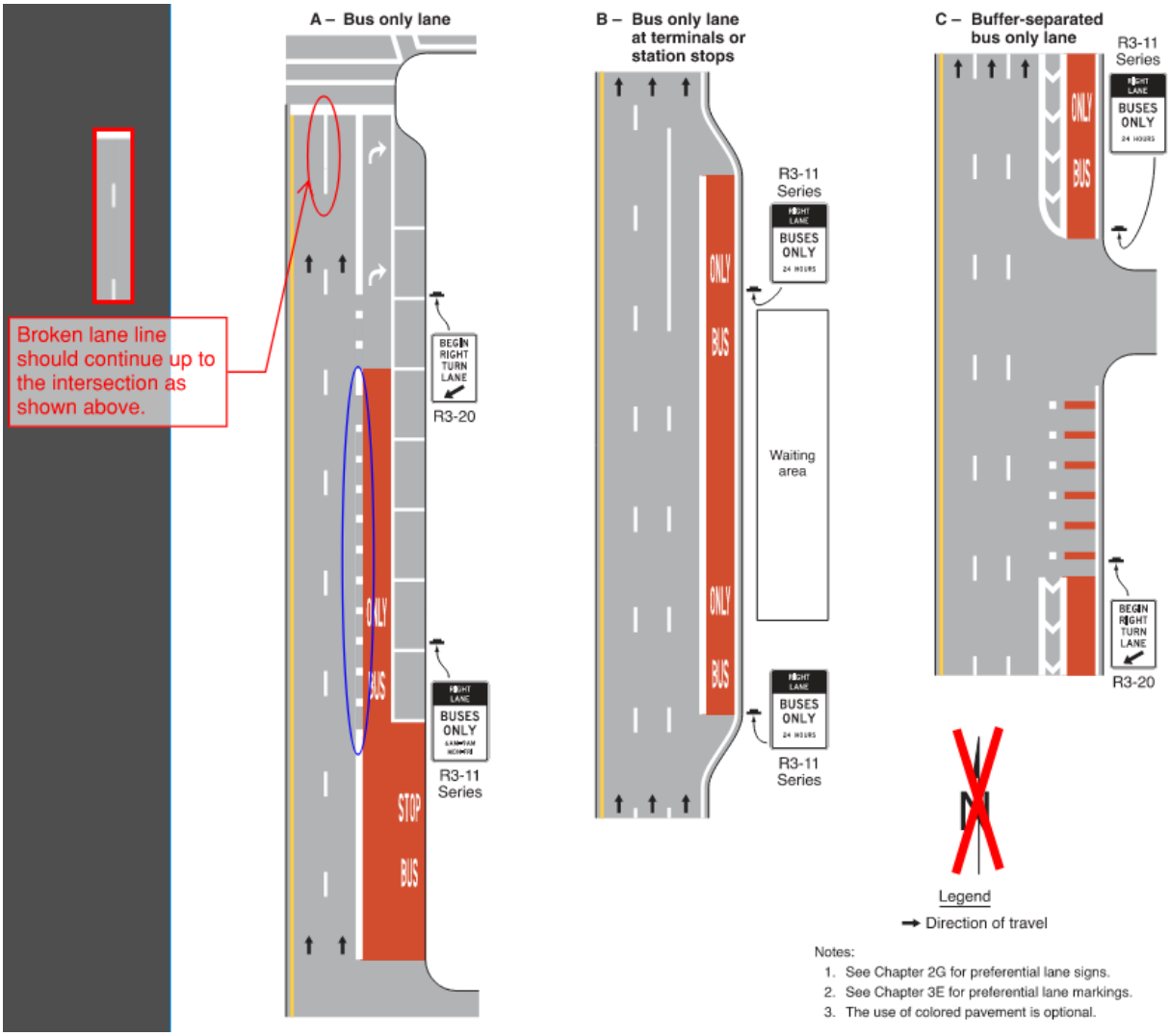
Guidance:

09 If red-colored pavement is used on public transit facilities separated from the roadway or on facilities on an independent alignment, it should be used only at the entrances to those facilities from roadways open to public travel.

Support:

10 Examples of applications of red-colored pavement are shown in Figure 3H-5.

Figure 3H-5. Examples of Red-Colored Pavement Applications



~~Section 3H.08 Purple-Colored Pavement for Electronic Toll Collection (ETC) Account-Only Preferential Lanes~~

~~**Standard:**~~

~~**01 Purple-colored pavement shall be limited to:**~~

~~**A. Lanes on the approach to a toll plaza where the lane is restricted to use only with a registered ETC account; and**~~

~~**B. Lanes or approaches to an open-road tolling (ORT) collection facility that bypasses the physical toll plaza, where the ORT facility is restricted for use only by vehicles with registered ETC accounts.**~~

~~**02 Purple-colored pavement shall not be used in an approach lane that also facilitates additional payment methods downstream.**~~

~~**03 If used approaching a physical toll plaza, purple-colored pavement shall be flanked by white solid longitudinal lines that establish the toll lane.**~~

~~04 If used on an ORT collection facility that bypasses the physical toll plaza, purple-colored pavement shall be flanked by appropriate edge lines, and if applicable in multi-lane bypasses, appropriate longitudinal solid or broken white lane lines.~~

~~Option:~~

~~05 Purple-colored pavement may be installed for the entire length of a toll lane or ORT collection facility or for only a portion (or portions) of the toll lane or ORT collection facility.~~

~~Support:~~

~~06 Figure 3H-6 illustrates examples of purple-colored pavement for use at toll plazas.~~

There is no toll infrastructure on MoDOT facilities. Revised Dec. 2025

Figure 3H-6. Examples of Purple-Colored Pavement Applications (Sheet 1 of 2)

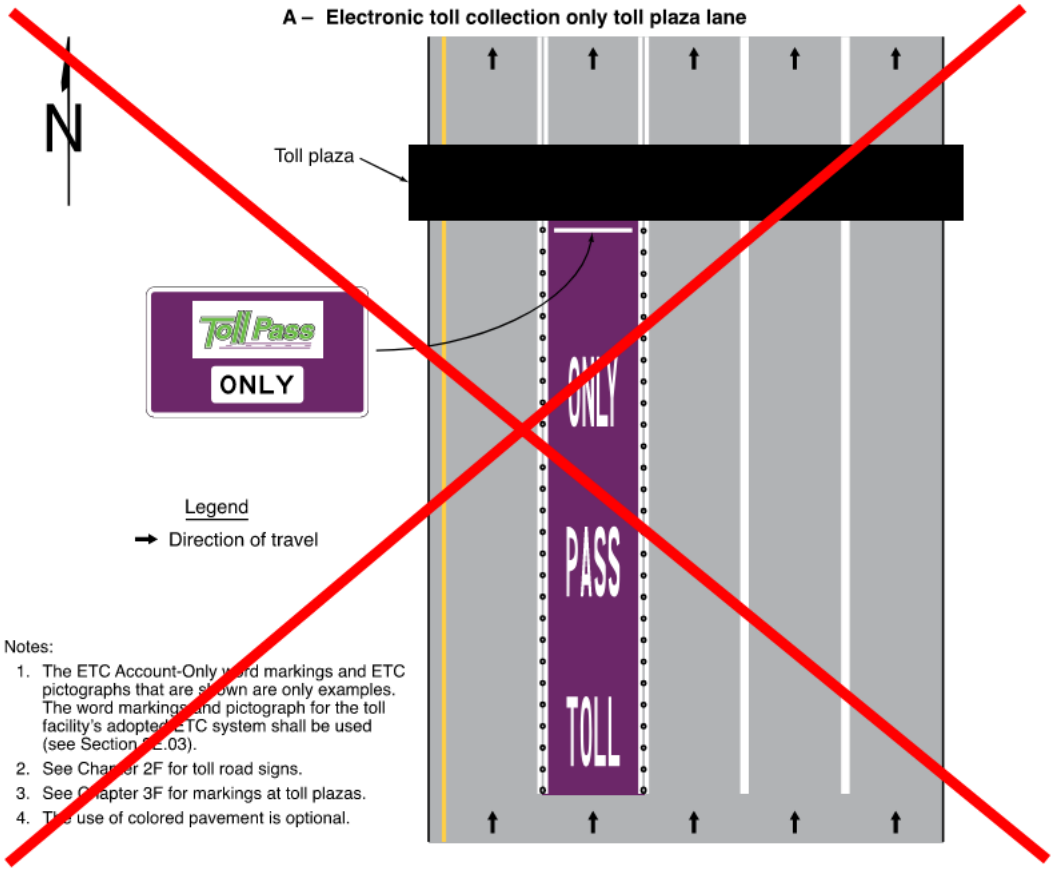
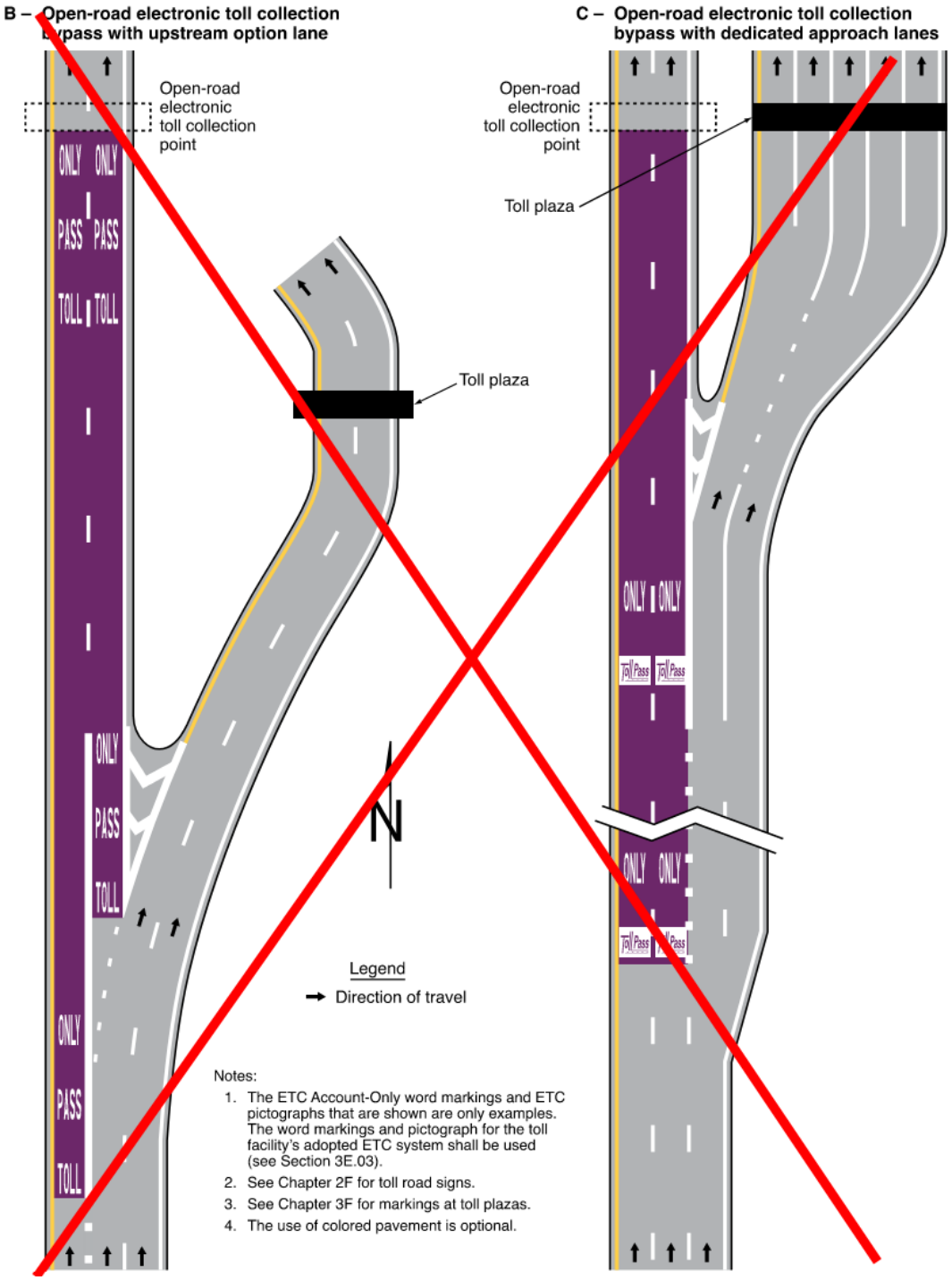


Figure is not adopted by MoDOT. Revised Dec. 2025

Figure 3H-6. Examples of Purple-Colored Pavement Applications (Sheet 2 of 2)



The definition of N is added because Section 3B.14 is not included in the MoDOT MUTCD. Revised Dec. 2025

Option:

03 Other spacing may be used based on engineering judgment.

~~Support:~~

~~04 Tubular markers are sometimes used to provide additional emphasis or improve lane discipline in advance of an unsignalized crosswalk (see Figure 3I-1).~~

Guidance:

05 When tubular markers are used to supplement a R1-6 series sign (see Section 2B.20) ~~that is either on the center line, lane line, or median island~~, they should not be used on the same pavement marking line where the R1-6 series sign is installed, because the tubular markers could obscure sign visibility.

MoDOT only allows R1-6 series signs to be installed on raised islands. Guidance is clarified to be consistent with MoDOT policy. Revised Dec. 2025

Support:

06 Section 6K.04 contains information for temporary installations of tubular markers.

Figure 3I-1. Examples of Tubular Markers Supplementing Pavement Markings in Advance of an Unsignalized Crosswalk (Sheet 1 of 2)

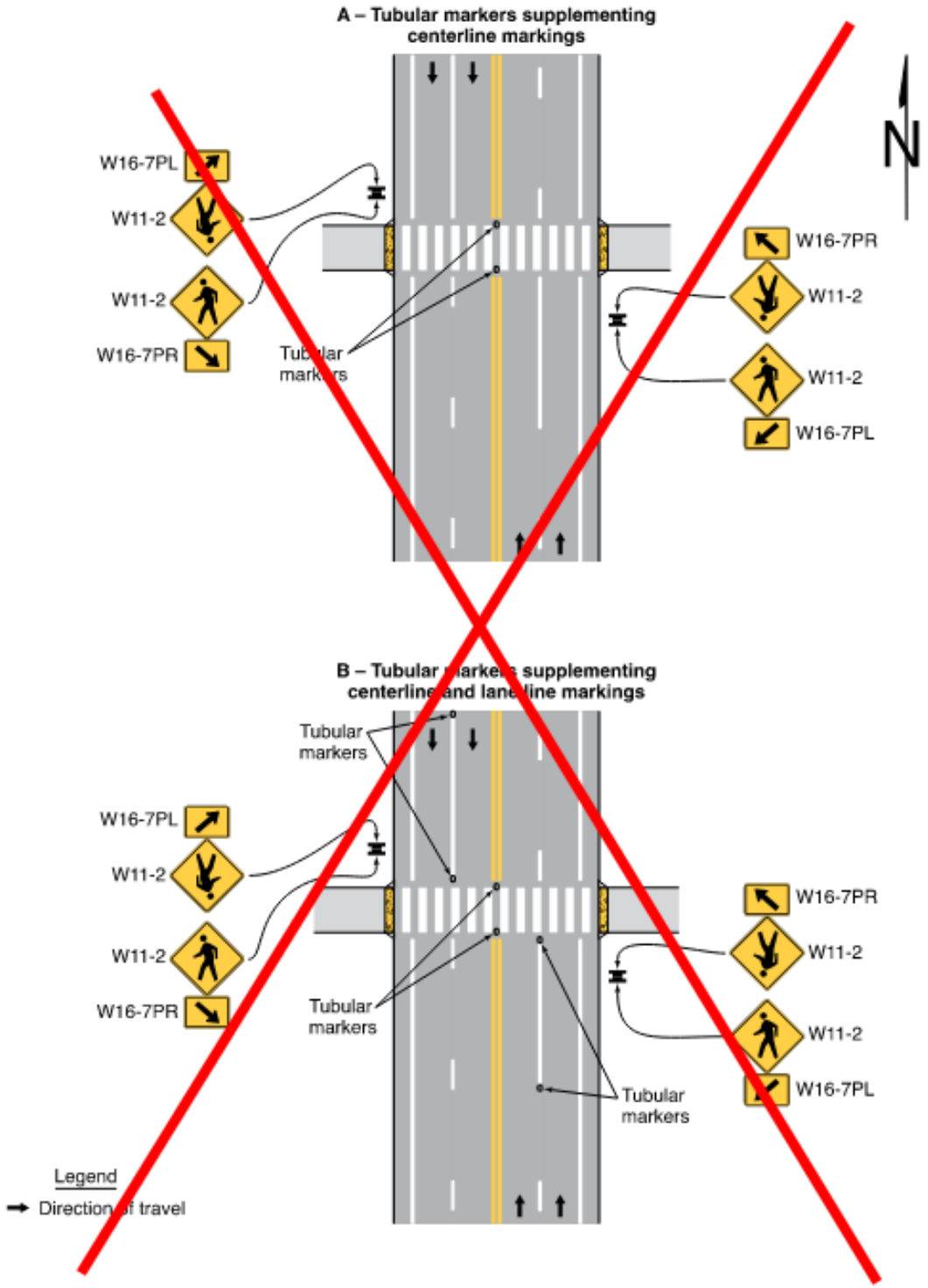
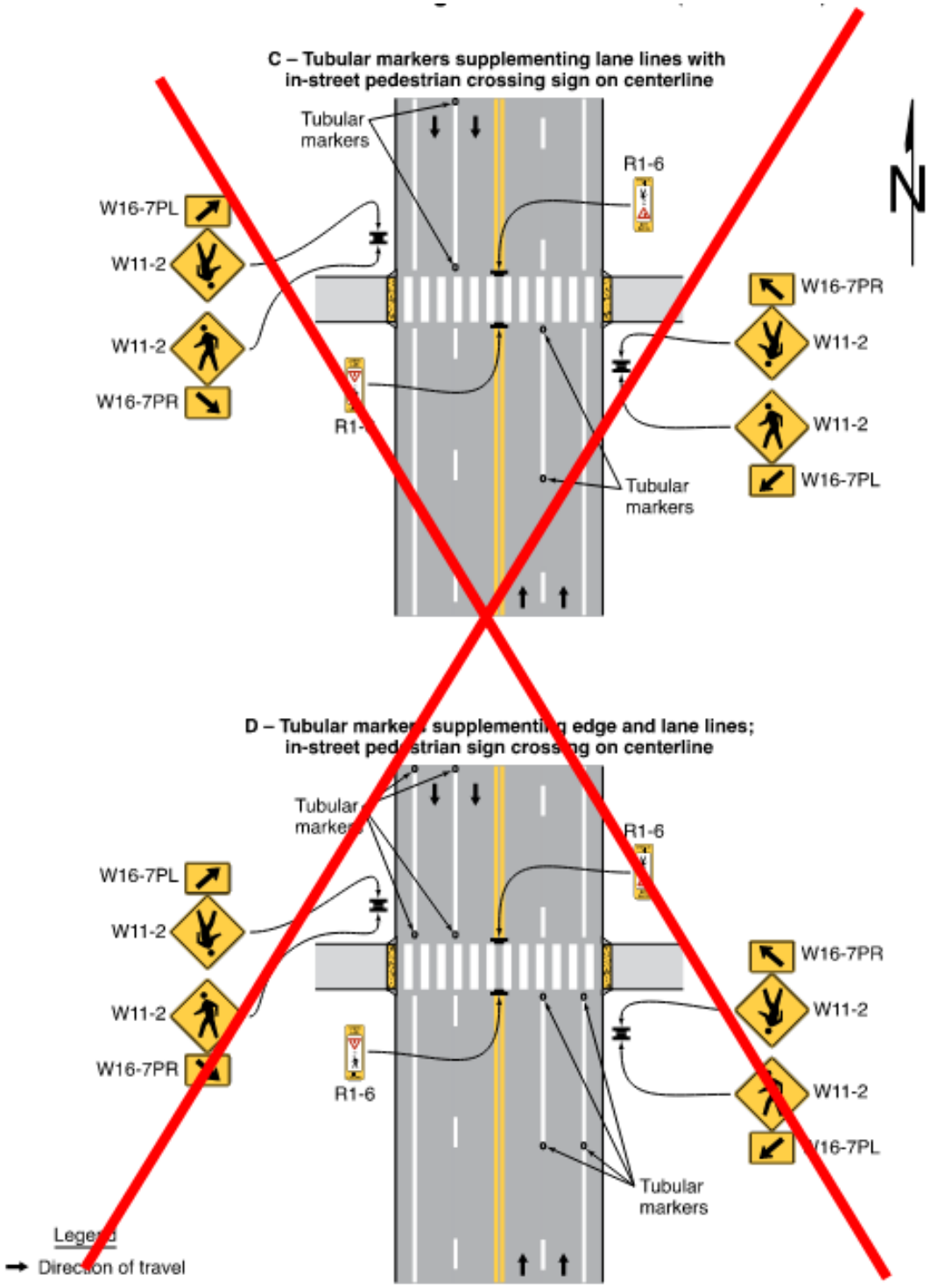


Figure 3I-1. Examples of Tubular Markers Supplementing Pavement Markings in Advance of an Unsignalized Crosswalk (Sheet 2 of 2)



CHAPTER 3J. MARKING AND DELINEATION OF ISLANDS AND SIDEWALK EXTENSIONS [EPG 620.9]

Section 3J.01 General

Support:

01 This Chapter addresses the marking and delineation of islands (see definition in Section 1C.02) and sidewalk extensions designated by pavement markings. Definitions, types, sizes, and other criteria for the design of islands are set forth in "A Policy on Geometric Design of Highways and Streets," 2018 Edition, AASHTO.

02 Section 3C.12 contains information on pedestrian islands and medians.

03 Sections 3H.04 and 3H.05 contain information on colored pavement that can be used within islands.

Option:

04 An island may be designated by curbs, pavement edges, pavement markings, channelizing devices, or other devices.

Section 3J.02 Approach-End Treatment

Support:

01 An approach-end treatment to an island consists of longitudinal pavement markings and/or channelizing devices upstream of the island followed by a divergence of those pavement markings and/or channelizing devices concluding with a transition to other pavement markings that demarcate or outline the island (see Figure 3J-1).

02 Section 3B.13 contains information on pavement markings that function as approach-end treatments for obstructions.

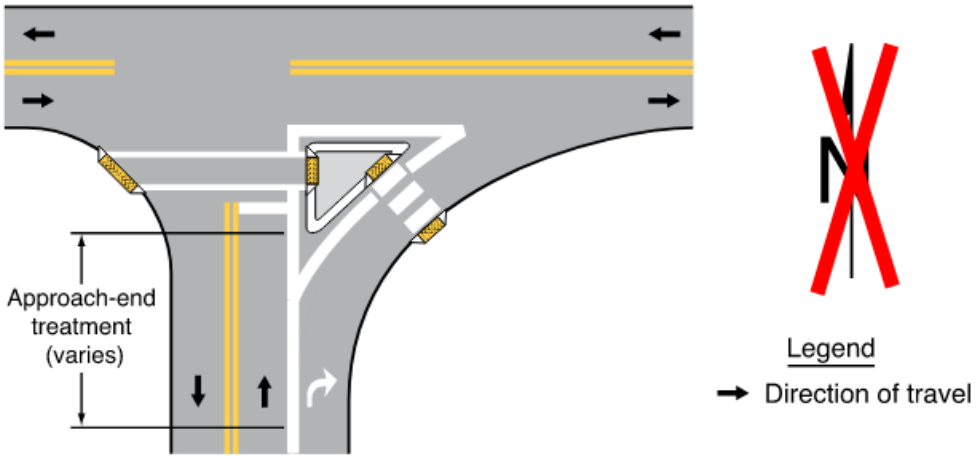
Guidance:

03 The ends of islands first approached by traffic should be marked with an approach-end treatment, curb markings (see Section 3J.04), or both to guide vehicles into desired paths of travel along the island edge.

~~*04 When raised bars or buttons that project more than 1 inch above the pavement surface are used to create a rumble section in the neutral area, the raised bars or buttons should be marked with white or yellow retroreflective materials, as determined by the direction or directions of travel they separate.*~~

MoDOT does not use raised bars or buttons for this application. Revised Dec. 2025

Figure 3J-1. Example of Markings for an Approach-End Treatment to an Island



Section 3J.03 Islands Designated by Pavement Markings

Standard:

01 Except as provided in ~~Paragraph 2 of this Section~~ the following paragraph, islands formed by pavement markings only shall be established using channelizing lines, and shall be white when separating traffic flows in the same general direction or yellow when separating opposing directions of traffic.

02 If a continuous flush median island separating travel in opposite directions is used, two sets of double solid yellow lines shall be used to form the island (see Figure 3B-5). Other markings in the median island area, such as diagonal lines (see Section 3B.25), shall also be yellow, except crosswalk markings which shall be white (see Chapter 3C).

03 If used, chevron or diagonal markings (see Section 3B.25) within the island shall be the same color as the channelizing line.

Option:

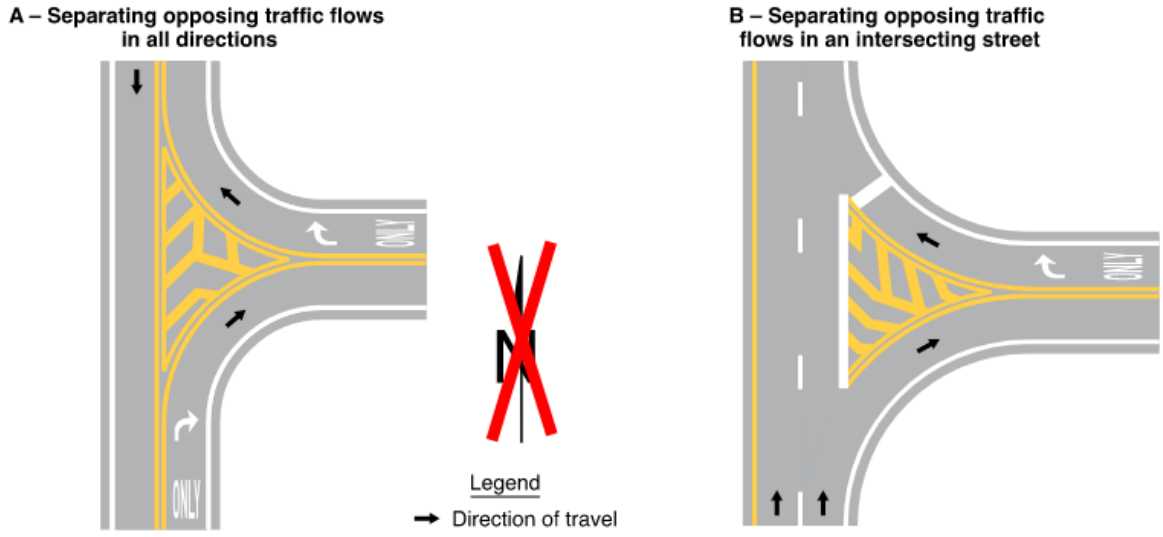
04 Both chevron and diagonal markings of the same color may be used within the same island based on engineering judgment.

05 The area within the flush island delineated by pavement markings may use colored pavement in accordance with the provisions of Chapter 3H.

Support:

06 Figure 3J-2 illustrates examples of islands designated by pavement markings.

Figure 3J-2. Examples of Islands Designated by Pavement Markings



Section 3J.04 Curb Markings for Raised Islands

Guidance:

M00 Barrier curbs on raised islands with a minimum height of 6 inches should be marked with retroreflective markings or delineators (see Section 3J.06).

MoDOT curb marking policy. Revised Dec. 2025

Standard:

01 Where curbs are marked for delineation or visibility purposes, the colors shall comply with the general principles of markings (see Section 3A.03).

Guidance:

02 Retroreflective solid yellow curb markings should be placed on the approach ends of raised medians and curbs of islands that are located in the line of traffic flow where the curb serves to channel traffic to the right of the obstruction (see Figure 3J-3).

03 Retroreflective solid white curb markings should be used when traffic is permitted to pass on either side of the island (see Figure 3J-3).

04 The retroreflective area should be of sufficient length to denote the general alignment of the edge of the island along which vehicles travel, including the approach end, when viewed from the approach to the island.

Option:

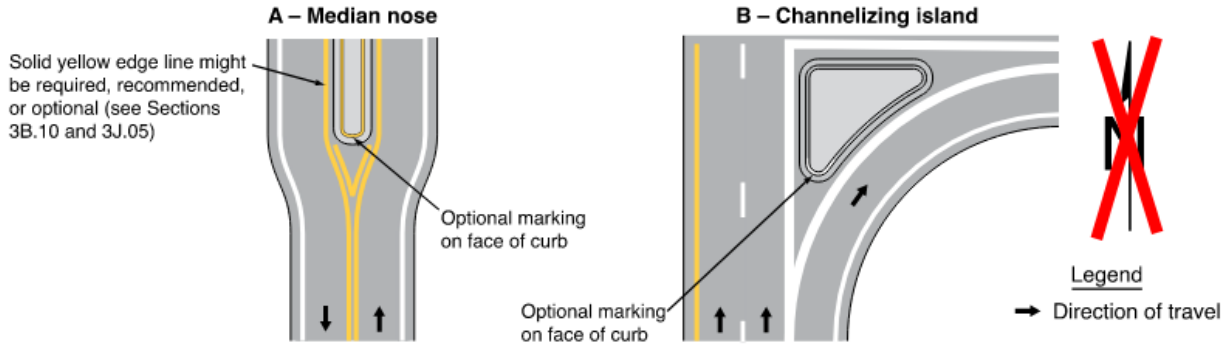
M04A An island with mountable curbs less than 3 in. tall may be marked with retroreflective markings or delineators.

MoDOT curb marking policy. Revised Dec. 2025

05 Where the curbs of the islands become parallel to the direction of traffic flow or where the island is illuminated or marked with delineators, curb markings may be discontinued based on engineering judgment or study.

06 Curb markings at openings in a continuous median island may be omitted based on engineering judgment or study.

Figure 3J-3. Examples of Islands Designated by Pavement Markings



Section 3J.05 Pavement Markings for Raised Islands

Support:

01 Pavement markings for raised islands include the approach-end treatment (see Section 3J.02), channelizing lines, edge lines, and chevron or diagonal markings.

Option:

02 Solid yellow edge lines (see Sections 3B.09 and 3B.10) may be used adjacent to raised islands separating travel in opposite directions (see Drawing A in Figure 3J-3).

Standard:

03 Except as provided in ~~Paragraphs 4 and 6 of this Section~~ the following Option paragraph and the second Guidance paragraph, raised islands separating traffic flows in the same general direction shall be outlined with white channelizing lines (see Drawing A in Figure 3J-4).

Option:

04 Pavement markings for smaller raised islands may be omitted based on engineering judgment.

Guidance:

05 Smaller raised islands without marked channelizing lines, edge lines, or chevron or diagonal markings should use curb markings (see Section 3J.04).

06 Where traffic passes on the right of a raised island separating traffic flows in the same general direction, a yellow edge line should be used adjacent to raised islands of discernible size or length instead of continuing the white channelizing line from the approach-end treatment (see Drawing B in Figure 3J-4).

Support:

07 Yellow edge lines adjacent to raised islands that separate traffic flows in the same general direction can be advantageous as a countermeasure for wrong-way entry or travel if the yellow edge line is of discernible length.

Option:

08 Chevron markings may be used in neutral areas formed by diverging channelizing lines at raised islands separating traffic flows in the same general direction.

09 Diagonal markings of an appropriate color may be used in buffer areas between the channelizing line and the raised island (see Figure 3J-5).

Figure 3J-4. Examples of Pavement Markings for Raised Islands (Sheet 1 of 2)

A – White channelizing lines applied to a raised island separating traffic flow in the same general direction

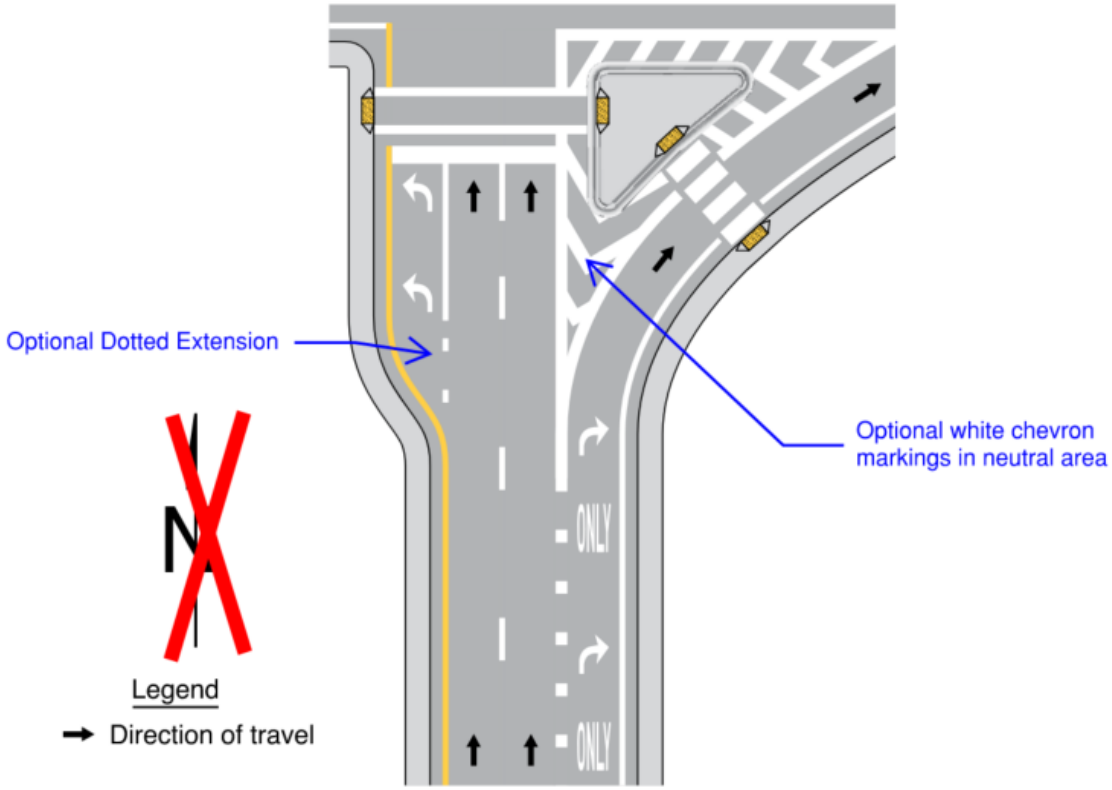


Figure 3J-4. Examples of Pavement Markings for Raised Islands (Sheet 2 of 2)

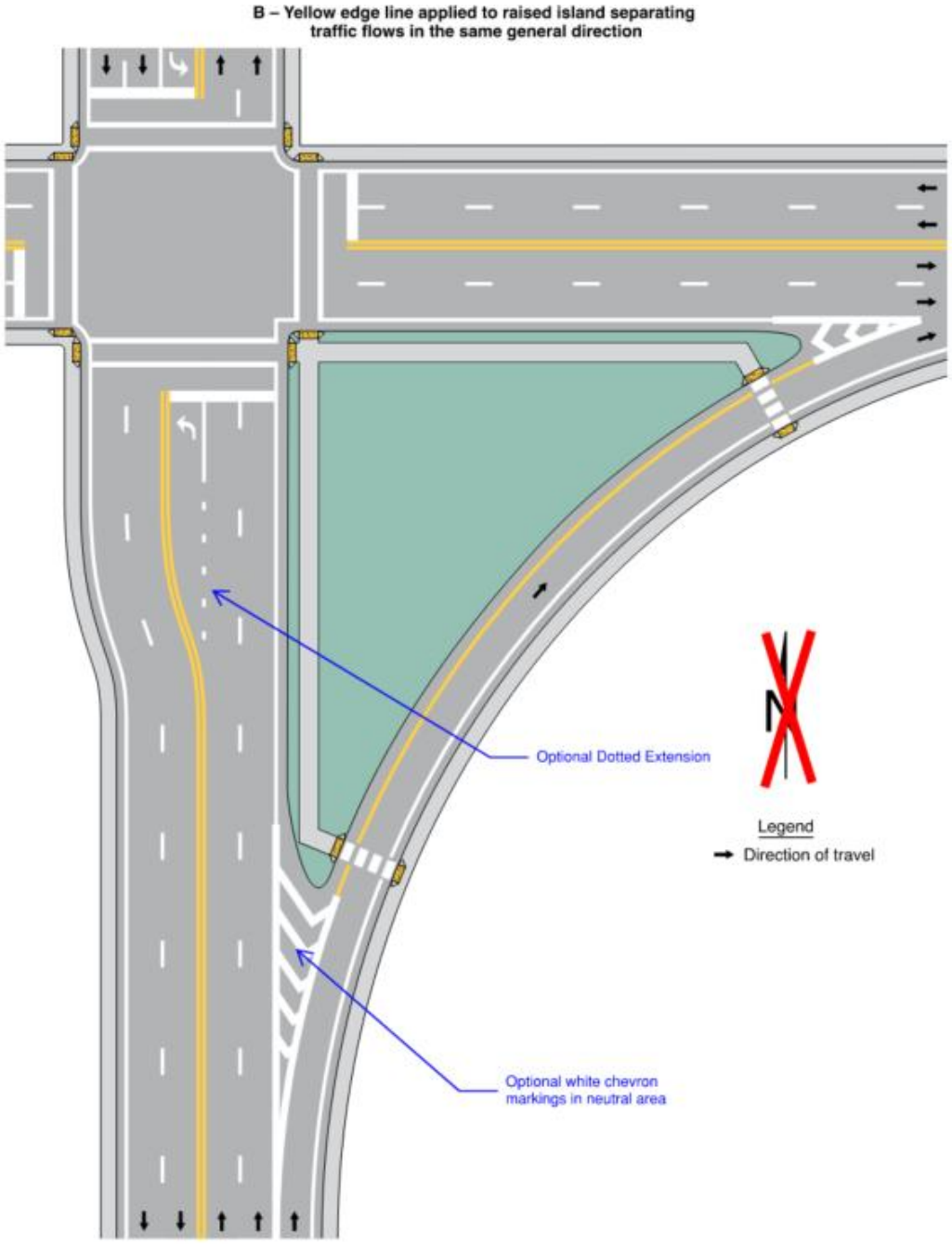
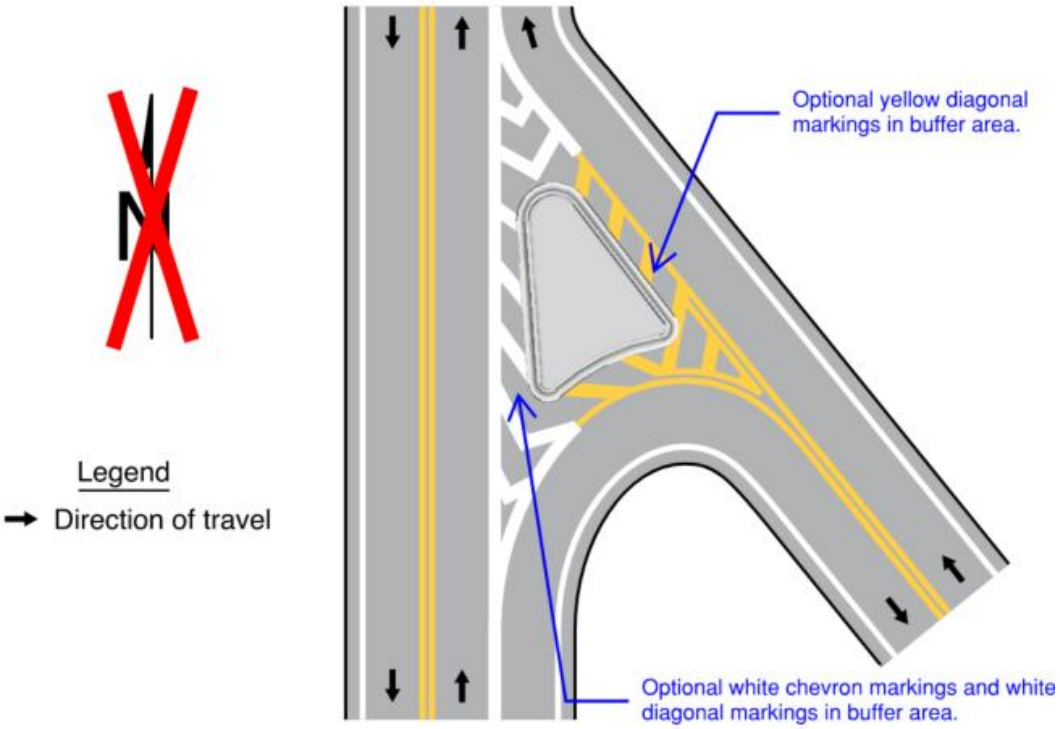


Figure 3J-5. Example of Optional Chevron and Diagonal Pavement Markings at a Raised Island



Section 3J.06 Island Delineation

Guidance:

M00 Barrier curbs on raised islands with a minimum height of 6 inches should be marked with retroreflective markings (see Section 3J.04) or delineators.

MoDOT policy for island delineation. Revised Dec. 202

Standard:

01 Delineators installed on islands shall be the same colors as the related channelizing or edge lines except that, when only facing wrong-way traffic, they shall be red (see Section 3G.03).

02 Each roadway through an intersection shall be considered separately in positioning delineators to assure maximum effectiveness.

~~Option:~~

~~03 Retroreflective or internally illuminated raised pavement markers of the appropriate color may be placed on the pavement in front of the curb and/or on the top of curbed approach ends of raised medians and curbs of islands, as a supplement to or as a substitute for retroreflective curb markings.~~

MoDOT does not use raised pavement markers. Revised Dec. 2025

Section 3J.07 Sidewalk Extensions Designated by Pavement Markings

Support:

01 Sidewalk extensions reclaim a portion of the roadway, sometimes including a portion of parking lanes, shoulders, and/or the traveled way, and repurpose that area for non-vehicular uses. They extend the sidewalk or other pedestrian space, shorten pedestrian crossing distances, alter the roadway geometry for speed management or channelizing, or serve other purposes.

02 Sidewalk extensions, sometimes referred to as curb extensions, neckdowns, bump outs, or bulb-outs typically are created by physical infrastructure including concrete or asphalt to form a physical narrowing of the roadway with the finished surface at the same level as the adjoining sidewalk.

03 Sidewalk extensions can also be designated by pavement markings for temporary or semi-permanent applications in which the finished surface is at the same level as the vehicular travel pavement. Where an adjoining curb and raised sidewalk are present, this type of application results in a multi-level sidewalk due to the difference in elevation between the adjoining pedestrian surfaces.

04 Sidewalk extensions designated by pavement markings differ from other paved areas designated by pavement markings that are intended to be traversable by a vehicle for authorized or emergency purposes.

Standard:

05 Sidewalk extensions designated by pavement markings shall include a physical separator such as tubular markers or floating curbs to provide conspicuity for, and to prevent vehicles from traversing, the area of the sidewalk extension designated by pavement markings. Pavement markings shall be ~~established using~~ double solid lines connecting to the outside physical curb or, in the absence of a curb, to the edge of the roadway. The color of the double solid line shall comply with the provisions of Section 3A.03.

MoDOT policy for sidewalk extensions. Revised Dec. 2025

Support:

06 The paved area between the double solid line forming the sidewalk extension designated by pavement markings and the sidewalk or other roadside area is not part of the roadway. Sidewalk extensions designated by pavement markings formed by double solid lines are distinct from areas such as shoulders or gore areas where travel is discouraged by the presence of a single line, or flush medians where travel is prohibited by a double solid line. Sidewalk extensions designated by pavement markings with double solid lines designate areas outside the roadway where vehicle traversal is prohibited.

07 Areas formed by a single wide line are sometimes used to alter the roadway geometry for speed management or channelizing, or to serve other purposes, where pedestrians are not expected ~~(see Drawing B in Figure 3J-6)~~. These areas are not considered a sidewalk extension, and provisions to delineate areas where vehicle traversal is discouraged include channelizing lines (see Section 3B.08), edge lines (see Section 3B.09), and diagonal markings (see Section 3B.25).

Guidance:

08 Channelizing devices such as tubular markers (see Chapter 3I) ~~should be used to provide conspicuity for, and to prevent vehicles from traversing, the area of the sidewalk extension designated by pavement markings. They~~ should be located adjacent to the double solid line outside the traveled way.

Content removed was added to Standard Paragraph 5. Revised Dec. 2025

Support:

09 When selecting other methods of physical separation, the visual contrast from adjoining pavement and maximum separation distances are considerations so they are visible to pedestrians having limited vision and detectable by pedestrians who travel with a long cane.

10 Sight lines and the visibility of road users within the sidewalk extension area are considerations when selecting methods of physical separation.

11 The swept path of turning design or other prevailing vehicle types is a consideration, especially if a larger vehicle is expected to traverse a portion of the sidewalk extension while turning where pedestrians might be present.

Standard:

12 Crosswalk markings shall not be extended through sidewalk extensions designated by pavement markings.

Support:

13 Accessibility provisions at sidewalk extensions designated by pavement markings are outside the scope of this ~~Manual~~ article. State and local organizations providing support services to pedestrians with vision disabilities can provide advice to the traffic engineer on site-specific accessibility decisions. In addition, orientation and mobility specialists or similar staff can provide advice to inform such decisions. The U.S. Access Board (www.access-board.gov) provides technical assistance for making pedestrian facilities accessible to persons with disabilities.

Guidance:

14 Traffic control devices that are critical to the specific conditions at the sidewalk extension, such as STOP or YIELD signs or Pedestrian Crossing signs, should be located within the sidewalk extension designated by pavement markings. Their lateral offset (see Section 2A.16) should be measured from the center of the double solid line designating a sidewalk extension rather than from the physical curb line behind the sidewalk extension area so that the signs are more visible to approaching traffic and not occluded by any physical features placed within the sidewalk extension area.

Support:

15 The location of accessible pedestrian signals (see Section 4K.02) is a consideration when providing a sidewalk extension designated by pavement markings.

16 Aesthetic surface treatments (see Chapter 3H) are sometimes used in sidewalk extensions designated by pavement markings to emphasize that the area is outside of the traveled way.

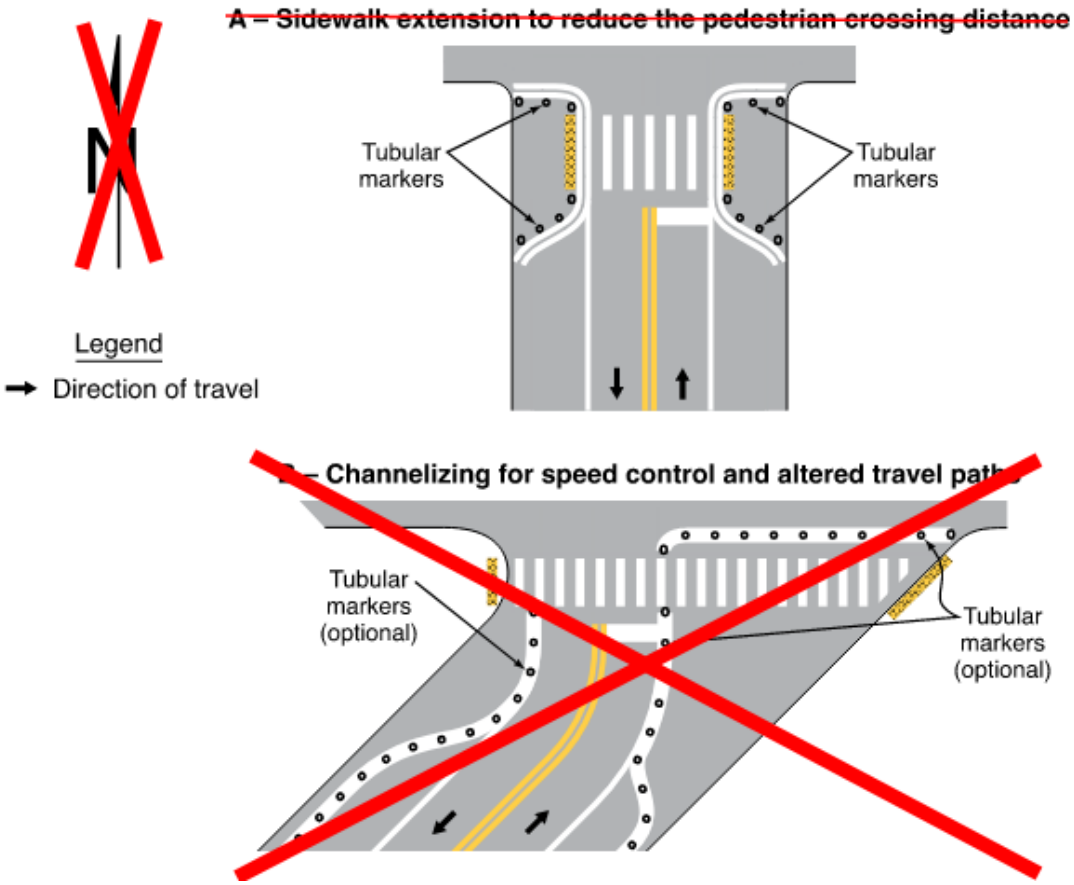
Standard:

17 In accordance with the provisions of Section 3H.03, aesthetic surface treatments, if used within a sidewalk extension designated by pavement markings, shall be non-retroreflective.

Support:

18 Figure 3J-6 illustrates an example of a sidewalk extension designated by pavement markings ~~and an example of channelizing~~.

Figure 3J-6. Examples of Sidewalk Extensions Designated by Pavement Markings ~~and Channelization~~



CHAPTER 3K. RUMBLE STRIP MARKINGS [EPG 620.10]

Section 3K.01 Longitudinal Rumble Strip Markings

Support:

01 Longitudinal rumble strips consist of a series of rough-textured or slightly raised or depressed road surfaces intended to alert inattentive drivers through vibration and sound that their vehicle has left the travel lane. Shoulder rumble strips are typically installed along the shoulder near the travel lane. On divided highways, rumble strips are sometimes installed on the median side (left-hand side) shoulder as well as on the outside (right-hand side) shoulder. On two-way roadways, rumble strips are sometimes installed along the center line.

02 This ~~Manual~~ article contains no provisions regarding the design and placement of longitudinal rumble strips. The provisions in this ~~Manual~~ article address the use of markings in combination with a longitudinal rumble strip. Figure 3K-1 illustrates markings used with or near longitudinal rumble strips.

03 Section 6M.06 contains information related to longitudinal rumble strips.

M03B Rumble strip markings provide notice to the driver that they are leaving their lane. They also provide increased visibility of the pavement markings during wet pavement conditions. Rumble strip markings are a system-wide safety improvement. Additional information on the use and application of rumble strip markings can be found in EPG 626.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Option:~~ **Standard:**

04 ~~An~~ Where edge line or centerline rumble strips are required, as noted in EPG 626, the edge line or center line marking ~~may~~ shall be located over ~~a longitudinal~~ the rumble strip to create a rumble stripe.

Paragraph modified to reflect MoDOT policy. Revised Dec. 2025

Standard:

05 The color of an edge line or center line associated with a longitudinal rumble stripe shall be in accordance with Section 3A.03.

~~**06 An edge line shall not be used in addition to a rumble stripe that is located along a shoulder.**~~

MoDOT does not install rumble stripes on shoulders. Revised Dec. 2025

Section 3K.02 Transverse Rumble Strip Markings

Support:

01 Transverse rumble strips consist of intermittent narrow, transverse areas of rough-textured or slightly raised or depressed road surface that extend across the travel lanes to alert drivers to unusual vehicular traffic conditions. Through noise and vibration, they attract the attention of road users to features such as unexpected changes in alignment and conditions requiring a reduction in speed or a stop.

02 This ~~Manual~~ article contains no provisions regarding the design and placement of transverse rumble strips that approximate the color of the pavement. The provisions in this ~~Manual~~ article address the use of markings in combination with a transverse rumble strip.

03 Section 6M.06 contains information related to transverse rumble strips.

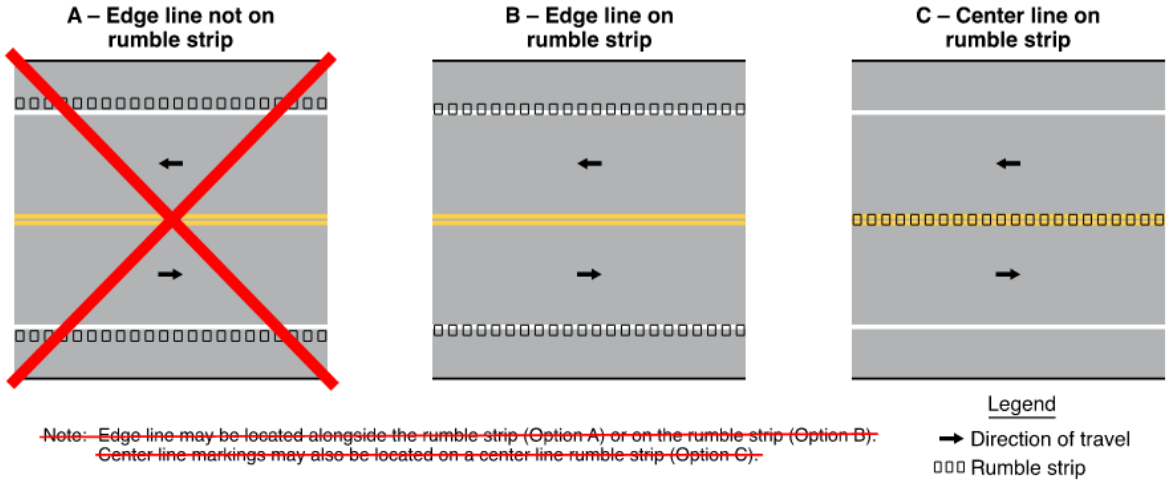
Standard:

04 Except as otherwise provided in Section 6M.06 for TTC zones, if the color of a transverse rumble strip used within a travel lane is not the color of the pavement, the color of the transverse rumble strip shall be either black or white.

Guidance:

05 White transverse rumble strip markings used in a travel lane should not be placed in locations where they could be confused with other transverse markings such as stop lines or crosswalks.

Figure 3K-1. Examples of Longitudinal Rumble Strip Markings



~~Note: Edge line may be located alongside the rumble strip (Option A) or on the rumble strip (Option B). Center line markings may also be located on a center line rumble strip (Option C).~~

PART 4 [EPG 902]
HIGHWAY TRAFFIC SIGNALS
CHAPTER 4A. GENERAL [EPG 902.1]

Section 4A.01 Types

Support:

01 The following types and uses of highway traffic signals and devices are discussed in ~~Part 4~~EPG 902: traffic control signals; bicycle signal faces; pedestrian signal heads; hybrid beacons; rectangular rapid flashing beacons; emergency-vehicle traffic control signals; traffic control signals for one-lane, two-way facilities; traffic control signals for freeway entrance ramps; ~~movable bridge traffic signals; toll plaza traffic signals;~~ flashing beacons; ~~lane-use control signals;~~ and in-roadway warning lights.

There are no movable bridges, toll facilities, or lane-use control signals on the state highway system. Revised Dec. 2025

Section 4A.02 Meanings of Signal Indications

Support:

01 The "Uniform Vehicle Code" (see Section 1A.06) is the primary source for the standards for the meanings of vehicular signal indications to both vehicle operators and pedestrians as provided in ~~Sections 4A.03~~EPG 902.1.3 and ~~4A.04~~902.1.4, the standards for the meanings of separate bicycle signal face indications as provided in ~~Section 4A.05~~EPG 902.4.5, and the standards for the meanings of separate pedestrian signal head indications as provided in ~~Section 4A.06~~EPG 902.4.6.

02 The physical area that is defined as being "within the intersection" is dependent upon the conditions that are described in the definition of an intersection in Section 1C.02.

Section 4A.03 Meanings of Steady Vehicular Signal Indications

Standard:

01 The following meanings shall be given to steady highway traffic signal indications for vehicles and pedestrians:

A. Steady green signal indications shall have the following meanings:

1. Vehicular traffic facing a CIRCULAR GREEN signal indication is permitted to proceed straight through or turn right or left or make a U-turn movement except as such movement is modified by lane-use signs, turn prohibition signs, lane markings, roadway design, separate turn signal indications, or other traffic control devices.

Vehicular traffic facing a CIRCULAR GREEN signal indication shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27). The Highway Safety and Traffic Division shall approve all new or reconstructed signal installations where U-turns are permitted during a permissive phase.

MoDOT allows U-turns during the permissive phase if there is lane use signage to indicate where U-turns are allowed, with approval of the Highway Safety and Traffic Division. Revised Dec. 2025

Such vehicular traffic, including vehicles turning right or left or making a U-turn movement, shall yield the right-of-way to:

(a) Pedestrians lawfully within an associated crosswalk, and

(b) Other vehicles lawfully within the intersection.

In addition, vehicular traffic turning left or making a U-turn movement to the left shall yield the right-of-way to other vehicles approaching from the opposite direction so closely as to constitute an immediate hazard during the time when such turning vehicle is moving across or within the intersection.

2. Vehicular traffic facing a GREEN ARROW signal indication, displayed alone or in combination with another signal indication, is permitted to cautiously enter the intersection

only to make the movement indicated by such arrow, or such other movement as is permitted by other signal indications displayed at the same time.

Vehicular traffic facing a GREEN ARROW signal indication shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27).

MoDOT allows U-turns during the protected phase if there is lane use signage to indicate where U-turns are allowed. Revised Dec. 2025

Such vehicular traffic, including vehicles turning right or left or making a U-turn movement, shall yield the right-of-way to:

(a) Pedestrians lawfully within an associated crosswalk, and

(b) Other vehicles lawfully within the intersection.

3. **Pedestrians facing a CIRCULAR GREEN signal indication, unless otherwise directed by a pedestrian signal indication or other traffic control device, are permitted to proceed across the roadway within any marked or unmarked associated crosswalk. The pedestrian shall yield the right-of-way to vehicles lawfully within the intersection or so close as to create an immediate hazard at the time that the green signal indication is first displayed.**
4. **Pedestrians facing a GREEN ARROW signal indication, unless otherwise directed by a pedestrian signal indication or other traffic control device, shall not cross the roadway.**

B. Steady yellow signal indications shall have the following meanings:

1. **Vehicular traffic facing a steady CIRCULAR YELLOW signal indication is thereby warned that the related green movement or the related flashing arrow movement is being terminated or that a steady red signal indication will be displayed immediately thereafter when vehicular traffic shall not enter the intersection. The rules set forth concerning vehicular operation under the movement(s) being terminated shall continue to apply while the steady CIRCULAR YELLOW signal indication is displayed.**
2. **Vehicular traffic facing a steady YELLOW ARROW signal indication is thereby warned that the related GREEN ARROW movement or the related flashing arrow movement is being terminated. The rules set forth concerning vehicular operation under the movement(s) being terminated shall continue to apply while the steady YELLOW ARROW signal indication is displayed.**
3. **Pedestrians facing a steady CIRCULAR YELLOW or YELLOW ARROW signal indication, unless otherwise directed by a pedestrian signal indication or other traffic control device shall not start to cross the roadway.**

C. Steady red signal indications shall have the following meanings:

1. **Vehicular traffic facing a steady CIRCULAR RED signal indication, unless entering the intersection to make another movement permitted by another signal indication, shall stop at a clearly marked stop line; but if there is no stop line, traffic shall stop before entering the crosswalk on the near side of the intersection; or if there is no crosswalk, then before entering the intersection; and shall remain stopped until a signal indication to proceed is displayed, or as provided below.**

Except when a traffic control device is in place prohibiting a turn on red or a steady RED ARROW signal indication is displayed, vehicular traffic facing a steady CIRCULAR RED signal indication is permitted to enter the intersection to turn right~~, or to turn left from a one-way street into a one-way street,~~ after stopping. The right to proceed with the turn shall be subject to the rules applicable after making a stop at a STOP sign.

Missouri statutes do not allow left turns on red from a one-way street into a one-way street. Revised Dec. 2025

2. **Vehicular traffic facing a steady RED ARROW signal indication shall not enter the intersection to make the movement indicated by the arrow and, unless entering the intersection to make another movement permitted by another signal indication, shall stop at a clearly marked stop line; but if there is no stop line, before entering the crosswalk on the**

near side of the intersection; or if there is no crosswalk, then before entering the intersection; and shall remain stopped until a signal indication or other traffic control device permitting the movement indicated by such RED ARROW is displayed.

When a traffic control device is in place permitting a turn on a steady RED ARROW signal indication, vehicular traffic facing a steady RED ARROW signal indication is permitted to enter the intersection to make the movement indicated by the arrow signal indication, after stopping. The right to proceed with the turn shall be limited to the direction indicated by the arrow and shall be subject to the rules applicable after making a stop at a STOP sign.

3. **Unless otherwise directed by a pedestrian signal indication or other traffic control device, pedestrians facing a steady CIRCULAR RED or steady RED ARROW signal indication shall not enter the roadway.**

Section 4A.04 Meanings of Flashing Vehicular Signal Indications

Standard:

01 The following meanings shall be given to flashing highway traffic signal indications for vehicles and pedestrians:

A. **A flashing green signal indication has no meaning and shall not be used.**
B. **Flashing yellow signal indications shall have the following meanings:**

1. **Vehicular traffic, on an approach to an intersection, facing a flashing CIRCULAR YELLOW signal indication is permitted to cautiously enter the intersection to proceed straight through or turn right or left or make a U-turn except as such movement is modified by lane-use signs, turn prohibition signs, lane markings, roadway design, separate turn signal indications, or other traffic control devices.**

Vehicular traffic facing a flashing CIRCULAR YELLOW signal indication shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27). The Highway Safety and Traffic Division shall approve all new or reconstructed signal installations where U-turns are permitted during a permissive phase.

Such vehicular traffic, including vehicles turning right or left or making a U-turn, shall yield the right-of-way to:

(a) Pedestrians lawfully within an associated crosswalk, and

(b) Other vehicles lawfully within the intersection.

In addition, vehicular traffic turning left or making a U-turn to the left shall yield the right-of-way to other vehicles approaching from the opposite direction so closely as to constitute an immediate hazard during the time when such turning vehicle is moving across or within the intersection.

MoDOT allows U-turns during the permissive phase if there is lane use signage to indicate where U-turns are allowed, with approval of the Highway Safety and Traffic Division. Revised Dec. 2025

2. **Vehicular traffic, on an approach to an intersection, facing a flashing YELLOW ARROW signal indication, displayed alone or in combination with another signal indication, is permitted to cautiously enter the intersection only to make the movement indicated by such arrow, or other such movement as is permitted by other signal indications displayed at the same time.**

Vehicular traffic facing a flashing YELLOW ARROW signal indication shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27). The Highway Safety and Traffic Division shall approve all new or reconstructed signal installations where U-turns are permitted during a permissive phase.

Such vehicular traffic, including vehicles turning right or left or making a U-turn, shall yield the right-of-way to:

(a) Pedestrians lawfully within an associated crosswalk, and

(b) Other vehicles lawfully within the intersection.

In addition, vehicular traffic turning left or making a U-turn to the left shall yield the right-of-way to other vehicles approaching from the opposite direction so closely as to constitute an immediate hazard during the time when such turning vehicle is moving across or within the intersection.

MoDOT allows U-turns during the permissive phase if there is lane use signage to indicate where U-turns are allowed, with approval of the Highway Safety and Traffic Division. Revised Dec. 2025

3. **Pedestrians facing any flashing yellow signal indication at an intersection, unless otherwise directed by a pedestrian signal indication or other traffic control device, are permitted to proceed across the roadway within any marked or unmarked associated crosswalk. Pedestrians shall yield the right-of-way to vehicles lawfully within the intersection at the time that the flashing yellow signal indication is first displayed.**
4. **When a flashing CIRCULAR YELLOW signal indication(s) is displayed as a beacon (see Chapter 4S) to supplement another traffic control device, road users are notified that there is a need to pay extra attention to the message contained thereon or that the regulatory or warning requirements of the other traffic control device, which might not be applicable at all times, are currently applicable.**

C. **Flashing red signal indications shall have the following meanings:**

1. **Vehicular traffic, on an approach to an intersection, facing a flashing CIRCULAR RED signal indication shall stop at a clearly marked stop line; but if there is no stop line, before entering the crosswalk on the near side of the intersection; or if there is no crosswalk, at the point nearest the intersecting roadway where the driver has a view of approaching traffic on the intersecting roadway before entering the intersection. The right to proceed shall be subject to the rules applicable after making a stop at a STOP sign.**
2. ~~**Vehicular traffic, on an approach to an intersection, facing a flashing RED ARROW signal indication if intending to turn in the direction indicated by the arrow shall stop at a clearly marked stop line; but if there is no stop line, before entering the crosswalk on the near side of the intersection; or if there is no crosswalk, at the point nearest the intersecting roadway where the driver has a view of approaching traffic on the intersecting roadway before entering the intersection. The right to proceed with the turn shall be limited to the direction indicated by the arrow and shall be subject to the rules applicable after making a stop at a STOP sign.**~~

MoDOT does not use flashing red arrow indications. Revised Dec. 2025

2. **Pedestrians facing any flashing red signal indication at an intersection, unless otherwise directed by a pedestrian signal indication or other traffic control device, are permitted to proceed across the roadway within any marked or unmarked associated crosswalk. Pedestrians shall yield the right-of-way to vehicles lawfully within the intersection at the time that the flashing red signal indication is first displayed.**
3. **When a flashing CIRCULAR RED signal indication(s) is displayed as a beacon (see Chapter 4S) to supplement another traffic control device, road users are notified that there is a need to pay extra attention to the message contained thereon or that the regulatory requirements of the other traffic control device, which might not be applicable at all times, are currently applicable. Use of this signal indication shall be limited to supplementing STOP (R1-1), DO NOT ENTER (R5-1), or WRONG WAY (R5-1a) signs, and to applications where compliance with the supplemented traffic control device requires a stop at a designated point.**

Section 4A.05 Meanings of Bicycle Symbol Signal Indications

Guidance:

M00 Bicycle symbol signal indications are not currently used on MoDOT facilities. Contact the Highway Safety and Traffic Division for guidance.

Standard:

01 The following meanings shall be given to bicycle symbol signal indications for bicyclists:

A. Bicyclists facing a steady GREEN BICYCLE signal indication are permitted to enter the intersection only to make the movement indicated by the lane-use arrow(s) displayed on the Bicycle Signal sign (see Section 9B.22) that is located immediately adjacent to the signal face, Bicyclists proceeding into the intersection during the display of the steady GREEN BICYCLE signal indication shall yield the right-of-way to:

1. Pedestrians lawfully within an associated crosswalk, and

2. Other vehicles lawfully within the intersection.

B. Bicyclists facing a steady YELLOW BICYCLE signal indication are thereby warned that the related green movement is being terminated and that a steady RED BICYCLE signal indication will be displayed immediately thereafter when bicyclists shall not enter the intersection. The rules set forth concerning bicycle operation under the movement being terminated shall continue to apply while the steady YELLOW BICYCLE signal indication is displayed.

C. Bicyclists facing a steady RED BICYCLE signal indication shall not enter the intersection to make the movement indicated by the lane-use arrow(s) displayed on the Bicycle Signal sign (see Section 9B.22) that is located immediately adjacent to the signal face and, unless entering the intersection to make another movement permitted by another bicycle symbol signal indication, shall stop at a clearly marked stop line; but if there is no stop line, before entering the crosswalk on the near side of the intersection; or if there is no crosswalk, then before entering the intersection; and shall remain stopped until a GREEN BICYCLE signal indication permitting the movement indicated by such RED BICYCLE signal indication is displayed.

Except when a traffic control device is in place prohibiting a turn on red, bicyclists facing a steady RED BICYCLE signal indication are permitted to enter the intersection to turn right if there are no approach lanes for motor vehicle traffic to their right. The right to proceed with the turn shall be subject to the rules applicable after making a stop at a STOP sign.

D. A flashing GREEN BICYCLE signal indication has no meaning and shall not be used.

E. A flashing YELLOW BICYCLE signal indication has no meaning and shall not be used.

F. Bicyclists facing a flashing RED BICYCLE signal indication shall stop at a clearly marked stop line; but if there is no stop line, before entering the crosswalk on the near side of the intersection; or if there is no crosswalk, at the point nearest the intersecting roadway where the bicyclist has a view of approaching traffic on the intersecting roadway before entering the intersection. The right to proceed in the direction indicated by the lane-use arrow(s) displayed on the Bicycle Signal sign (see Section 9B.22) that is located immediately adjacent to the signal face shall be subject to the rules applicable after making a stop at a STOP sign.

Section 4A.06 Meanings of Pedestrian Signal Indications

Standard:

01 Pedestrian signal indications shall have the following meanings:

A. A flashing WALKING PERSON (symbolizing WALK) signal indication has no meaning and shall not be used.

B. Pedestrians facing a steady WALKING PERSON (symbolizing WALK) signal indication shall be permitted to start to cross the roadway in the direction of the signal indication, possibly in conflict with turning vehicles. Pedestrians shall yield the right-of-way to vehicles lawfully within the intersection at the time that the WALKING PERSON (symbolizing WALK) signal indication is first shown.

C. Pedestrians facing a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication shall not start to cross the roadway in the direction of the signal indication. Any pedestrian who has already started to cross the roadway on a steady WALKING PERSON (symbolizing WALK) signal indication shall continue to proceed to the far side of the traveled way of the street or highway, unless otherwise directed by a traffic control device to proceed only to the

median of a divided highway or only to some other island or pedestrian refuge area (see Section 3C.12).

D. Pedestrians facing a steady UPRAISED HAND (symbolizing DONT WALK) signal indication shall not enter the roadway in the direction of the signal indication.

Section 4A.07 Lateral Offset of Signal Supports and Cabinets

Guidance:

01 The following items should be considered when placing signal supports and cabinets:

A. Reference should be made to the "Roadside Design Guide," 4th Edition, 2011, AASHTO, and to the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

B. Signal supports should be placed as far as practicable from the edge of the traveled way without adversely affecting the visibility of the signal indications.

C. Where supports cannot be located based on the recommended AASHTO clearances, consideration should be given to the use of appropriate safety devices.

D. No part of a concrete foundation for a breakaway signal support should extend more than 4 inches above the ground level at any point. This limitation does not apply to the concrete foundation for a rigid support. Modified to specify breakaway supports. Revised Dec. 2025

E. In order to minimize hindrance to the passage of persons with physical disabilities, a signal support or controller cabinet should not obstruct the sidewalk or the pedestrian access route such that less than 4 feet of clear space is available, or access from the sidewalk to the crosswalk. Refer to the Public Right-of-Way Accessibility Guidelines, published by the U.S. Access Board for pedestrian access route. Modified to clarify that signal equipment can be located in the sidewalk if it does not obstruct the pedestrian access route per PROWAG. Revised Dec. 2025

F. Controller cabinets should be located as far as practicable from the edge of the roadway.

G. On medians, the minimum clearances provided in Items A through E for signal supports should be obtained, if practicable.

Section 4A.08 Use of Signs at Signalized Locations

Support:

01 Traffic signal signs are sometimes used at highway traffic signal locations to instruct or guide pedestrians, bicyclists, or motorists. Among the signs typically used at or on the approaches to signalized locations are movement prohibition signs (see Section 2B.26), lane-control signs (see Sections 2B.27 through 2B.29), pedestrian crossing signs (see Section 2B.57), pedestrian and bicycle actuation signs (see Section 2B.58), traffic signal signs (see Sections 2B.59 and 2C.44), No Turn on Red signs (see Section 2B.60), Signal Ahead warning signs (see Section 2C.35), Street Name signs (see Section 2D.45), and Advance Street Name signs (see Section 2D.46).

Guidance:

02 Regulatory, warning, and guide signs should be used at highway traffic signal locations as provided in Part 2 and as specifically provided elsewhere in ~~Part 4~~EPG 902.

Support:

03 Section 2B.27 contains information regarding the use of overhead lane-control signs on signalized approaches where lane drops, multiple-lane turns involving combined through-and-turn lanes, or other lane-use regulations that would be unexpected by unfamiliar road users are present.

~~*Guidance*~~ **Standard***:*

04 If used, illuminated traffic signal signs ~~*should*~~ shall be designed and mounted in such a manner as to avoid glare and reflections that seriously detract from the signal indications. Highway traffic signal faces ~~*should*~~ shall be given dominant position and brightness to maximize their priority in the overall display.

This statement is a standard in the EPG and was a standard in the 2009 Edition of the MUTCD. Revised Dec. 2025

~~**Standard:**~~

05 The minimum vertical clearance and horizontal offset of the total assembly of traffic signal signs (see Section 2B.59) shall comply with the provisions of Sections 4D.09 and 4D.10.

06 STOP signs shall not be used in conjunction with any highway traffic signal operation, except in either of the following cases:

A. If the signal indication for an approach is a flashing red at all times, or

B. If a minor street or driveway is located within or adjacent to an area controlled by a traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists.

Section 4A.09 Use of Pavement Markings at Signalized Locations

Support:

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

Guidance:

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

Section 4A.10 Responsibility for Operation and Maintenance

Guidance:

01 Prior to installing any highway traffic signal, the responsibility for the maintenance of the signal and all of the appurtenances, hardware, software, and the timing plan(s) should be clearly established by the responsible agency.

02 To this end the agency should:

A. Keep every controller assembly in effective operation in accordance with its predetermined timing schedule, check the operation of the controller assembly frequently enough to verify that it is operating in accordance with the predetermined timing schedule, and establish a policy to maintain a record of all timing changes and that only authorized persons are permitted to make timing changes;

B. Clean the optical system of the signal sections and replace the light sources as frequently as experience proves necessary;

C. Clean and service equipment and other appurtenances as frequently as experience proves necessary;

D. Provide for alternate operation of the traffic control signal during a period of failure, using flashing mode or manual control, or manual traffic direction by proper authorities as might be required by traffic volumes or congestion, or by erecting other traffic control devices;

E. Have properly-skilled maintenance personnel available without undue delay for all signal malfunctions and signal indication failures;

F. Maintain an inventory of ~~Provide~~ spare equipment to minimize the interruption of highway traffic signal operation as a result of equipment failure;

G. Provide for the availability of properly-skilled maintenance personnel for the repair of all components; ~~and~~

H. Maintain the appearance of the signal displays and equipment; and

I. Follow appropriate procedures for operation and maintenance for all traffic signal control systems and equipment.

Modifications to match EPG language. Revised Dec. 2025

CHAPTER 4B. TRAFFIC CONTROL SIGNALS—GENERAL [EPG 902.2]

Section 4B.01 General

Support:

01 Words such as pedestrians and bicyclists are used redundantly in selected ~~Sections~~ Articles of ~~Part~~ 4EPG 902 to encourage sensitivity to these elements of "traffic."

02 Standards for traffic control signals are important because traffic control signals need to attract the attention of a variety of road users, including those who are older, those with vision disabilities, as well as those who are fatigued or distracted, or who are not expecting to encounter a signal at a particular location.

Section 4B.02 Advantages and Disadvantages of Traffic Control Signals

Support:

01 When properly used, traffic control signals are valuable devices for safety and the control of vehicular and vulnerable road user traffic. They control the various traffic movements by alternating between directing them to stop and permitting them to proceed and thereby profoundly influence traffic flow. This accomplishes the need to safely separate road users in time in order to prevent crashes.

02 Traffic control signals that are properly designed, located, operated, and maintained will have one or more of the following advantages:

A. They reduce the frequency and severity of certain types of crashes, especially right-angle collisions and those involving vulnerable road users.
B. They provide for the orderly movement of traffic.
C. They increase the traffic-handling capacity of the intersection if:
    1. Proper physical layouts and control measures are used, and
    2. The signal operational parameters are reviewed and updated (if needed) on a regular basis (as engineering judgment determines that significant traffic flow and/or land use changes have occurred) to maximize the ability of the traffic control signal to satisfy current traffic demands.
D. They are coordinated to provide for continuous or nearly-continuous movement of traffic at a definite speed along a given route under favorable conditions.
E. They are used to interrupt heavy traffic at intervals to permit other traffic, vehicular or pedestrian, to cross.

03 Traffic control signals are often considered a panacea for all traffic problems at intersections. This belief has led to traffic control signals being installed at many locations where they are not needed, adversely affecting the safety and efficiency of motor vehicle, bicycle, and pedestrian traffic.

04 Traffic control signals, even when justified by traffic and roadway conditions, can be ill-designed, ineffectively placed, improperly operated, or poorly maintained. Improper or unjustified traffic control signals can result in one or more of the following disadvantages:

A. Excessive delay,
B. Excessive disobedience of the signal indications,
C. Increased use of less-adequate routes as road users attempt to avoid the traffic control signals, and
D. Significant increases in the frequency of collisions (especially rear-end collisions).

Section 4B.03 Alternatives to Traffic Control Signals

Guidance:

01 Since road user delay and the frequency of some types of crashes are sometimes higher under traffic signal control than under STOP sign control, consideration should be given to providing alternatives to traffic control signals even if one or more of the signal warrants (see Chapter 4C) has been satisfied.

Option:

02 These alternatives may include, but are not limited to, the following:

A. Installing signs along the major street to warn road users approaching the intersection;
B. Installing a roundabout to reduce fatal and serious injury crashes and vehicular conflicts that result in fatal and serious injury crashes (see Section 8A.12 if the location is in close proximity to a grade crossing);
C. Installing a pedestrian hybrid beacon (see Chapter 4J), rectangular rapid flashing beacons (see Chapter 4L), pedestrian-actuated Warning Beacons (see Chapter 4S), or In-Roadway Warning Lights (see Chapter 4U) if pedestrian safety is the major concern;
D. Relocating the stop line(s) and making other changes to improve the sight distance at the intersection;
E. Installing measures designed to reduce speeds on the approaches;
F. Installing a flashing beacon at the intersection to supplement STOP sign control;
G. Installing flashing beacons on warning signs in advance of a stop-controlled intersection on the major-street and/or minor-street approaches;
H. Adding one or more lanes on a minor-street approach to reduce the number of vehicles per lane on the approach;
I. Revising the geometrics at the intersection to channelize vehicular movements and reduce the time required for a vehicle to complete a movement, which could also assist pedestrians;
J. Revising the geometrics at the intersection to add pedestrian median refuge islands and/or curb extensions;
K. Installing roadway lighting if a disproportionate number of crashes occur at night;
L. Restricting one or more turning movements, perhaps on a time-of-day basis, if alternate routes are available;
M. If the warrant is satisfied, installing multi-way stop control;
N. Employing other alternatives, depending on conditions at the intersection.

Support:

M02A EPG 233 contains information on intersection alternatives.

Section 4B.04 Basis of Installation of Traffic Control Signals

Support:

01 A careful analysis of traffic operations, pedestrian and bicyclist needs, and other factors at a large number of signalized and unsignalized locations, coupled with engineering judgment, has provided a series of signal warrants, described in Chapter 4C, that define the minimum conditions under which installing traffic control signals might be justified.

M01A MoDOT's general policy is to own, operate and maintain all traffic signals and flashers installed or constructed on the state highway system.

M01B When the installation of a traffic signal is warranted, the cost of the signal (excluding emergency and school signals), installation and maintenance, and electrical power for operation, unless otherwise stated, will be borne by the Commission. Where possible, MoDOT takes advantage of any reduced power rates by including in the municipal and/or county agreement a phrase the city will pay for the power, with reimbursement to be made by the state. Where city/county power is not available, MoDOT pays for the power directly.

M01C The need for signalizing an intersection will normally be recognized and initiated at the district level. A careful analysis of traffic operations, pedestrian and bicyclist needs, and other factors at a large number of signalized and unsignalized locations, coupled with engineering judgment, has provided a series of signal warrants, described in EPG 902.3, that define the minimum conditions under which installing traffic control signals might be justified.

M01D Meeting the warrant requirements of the MUTCD alone is not necessarily a sufficient reason to install traffic signals. Since the installation of traffic control signals will operate either to the advantage or disadvantage of vehicles and persons controlled, the selection and use of traffic control devices is to be preceded by a thorough engineering study of the roadway and traffic conditions.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

02 The design (including the phasing, operation, and timing) of new traffic control signals should be based on an engineering study of roadway, traffic, and other conditions.

Section 4B.05 Basis of Removal of Traffic Control Signals

Guidance:

01 Engineering judgment should be applied in the review of operating traffic control signals to determine whether the type of installation and the timing program meet the current requirements of all forms of traffic.

02 If changes in traffic patterns eliminate the need for a traffic control signal, consideration should be given to removing it and replacing it with appropriate alternative traffic control devices, if any are needed.

03 If the engineering study indicates that the traffic control signal is no longer justified, and a decision is made to remove the signal, the removal should be accomplished using the following steps:

A. Determine the appropriate traffic control to be used after the removal of the signal.

B. Remove any sight-distance restrictions as necessary.

C. Inform the public of the removal study.

D. Flash or cover the signal heads for a minimum of 90 days, and install the appropriate STOP sign control or other traffic control devices.

E. Remove the signal if the engineering data collected during the removal study period confirms that the signal is no longer needed.

Option:

04 Because Items C, D, and E in ~~Paragraph 3~~the third guidance paragraph of this ~~Section~~ Article are not relevant when a temporary traffic control signal (see ~~Section 4D.11~~EPG 902.4.11) is removed, a temporary traffic control signal may be removed immediately after Items A and B are completed.

05 Instead of total removal of a traffic control signal, the poles, controller cabinet, and cables may remain in place after removal of the signal heads for continued analysis.

Standard:

M06 After all of the above considerations have been evaluated and if the decision is made to proceed with the removal, the following steps shall be taken:

1. Central Office Traffic shall be advised and documentation of the above noted evaluations provided to support the decision.

2. Public notice of the intention to remove shall be made. This can consist of news releases, public hearings and presentations at city council meetings or canvassing parties affected by the removal. This is a very important step and the district must be prepared to answer any questions that might arise.

3. Establish a date for the signal to be turned off and notify Central Office Traffic.

4. Flash the signal heads for a minimum of 30 days. After the flash period, cover the signal heads for no less than 60 days. The type of flash used shall compliment the type of traffic control selected for the intersection, yellow/red for two-way stops and red/red for four-way stops.

5. After the 90 day transition period has been successfully completed, the physical removal of the signals can be initiated. A comprehensive removal shall be completed with all concrete foundations and bases removed to at least flush with the ground. Consideration shall be given to filling or securing any pull boxes.

Guidance:

M07 When a temporary traffic control signal is removed the appropriate traffic control to be used after removal of the signal is to be determined and any sight distance restrictions removed.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES [EPG 902.3]

Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

Standard:

01 Except for a temporary traffic control signal (see ~~Section 4D.11~~EPG 902.4.11) installed in a temporary traffic control zone, before a traffic control signal is installed at a particular location, an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at that location.

02 The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:

Warrant 1, Eight-Hour Vehicular Volume

Warrant 2, Four-Hour Vehicular Volume

Warrant 3, Peak Hour

Warrant 4, Pedestrian Volume

Warrant 5, School Crossing

Warrant 6, Coordinated Signal System

Warrant 7, Crash Experience

Warrant 8, Roadway Network

Warrant 9, Intersection Near a Grade Crossing

03 The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Support:

04 Sections 8D.08 and 8D.14 contain information regarding the use of traffic control signals instead of gates and/or flashing-light signals at grade crossings.

Guidance:

05 When considering the installation of a traffic control signal, alternatives to traffic control signals, including those listed in ~~Section 4B.03~~EPG 902.2.3, should also be considered.

06 A traffic control signal should not be installed unless one or more of the factors described in this ~~Chapter~~ Article are met. Signalization can be approved at the district level for locations meeting the criteria in this Article.

MoDOT guidance from the EPG. Revised Dec. 2025

07 A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.

M07A A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow. Traffic signals that are too closely spaced can be a problem to coordinate and may result in a significant loss of operating efficiency. There are three primary areas of concern with close signal spacing:

A. Traffic Queuing. Queue spillback between intersections can cause a breakdown in signalized traffic flow. Ideally, signals are to be spaced to allow room for anticipated queues. A rule of thumb for spacing is eight times the largest cycle length used. An estimate of queues can be made using modeling software.

B. Signal Coordination. Signal spacing is an important factor in coordination of signals. In general, an analysis of signal coordination is to be done if a new signal will be in a coordinated system, and particularly if the distance from the nearest signal is less than 1000 feet.

C. Operating Efficiency. If the location of the proposed signal shows a potential for queue spillback problems or coordination problems, then the operation will result in a reduced efficiency for both the new signal as well as the adjacent signals. To quantify the reduction in efficiency, an analysis of

signal timing and coordination is to be developed that addresses the queuing or coordination problem and compared to existing conditions using modeling software.

M07B Parking on the approaches to the intersection should be reviewed to determine if it is necessary to restrict parking on one or more approaches in order to increase sight distance or to provide increased capacity at the intersection.

MoDOT guidance from EPG. Revised Dec. 2025

~~08 The study should consider the effects of the right-turning vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turning traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2 of this Section.~~

The EPG replaces paragraph 8 with the paragraph shown below regarding right turn movement and also includes a table as a guide to determine the number of right turns to include in a warrant analysis. Revised Dec. 2025

M08 The engineering study should consider the effects of the right-turning vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turning traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed above. If a separate channelized or "free" right with an adequate approach lane is available or proposed, the benefits of a traffic signal in accomplishing this movement are minimal. In such cases, the right-turning volumes for the affected approaches are not to be included in the warrant evaluation. Where the right-turning vehicles are under signal control or where there is a "free" right with no adequate approach lane, right-turning vehicles may be included in warrant analysis. Right-turn movements are typically permitted on red and right-turn movements only require gaps in one or two conflicting movements. As the right turn percentage of total approach volume increases, the benefit of signalization decreases. To account for this effect in warrant analysis, the percentage of right-turning vehicles used in warrant analysis is to be reduced as the right turn percentage of total approach volume increases. If right-turn movements on red are prohibited for an approach, the full right-turning volume is to be considered in warrant analysis. The following table is a guide for determining the number of right-turning vehicles to include in a warrant analysis.

Table 902.3.1 Number of Right Turns to Include in a Warrant Analysis

Proposed Right Turn Condition	Right Turn Percentage (Right Turn Volume/Total Approach Volume)	Percent Right Turn Used in Warrant Analysis
Free Right With Adequate Lane	Any	0
Signal Control or Free Right Without Adequate Approach	0 to 25	100
	25 to 50	75
	50 to 75	50
	75 to 100	25
RTOR Restricted	Any	100

09 Engineering judgment should also be used in applying various traffic signal warrants to cases where major-street approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether a major-street approach is considered as one lane or two lanes. For example, for a major-street approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The major-street approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turning vehicles.

10 Similar engineering judgment and rationale should be applied to a minor-street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turning traffic with traffic on the major street should be considered. Thus, right-turning traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The minor-street approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.

11 If a minor-street approach has one combined through/right-turn lane plus a left-turn lane, the approach should either be analyzed as a two-lane approach based on the sum of the traffic volumes using both lanes or as a one-lane approach based on only the traffic volume in the approach lane with the higher volume.

12 At a location that is under development or construction or at a location where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into steady (stop-and-go) operation to determine if the signal is justified. If not justified, the signal should be taken out of steady (stop-and-go) operation or removed.

M12A *Many times developers will submit projected volumes to justify the installation of a traffic signal. Projected volumes, if properly determined, can be accurate gauges of the expected traffic. Great care is to be taken evaluating an intersection for traffic signals when projections are used. The projections are to be part of a formal traffic impact study performed by a traffic engineering consultant. The consultant should refer to EPG 905.3.4 when determining the projected volumes at the intersection in question. Engineering judgement is used to determine if projected volumes warrant a traffic signal.*

The EPG modifies Paragraph 12 with more specific guidance about traffic volume projections. Revised Dec. 2025

Option:

M12B Because of increased development along the state highway system by commercial and industrial complexes, along with certain public institutions and street developments, traffic flows are generated which require remedial measures to maintain efficient flow of traffic. Traffic signals may be considered for handling traffic at these developments using Warrant 1 or Warrant 3.

Standard:

M12C To qualify privately owned or publicly owned developments for traffic control measures the applicant shall first convey to the Commission, by permanent traffic control easement, that area of operation or area of work which falls on land not within the normal right of way boundaries. The requirements and conditions of the easement will be based on the traffic operational requirements.

The EPG includes the following paragraph considering traffic signals using Warrant 1 and Warrant 3 for handling traffic flows generated by commercial and industrial developments along the state highway system. Revised Dec. 2025

Option:

13 For signal warrant analysis, a location with a wide median may be analyzed as one intersection or as two intersections (see Section 2A.23) based on engineering judgment.

14 At an intersection with a high volume of left-turning traffic from the major street, the signal warrant analysis may be performed in a manner that considers the higher of the major-street left-turn volumes as the "minor-street" volume and the corresponding single direction of opposing traffic on the major street as the "major-street" volume.

15 For signal warrants requiring conditions to be present for a certain number of hours in order to be satisfied, any four consecutive 15-minute periods may be considered as 1 hour if the separate 1-hour periods used in the warrant analysis do not overlap each other and both the major-street volume and the minor-street volume are for the same specific 1-hour periods.

16 For signal warrant analysis, bicyclists may be counted as either vehicles or pedestrians.

Support:

17 When performing a signal warrant analysis, bicyclists riding in the street with other vehicular traffic are usually counted as vehicles and bicyclists who are clearly using pedestrian facilities are usually counted as pedestrians.

Option:

18 Engineering study data may include the following:

A. The number of vehicles entering the intersection in each hour from each approach during 12 hours of an average day. It is desirable that the hours selected contain the greatest percentage of the 24-hour traffic volume.

B. Vehicular volumes for each traffic movement from each approach, classified by vehicle type (heavy trucks, passenger cars and light trucks, public-transit vehicles, and, in some locations, bicycles), during each 15-minute period of the 2 hours in the morning and 2 hours in the afternoon during which the total traffic entering the intersection is the greatest.

C. Pedestrian volume counts on each crosswalk during the same periods as the vehicular counts in Item B and during the hours of highest pedestrian volume. Where young, elderly, and/or persons with physical or vision disabilities need special consideration, the pedestrians and their crossing times may be classified by general observation.

D. Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements at the location under study. These persons might not be adequately reflected in the pedestrian volume count if the absence of a signal restrains their mobility.

E. The posted or statutory speed limit or the 85th-percentile speed on the uncontrolled approaches to the location.

F. A condition diagram showing details of the physical layout, including such features as intersection geometrics, channelization, grades, sight-distance restrictions, transit stops and routes, parking conditions, pavement markings, roadway lighting, driveways, nearby railroad crossings, distance to the nearest traffic control signals, utility poles and fixtures, and adjacent land use.

G. A collision diagram showing crash experience by type, location, direction of movement, severity, weather, time of day, date, and day of week for at least 1 year.

H. On-site photographs of all approaches and any special considerations.

19 The following data, which are desirable for a more precise understanding of the operation of the intersection, may be obtained during the periods described in Item B of ~~Paragraph 18~~the preceding paragraph ~~of this Section~~:

A. Delay Study - Vehicle-hours of stopped-time delay determined separately for each approach.

B. Gap Study - The number and distribution of acceptable gaps in vehicular traffic on the major street for entrance from the minor street.

C. Speed Study - The posted or statutory speed limit or the 85th-percentile speed on controlled approaches at a point near to the intersection but unaffected by the control.

D. Pedestrian Delay Study - Pedestrian delay time for at least two 30-minute peak pedestrian delay periods of an average weekday or like periods of a Saturday or Sunday.

E. Queue Study - Queue length on stop-controlled approaches.

The EPG includes the following information regarding Signal Coordination Study. Revised Dec. 2025

F. Signal Coordination Study - A time-space diagram for the coordinated signal system for each timing plan to be used is developed or revised to include the proposed signal installation. The time-space diagram is based on normal free flow speed for that time of day. It is necessary to develop realistic signal timing and offsets for the new signals. The time-space diagram is reviewed to determine the effects of the new signal on vehicle platooning through the coordinated system. This study can be further enhanced by using a traffic modeling program to help visualize actual conditions.

M19A All of the above counts and data are to be obtained on an average day period.

Support:

20 The safe and efficient movement of all road users is the primary consideration in the engineering study to determine whether to install a traffic control signal or to install some other type of control or roadway configuration. Installation of a traffic control signal does not necessarily result in improved safety in every case. In some cases, the installation of a traffic control signal at an inappropriate location could adversely impact safety for one or more types of road users. The purpose of the engineering study is to evaluate all of the factors that are relevant to a specific location. The satisfaction of a warrant (or warrants) is one of the relevant factors in the engineering study, but it is not intended to be the only factor or even the overriding consideration. Agencies can install a traffic control signal at a location where no warrants are met, but only after conducting an engineering study that documents the rationale for deciding that the installation of a traffic control signal is the best solution for improving the overall safety and/or operation at the location.

Option:

M21 Adequate roadway capacity is always desirable and especially so at a signalized intersection. The widening of both the main highway and intersecting roadways may be necessary to reduce the delays caused by assignment of right of way at the intersection and the widening itself may reduce or eliminate the need for signalization. In general, it is always desirable to provide a left turn lane for each major approach at each intersection. This is especially so on a two-lane roadway where there are sizable volumes of left-turning traffic. The left turn lane provides a place to separately store left-turning traffic. Separating the through and turning vehicles will generally improve the capacity of the intersection as well as reducing the overall delay at the intersection and the opportunity for rear-end crashes.

The EPG includes the preceding paragraph regarding the necessity of widening both main highway and intersecting roadways to reduce delays. Revised Dec. 2025

Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume

Support:

01 The Minimum Vehicular Volume, Condition A (see Table 4C-1), is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

02 The Interruption of Continuous Traffic, Condition B (see Table 4C-1), is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

Guidance:

04 The need for a traffic control signal should be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major street and the more critical minor-street approach, respectively, to the intersection; or

B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major street and the more critical minor-street approach, respectively, to the intersection.

Standard:

05 These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours that are selected for the Condition A analysis shall not be required to be the same 8 hours that are selected for the Condition B analysis.

Support:

06 On the minor street, the more critical volume is not required to be on the same approach during each of these 8 hours. The more critical minor-street volume is the one that meets the warranting criteria for that approach, and in the case of a one-lane minor-street approach that is opposite from a multi-lane minor-street approach might not have the higher volume.

Option:

07 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Guidance:

08 The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

09 The need for a traffic control signal should-be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:

A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major street and the more critical minor-street approach, respectively, to the intersection; and

B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major street and the more critical minor-street approach, respectively, to the intersection.

Standard:

10 These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B.

Support:

11 On the minor street, the more critical volume is not required to be on the same approach during each of the 8 hours. The more critical minor-street volume is the one that meets the warranting criteria for that approach, and in the case of a one-lane minor-street approach that is opposite from a multi-lane minor-street approach might not have the higher volume.

Option:

12 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Table 4C-1 Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on more critical minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on more critical minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume

[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Section 4C.03 Warrant 2, Four-Hour Vehicular Volume

Support:

01 The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. This warrant is based on existing traffic and is not normally used during project development.

The EPG includes additional support for the application of Warrant 2. Revised Dec. 2025

Guidance:

02 The need for a traffic control signal should be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the more critical minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes.

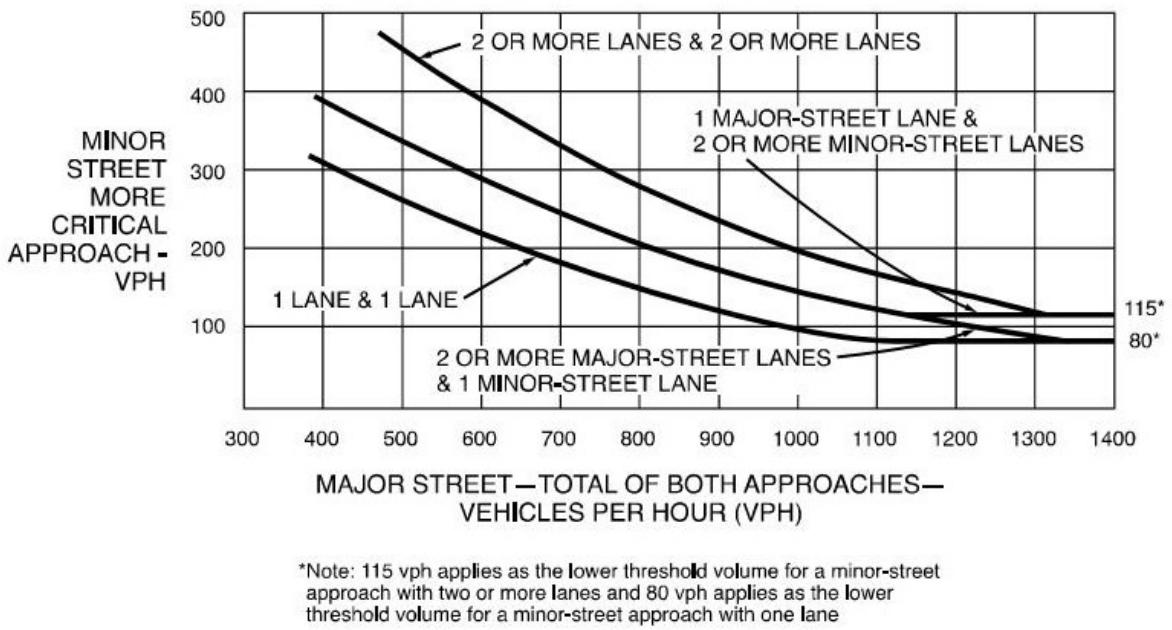
Support:

03 On the minor street, the more critical volume is not required to be on the same approach during each of these 4 hours. The more critical minor-street volume is the one that meets the warranting criteria for that approach, and in the case of a one-lane minor-street approach that is opposite from a multi-lane minor-street approach might not have the higher volume.

Option:

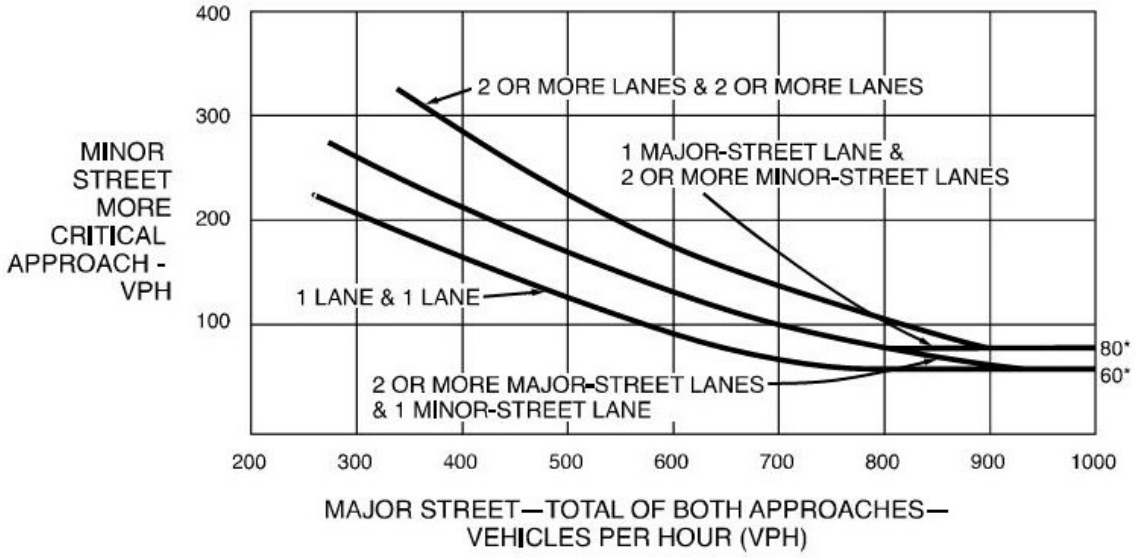
04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Figure 4C-1 Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane

Figure 4C-2 Warrant 2, Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane

Section 4C.04 Warrant 3, Peak Hour

Support:

01 The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Guidance:

02 This signal warrant should be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

03 The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. *If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:*
    1. *The total stopped-time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach, and*
    2. *The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and*
    3. *The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.*
B. *The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the more critical minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.*

Option:

04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in Item B of ~~Paragraph 3 in~~ the second guidance paragraph of this ~~Section~~ Article.

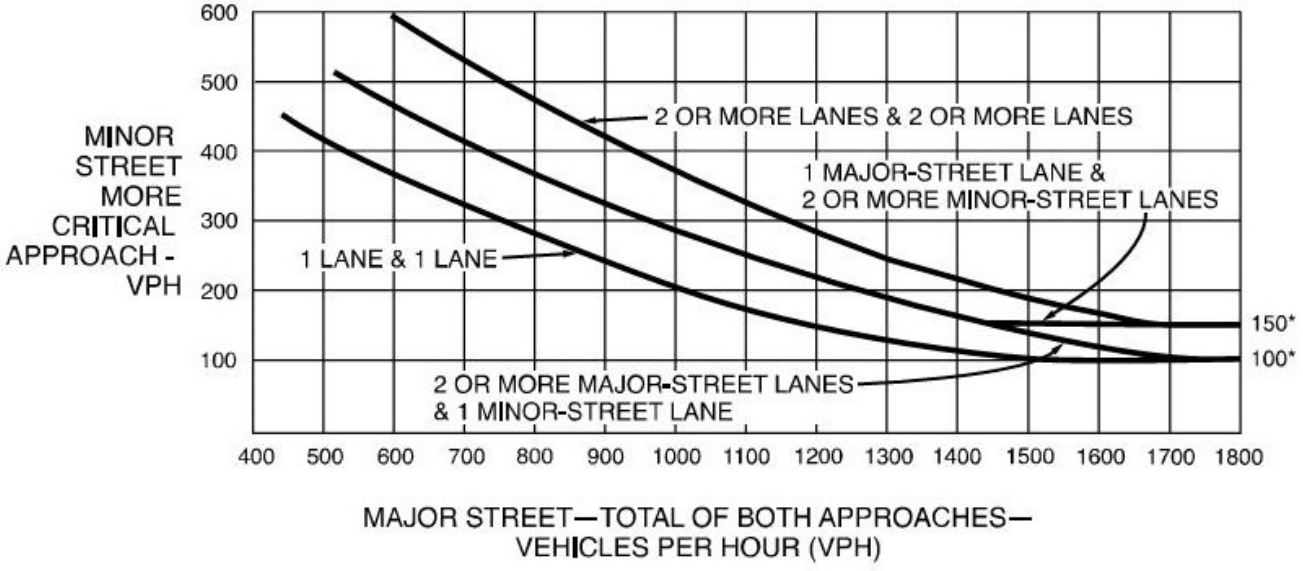
~~05 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study., the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.~~

MoDOT guidance is not to operate signals in flashing mode during off-peak periods. Revised Dec. 2025

Guidance:

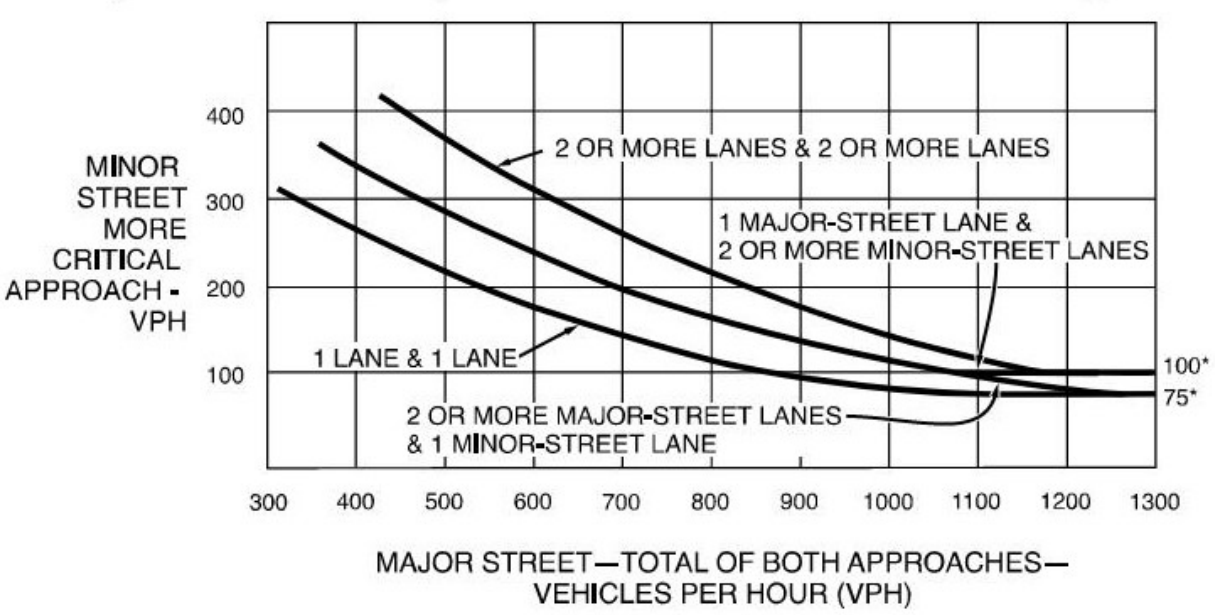
06 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.

Figure 4C-3 Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane

Figure 4C-4 Warrant 3, Peak Hour (70% Factor)
COMMUNITY LESS THAN 10,000 POPULATION OF ABOVE 40 MPH ON MAJOR



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

Section 4C.05 Warrant 4, Pedestrian Volume

Support:

01 The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

Guidance:

02 The need for a traffic control signal at an intersection or midblock crossing should be considered if an engineering study finds that one of the following criteria is met:

- *A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or*
- *B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-6.*

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 35 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-7 may be used in place of Figure 4C-5 to evaluate Item A ~~in Paragraph 2~~ of the first guidance paragraph of this ~~Section~~ Article, and Figure 4C-8 may be used in place of Figure 4C-6 to evaluate Item B ~~in Paragraph 2~~of the first guidance paragraph of this ~~Section~~ Article.

04 Where there is a divided street having a median of sufficient width for pedestrians to wait, the criteria in Items A and B of ~~Paragraph 2~~the first guidance paragraph of this ~~Section~~ Article may be applied separately to each direction of vehicular traffic.

Guidance:

05 The Pedestrian Volume signal warrant should not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than ~~300~~1,000 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

MoDOT guidance exceeds MUTCD minimum spacing. Revised Dec. 2025

Standard:

06 If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4I.

Guidance:

07 If this warrant is met and a traffic control signal is justified by an engineering study, then:

- *A. If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.*
- *B. If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs~~,~~ and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.*
- *C. Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.*

Option:

08 The criterion for the pedestrian volume crossing the major street may be reduced as much as 50 percent if the 15th-percentile crossing speed of pedestrians is less than 3.5 feet per second (see Figures 4C-5 through 4C-8).

09 A traffic control signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provide gaps of adequate length for pedestrians to cross the street.

Figure 4C-5 Warrant 4, Pedestrian Four- Hour Volume

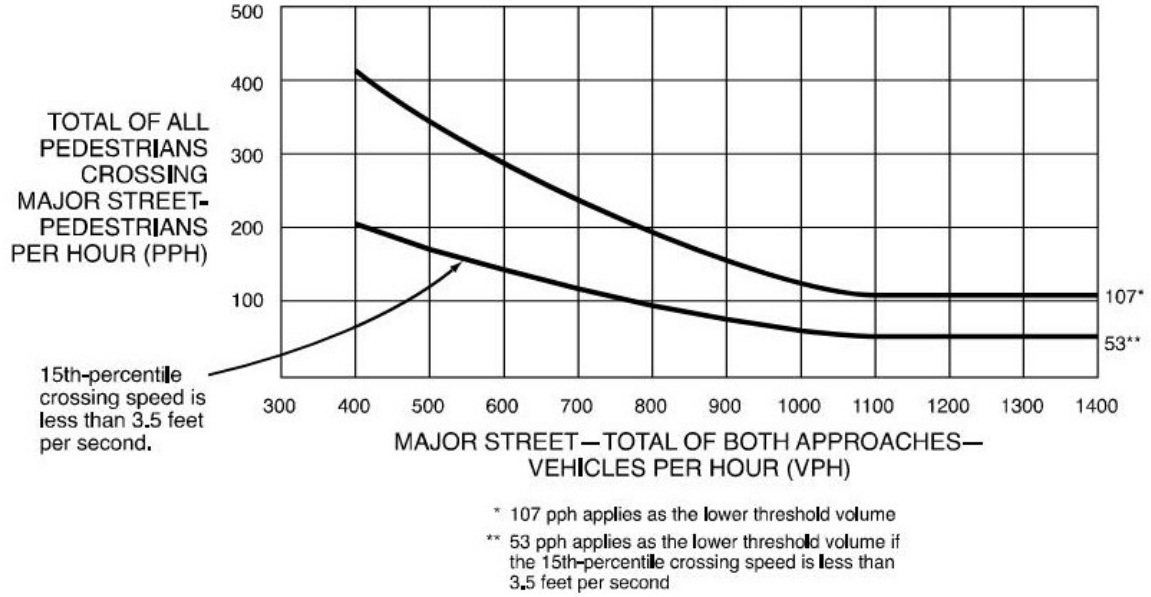


Figure 4C-6 Warrant 4, Pedestrian Peak Hour

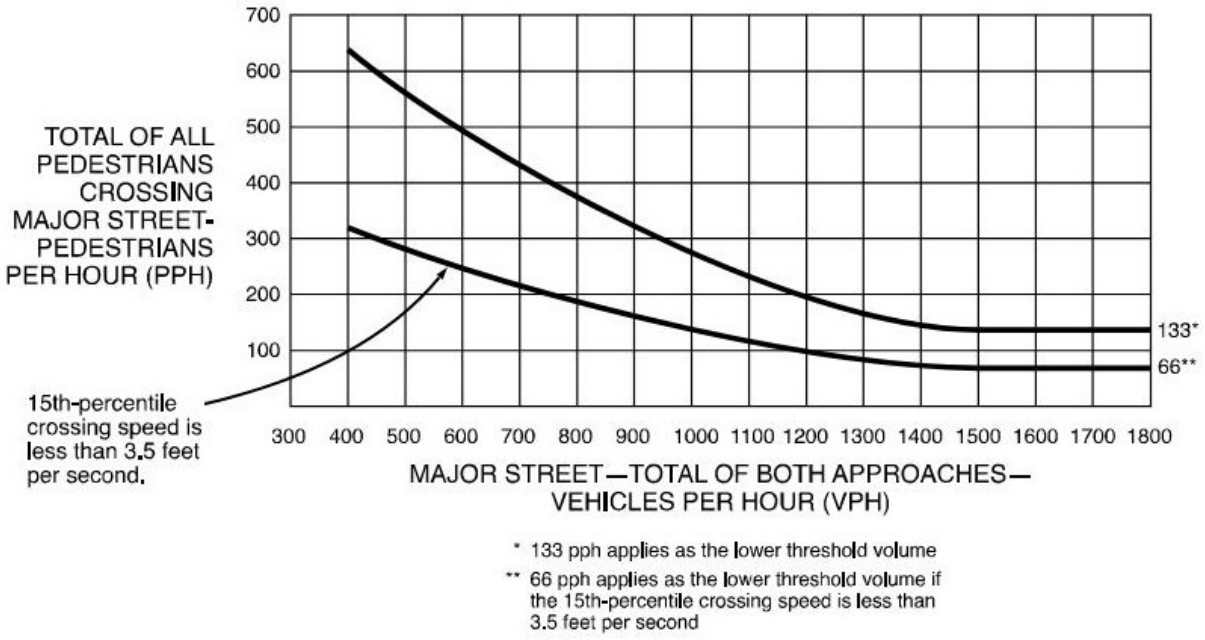


Figure 4C-7 Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

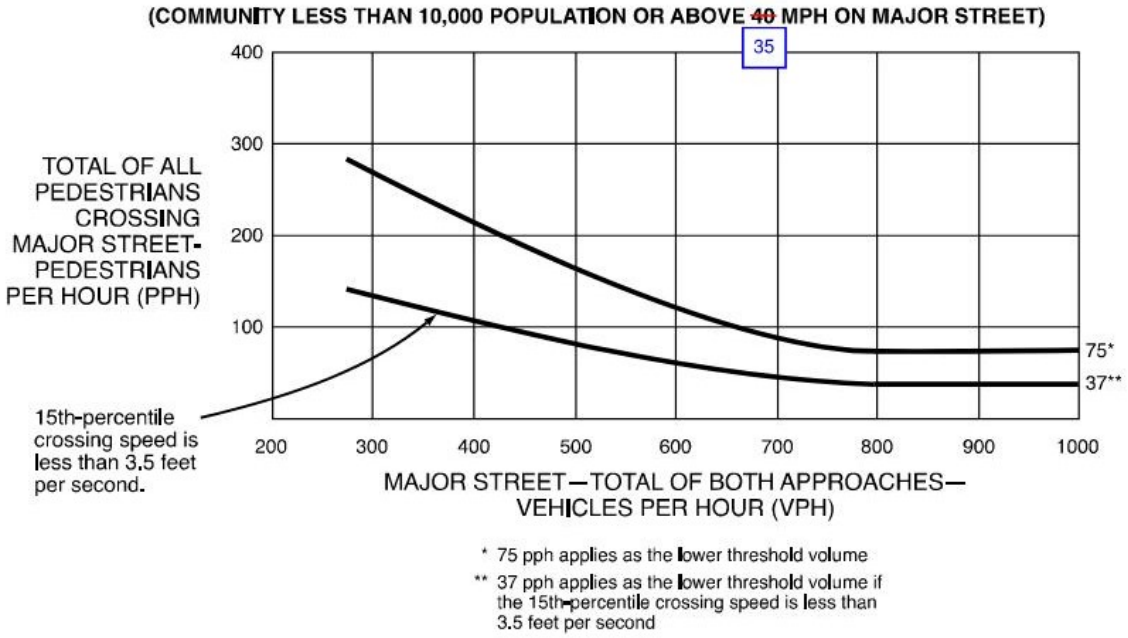
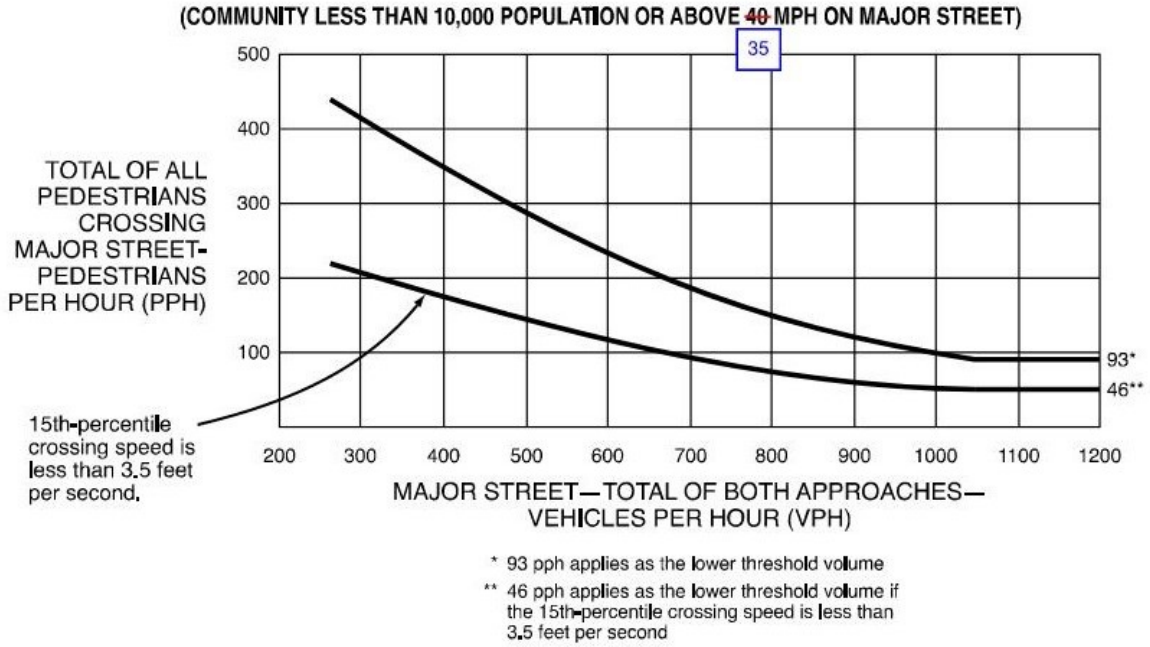


Figure 4C-8 Warrant 4, Pedestrian Peak Hour (70% Factor)



Section 4C.06 Warrant 5, School Crossing

Support:

01 The School Crossing signal warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purposes of this warrant, the word “schoolchildren” includes elementary through high school students.

Guidance:

02 The need for a traffic control signal should be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of schoolchildren at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period and there are a minimum of 20 schoolchildren during the highest crossing hour.

03 Before a decision is made to install a traffic control signal, consideration should be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.

04 The School Crossing signal warrant should not be applied at locations where the distance to the nearest traffic control signal along the major street is less than ~~300~~1,000 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

MoDOT guidance exceeds MUTCD minimum spacing. Revised Dec. 2025

Standard:

05 If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4I.

Guidance:

06 If this warrant is met and a traffic control signal is justified by an engineering study, then:

A. If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.

B. If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs~~,~~ and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.

C. Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.

M06A For further information, see EPG 913 Traffic Control for School Areas.

Reference to MoDOT specific policy. Revised Dec. 2025

Section 4C.07 Warrant 6, Coordinated Signal System

Support:

01 Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles. This warrant is based on the premise that vehicular traffic has a tendency to disperse and increase headways between signalized intersections.

The EPG includes additional support for Warrant 6. Revised Dec. 2025

Guidance:

02 The need for a traffic control signal should be considered if an engineering study finds that one of the following criteria is met:

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.

03 The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1,000 feet.

Section 4C.08 Warrant 7, Crash Experience

Support:

01 This warrant is based on crash experience at an intersection. The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

The EPG includes additional support to clarify Warrant 7. Revised Dec. 2025

Guidance:

02 The need for a traffic control signal should be considered if an engineering study finds that all of the following criteria are met:

- *A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and*
- *B. At least one of the following conditions applies to the reported crash history (where each reported crash considered is related to the intersection and apparently exceeds the applicable requirements for a reportable crash):*
  1. *The number of reported angle crashes and pedestrian crashes within a 1-year period equals or exceeds the threshold number in Table 4C-2 for total angle crashes and pedestrian crashes (all severities); or*
  2. *The number of reported fatal-and-injury angle crashes and pedestrian crashes within a 1-year period equals or exceeds the threshold number in Table 4C-2 for total fatal-and-injury angle crashes and pedestrian crashes; or*
  3. *The number of reported angle crashes and pedestrian crashes within a 3-year period equals or exceeds the threshold number in Table 4C-3 for total angle crashes and pedestrian crashes (all severities); or*
  4. *The number of reported fatal-and-injury angle crashes and pedestrian crashes within a 3-year period equals or exceeds the threshold number in Table 4C-3 for total fatal-and-injury angle crashes and pedestrian crashes; and*
- *C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see ~~Section 4C.02~~EPG 902.3.2), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major street and the more critical minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant (see ~~Section 4C.05~~EPG 902.3.5).*

Standard:

03 These major-street and minor-street volumes shall be for the same 8 hours.

M03A To justify installation of a traffic signal by satisfaction of Warrant 7, an engineering study shall be submitted to the district to document satisfaction of the warrant criteria listed above. The study shall include analysis of relevant crash data. For further information, see EPG 905.2.2 Crash Analysis.

MoDOT requirement for Warrant 7. Revised Dec. 2025

Support:

04 On the minor street, the more critical volume is not required to be on the same approach during each of these 8 hours. The more critical minor-street volume is the one that meets the warranting criteria for that approach, and in the case of a one-lane minor-street approach that is opposite from a multi-lane minor-street approach might not have the higher volume.

Option:

05 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000:

A. The traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

B. Tables 4C-4 and 4C-5 may be used in place of Tables 4C-2 and 4C-3, respectively.

~~Option:~~

~~06 Agencies may calibrate Highway Safety Manual (HSM) (AASHTO, 2010) safety performance functions (SPFs) to their own crash data or develop their own SPFs to produce agency specific average crash frequency values. When documented as part of the engineering study, these agency specific crash frequency values may be used instead of the values shown in Tables 4C-2 through 4C-5 when applying the Crash Experience signal warrant.~~

MoDOT adopts Tables 4C-2 through 4C-5 therefore the option statement in Paragraph 6 is not necessary. Revised Dec. 2025

Support:

07 The values in Tables 4C-2 through 4C-5 for Minimum Number of Reported Crashes that correspond to the Crash Experience signal warrant were derived using the safety performance functions (SPFs) in the Highway Safety Manual (HSM) (AASHTO, 2010) for stop-controlled and signalized intersections with characteristics that are considered typical. The values in Tables 4C-2 through 4C-5 are representative of average crash frequency for the given intersection condition. The values correspond to the threshold at which the signalized intersection safety performance outperforms the stop-controlled intersection, for otherwise identical conditions and equivalent traffic.

Table 4C-2. Minimum Number of Reported Crashes in a One-Year Period

Number of through lanes on each approach		Total of angle and pedestrian crashes (all severities)[a]		Total of fatal-and-injury angle and pedestrian crashes[a]	
Major Street	Minor Street	Four Legs	Three Legs	Four Legs	Three Legs
1	1	5	4	3	3
2 or more	1	5	4	3	3
2 or more	2 or more	5	4	3	3
1	2 or more	5	4	3	3

[a] Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major street and one or more vehicles on the minor street

Table 4C-3. Minimum Number of Reported Crashes in a Three-Year Period

Number of through lanes on each approach		Total of angle and pedestrian crashes (all severities)[a]		Total of fatal-and-injury angle and pedestrian crashes[a]	
Major Street	Minor Street	Four Legs	Three Legs	Four Legs	Three Legs
1	1	6	5	4	4
2 or more	1	6	5	4	4
2 or more	2 or more	6	5	4	4
1	2 or more	6	5	4	4

[a] Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major street and one or more vehicles on the minor street

Table 4C-4. Minimum Number of Reported Crashes in a One-Year Period

Community less than 10,000 population or above 40 mph on major street					
Number of through lanes on each approach		Total of angle and pedestrian crashes (all severities)[a]		Total of fatal-and-injury angle and pedestrian crashes[a]	
Major Street	Minor Street	Four Legs	Three Legs	Four Legs	Three Legs
1	1	4	3	3	3
2 or more	1	10	9	6	6
2 or more	2 or more	10	9	6	6
1	2 or more	4	3	3	3

[a] Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major street and one or more vehicles on the minor street

Table 4C-5. Minimum Number of Reported Crashes in a Three-Year Period

Community less than 10,000 population or above 40 mph on major street					
Number of through lanes on each approach		Total of angle and pedestrian crashes (all severities)[a]		Total of fatal-and-injury angle and pedestrian crashes[a]	
Major Street	Minor Street	Four Legs	Three Legs	Four Legs	Three Legs
1	1	6	5	4	4
2 or more	1	16	13	9	9
2 or more	2 or more	16	13	9	9
1	2 or more	6	5	4	4

[a] Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major street and one or more vehicles on the minor street

Section 4C.09 Warrant 8, Roadway Network

Support:

01 Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network. This warrant is based on existing traffic and is not normally used during project development.

The EPG includes additional support for the application of Warrant 8. Revised Dec. 2025

Guidance:

02 The need for a traffic control signal should be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

- *A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or*
- *B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).*

03 A major route as used in this signal warrant should have at least one of the following characteristics:

- *A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow;*
- *B. It includes rural or suburban highways outside, entering, or traversing a city; or*
- *C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.*

Section 4C.10 Warrant 9, Intersection Near a Grade Crossing

Support:

01 The Intersection Near a Grade Crossing signal warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity of a grade crossing on an approach controlled by a STOP or YIELD sign at a highway-highway intersection is the principal reason to consider installing a traffic control signal.

Guidance:

02 This signal warrant should be applied only after adequate consideration has been given to other alternatives or after a trial of an alternative has failed to alleviate the safety concerns associated with the grade crossing. Among the alternatives that should be considered or tried are:

- *A. Providing additional pavement that would enable vehicles to clear the track or that would provide space for an evasive maneuver, or*
- *B. Reassigning the stop controls at the highway-highway intersection to make the approach across the track a non-stopping approach.*

03 The need for a traffic control signal should be considered if an engineering study finds that both of the following criteria are met:

- *A. A grade crossing exists on an approach controlled by a STOP or YIELD sign at a highway-highway intersection and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and*
- *B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) of the highway-highway intersection and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1C.02.*

04 The following considerations apply when plotting the traffic volume data on Figure 4C-9 or 4C-10:

A. *Figure 4C-9 should be used if there is only one lane approaching the highway-highway intersection at the track crossing location and Figure 4C-10 be used if there are two or more lanes approaching the highway-highway intersection at the track crossing location.*

B. *After determining the actual distance D, the curve for the distance D that is nearest to the actual distance D should be used. For example, if the actual distance D is 95 feet, the plotted point should be compared to the curve for D=90 feet.*

C. *If the rail traffic arrival times are unknown, the highest traffic volume hour of the day should be used.*

Option:

05 The traffic volume on the minor-street approach to the highway-highway intersection may be multiplied by up to three adjustment factors as provided in ~~Paragraphs 6 through 8~~the sixth paragraph through the eighth paragraph of this ~~Section~~ Article.

06 Because the curves are based on an average of four occurrences of rail traffic per day, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-6 for the appropriate number of occurrences of rail traffic per day.

07 Because the curves are based on typical vehicle occupancy, if at least 2% of the vehicles crossing the track are buses carrying at least 20 people, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-7 for the appropriate percentage of high-occupancy buses.

08 Because the curves are based on tractor-trailer trucks comprising 10% of the vehicles crossing the track, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-8 for the appropriate distance and percentage of tractor-trailer trucks.

Standard:

09 If this warrant is met and a traffic control signal at the highway-highway intersection is justified by an engineering study, then:

A. The traffic control signal shall have actuation on the minor street,

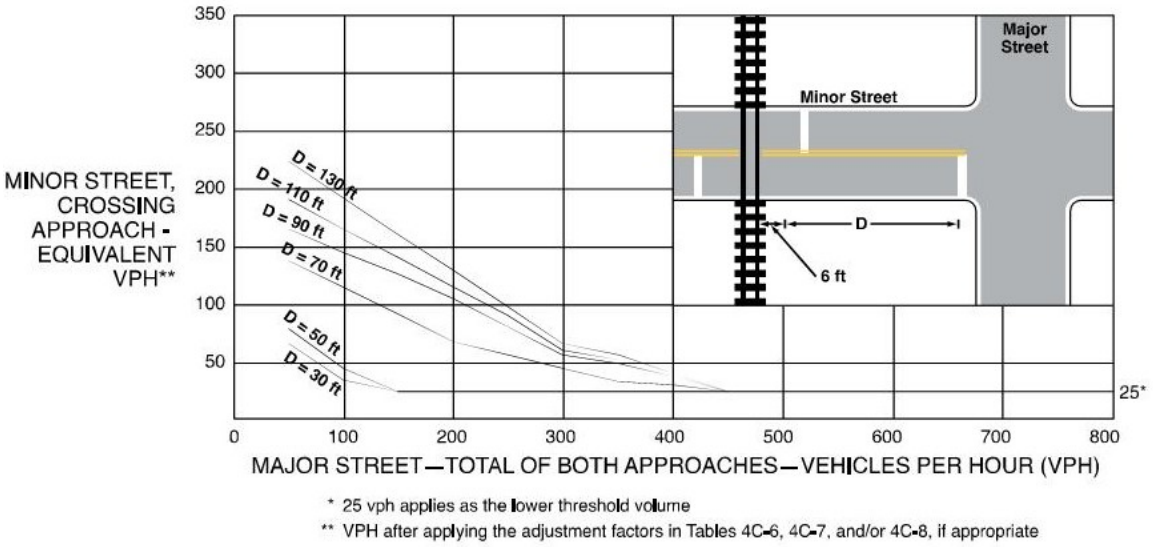
B. Preemption control shall be provided in accordance with Sections 4F.19 and 8D.09, and

C. The grade crossing shall have flashing-light signals (see Section 8D.02).

Guidance:

10 If this warrant is met and a traffic control signal at the highway-highway intersection is justified by an engineering study, the grade crossing should have automatic gates (see Section 8D.03).

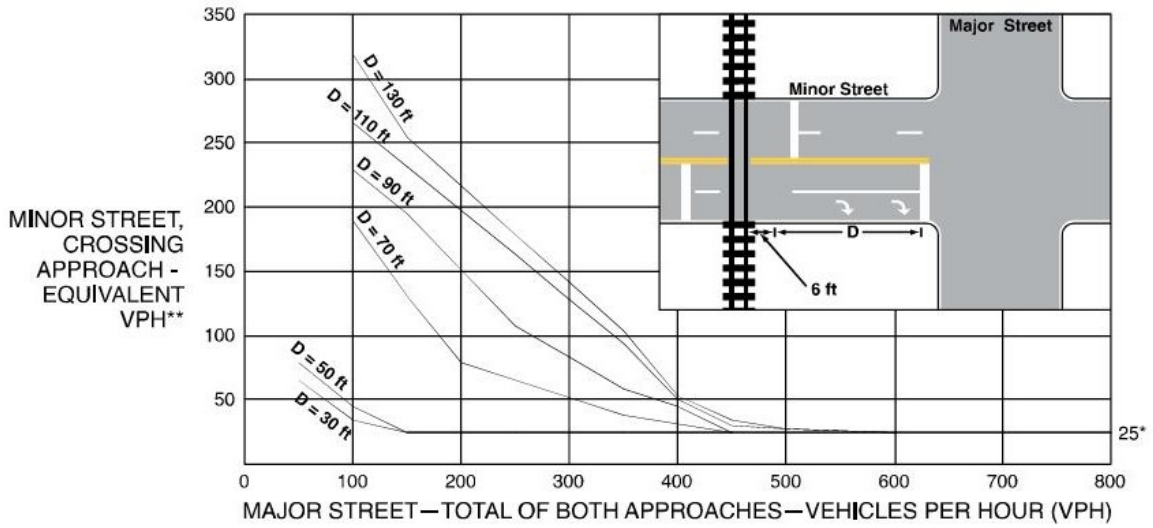
Figure 4C-9. Warrant 9, Intersection Near a Grade Crossing (One Approach Lane at the Track Crossing)



* 25 vph applies as the lower threshold volume

** VPH after applying the adjustment factors in Tables 4C-6, 4C-7, and/or 4C-8, if appropriate

Figure 4C-10. Warrant 9, Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)



* 25 vph applies as the lower threshold volume

** VPH after applying the adjustment factors in Tables 4C-6, 4C-7, and/or 4C-8, if appropriate

Table 4C-6. Warrant 9, Adjustment Factor for Daily Frequency of Rail Traffic

Rail traffic per day	Adjustment factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

Table 4C-7. Warrant 9, Adjustment Factor for Percentage of High-Occupancy Buses

% of high-occupancy buses* on minor-street approach	Adjustment factor
0%	1.00
2%	1.09
4%	1.19
6% or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people.

Table 4C-8. Warrant 9, Adjustment Factor for Percentage of Tractor-Trailer Trucks

% of tractor-trailer trucks on minor-street approach	Adjustment factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

CHAPTER 4D. DESIGN FEATURES OF TRAFFIC CONTROL SIGNALS

Section 4D.01 General

Support:

01 The features of traffic control signals of interest to road users are the location, design, and meaning of the signal indications. Uniformity in the design features that affect the traffic to be controlled, as set forth in this Manual, is especially important for the safety and efficiency of operations.

02 Traffic control signals can be operated in pretimed, semi-actuated, or full-actuated modes. For isolated (non-interconnected) signalized locations on rural high-speed highways, full-actuated mode with advance vehicle detection on the high-speed approaches is typically used. These features are designed to reduce the frequency with which the onset of the yellow change interval is displayed when high-speed approaching vehicles are in the "dilemma zone" such that the drivers of these high-speed vehicles find it difficult to decide whether to stop or proceed.

M02A EPG 902.23 contains information regarding traffic control signal operation.

Standard:

03 The design and operation of traffic control signals shall take into consideration the needs of all modes of traffic including access and safety.

04 When a traffic control signal is not in operation, such as before it is placed in service, during seasonal shutdowns, or when it is not desirable to operate the traffic control signal, the signal faces shall be covered, turned, or taken down to clearly indicate that the traffic control signal is not in operation.

Guidance:

05 If a cover is placed over a traffic control signal face that is not in operation and that has a yellow retroreflective strip along the perimeter of its signal backplate (see ~~Paragraph 21~~the fifth option paragraph ~~in Section 4D.06~~of EPG 902.4.6), the entire signal face, including the backplate, should be covered. If a traffic control signal face that is not in operation and that has a yellow retroreflective strip along the perimeter of its signal backplate is turned, the turned signal face should be oriented such that the yellow backplate border will not reflect light back to road users on any of the approaches to the intersection.

~~Support:~~

~~06 Seasonal shutdown is a condition in which a permanent traffic control signal is turned off or otherwise made non-operational during a particular season when its operation is not justified. This might be applied in a community where tourist traffic during most of the year justifies the permanent signalization, but a seasonal shutdown of the signal during an annual period of lower tourist traffic would reduce delays; or where a major traffic generator, such as a large factory, justifies the permanent signalization, but the large factory is shut down for an annual factory vacation for a few weeks in the summer.~~

MoDOT does not use seasonal shutdown. Revised Dec. 2025

Standard:

07 A traffic control signal shall control traffic only at the intersection or midblock location where the signal faces are placed.

Guidance:

08 Midblock crosswalks should not be signalized if they are located within ~~300~~1,000 feet from the nearest traffic control signal, unless supported by an engineering study or engineering judgment that indicates safe and efficient operation of the closely-spaced traffic control signals can be achieved.

Distance changed to be consistent with similar modification in Sections 4C.05 and 4C.06. Revised Dec. 2025

09 Midblock crosswalks should not be signalized if they are located within 100 feet from side streets or driveways that are controlled by STOP signs or YIELD signs, unless supported by an engineering study or engineering judgment that considers restricting turning movements from the side street or driveway to eliminate conflicts with pedestrian and bicyclist movements.

10 Engineering judgment should be used to determine the proper phasing and timing for a traffic control signal. Since traffic flows and patterns change, phasing and timing should be reevaluated regularly and updated if needed.

11 Traffic control signals within ½ mile of one another along a major route or in a network of intersecting major routes should be coordinated, preferably with interconnected controller units. Where traffic control signals that are within ½ mile of one another along a major route have a jurisdictional boundary or a boundary between different signal systems between them, coordination across the boundary should be considered.

Support:

12 Signal coordination need not be maintained between control sections that operate on different cycle lengths.

13 Sections 4F.19~~, 4Q.03,~~ and 8D.09 contain information about coordination of traffic control signals with grade crossing signals~~ and movable bridge signals~~.

There are no movable bridges on the state highway system. Revised Dec. 2025

Section 4D.02 Provisions for Pedestrians

Support:

01 ~~Chapter 4I~~EPG 902.9 contains additional information regarding pedestrian control features, ~~Chapter 4J~~EPG 902.10 contains additional information regarding pedestrian hybrid beacons, and ~~Chapter 4K~~EPG 902.11 contains additional information regarding accessible pedestrian signals and detectors. EPG 642.4 Impact of the Project Category on ADA contains information regarding what types of signal projects must be accompanied by ADA-related improvements.

The EPG includes an additional support statement. Revised Dec. 2025

Standard:

02 Pedestrian signal heads shall be used in conjunction with vehicular traffic control signals under any of the following conditions, unless the pedestrian crossing is prohibited:

- **A. If the basis for traffic signal installation was justified by an engineering study and meeting either Warrant 4, Pedestrian Volume or Warrant 5, School Crossing (see ~~Chapter 4C~~EPG 902.3);**
- **B. If an exclusive pedestrian signal phase or a leading pedestrian interval (LPI) is provided with all conflicting vehicular movements being stopped;**
- **C. At an established signalized school crossing; or**
- **D. Where there are existing pedestrian accommodations and engineering judgment determines that multi-phase signal indications (such as split-phase timing) would tend to confuse or cause conflicts with pedestrians using a crosswalk guided only by vehicular signal indications.**

Guidance:

03 Pedestrian signal heads should be installed for each marked crosswalk at a location controlled by a traffic control signal.

Standard:

04 Where pedestrian movements regularly occur, pedestrians ~~should~~ shall be provided with sufficient time to cross the roadway by adjusting the traffic control signal operation and timing to provide sufficient crossing time every cycle or by providing pedestrian detectors.

Guidance:

05 Where certain pedestrian movements are prohibited at a traffic control signal location, a No Pedestrian Crossing (R9-3) sign (see Section 2B.57) should be used if it is impracticable to provide a barrier or other physical feature to physically discourage the pedestrian movements.

Support:

06 Accessible pedestrian signals (see ~~Chapter 4K~~EPG 902.11) that provide information in non-visual formats (such as audible tones and/or speech messages, and vibrating surfaces) enhance safety and accessibility at signalized crossings for pedestrians with vision disabilities.

Option:

07 Pedestrian signal heads may be used under other conditions based on engineering judgment.

Section 4D.03 Provisions for Bicyclists

Guidance:

M00A Bicycle symbol signal indications are not currently used on MoDOT facilities. Contact the Highway Safety and Traffic Division for guidance.

Standard:

01 At installations where visibility-limited signal faces are used, signal faces shall be adjusted so bicyclists for whom the indications are intended can see the signal indications. If the visibility-limited signal faces cannot be aimed to serve the bicyclist, then separate signal faces (see Chapter 4H) shall be provided for the bicyclist.

02 On bikeways, signal timing and actuation shall be reviewed and adjusted to consider the needs of bicyclists.

Option:

03 Where it is desired to provide separate signal indications to control bicyclist movements at a traffic control signal, bicycle signal faces may be used (see Chapter 4H).

Support:

04 Sections 9B.02, 9B.11, 9B.20, 9B.22, 9E.02, 9E.06, 9E.07, 9E.08, 9E.11, 9E.12, and 9E.15 contain additional provisions regarding bicyclist movements and actuation at traffic control signals.

Section 4D.04 Provisions for Transit Vehicles

Option:

01 Where it is desired to provide separate signal indications to control transit vehicles at a traffic control signal, LRT signal indications may be used at intersections where special signal phases are used for transit vehicles (see Section 8D.15).

Section 4D.05 Number of Signal Faces on an Approach

Standard:

01 The signal faces for each approach to an intersection or a midblock location shall be provided as follows:

- **A. If a signalized motor vehicle through movement exists on an approach, a minimum of two primary signal faces shall be provided for the through movement. Except for single lane approaches, if a signalized motor vehicle through movement does not exist on an approach, a minimum of two primary signal faces shall be provided for the signalized motor vehicle turning movement that is considered to be the major movement from the approach (also see Section 4F.16).**
- **B. See Sections 4F.02 through 4F.08 for left-turn (and U-turn to the left) signal faces.**
- **C. See Sections 4F.09 through 4F.15 for right-turn ~~(and U-turn to the right)~~ signal faces.**

MoDOT does not use U-turns to the right. Revised Dec. 2025

Option:

02 Where a movement (or a certain lane or lanes) at the intersection never conflicts with any other signalized vehicular or pedestrian movement, a continuously-displayed single-section GREEN ARROW signal indication may be used to inform road users that the movement is free-flow and does not need to stop.

Support:

03 In some circumstances where the through movement never conflicts with any other signalized vehicular or pedestrian movement at the intersection, such as at T-intersections with appropriate geometrics and/or pavement markings and signing, an engineering study might determine that the through movement (or certain lanes of the through movement) can be free-flow and not signalized.

Guidance:

04 If two or more left-turn lanes are provided for a separately-controlled left-turn movement, or if a left-turn movement represents the major movement from an approach, two or more primary left-turn signal faces should be provided.

05 If two or more right-turn lanes are provided for a separately-controlled right-turn movement, or if a right-turn movement represents the major movement from an approach, two or more primary right-turn signal faces should be provided.

Support:

06 Locating primary signal faces overhead on the far side of the intersection has been shown to provide safer operation by reducing intersection entries late in the yellow interval and by reducing red signal violations, as compared to post-mounting signal faces at the roadside or locating signal faces overhead within the intersection on a diagonally-oriented mast arm or span wire. On approaches with two or more lanes for the through movement, one signal face per through lane, centered over each through lane, has also been shown to provide safer operation.

~~*Guidance:*~~ **Standard:**

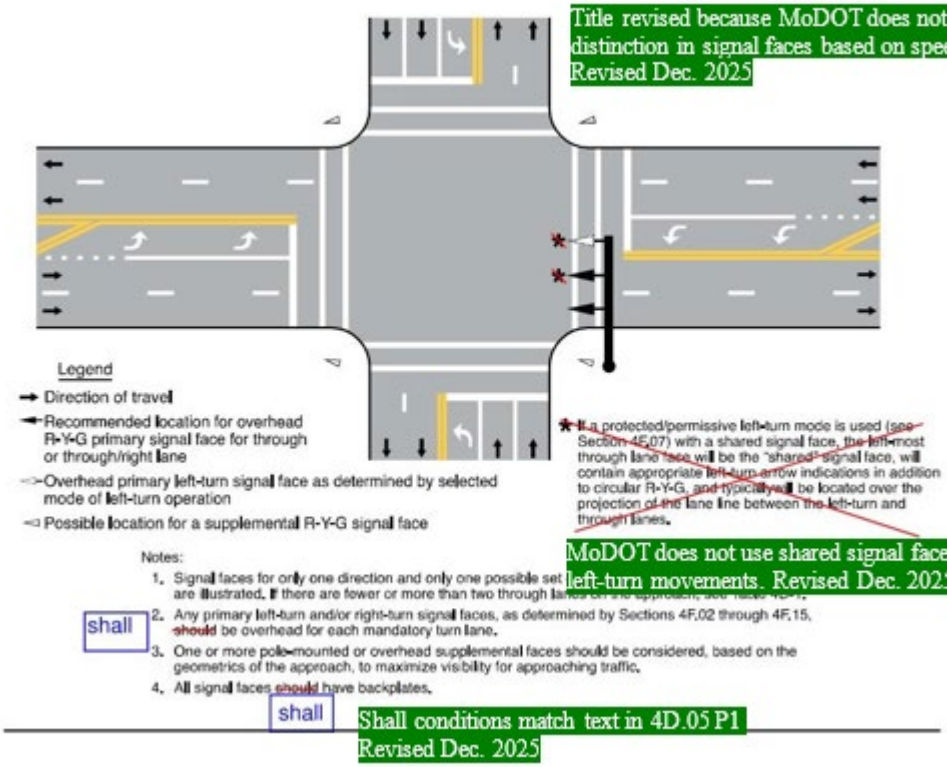
07 ~~*If the posted or statutory speed limit or the 85th percentile speed on an approach to a signalized location is 45 mph or higher, s*~~**Signal faces** ~~*should*~~ **shall be provided as follows for all new or reconstructed signal installations (see Figure 4D-1):**

- **A. The minimum number and location of primary (non-supplemental) signal faces for through traffic** ~~**should**~~ **shall be provided in accordance with Table 4D-1.**
- **B. If the number of overhead primary signal faces for through traffic is equal to the number of through lanes on an approach, one overhead signal face** ~~**should**~~ **shall be located approximately over the center of each through lane.**
- **C. Except for shared left-turn and right-turn signal faces, any primary signal face required by Sections 4F.02 through 4F.16 for a mandatory turn lane** ~~**should**~~ **shall be located overhead approximately over the center of each mandatory turn lane.**
- **D. All primary signal faces** ~~**should**~~ **shall be located on the far side of the intersection.**
- **E. In addition to the primary signal faces, one or more supplemental pole-mounted or overhead signal faces should be considered to provide added visibility for approaching traffic that is traveling behind large vehicles.**
- **E. All signal faces** ~~**should**~~ **shall have backplates.**

~~*08 This layout of signal faces should also be considered for any major urban or suburban arterial street with four or more lanes and for other approaches with speeds of less than 45 mph.*~~

MoDOT does not differentiate signal face location based on vehicle speeds. Paragraph 8 is unnecessary because MoDOT makes P7 a standard for all new or reconstructed intersections. Revised Dec. 2025

Figure 4D-1. Recommended Vehicular Signal Faces for Approaches



Title revised because MoDOT does not make a distinction in signal faces based on speeds. Revised Dec. 2025

MoDOT does not use shared signal faces for left-turn movements. Revised Dec. 2025

Shall conditions match text in 4D.05 P1 Revised Dec. 2025

Table 4D-1. Recommended Minimum Number of Primary Signal Faces for Through Traffic on Approaches

Number of Through Lanes on the Approach	Total Number of Primary Through Signal Faces for the Approach*	Minimum Number of Overhead-Mounted Primary Through Signal Faces for the Approach
1	2	1
2	2	~~1~~ 2
3	3	~~2**~~ 3
4 or more	4 or more	~~3**~~ 4 or more

Notes:

* A minimum of two through signal faces is always required (see Section 4D.05). These recommended numbers of through signal faces may be exceeded. Also, see cone of vision requirements otherwise indicated in Section 4D.07.

~~** If practical, all of the recommended number of primary through signal faces should be located overhead.~~

Title revised because MoDOT does not make a distinction in signal faces based on speeds. Revised Dec. 2025

When there are two or more through lanes, MoDOT requires all of the primary through signal faces to be mounted overhead. Revised Dec. 2025

Section 4D.06 Visibility, Aiming, and Shielding of Signal Faces

~~*Guidance*~~**Standard:**

01 The visibility of signal indications to approaching traffic ~~*should*~~ shall be the highest priority for signal face placement and aiming.

02 Road users approaching a signalized intersection or other signalized area, such as a midblock crosswalk, ~~*should*~~ shall be given a clear and unmistakable indication of whether they are being directed to stop or permitted to proceed.

03 The geometry of each intersection to be signalized, including vertical grades, horizontal curves, and obstructions as well as the lateral and vertical angles of sight toward a signal face, as determined by typical driver-eye position, ~~*should*~~ shall be considered in determining the vertical, longitudinal, and lateral position of the signal face.

MoDOT wants to keep P1, P2, and P3 as standard statements, as they were in the 2009 Edition of the MUTCD. Revised Dec. 2025

Guidance:

04 At signalized midblock crosswalks, at least one of the signal faces should be over the traveled way for each approach.

05 The two primary signal faces required as a minimum for each approach should be continuously visible to traffic approaching the traffic control signal, from a point at least the minimum sight distance provided in Table 4D-2 in advance of and measured to the stop line. This range of continuous visibility should be provided unless precluded by a physical obstruction or unless another signalized location is within this range.

Standard:

06 If approaching traffic does not have a continuous view of at least two signal faces for at least the minimum sight distance shown in Table 4D-2, a sign (see Section 2C.35) ~~*should*~~ shall be installed to warn approaching traffic of the traffic control signal.

MoDOT wants to keep P6 as a standard statement, as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

Option:

07 If a sign is installed to warn approaching road users of the traffic control signal, the sign may be supplemented by a Warning Beacon (see ~~Section 4S.03~~EPG 902.18.3).

08 A Warning Beacon used in this manner may be interconnected with the traffic signal controller assembly in such a manner as to flash yellow during the period when road users passing this beacon at the legal speed for the roadway might encounter a red signal indication (or a queue resulting from the display of the red signal indication) upon arrival at the signalized location.

09 If the sight distance to the signal faces for an approach is limited by horizontal or vertical alignment, supplemental signal faces aimed at a point on the approach at which the signal indications first become visible may be used.

Guidance:

10 Supplemental signal faces should be used if engineering judgment has shown that they are needed to achieve intersection visibility both in advance and immediately before the signalized location.

11 If supplemental signal faces are used, they should be located to provide optimum visibility for the movement to be controlled.

Standard:

12 In cases where irregular street design necessitates placing signal faces for different street approaches with a comparatively small angle between their respective signal indications, each signal indication ~~*should*~~ shall, to the extent practical, be visibility-limited by signal visors, signal louvers, optically programmable LED indications, or other means so that an approaching road user's view of the signal indication(s) controlling movements on other approaches is minimized.

MoDOT wants to keep P12 as a standard statement, as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

~~**Standard:**~~

13 Signal visors exceeding 12 inches in length shall not be used on free-swinging signal faces.

~~*Guidance:*~~

14 Signal visors ~~should~~ shall be used on signal faces to aid in directing the signal indication specifically to approaching traffic, as well as to reduce "sun phantom," which can result when external light enters the lens.

MoDOT wants to keep P14 as standard statement, as it is in the EPG. Revised Dec. 2025

~~*15 The use of signal visors, or the use of signal faces or devices that direct the light without a reduction in intensity, should be considered as an alternative to signal louvers because of the reduction in light output caused by signal louvers.*~~

Guidance statement not included in the EPG. Revised Dec. 2025

Option:

16 Special signal faces, such as visibility-limited signal faces, may be used such that the road user does not see signal indications intended for other approaches before seeing the signal indications for their own approach, especially if simultaneous viewing of both signal indications could cause the road user to be misdirected.

Support:

M16A Limiting the visibility of the indication is to be carefully done according to the manufacturer's recommendations. A single section of an optically limited head can be combined with conventional sections to create the needed visibility control. Due to the increased cost of optically limited heads, they may only be used at locations where needed.

Standard:

M16B Optically limited heads shall not be installed on a span wire since the control of the indication will be lost because of the movement of the span wire mounted head.

Support and standard statements included in the EPG. Revised Dec. 2025

~~*Guidance:*~~

17 All vehicular signal faces shall have backplates. ~~If the posted or statutory speed limit or the 85th-percentile speed on an approach to a signalized location is 45 mph or higher, signal backplates should be used on all of the signal faces that face the approach. Signal backplates should also be considered for use on signal faces on approaches with posted or statutory speed limits or 85th-percentile speeds of less than 45 mph where sun glare, bright sky, and/or complex or confusing backgrounds indicate a need for enhanced signal face target value.~~

Guidance changed to a standard statement because MoDOT requires backplates for all signal faces. Revised Dec. 2025

Support:

18 The use of backplates enhances the contrast between the traffic signal indications and their surroundings for both day and night conditions, which is also helpful to older drivers.

Standard:

19 ~~If backplates are used, a~~ Ancillary legends of any kind that identify the purpose or operation of the signal face shall not be placed on the backplate.

20 Except as provided in the fourth option paragraph of this Article, ~~T~~the inside of signal visors (hoods), the entire surface of louvers and fins, and the front surface of backplates shall have a dull black finish to minimize light reflection and to increase contrast between the signal indication and its background.

Exception for a retroreflective strip on surface of backplates. Revised Dec. 2025

Option:

21 A yellow retroreflective strip with a minimum width of 1 inch and a maximum width of 3 inches may be placed along the perimeter of the face of a signal backplate to project a rectangular appearance at night.

M21A Support:

Backplates coupled with retroreflective strips around the perimeter improve the visibility of the signal face by introducing a controlled-contrast background.

Standard:

M21B For signalized intersection approaches with operating speeds equal to or greater than 55 miles per hour, signal backplates shall have a yellow retroreflective strip around the perimeter as described in the seventeenth paragraph (beginning with "Optically") through the twenty-third paragraph (beginning with "Backplates") of this Article.

Guidance:

M21C Retroreflective strips as described above should be installed on signal backplates at signalized intersections where enhanced signal visibility and conspicuity is desired in daytime and/or nighttime conditions. Such signalized intersections include, but are not limited to:

A. *Signalized intersections with complex or confusing backgrounds;*
B. *Signalized intersections with automated enforcement;*
C. *Isolated signalized intersections; or*
D. *Signalized intersections that are the first signalized intersection upon entering a city or in an unexpected area.*
E. *Signalized intersections with a crash rate higher than comparable intersections.*

MoDOT guidance for retroreflective borders on signal backplates. Revised Dec. 2025

Table 4D-2. Minimum Sight Distance for Signal Visibility

85th-Percentile Speed	Minimum Sight Distance
20 mph	175 feet
25 mph	215 feet
30 mph	270 feet
35 mph	325 feet
40 mph	390 feet
45 mph	460 feet
50 mph	540 feet
55 mph	625 feet
60 mph	715 feet

Note: Distances in this table are derived from stopping sight distance plus an assumed queue length for shorter cycle lengths (60 to 75 seconds).

Section 4D.07 Lateral Positioning of Signal Faces

Standard:

01 At least one and preferably both of the minimum of two primary signal faces required for the through movement (or the major turning movement if there is no through movement) on the approach shall be located between two lines intersecting with the center of the approach at a point 10 feet behind the stop line, one making an angle of approximately 20 degrees to the right of the center of the approach extended, and the other making an angle of approximately 20 degrees to the left of the center

of the approach extended. The signal face that satisfies this requirement shall simultaneously satisfy the longitudinal placement requirement described in ~~Section 4D.08~~EPG 902.4.8 (see Figure 4D-2).

02 If both of the minimum of two primary signal faces required for the through movement (or the major turning movement if there is no through movement) on the approach are post-mounted, they shall both be on the far side of the intersection, one on the right and one on the left of the approach lane(s).

03 The required signal faces for through traffic on an approach shall be located not less than 8 feet apart measured horizontally perpendicular to the approach between the centers of the signal faces.

04 If more than one separate turn signal face is provided for a turning movement and if one or both of the separate turn signal faces are located over the roadway, the signal faces shall be located not less than 8 feet apart measured horizontally perpendicular to the approach between the centers of the signal faces.

Guidance:

05 If horizontally-arranged or clustered signal faces are used, the minimum 8-foot horizontal separation between the two signal faces should be measured from the center of the right-most signal indication in the signal face on the left to the center of the left-most signal indication in the signal face on the right.

06 ~~Except as provided in Paragraph 7 of this Section, f~~For signal faces located over the roadway, separate turn signal faces should be located at least 8 feet from the nearest traffic signal face for a different movement on the same approach measured horizontally perpendicular to the approach between the centers of the signal faces.

~~Option:~~

~~07 For modifications to existing traffic signals, the minimum horizontal separation between a separate turn signal face and the nearest traffic signal face for a different movement may be reduced to 3 feet.~~

~~*Guidance:*~~

08 If a signal face controls a specific lane or lanes of an approach, its position should make it readily visible to road users making that movement.

~~Support:~~

~~09 Section 4D.05 contains additional provisions regarding lateral positioning of signal faces for approaches having a posted or statutory speed limit or an 85th percentile speed of 45 mph or higher.~~

MoDOT does not differentiate signal face location based on vehicle speeds. The EPG does not include P9 support. Revised Dec. 2025

~~*Guidance:*~~ **Standard:**

10 If a mandatory left-turn, right-turn, or U-turn lane is present on an approach and if a primary separate turn signal face controlling that lane is mounted over the roadway, the primary separate turn signal face ~~*should*~~ shall not be positioned any farther to the right than the extension of the right-hand edge of the mandatory turn lane or any farther to the left than the extension of the left-hand edge of the mandatory turn lane.

MoDOT upgrades P10 to a standard as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

Option:

M10A If opposing left turn lanes are substantially in line with each other across a signalized intersection and the primary indications are located over the roadway, the left-turn signal face should be offset 2 feet to right of the centerline of the lane to prevent the signal faces from blocking the view from the opposing approaches.

Option statement is specific MoDOT guidance for the location of a left-turn signal face from the EPG. Revised Dec. 2025

Support:

11 Supplemental turn signal faces mounted over the roadway are not subject to the positioning recommendations in ~~Paragraph 10~~ the fifth standard paragraph of this ~~Section~~ Article.

~~*Guidance:*~~ **Standard:**

12 For new or reconstructed signal installations, on an approach with a mandatory turn lane(s) for a permissive left-turn (or U-turn to the left) movement, signal faces that display a CIRCULAR GREEN signal indication ~~should~~ shall not be post-mounted on the far-side median or mounted overhead above the mandatory turn lane(s) or the extension of the lane(s).

The EPG includes P12 as a standard statement. Revised Dec. 2025

~~**Standard:**~~

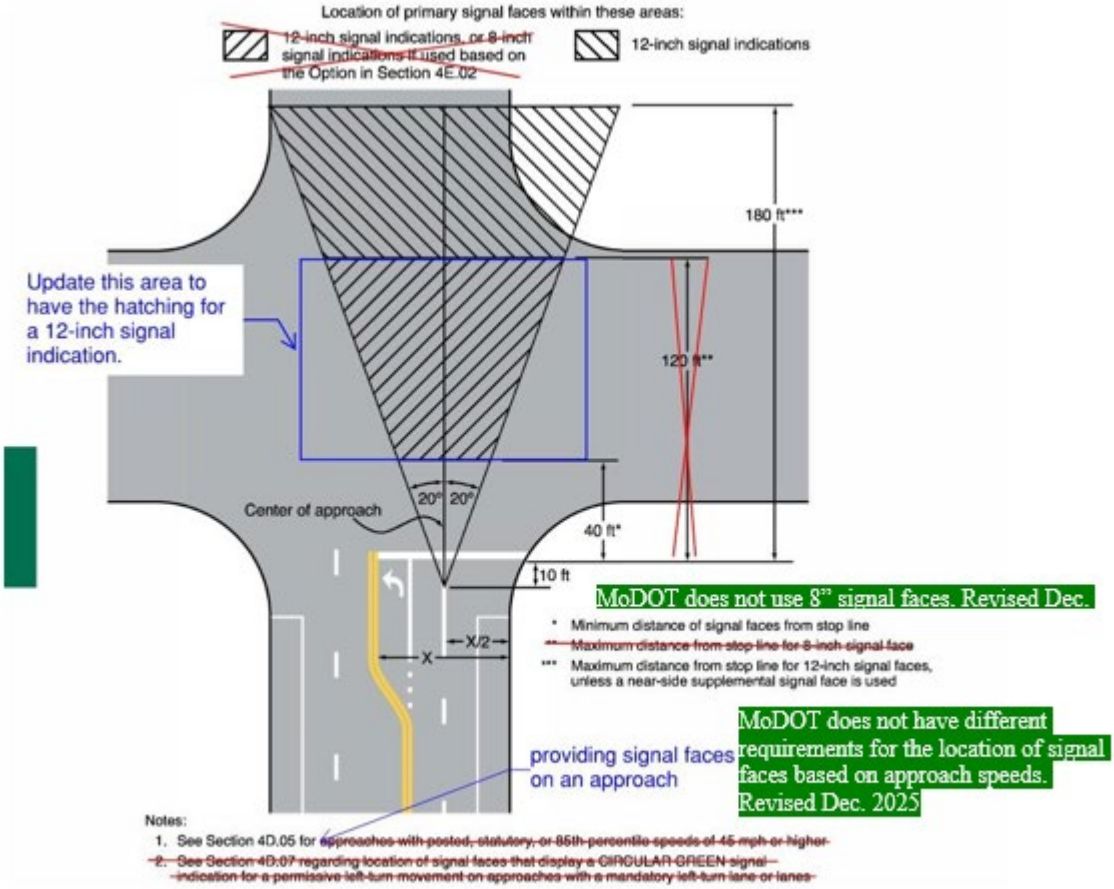
13 If supplemental post-mounted signal faces are used, the following limitations shall apply:

A. Left-turn arrows and U-turn arrows to the left shall not be used in near right signal faces that are located to the right of the through and/or right-turn lanes.

B. Right-turn arrows ~~and U-turn arrows to the right~~ shall not be used in far left signal faces that are located to the left of the through and/or left-turn lanes. A far-side median-mounted signal face shall be considered a far left signal face for this application.

MoDOT does not use U-turn arrows to the right. Revised Dec. 2025

Figure 4D-2. Lateral and Longitudinal Location of Primary Signal Faces



Section 4D.08 Longitudinal Positioning of Signal Faces

Standard:

01 Except where the width of an intersecting roadway or other conditions make it physically impractical, the signal faces for each approach to an intersection or a midblock location shall be provided as follows:

- **A. A signal face installed to satisfy the requirements for primary left-turn signal faces (see Sections 4F.02 through 4F.08) and primary right-turn signal faces (see Sections 4F.09 through 4F.15), and at least one and preferably both of the minimum of two primary signal faces required for the through movement (or the major turning movement if there is no through movement) on the approach shall be located:**
  1. **No less than 40 feet beyond the stop line, and**
  2. **No more than 180 feet beyond the stop line unless a supplemental near-side signal face is provided.**
- **B. The primary signal faces that are used to satisfy the requirements of Item A shall simultaneously satisfy the lateral placement requirement described in ~~Section 4D.07~~EPG 902.4.7 (see Figure 4D-2).**

Guidance:

02 Where the nearest signal face is located between 150 and 180 feet beyond the stop line, engineering judgment of the conditions, including the worst-case visibility conditions, should be used to determine if the provision of a supplemental near-side signal face would be beneficial.

03 Supplemental near-side signal faces should be located as near as practicable to the stop line.

~~Support:~~

~~04 Section 4D.05 contains additional provisions regarding longitudinal positioning of signal faces for approaches having a posted or 85th-percentile speed of 45 mph or higher.~~

MoDOT does not differentiate signal face location based on vehicle speeds. The EPG does not include P4 support. Revised Dec. 2025

Section 4D.09 Mounting Height of Signal Faces

Standard:

01 The bottom of the signal housing and any related attachments to a vehicular signal face located over any portion of a highway that can be used by motor vehicles shall be at least ~~15~~16 feet above the pavement.

MoDOT uses 16 feet as the minimum mounting height for signal faces. Revised Dec. 2025

02 The bottom of the signal housing (including brackets) of a vehicular signal face that is vertically arranged or horizontally arranged and not located over a roadway shall~~:~~

- **~~A. Shall b~~Be a minimum of ~~8~~9 feet and a maximum of 19 feet above the sidewalk or, if there is no sidewalk, above the pavement grade at the ~~center of the roadway~~ edge of pavement adjacent to the signal face.**
- **~~B. Shall be a minimum of 4.5 feet above the median island grade of a center median island if located on the near side of the intersection.~~**

MoDOT exceeds MUTCD minimum distances and changes maximum distances to standard statements. Reference to center of roadway changed to edge of pavement. Revised Dec. 2025

Option:

M02A Except as provided in the second standard paragraph of this Article, where engineering judgment supports the installation of a supplemental signal indication, a mounting height greater than 19 ft. above the sidewalk or edge of pavement may be used.

Option statement from EPG. Revised Dec. 2025

~~*Guidance:*~~ **Standard:**

03 The top of the signal housing of a vehicular signal face located over any portion of a highway that can be used by motor vehicles ~~*should*~~ shall not be more than 25.6 feet above the pavement.

The EPG includes Paragraph 3 as a standard statement as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

Guidance:

04 For viewing distances between 40 and 53 feet from the stop line, the maximum mounting height to the top of the signal housing of a vehicular signal face located over any portion of a highway that can be used by motor vehicles should be as shown in Figure 4D-3 .

~~*05 The bottom of the signal housing (including brackets) of a vehicular signal face that is vertically arranged and not located over a roadway or shoulder:*~~

~~*A. Should be a maximum of 19 feet above the sidewalk or, if there is no sidewalk, above the pavement grade at the center of the roadway.*~~

~~*B. Should be a maximum of 19 feet above the median island grade of a center median island if located on the near side of the intersection.*~~

MoDOT exceeds MUTCD minimum distances and changes maximum distances to standard statements. Revised Dec. 2025

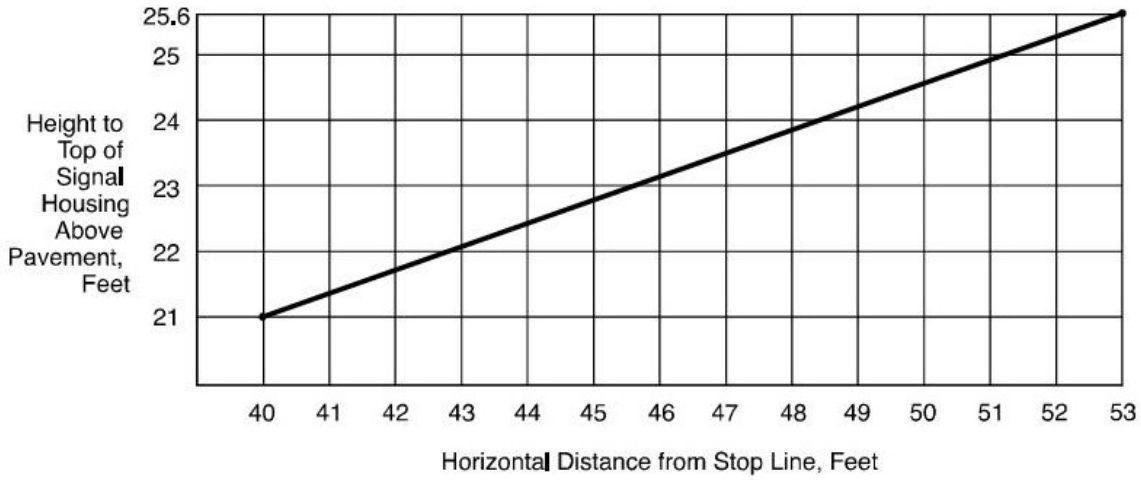
06 The bottom of the signal housing (including brackets) of a vehicular signal face that is horizontally arranged and not located over a roadway or shoulder:

A. Should be a maximum of 22 feet above the sidewalk or, if there is no sidewalk, above the pavement grade at the ~~center of the roadway~~ edge of pavement adjacent to the signal face.

B. Should be a maximum of 22 feet above the median island grade of a center median island if located on the near side of the intersection.

Reference to center of roadway changed to edge of pavement to be consistent with P2. Revised Dec. 2025

Figure 4D-3. Maximum Mounting Height of Signal Faces that Are Located between 40 Feet and 53 Feet from the Stop Line



Section 4D.10 Lateral Offset (Clearance) of Signal Faces

Guidance:

01 Signal faces mounted at the side of a roadway at less than 15 feet from the bottom of the housing and any related attachments should have a horizontal offset of not less than 2 feet from the face of a vertical curb, or if there is no curb, not less than 2 feet from the edge of a shoulder.

Section 4D.11 Temporary and Portable Traffic Control Signals

Support:

01 A temporary traffic control signal is generally installed using methods that minimize the costs of installation, relocation, and/or removal. Typical temporary traffic control signals are for specific purposes, such as for one-lane, two-way facilities in temporary traffic control zones (see ~~Chapter 4O~~EPG 902.15), for a haul-road intersection, or for access to a site that will have a permanent access point developed at another location in the near future. Portable traffic signals are temporary traffic signals.

02 Because a portable traffic control signal~~s~~ is considered to be a type of temporary traffic control signal, the provisions for temporary traffic control signals are also applicable to portable traffic control signals.

Standard:

03 Advance signing shall be used when employing a temporary traffic control signal.

04 A temporary traffic control signal shall:

- **A. Meet the physical display and operational requirements of a conventional traffic control signal;**
- **B. Be removed when no longer needed; and**
- **C. Except as provided in ~~Paragraph 5~~the subsequent paragraph ~~of this Section~~, be placed in the flashing mode during periods when it is not desirable to operate the signal in the steady mode, or the signal heads shall be covered, turned, or taken down to indicate that the signal is not in operation.**

Option:

05 If the temporary traffic control signal is capable of being operated in a semi-actuated mode, such that green signal indications are continually shown to major-street traffic except when responding to a minor-street approach vehicle call, it may be operated in a semi-actuated mode instead of being placed in a flashing mode.

Guidance:

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

07 The use of temporary traffic control signals by a work crew on a regular basis in their work area should be subject to the approval of the jurisdiction having authority over the roadway.

08 A temporary traffic control signal should not operate longer than 30 days unless associated with a longer-term temporary traffic control zone project.

09 Section 6L.01 contains information about the use of temporary traffic control signals in temporary traffic control zones.

CHAPTER 4E. TRAFFIC CONTROL SIGNAL INDICATIONS [EPG 902.5]

Section 4E.01 Signal Indications – Design, Illumination, Color, and Shape

Standard:

01 The illuminated part of each signal indication shall be circular or arrow, except those used for bicycle symbol signal indications~~,~~ pedestrian signal heads~~,~~ and light rail transit signal indications~~, and lane-use control signals~~.

Lane-use control signals are not used on MoDOT facilities. Revised Dec. 2025

02 Letters or numbers (including those associated with countdown displays) shall not be displayed as part of a vehicular signal indication.

03 Strobes shall not be used within or adjacent to any signal indication.

04 Except for the flashing vehicular and pedestrian signal indications and the distinctive indications for emergency-vehicle preemption (see Section 4F.19) that are expressly allowed by the provisions of this ~~Part~~ EPG 902, flashing displays shall not be used within or adjacent to any signal indications.

05 Each circular signal indication shall emit a single color: red, yellow, or green.

06 ~~Except as provided in Paragraph 7 of this Section, e~~Each arrow signal indication shall emit a single color: red, yellow, or green.

~~Option:~~

~~07 A bimodal signal section that is capable of alternating between the display of a GREEN ARROW signal indication and the display of a YELLOW ARROW signal indication, both pointing in the same direction, may be used provided that both colors are never displayed simultaneously.~~

MoDOT does not use bimodal signal indications. Revised Dec. 2025

~~**Standard:**~~

08 The arrow, which shall show only one direction, shall be the only illuminated part of an arrow signal indication.

09 Arrows shall be pointed:

- **A. Vertically upward to indicate a straight-through movement,**
- **B. Horizontally in the direction of the turn to indicate a turn at approximately or greater than a right angle, or**
- **C. Upward with a slope at an angle approximately equal to that of the turn if the angle of the turn is substantially less than a right angle, or**
- **D. In a manner that directs the driver through the turn if a U-turn arrow is used (see Figure 4E-1).**

M09A All signal indications shall be Light Emitting Diode (LED).

10 ~~Except as provided in Paragraph 11 of this Section, the requirements of Chapters 1 and 2 of the publication entitled "Equipment and Materials Standards of the Institute of Transportation Engineers" that pertain to the aspects of the signal head design that affect the display of the signal indications shall be met for signal optical units that use incandescent lamps within optical assemblies that include lenses. Except as provided in Paragraph 11 of this Section, t~~The requirements of the Institute of Transportation Engineers' publications entitled "Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement," 2005, ITE, and "Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Supplement," 2008, ITE, that pertain to the aspects of the signal head design that affect the display of the signal indications shall be met for light-emitting diode (LED) traffic signal modules.

Guidance:

11 The intensity and distribution of light from each ~~illuminated signal lens or~~ LED signal module should comply with the publications specified in ~~Paragraph 10~~ the preceding paragraph of this ~~Section~~ Article, as appropriate.

~~**Support:**~~

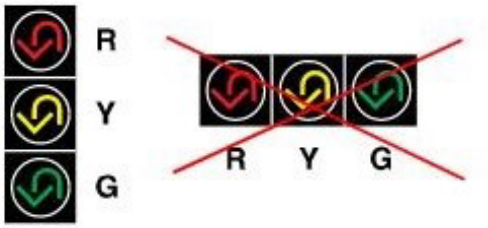
~~12 References to signal lenses in this section are not intended to limit signal optical units to incandescent lamps within optical as diode (LED) traffic signal modules. Some units are practical for all signal indications, and some are practical for specific semblies that include lenses. Research has resulted in signal optical units that are not lenses, such as, but not limited to, light-emitting types such as visibility-limited signal indications.~~

MoDOT uses LED for all signal indications. Revised Dec. 2025

~~*Guidance:*~~

13 If a signal indication is so bright that it causes excessive glare during nighttime conditions, some form of automatic dimming should be used to reduce the brilliance of the signal indication.

Figure 4E-1. Typical Arrangement of U-Turn Signal Faces



Section 4E.02 Size of Vehicular Signal Indications

Standard:

01 ~~There shall be three nominal diameter sizes for~~ All vehicular signal indications~~: 4 inches, 8 inches, and~~ shall be 12 inches.

~~02 Four-inch signal indications shall only be used for bicycle signal faces per Section 4H.07.~~

~~03 Twelve-inch signal indications shall be used for all arrow signal indications.~~

~~04 Except as provided in Paragraph 5 of this Section, 12-inch signal indications shall be used for all circular signal indications in all new signal faces.~~

~~Option:~~

~~05 Eight-inch circular signal indications may be used in new signal faces only for: the~~

~~A. The green or flashing yellow signal indications in an emergency-vehicle traffic control signal (see Section 4M.02);~~

~~B. The circular indications in signal faces controlling the approach to the downstream location where two adjacent signalized locations are close to each other and it is impractical because of factors such as high approach speeds, horizontal or vertical curves, or other geometric factors to install visibility-limited signal faces for the downstream approach;~~

~~C. The circular indications in a signal face that is located less than 120 feet from the stop line on a roadway with a posted or statutory speed limit or operating speed of 30 mph or less;~~

~~D. The circular indications in a supplemental near-side signal face;~~

~~E. The circular indications in a supplemental signal face installed for the sole purpose of controlling pedestrian movements rather than vehicular movements; and~~

~~F. The circular indications in a flashing beacon (see Chapter 4S).~~

~~06 Different sizes of signal indications may be used in the same signal face or signal head, provided that the signal face or signal head complies with the requirements contained in Paragraphs 3 and 4 through 5 of this Section.~~

MoDOT uses 12-inch indications for all vehicular signal indications, including for emergency vehicle traffic control signals. Revised Dec. 2025

Section 4E.03 Positions of Signal Indications Within a Signal Face – General

Support:

01 Standardization of the number and arrangements of signal sections in vehicular traffic control signal faces enables road users who are color vision deficient to identify the illuminated color by its position relative to other signal sections.

Standard:

02 Unless otherwise provided in ~~this Manual~~ the EPG for a particular application, each signal face at a signalized location shall have three, four, or five signal sections. Unless otherwise provided in ~~this Manual~~ the EPG for a particular application, if a vertical signal face includes a cluster (see ~~Section 4E.04~~ EPG 902.5.4), the signal face shall have at least three vertical positions.

03 A single-section signal face shall be permitted at a traffic control signal if it consists of a continuously-displayed GREEN ARROW signal indication that is being used to indicate a continuous movement and positioned vertically upward to indicate a straight-through movement.

Additional standard statement from the EPG. Revised Dec. 2025

04 The signal sections in a signal face shall be arranged in a vertical or horizontal straight line, except as otherwise provided in ~~Section 4E.04~~EPG 902.5.4.

05 The arrangement of adjacent signal sections in a signal face shall follow the relative positions listed in ~~Sections 4E.04~~EPG 902.5.4 or ~~4E.05~~902.5.5, as applicable.

06 If a signal section that displays a CIRCULAR YELLOW signal indication is used, it shall be located between the signal section that displays the red signal indication and all other signal sections.

07 If a U-turn arrow signal section is used in a signal face for a U-turn to the left, its position in the signal face shall be the same as stated in ~~Sections 4E.04~~EPG 902.5.4 and ~~4E.05~~902.5.5 for a left-turn arrow signal section of the same color. ~~If a U-turn arrow signal section is used in a signal face for a U-turn to the right, its position in the signal face shall be the same as stated in Sections 4E.04 and 4E.05 for a right-turn arrow signal section of the same color.~~

MoDOT does not use U-turn arrows to the right. Revised Dec. 2025

08 A U-turn arrow signal indication pointing to the left shall not be used in a signal face that also contains a left-turn arrow signal indication. ~~A U-turn arrow signal indication pointing to the right shall not be used in a signal face that also contains a right-turn arrow signal indication.~~

MoDOT does not use U-turn arrows to the right. Revised Dec. 2025

~~Option:~~

~~09 Within a signal face, two identical CIRCULAR RED or RED ARROW signal indications may be displayed immediately horizontally adjacent or immediately vertically adjacent to each other in a vertical signal face (see Drawing A in Figure 4E-2) or immediately horizontally adjacent to each other in a horizontal signal face (see Drawing B in Figure 4E-2) for emphasis.~~

MoDOT does not use two identical signal indications in the same signal face. Revised Dec. 2025

~~10 Horizontally-arranged and vertically-arranged signal faces may be used on the same approach provided they are separated to meet the lateral separation spacing required in Section 4D.07.~~

MoDOT typically does not use horizontal signal faces. Revised Dec. 2025

Support:

11 Figure 4E-2 illustrates some of the typical arrangements of signal sections in signal faces that do not control separate turning movements. Figures 4F-1 through 4F-7 illustrate the typical arrangements of signal sections in left-turn signal faces. Figures 4F-8 through 4F-14 illustrate the typical arrangements of signal sections in right-turn signal faces.

Section 4E.04 Positions of Signal Indications Within a Vertical Signal Face

Standard:

01 In each vertically-arranged signal face, all signal sections that display red signal indications shall be located above all signal sections that display yellow and green signal indications.

02 In vertically-arranged signal faces, each signal section that displays a YELLOW ARROW signal indication shall be located above the signal section that displays the GREEN ARROW signal indication to which it applies.

03 The relative positions of signal sections in a vertically-arranged signal face, from top to bottom, shall be as follows:

CIRCULAR RED

Steady ~~and/or flashing~~ left-turn RED ARROW

Steady ~~and/or flashing~~ right-turn RED ARROW

CIRCULAR YELLOW

CIRCULAR GREEN

Straight-through GREEN ARROW

Steady left-turn YELLOW ARROW

Flashing left-turn YELLOW ARROW

Left-turn GREEN ARROW

Steady right-turn YELLOW ARROW

Flashing right-turn YELLOW ARROW

Right-turn GREEN ARROW

MoDOT does not use flashing red arrows indications. Revised Dec. 2025

~~04 If a bimodal signal section (see Section 4E.01) is used in a vertically-arranged signal face, the bimodal signal section shall occupy the same position relative to the other sections as the signal section that displays the GREEN ARROW signal indication in a vertically-arranged signal face would occupy.~~

MoDOT does not use bimodal signal indications. Revised Dec. 2025

Option:

05 In a vertically-arranged signal face, signal sections that display signal indications of the same color may be arranged horizontally adjacent to each other at right angles to the basic straight line arrangement to form a clustered signal face (see Figures ~~4E-2, 4F-4,~~ 4F-6, ~~4F-10, 4F-11,~~ 4F-13, and 4F-15).

Standard:

06 Such clusters shall be limited to the following:

~~A. Two identical signal sections,~~

~~B.~~A. Two or three different signal sections that display signal indications of the same color, or

~~C.~~B. For only the specific case described in ~~Section 4F.16~~EPG 902.6.16 (see Drawing B in Figure 4F-15), two signal sections, one of which displays a GREEN ARROW signal indication and the other of which displays a flashing YELLOW ARROW signal indication.

~~07 Except as otherwise provided in Sections 4F.04, 4F.08, 4F.11, and 4F.15 for a three-section separate turn signal face with a bimodal signal section that displays a flashing YELLOW ARROW signal indication, the~~ The signal section that displays a flashing yellow signal indication during steady mode operation:

A. Shall not be placed in the same vertical position as the signal section that displays a steady yellow signal indication, and

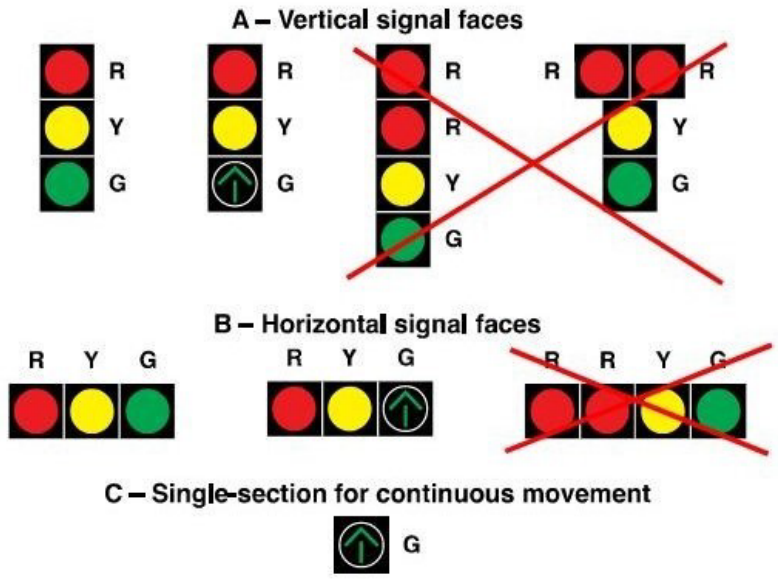
B. Shall be placed below the signal section that displays a steady yellow signal indication.

MoDOT does not use two identical signal sections in the same cluster or bimodal signal indications. Revised Dec. 2025

Support:

08 Sections 4J.02 and 4N.02 contain exceptions to the provisions of this ~~Section~~ Article that are applicable to hybrid beacons.

Figure 4E-2. Typical Arrangements of Signal Sections in Signal Faces That Do Not Control Turning Movements



Section 4E.05 Positions of Signal Indications Within a Horizontal Signal Face

Support:

M00 Other than in emergency vehicle signals, MoDOT does not typically utilize horizontal signal faces unless engineering judgment deems necessary because of poor visibility or low clearance.

Standard:

01 In each horizontally-arranged signal face, all signal sections that display red signal indications shall be located to the left of all signal sections that display yellow and green signal indications.

02 In horizontally-arranged signal faces, each signal section that displays a YELLOW ARROW signal indication shall be located to the left of the signal section that displays the GREEN ARROW signal indication to which it applies.

03 The relative positions of signal sections in a horizontally-arranged signal face, from left to right, shall be as follows:

CIRCULAR RED

Steady ~~and/or flashing~~ left-turn RED ARROW

Steady ~~and/or flashing~~ right-turn RED ARROW

CIRCULAR YELLOW

Steady left-turn YELLOW ARROW

Flashing left-turn YELLOW ARROW

Left-turn GREEN ARROW

CIRCULAR GREEN

Straight-through GREEN ARROW

Steady right-turn YELLOW ARROW

Flashing right-turn YELLOW ARROW

Right-turn GREEN ARROW

MoDOT does not use flashing red arrows indications. Revised Dec. 2025

~~**04 If a bimodal signal section (see Section 4E.01) is used in a horizontally-arranged signal face, the signal section that displays the dual left-turn arrow signal indication shall be located immediately to the right of the signal section that displays the CIRCULAR YELLOW signal indication, the signal section that displays the straight-through GREEN ARROW signal indication shall be located immediately to the right of the signal section that displays the CIRCULAR GREEN signal indication, and the signal section that displays the dual right-turn arrow signal indication shall be located to the right of all other signal sections.**~~

MoDOT does not use bimodal signal indications. Revised Dec. 2025

05 Except as otherwise provided in ~~Sections 4F.04~~EPG 902.6.4, ~~4F.08~~902.6.8, ~~4F.11~~902.6.11, and ~~4F.15~~902.6.15 for a three-section separate turn signal face with a flashing YELLOW ARROW signal indication, the signal section that displays a flashing yellow signal indication during steady mode operation:

- **A. Shall not be placed in the same horizontal position as the signal section that displays a steady yellow signal indication, and**
- **B. Shall be placed to the right of the signal section that displays a steady yellow signal indication.**

CHAPTER 4F. STEADY (STOP-AND-GO) OPERATION OF TRAFFIC CONTROL SIGNALS [EPG 902.6]

Section 4F.01 Application of Steady and Flashing Signal Indications during Steady (Stop-and-Go) Operation

Standard:

01 When a traffic control signal is being operated in a steady (stop-and-go) mode, at least one indication in each signal face shall be displayed at any given time.

02 A signal face(s) that controls a particular vehicular movement during any interval of a cycle shall control that same movement during all intervals of the cycle.

03 Steady and flashing signal indications shall be applied as follows:

A. A steady CIRCULAR RED signal indication:

1. **Shall be displayed when it is intended to prohibit traffic, except pedestrians directed by a pedestrian signal head, from entering the intersection or other controlled area. Turning after stopping is permitted as stated in Item C.1 in the first standard p~~P~~aragraph ~~1~~ of ~~Section 4A.03~~EPG 902.1.3.**
2. **Shall be displayed with the appropriate GREEN ARROW signal indications when it is intended to permit traffic to make a specified turn or turns, and to prohibit traffic from proceeding straight ahead through the intersection or other controlled area, except in protected only mode operation (see ~~Sections 4F.06~~EPG 902.6.6 and ~~4F.13~~902.6.13), or in protected/permissive mode operation with separate turn signal faces (see ~~Sections 4F.08~~EPG 902.6.8 and ~~4F.15~~902.6.15).**

B. A steady CIRCULAR YELLOW signal indication:

1. **Shall be displayed following a CIRCULAR GREEN or straight-through GREEN ARROW signal indication in the same signal face.**
2. **Shall not be displayed in conjunction with the change from the CIRCULAR RED signal indication to the CIRCULAR GREEN signal indication.**
3. **Shall be followed by a CIRCULAR RED signal indication except that, when entering preemption operation, the return to the previous CIRCULAR GREEN signal indication shall be permitted following a steady CIRCULAR YELLOW signal indication (see Section 4F.19).**
4. **Shall not be displayed to an approach from which drivers are turning left permissively using a shared signal face or making a U-turn to the left permissively using a shared signal face unless one of the following conditions exists:**
   - **(a) A steady CIRCULAR YELLOW signal indication is also simultaneously being displayed to the opposing approach;**
   - **(b) An engineering study has determined that, because of unique intersection conditions, the condition described in Item (a) cannot reasonably be implemented without causing significant operational or safety problems and that the volume of impacted left-turning or U-turning traffic is relatively low, and those left-turning or U-turning drivers are advised that a steady CIRCULAR YELLOW signal indication is not simultaneously being displayed to the opposing traffic if this operation occurs continuously by the installation of a W25-1 sign (see Section 2C.44) with the legend ONCOMING TRAFFIC HAS EXTENDED GREEN; or**
   - **(c) Drivers are advised of the operation if it occurs only occasionally, such as during a preemption sequence, by the installation of a W25-2 sign (see Section 2C.44) with the legend ONCOMING TRAFFIC MAY HAVE EXTENDED GREEN.**

C. A steady CIRCULAR GREEN signal indication shall be displayed only when it is intended to permit traffic to proceed in any direction that is lawful and practical.

D. A steady RED ARROW signal indication shall be displayed when it is intended to prohibit traffic, except pedestrians directed by a pedestrian signal head, from entering the intersection or other controlled area to make the indicated turn. Except as described in Item C.2 in the first standard ~~P~~paragraph 1 of ~~Section 4A.03~~ EPG 902.1.3, turning on a steady RED ARROW signal indication shall not be permitted.

~~**E. A flashing RED ARROW signal indication shall be displayed as part of a steady (stop-and-go) mode of operation only when it is intended to permit traffic, after coming to a full stop, to cautiously enter the intersection to make a turn in the direction indicated by the arrow after yielding to pedestrians, if any, and/or to opposing traffic, if any.**~~

MoDOT does not use flashing red arrows indications. Revised Dec. 2025

F. A steady YELLOW ARROW signal indication:

1. **Shall be displayed in the same direction as a GREEN ARROW signal indication following a GREEN ARROW signal indication in the same signal face, unless:**
   (a) **The GREEN ARROW signal indication and a CIRCULAR GREEN (or straight-through GREEN ARROW) signal indication terminate simultaneously in the same signal face., or**
   (b) **The green arrow is a straight-through GREEN ARROW (see Item B.1 in this Paragraph).**
2. **Shall be displayed in the same direction as a flashing YELLOW ARROW signal indication ~~or flashing RED ARROW signal indication~~ following a flashing YELLOW ARROW signal indication ~~or flashing RED ARROW signal indication~~ in the same signal face, when the flashing arrow indication is displayed as part of a steady mode operation, if the signal face will subsequently display a steady red signal indication.**
3. **Shall not be displayed in conjunction with the change from a steady RED ARROW~~, flashing RED ARROW,~~ or flashing YELLOW ARROW signal indication to a GREEN ARROW signal indication, except when entering preemption operation as provided in Item F.5(a) of this Paragraph.**
4. **Shall not be displayed when any conflicting vehicular movement has a green or yellow signal indication (including right turns that conflict with U-turns to the left ~~except for the situation regarding U-turns to the left provided in Paragraph 4 of this Section~~) or any conflicting pedestrian movement has a WALKING PERSON (symbolizing WALK) or flashing UPRAISED HAND (symbolizing DONT WALK) signal indication, except that a steady left-turn ~~(or U-turn to the left)~~ YELLOW ARROW signal indication used to terminate a flashing left-turn (or U-turn to the left) YELLOW ARROW ~~or a flashing left-turn (or U-turn to the left) RED ARROW~~ signal indication in a signal face controlling a permissive left-turn (or U-turn to the left) movement as described in ~~Sections 4F.04~~EPG 902.6.4 and ~~4F.08~~902.6.8 shall be permitted to be displayed when a CIRCULAR YELLOW signal indication is displayed for the opposing through movement. Vehicles departing in the same direction shall not be considered in conflict if, for each turn lane with moving traffic, there is a separate departure lane, and pavement markings or raised channelization clearly indicate which departure lane to use.**

MoDOT does not use flashing red arrows indications and does not allow right-turn green arrows that conflict with U-turns. Revised Dec. 2025

5. **Shall not be displayed to terminate a flashing arrow signal indication on an approach from which drivers are turning left permissively or making a U-turn to the left permissively unless one of the following conditions exists:**
   (a) **A steady CIRCULAR YELLOW signal indication is also simultaneously being displayed to the opposing approach;**
   (b) **An engineering study has determined that, because of unique intersection conditions, the condition described in Item (a) cannot reasonably be implemented without causing significant operational or safety problems and that the volume of impacted left-turning**

or U-turning traffic is relatively low, and those left-turning or U-turning drivers are advised that a steady CIRCULAR YELLOW signal indication is not simultaneously being displayed to the opposing traffic if this operation occurs continuously by the installation of a W25-1 sign (see Section 2C.44) with the legend ONCOMING TRAFFIC HAS EXTENDED GREEN; or

(c) Drivers are advised of the operation if it occurs only occasionally, such as during a preemption sequence, by the installation of a W25-2 sign (see Section 2C.44) with the legend ONCOMING TRAFFIC MAY HAVE EXTENDED GREEN.

6. Shall be terminated by a RED ARROW signal indication for the same direction or a CIRCULAR RED signal indication except:

(a) When entering preemption operation, the display of a GREEN ARROW signal indication or a flashing ~~arrow~~ YELLOW ARROW signal indication shall be permitted following a steady YELLOW ARROW signal indication.

(b) When the movement controlled by the arrow is to continue on a permissive mode basis during an immediately following signal phase, the display of a CIRCULAR GREEN signal indication or flashing YELLOW ARROW signal indication shall be permitted following a steady YELLOW ARROW signal indication. To provide a red clearance interval, it shall be permitted to display a steady left-turn RED ARROW signal indication immediately following the steady left-turn YELLOW ARROW signal indication.

G. A flashing YELLOW ARROW signal indication shall be displayed as part of a steady (stop-and-go) mode of operation only when it is intended to permit traffic to cautiously enter the intersection to make a turn in the direction indicated by the arrow after yielding to pedestrians, if any, and/or to opposing traffic, if any.

H. A steady GREEN ARROW signal indication:

1. Shall be displayed only to allow vehicular movements, in the direction indicated, that are not in conflict with other vehicles moving on a green or yellow signal indication (including right turns that conflict with U-turns to the left) except for the situation regarding ~~U-turns provided in Paragraph 4 of this Section and~~ straight-through GREEN ARROWs provided in ~~Paragraph 5~~the first option paragraph of this ~~Section~~ Article), even if the other vehicles are required to yield the right-of-way to the traffic moving on the GREEN ARROW signal indication, and are not in conflict with pedestrians crossing in compliance with a WALKING PERSON (symbolizing WALK) or flashing UPRAISED HAND (symbolizing DONT WALK) signal indication. Vehicles departing in the same direction shall not be considered in conflict if, for each turn lane with moving traffic, there is a separate departure lane, and pavement markings or raised channelization clearly indicate which departure lane to use.

MoDOT does not allow right-turn green arrows that conflict with U-Turns. Revised Dec. 2025

2. Shall be displayed on a signal face that controls a left-turn movement when said movement is not in conflict with other vehicles moving on a green or yellow signal indication (when U-turns to the left are allowed, a right-turn GREEN ARROW signal indication shall not be simultaneously displayed to road user making a right turn from the conflicting approach to the left) ~~except for the situation regarding U-turns provided in Paragraph 4 of this Section)~~ and is not in conflict with pedestrians crossing in compliance with a WALKING PERSON (symbolizing WALK) or flashing UPRAISED HAND (symbolizing DONT WALK) signal indication. Vehicles departing in the same direction shall not be considered in conflict if, for each turn lane with moving traffic, there is a separate departure lane, and pavement markings or raised channelization clearly indicate which departure lane to use.

MoDOT does not allow right-turn green arrow indications that conflict with U-Turns. Revised Dec. 2025

3. Shall not be required on the stem of a T-intersection or for turns from a one-way street.

Option:

~~04 If U-turns are permitted from the approach and a right-turn GREEN ARROW signal indication is simultaneously being displayed to road users making a right turn from the conflicting approach to the left, road users making a U-turn may be advised of the operation by the installation of a U-TURN YIELD TO RIGHT TURN (R10-16) sign (see Section 2B.59).~~

MoDOT does not allow right-turn green arrows that conflict with U-Turns. Revised Dec. 2025

05 A steady straight-through green arrow signal indication may be used instead of a circular green signal indication in a signal face to discourage wrong-way turns under the following conditions, even if opposed by a simultaneous permissive left-turn movement:

A. On an approach intersecting a one-way street;
B. On an approach intersecting an interchange exit ramp;
C. On an approach with unique geometric design that prohibits turns; or
D. On an approach with pre-signals and the adjacent lanes are controlled separately (see Sections 8D.11 and 8D.12).

06 If not otherwise prohibited, steady red, yellow, and green turn arrow signal indications may be used instead of steady circular red, yellow, and green signal indications in a signal face on an approach where all traffic is required to turn or where the straight-through movement is not physically possible.

Support:

M06A A signal face for a right-turn movement is normally not required if the movement is channelized. A yield sign would normally control a channelized right-turn movement (See Section 2B.05 and 2B.10).

Option:

M06B In cases where road users making a right-turn cannot readily judge conflicting movements, signal control may be necessary for the channelized right-turn movement. See EPG 902.6.9 for signal indications used for right-turn movements.

Option statement from the EPG. Revised Dec. 2025

Support:

07 ~~Section 4F.16~~EPG 902.6.16 contains information regarding the signalization of approaches that have a combined left-turn/right-turn lane and no through movement.

08 Section 4D.07 contains information regarding limitations on left-turn arrows, right-turn arrows, and U-turn arrows in supplemental signal faces.

Standard:

09 A straight-through RED ARROW signal indication or a straight-through YELLOW ARROW signal indication shall not be displayed on any signal face, either alone or in combination with any other signal indication.

10 The following combinations of signal indications shall not be simultaneously displayed on any one signal face:

A. CIRCULAR YELLOW with CIRCULAR RED,
B. CIRCULAR GREEN with CIRCULAR RED, or
C. Straight-through GREEN ARROW with CIRCULAR RED.

11 Except as provided in ~~Paragraph 13~~the eighth standard paragraph of this ~~Section~~ Article, the above combinations shall not be simultaneously displayed on an approach as a result of the combination of displays from multiple signal faces unless the display is created by a signal face(s) devoted exclusively to the control of a right-turn movement and:

A. The signal face(s) controlling the right-turn movement is visibility limited from the adjacent through movement or positioned to minimize potential confusion to approaching road users, or
B. A RIGHT TURN SIGNAL (R10-10) sign (see ~~Sections 4F.09~~EPG 902.6.9, ~~4F.11~~902.6.11, ~~4F.13~~902.6.13, and ~~4F.15~~902.6.15) is mounted adjacent to the signal face(s) controlling the right-turn movement.

12 Except as provided in ~~Paragraph 13~~the subsequent paragraph ~~of this Section~~, the following combinations of signal indications shall not be simultaneously displayed on any one signal face or as a result of the combination of displays from multiple signal faces on an approach:

- **A. CIRCULAR GREEN with CIRCULAR YELLOW,**
- **B. Straight-through GREEN ARROW with CIRCULAR YELLOW,**
- **C. GREEN ARROW with YELLOW ARROW pointing in the same direction,**
- **D. YELLOW ARROW with RED ARROW pointing in the same direction, or**
- **E. GREEN ARROW with RED ARROW pointing in the same direction.**

13 If a separate signal face is provided at a pre-signal (see Section 8D.11) or at a queue cutter signal (see Section 8D.12) for a left-turn and/or right-turn lane that extends from the downstream signalized intersection back to and across a grade crossing, the following combinations of signal indications shall be permitted to be simultaneously displayed as a result of the combination of displays from multiple signal faces at the pre-signal or queue cutter signal:

- **A. Straight-through GREEN ARROW with CIRCULAR RED,**
- **B. Straight-through GREEN ARROW with CIRCULAR YELLOW, and**
- **C. CIRCULAR YELLOW with CIRCULAR RED.**

14 Except as otherwise provided in ~~Sections 4F.08~~EPG 902.6.8, ~~4F.15~~902.6.15, 4J.03, and 4N.03, the same signal section shall not be used to display both a flashing yellow and a steady yellow indication during steady mode operation. Except as otherwise provided in ~~Sections 4F.04~~EPG 902.6.4, ~~4F.08~~902.6.8, ~~4F.11~~902.6.11, and ~~4F.13~~902.6.13, the same signal section shall not be used to display both a flashing red and a steady red indication during steady mode operation.

Guidance:

15 No movement that creates an unexpected crossing of pathways of moving vehicles or pedestrians should be allowed during any green or yellow interval, except when all three of the following conditions are met:

- *A. The movement involves only slight conflict, and*
- *B. Serious traffic delays are substantially reduced by permitting the conflicting movement, and*
- *C. Drivers and pedestrians subjected to the unexpected conflict are effectively warned thereof by a sign.*

Section 4F.02 Signal Indications for Left-Turn Movements – General

Support:

01 In ~~Sections 4F.03~~EPG 902.6.3 through ~~4F.08~~902.6.8, provisions applicable to left-turn movements and left-turn lanes are also applicable to signal indications for U-turns to the left that are provided at locations where left turns are prohibited or not geometrically possible.

02 Left-turning traffic is controlled by one of four modes as follows:

- A. Permissive Only Mode—turns made on a CIRCULAR GREEN signal indication~~,~~ or a flashing left-turn YELLOW ARROW signal indication~~, or a flashing left-turn RED ARROW signal indication~~ after yielding to pedestrians, if any, and/or opposing traffic, if any.
- B. Protected Only Mode—turns made only when a left-turn GREEN ARROW signal indication is displayed.
- C. Protected/Permissive Mode—both modes can occur on an approach during the same cycle.
- D. Variable Left-Turn Mode—the operating mode changes among the protected only mode and/or the protected/permissive mode and/or the permissive only mode during different periods of the day or as traffic conditions change.

Option:

03 In areas having a high percentage of older drivers, special consideration may be given to the use of protected only mode left-turn phasing, when appropriate.

Standard:

04 During a permissive left-turn movement, the signal faces for through traffic on the opposing approach shall simultaneously display green or steady yellow signal indications. If pedestrians crossing the lane or lanes used by the permissive left-turn movement to depart the intersection are controlled by pedestrian signal heads, the signal indications displayed by those pedestrian signal heads shall not be limited to any particular display during the permissive left-turn movement.

05 During a protected left-turn movement, the signal faces for through traffic on the opposing approach shall simultaneously display steady CIRCULAR RED signal indications. During a protected left-turn movement, a GREEN ARROW or a YELLOW ARROW signal indication shall not simultaneously be displayed to right-turning traffic on the opposing approach, except where a separate ~~departure~~ exclusive, no conflict lane is available for each left-turn and right-turn lane with moving traffic and pavement markings or raised channelization clearly indicate which ~~departure~~ exclusive, no conflict lane to use (see Item H.1 in ~~Paragraph 3~~the third standard paragraph of ~~in Section 4F.01~~EPG 902.6.1). If pedestrians crossing the lane or lanes used by the protected left-turn movement to depart the intersection are controlled by pedestrian signal heads, the pedestrian signal heads shall display a steady UPRAISED HAND (symbolizing DONT WALK) signal indication during the protected left-turn movement.

06 If a combined left-turn/through lane exists on an approach, a left-turn GREEN ARROW or left-turn YELLOW ARROW signal indication ~~or a flashing left-turn RED ARROW signal indication~~ shall not be displayed to the approach simultaneously with a CIRCULAR RED signal indication for the through movement, and a left-turn RED ARROW signal indication shall not be displayed to the approach simultaneously with a CIRCULAR GREEN or CIRCULAR YELLOW signal indication for the through movement.

07 A yellow change interval for the left-turn movement shall not be displayed when the status of the left-turn operation is changing from permissive to protected within any given signal sequence.

08 If the operating mode changes among the protected only mode and/or the protected/permissive mode and/or the permissive only mode during different periods of the day or as traffic conditions change, the requirements in ~~Sections 4F.03~~EPG 902.6.3 through ~~4F.08~~902.6.8 that are appropriate to that mode of operation shall be met, subject to the following:

- **A. The CIRCULAR GREEN and CIRCULAR YELLOW signal indications shall not be displayed when operating in the protected only mode.**
- **B. The left-turn GREEN ARROW and left-turn YELLOW ARROW signal indications shall not be displayed when operating in the permissive only mode.**

Option:

~~09 When variable left-turn mode phasing is used for an approach that has a combined left-turn/straight-through lane and a flashing yellow arrow is used as the permissive turn display, a five-section shared left-turn signal face containing both circular and arrow indications may be used in combination with one or more separate left-turn signal faces for the mandatory left-turn lane(s), if any are present, on the same approach. The steady left-turn YELLOW ARROW signal indication and the flashing left-turn YELLOW ARROW signal indication may be displayed in the same section of the five-section shared left-turn signal face.~~

MoDOT does not use flashing yellow arrows in shared signal faces. Revised Dec. 2025

10 Additional static signs or changeable message signs may be used to meet the requirements for the variable left-turn mode or to inform drivers that left-turn green arrows will not be available during certain times of the day.

Support:

11 ~~Sections 4F.03~~EPG 902.6.3 through ~~4F.08~~902.6.8 describe the use of the following two types of signal faces for controlling left-turn movements:

- A. Shared signal face – This type of signal face controls both the left-turn movement and the adjacent movement (usually the through movement) and can serve as one of the two required primary signal faces for the adjacent movement. A shared signal face always displays the same color of circular indication that is displayed by the signal face or faces for the adjacent movement. If a shared signal

face that provides protected/permissive mode left turns is mounted overhead for an approach that includes a mandatory left-turn lane, it is usually positioned over or slightly to the right of the extension of the lane line separating the left-turn lane from the adjacent lane. If a shared signal face that provides protected/permissive mode left turns is mounted overhead for an approach that does not include a mandatory left-turn lane, it is usually positioned over the center of the combined left-turn/straight-through lane.

B Separate left-turn signal face – This type of signal face controls only the left-turn movement and cannot serve as one of the two required primary signal faces for the adjacent movement (usually the through movement) because it displays signal indications that are applicable only to the left-turn movement. This type of signal face is used only for an approach that has a mandatory left-turn lane(s). If a separate left-turn signal face is mounted overhead at the intersection, it is positioned over the extension of the mandatory left-turn lane. In a separate left-turn signal face, a flashing left-turn YELLOW ARROW signal indication ~~or a flashing left-turn RED ARROW signal indication~~ is used to control permissive left-turn movements.

MoDOT does not use flashing red arrows for left turns. Revised Dec. 2025

12 Section 4D.07 contains provisions regarding the lateral positioning of signal faces that control left-turn movements.

13 It is not necessary that the same mode of left-turn operation or same type of left-turn signal face be used on every approach to a signalized location. Selecting different modes and types of left-turn signal faces for the various approaches to the same signalized location is acceptable.

Option:

14 A signal face that is shared by left-turning and right-turning traffic may be provided for a combined left-turn/right-turn lane on an approach that has no through traffic (see ~~Section 4F.16~~EPG 902.6.16).

Support:

15 See EPG 902.23.3 for additional information regarding left-turn phasing for signalized intersections.

Reference to MoDOT specific left-turn phasing information in “Designing a Traffic Signal”. Revised Dec. 2025

Section 4F.03 Signal Indications for Permissive Only Mode Left-Turn Movements in a Shared Signal Face

Standard:

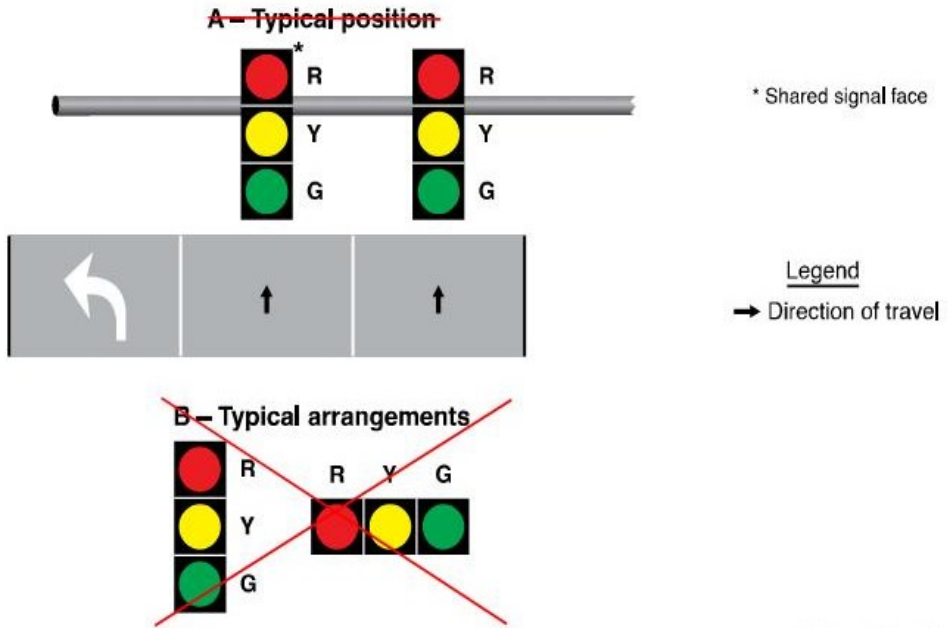
01 If a shared signal face is provided for a permissive only mode left turn, it shall meet the following requirements (see Figure 4F-1):

- **A. It shall be capable of displaying the following signal indications: steady CIRCULAR RED, steady CIRCULAR YELLOW, and CIRCULAR GREEN. Only one of the three indications shall be displayed at any given time.**
- **B. During the permissive left-turn movement, a CIRCULAR GREEN signal indication shall be displayed.**
- **C. A permissive only shared signal face, regardless of where it is positioned and regardless of how many adjacent through signal faces are provided, shall always simultaneously display the same color of circular indication that the adjacent through signal face or faces display.**
- **D. If the permissive only mode is not the only left-turn mode used for the approach, the signal face shall be the same shared signal face that is used for the protected/permissive mode (see ~~Section 4F.07~~EPG 902.6.7) except that the left-turn GREEN ARROW and left-turn YELLOW ARROW signal indications shall not be displayed when operating in the permissive only mode.**

M02 Vehicular traffic shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27). The Highway Safety and Traffic Division shall approve all new or reconstructed signal installations where U-turns are permitted during a permissive phase.

MoDOT U-turn policy. Revised Dec. 2025

Figure 4F-1. Typical Position of Shared Signal Faces for Permissive Only Mode Left Turns



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~~.**

MoDOT does not use bimodal arrows. Revised Dec. 2025

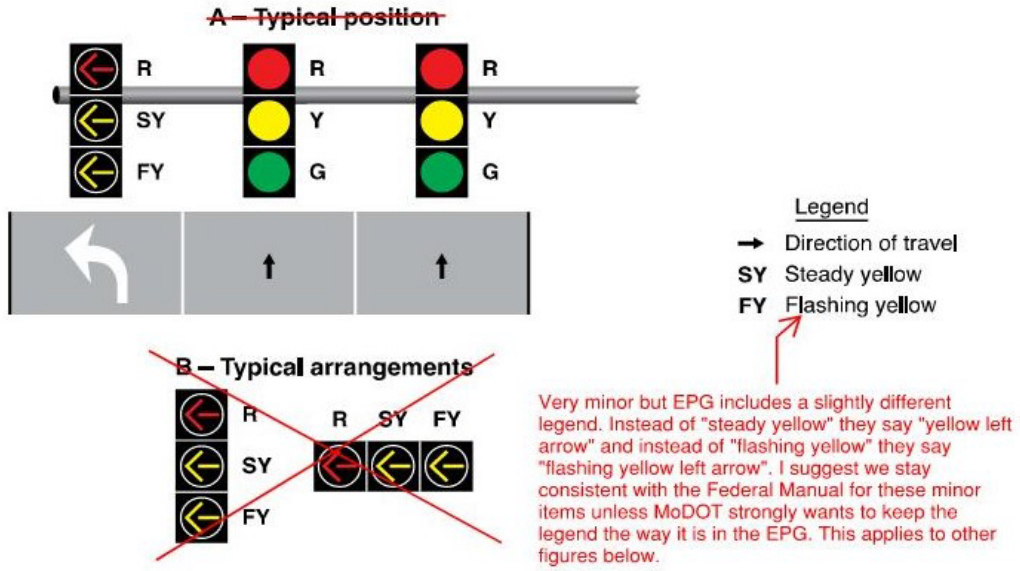
F. **During flashing mode operation (see ~~Section 4G.01~~EPG 902.7.1), the display of a flashing left-turn YELLOW ARROW signal indication shall be only from the signal section that displays a steady left-turn YELLOW ARROW signal indication during steady mode (stop-and-go) operation.**

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~~EPG 902.6.8) except that the left-turn GREEN ARROW signal indication shall not be displayed when operating in the permissive only mode.**

M03A Vehicular traffic shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27). The Highway Safety and Traffic Division shall approve all new or reconstructed signal installations where U-turns are permitted during a permissive phase.

MoDOT U-turn policy. Revised Dec. 20025

Figure 4F-2. Typical Position 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).

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).

MoDOT does not use flashing red arrows. Revised Dec. 2025

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

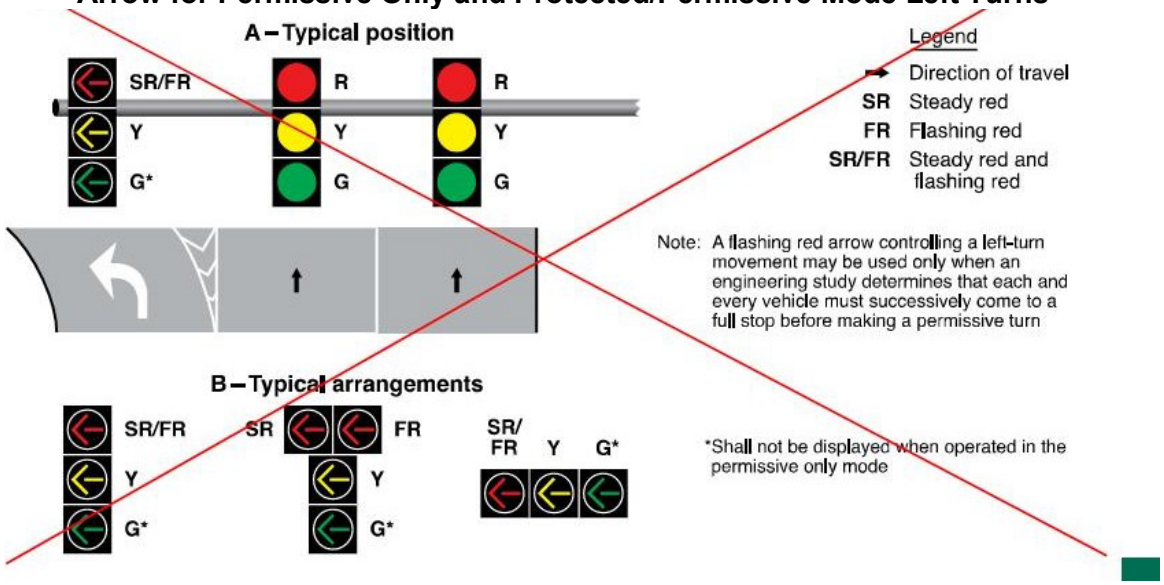


Figure 4F-3 will be removed because MoDOT does not use flashing red arrow.

Section 4F.05 Signal Indications for Protected Only Mode Left-Turn Movements in a Shared Signal Face

Standard:

01 A shared signal face shall not be used for protected only mode left turns unless the CIRCULAR GREEN and left-turn GREEN ARROW signal indications always begin and terminate together. If a shared signal face is provided for a protected only mode left turn, it shall meet the following requirements (see Figure 4F-4):

A. It shall be capable of displaying the following signal indications: steady CIRCULAR RED, steady CIRCULAR YELLOW, CIRCULAR GREEN, and left-turn GREEN ARROW. Only one of the three colors shall be displayed at any given time.

B. During the protected left-turn movement, the shared signal face shall simultaneously display both a CIRCULAR GREEN signal indication and a left-turn GREEN ARROW signal indication.

C. The shared signal face shall always simultaneously display the same color of circular indication that the adjacent through signal face or faces display.

D. If the protected only mode is not the only left-turn mode used for the approach, the signal face shall be the same shared signal face that is used for the protected/permissive mode (see ~~Section 4F.07~~EPG 902.6.7).

Option:

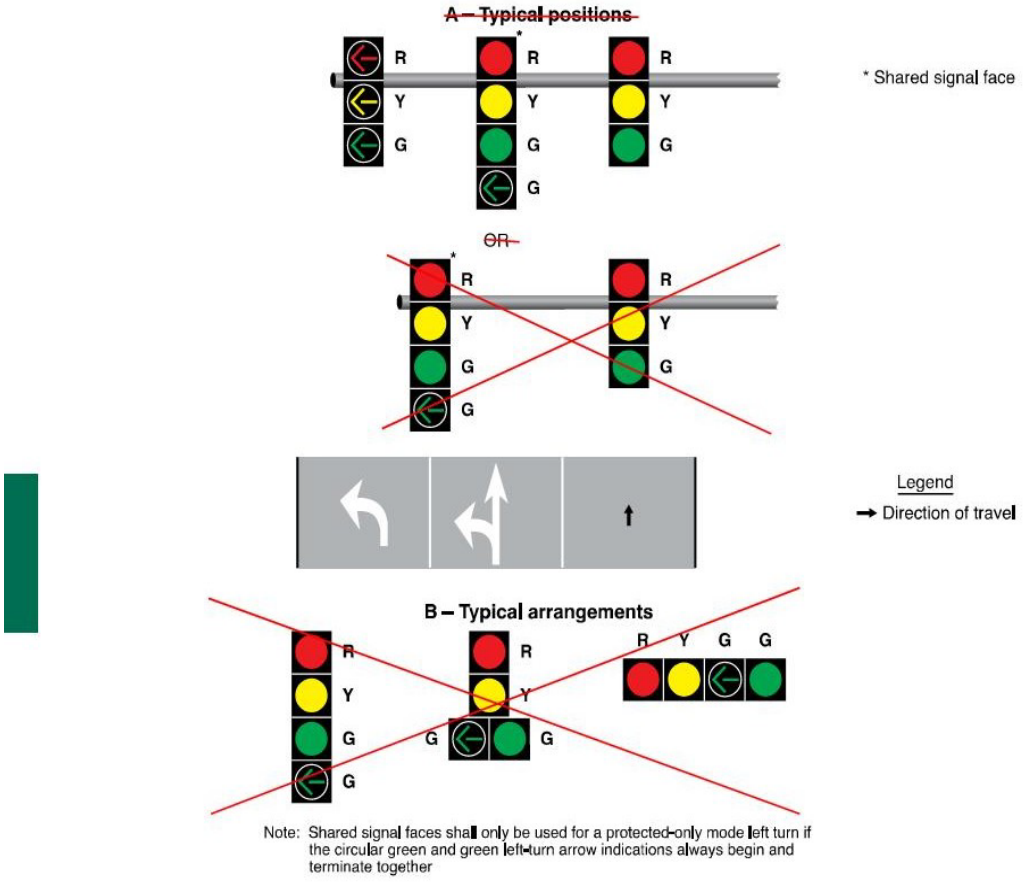
02 A straight-through GREEN ARROW signal indication may be used instead of the CIRCULAR GREEN signal indication in Items A and B in ~~Paragraph 1~~the first standard paragraph of this ~~Section~~Article on an approach where a straight-through GREEN ARROW signal indication is also used instead of a CIRCULAR GREEN signal indication in the other signal face(s) for through traffic.

Standard:

M03 Vehicular traffic shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27).

MoDOT U-turn policy. Revised Dec. 2025

Figure 4F-4. Typical Position of Shared Signal Faces for Protected Only Mode Left Turns



Section 4F.06 Signal Indications for Protected 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 provided for a protected only mode left turn, it shall meet the following requirements (see Figure 4F-5):

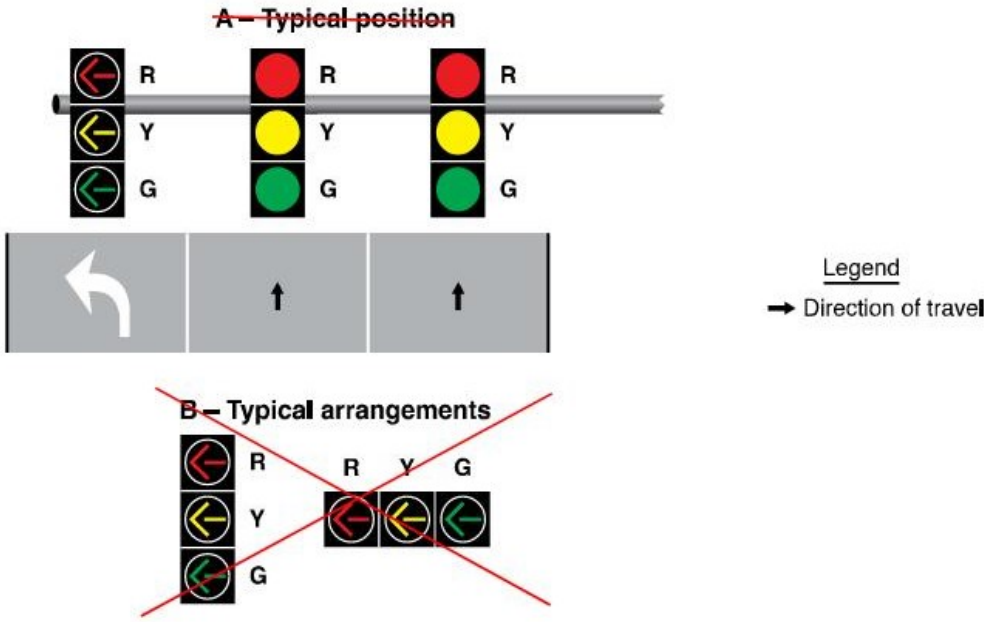
- **A. It shall be capable of displaying, the following signal indications: steady left-turn RED ARROW, steady left-turn YELLOW ARROW, and left-turn GREEN ARROW. Only one of the three indications shall be displayed at any given time.**
- **B. During the protected left-turn movement, a left-turn GREEN 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. If the protected 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 that is used for the protected/permissive mode (see ~~Section 4F.08~~EPG 902.6.8 and Figures 4F-3 and 4F-7) except that the flashing left-turn YELLOW ARROW ~~or flashing left-turn RED ARROW~~ signal indication shall not be displayed when operating in the protected only mode.**

Standard:

M03 Vehicular traffic shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27).

MoDOT U-turn policy. Revised Dec. 2025

Figure 4F-5. Typical Position of Separate Signal Faces for Protected Only Mode Left Turns



Section 4F.07 Signal Indications for Protected/Permissive Mode Left-Turn Movements in a Shared Signal Face

Standard:

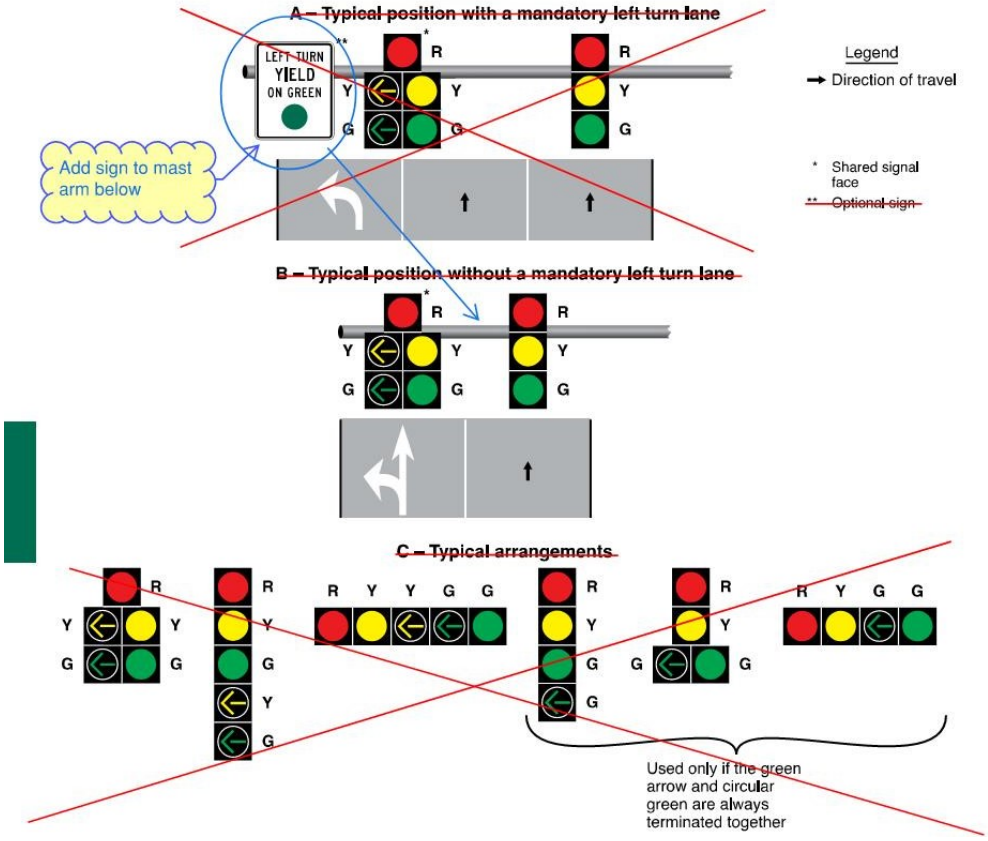
01 If a shared signal face is provided for a protected/permissive mode left turn, it shall meet the following requirements (see Figure 4F-6):

- **A. It shall be capable of displaying the following signal indications: steady CIRCULAR RED, steady CIRCULAR YELLOW, CIRCULAR green, steady left-turn YELLOW ARROW, and left-turn GREEN ARROW. Only one of the three circular indications shall be displayed at any given time. Only one of the two arrow indications shall be displayed at any given time. If the left-turn GREEN ARROW signal indication and the CIRCULAR GREEN signal indication(s) for the adjacent through movement are always terminated together, the steady left-turn YELLOW ARROW signal indication shall not be required.**
- **B. During the protected left-turn movement, the shared signal face shall simultaneously display a left-turn GREEN ARROW signal indication and a circular signal indication that is the same color as the signal indication for the adjacent through lane on the same approach as the protected left turn.**
- **C. A steady left-turn YELLOW ARROW signal indication shall be displayed following the left-turn GREEN ARROW signal indication, unless the left-turn GREEN ARROW signal indication and the CIRCULAR GREEN signal indication(s) for the adjacent through movement are being terminated together. When the left-turn GREEN ARROW and CIRCULAR GREEN signal indications are being terminated together, the required display following the left-turn GREEN ARROW signal indication shall be either the display of a CIRCULAR YELLOW signal indication alone or the simultaneous display of the CIRCULAR YELLOW and left-turn YELLOW ARROW signal indications.**
- **D. During the permissive left-turn movement, the shared signal face shall display only a CIRCULAR GREEN signal indication.**
- **E. A protected/permissive shared signal face, regardless of where it is positioned and regardless of how many adjacent through signal faces are provided, shall always simultaneously display the same color of circular indication that the adjacent through signal face or faces display.**
- **F. A supplementary sign shall not be required. If used, it shall be a LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign (see Section 2B.59).**

M02 Vehicular traffic shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27). The Highway Safety and Traffic Division shall approve all new or reconstructed signal installations where U-turns are permitted during a permissive phase.

MoDOT U-turn policy. Revised Dec. 20025

Figure 4F-6. Typical Position of Shared Signal Faces for 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~~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.~~

MoDOT does not use bimodal signal sections. Revised Dec. 2025

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~~EPG 902.7) 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.

M03A The LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-12a) sign shall be installed adjacent to a four-section signal face operated in protective/permissive left-turn mode.

M03B Vehicular traffic shall only be permitted to make a U-turn movement from the left-turn lane where Intersection Lane Control signs are installed indicating that the movement is permitted (see Section 2B.27). The Highway Safety and Traffic Division shall approve all new or reconstructed signal installations where U-turns are permitted during a permissive phase.

MoDOT U-turn policy. Revised Dec. 20025

~~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.~~

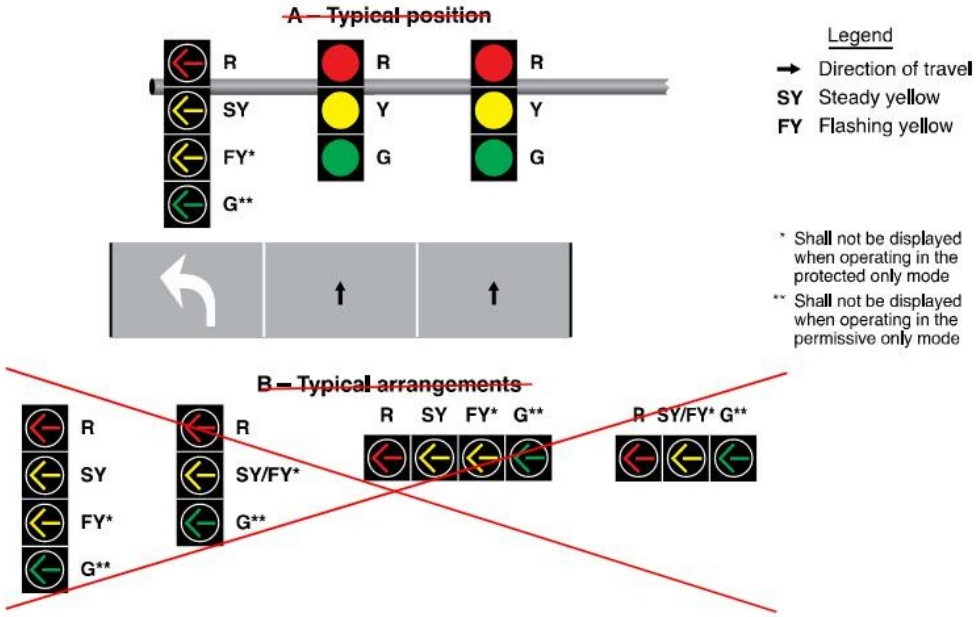
~~H. A supplementary sign shall not be required. If used, it shall be a LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign (see Section 2B.59).~~

~~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).~~

MoDOT does not use bimodal indications, flashing red arrows, or clusters of two red indications. Revised Dec. 2025

Figure 4F-7. Typical Position of Shared Signal Faces for Protected/Permissive Mode Left Turns



Section 4F.09 Signal Indications for Right-Turn Movements – General

Support:

~~01 In Sections 4F.10 through 4F.15, provisions applicable to right-turn movements and right-turn lanes are also applicable to signal indications for U-turns to the right that are provided at locations where right turns are prohibited or not geometrically possible.~~

MoDOT does not use U-Turns to the right. Revised Dec. 2025

02 Right-turning traffic is controlled by one of four modes as follows:

A. Permissive Only Mode—turns made on a CIRCULAR GREEN signal indication~~,~~ or a flashing right-turn YELLOW ARROW signal indication~~, or a flashing right-turn RED ARROW signal indication~~ after yielding to pedestrians, if any.

B. Protected Only Mode—turns made only when a right-turn GREEN ARROW signal indication is displayed.

C. Protected/Permissive Mode—both modes occur on an approach during the same cycle.

D. Variable Right-Turn Mode—the operating mode changes among the protected only mode and/or the protected/permissive mode and/or the permissive only mode during different periods of the day or as traffic conditions change.

MoDOT does not use flashing red right-turn arrows. Revised Dec. 2025

M02A Right turns on a CIRCULAR RED signal indication are permitted, after stopping unless a traffic control device is in place prohibiting a turn on red (see Section 4A.03)

Support statement from EPG. Revised Dec. 2025

Standard:

03 During a permissive right-turn movement, the signal faces, if any, that exclusively control U-turn traffic that conflicts with the permissive right-turn movement (see Item H.1 in ~~Paragraph 3~~the third standard paragraph of ~~in Section 4F.01~~EPG 902.6.1) shall simultaneously display steady U-turn RED ARROW signal indications. If pedestrians crossing the lane or lanes used by the permissive right-turn movement to depart the intersection are controlled by pedestrian signal heads, the signal

indications displayed by those pedestrian signal heads shall not be limited to any particular display during the permissive right-turn movement.

04 During a protected right-turn movement, a GREEN ARROW or a YELLOW ARROW signal indication shall not simultaneously be displayed to left-turning traffic on the opposing approach, except where a separate departure lane is available for each left-turn and right-turn lane with moving traffic and pavement markings or raised channelization clearly indicate which departure lane to use (see Item H.1 in ~~Paragraph 3~~the third standard paragraph of ~~in Section 4F.01~~EPG 902.6.1). Signal faces, if any, that exclusively control U-turn traffic that conflicts with the protected right-turn movement shall simultaneously display steady RED ARROW signal indications. If pedestrians crossing the lane or lanes used by the protected right-turn movement to depart the intersection are controlled by pedestrian signal heads, the pedestrian signal heads shall display a steady UPRAISED HAND (symbolizing DONT WALK) signal indication during the protected right-turn movement.

M04A During the phase where a steady CIRCULAR RED signal indication is displayed for a right-turn movement and conflicting U-turns are allowed a RIGHT ON RED MUST YIELD TO U-TURN (R10-30) sign shall be installed for the right-turn movement. If the conflicting right turn is controlled by a yield sign, a RIGHT TURN MUST YIELD TO U-TURN (R10-30a) sign shall be installed.

M04B When U-turns from a protected only mode for left turns are allowed, a right turn GREEN ARROW signal indication for a conflicting right turn movement shall not be simultaneously displayed.

MoDOT policy for U-turns. Revised Dec. 2025

05 If a combined right-turn/through lane exists on an approach, a right-turn GREEN ARROW or right-turn YELLOW ARROW signal indication ~~or a flashing right-turn RED ARROW signal indication~~ shall not be displayed to the approach simultaneously with a CIRCULAR RED signal indication for the through movement, and a right-turn RED ARROW signal indication shall not be displayed to the approach simultaneously with a CIRCULAR GREEN or CIRCULAR YELLOW signal indication for the through movement.

MoDOT does not use flashing right-turn red arrows. Revised Dec. 2025

06 If the operating mode changes among the protected only mode and/or the protected/permissive mode and/or the permissive only mode during different periods of the day or as traffic conditions change, the requirements in ~~Sections 4F.10~~EPG 902.6.10 through ~~4F.15~~902.6.15 that are appropriate to that mode of operation shall be met, subject to the following:

- **A. The CIRCULAR GREEN and CIRCULAR YELLOW signal indications shall not be displayed when operating in the protected only mode.**
- **B. The right-turn GREEN ARROW and right-turn YELLOW ARROW signal indications shall not be displayed when operating in the permissive only mode.**

Option:

~~07 When variable right-turn mode phasing is used for an approach that has a combined right-turn/straight through lane and a flashing yellow arrow is used as the permissive turn display, a five-section shared right-turn signal face containing both circular and arrow indications may be used in combination with one or more separate right-turn signal faces for the mandatory right-turn lane(s), if any are present, on the same approach. The steady right-turn YELLOW ARROW signal indication and the flashing right-turn YELLOW ARROW signal indication may be displayed in the same section of the five-section shared right-turn signal face.~~

MoDOT does not use flashing right-turn yellow arrows for a combined right-turn/straight through lane. Revised Dec. 2025

08 Additional static signs or changeable message signs may be used to meet the requirements for the variable right-turn mode or to inform drivers that right-turn green arrows will not be available during certain times of the day.

Support:

09 ~~Sections 4F.10~~EPG 902.6.10 through ~~4F.15~~902.6.15 describe the use of the following two types of signal faces for controlling right-turn movements:

A. Shared signal face – This type of signal face controls both the right-turn movement and the adjacent movement (usually the through movement) and can serve as one of the two required primary signal faces for the adjacent movement. A shared signal face always displays the same color of circular indication that is displayed by the signal face or faces for the adjacent movement.

B. Separate right-turn signal face – This type of signal face controls only the right-turn movement and cannot serve as one of the two required primary signal faces for the adjacent movement (usually the through movement) because it displays signal indications that are applicable only to the right-turn movement. If a separate right-turn signal face is mounted overhead at the intersection, it is positioned over the extension of the mandatory right-turn lane. In a separate right-turn signal face, a flashing right-turn YELLOW ARROW signal indication ~~or a flashing right-turn RED ARROW signal indication~~ is used to control permissive right-turn movements.

MoDOT does not use flashing right turn red arrows. Revised Dec. 2025

10 Section 4D.07 contains provisions regarding the lateral positioning of signal faces that control right-turn movements.

11 It is not necessary that the same mode of right-turn operation or same type of right-turn signal face be used on every approach to a signalized location. Selecting different modes and types of right-turn signal faces for the various approaches to the same signalized location is acceptable.

Option:

12 A signal face that is shared by left-turning and right-turning traffic may be provided for a combined left-turn/right-turn lane on an approach that has no through traffic (see ~~Section 4F.16~~EPG 902.6.16).

Section 4F.10 Signal Indications for Permissive Only Mode Right-Turn Movements in a Shared Signal Face

Standard:

01 If a shared signal face is provided for a permissive only mode right turn, it shall meet the following requirements (see Figure 4F-8):

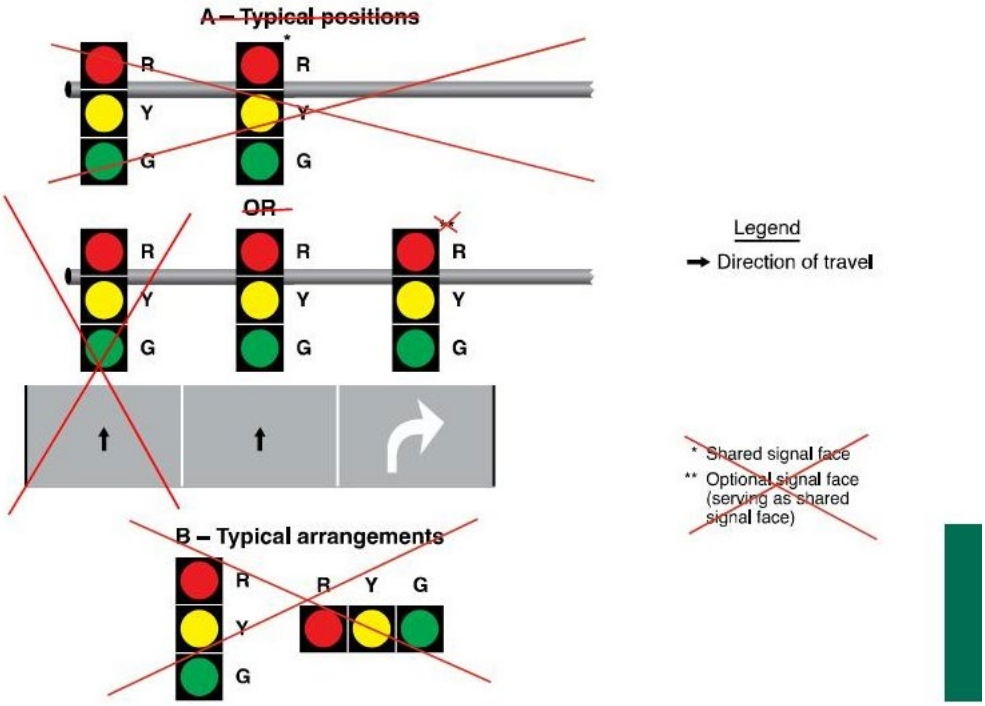
A. It shall be capable of displaying the following signal indications: steady CIRCULAR RED, steady CIRCULAR YELLOW, and CIRCULAR GREEN. Only one of the three indications shall be displayed at any given time.

B. During the permissive right-turn movement, a CIRCULAR GREEN signal indication shall be displayed.

C. A permissive only shared signal face, regardless of where it is positioned and regardless of how many adjacent through signal faces are provided, shall always simultaneously display the same color of circular indication that the adjacent through signal face or faces display.

D. If the permissive only mode is not the only right-turn mode used for the approach, the signal face shall be the same shared signal face that is used for the protected/permissive mode (see Section 4F.14) except that the right-turn GREEN ARROW and right-turn YELLOW ARROW signal indications shall not be displayed when operating in the permissive only mode.

Figure 4F-8. Typical Position of Shared Signal Faces for Permissive Only Mode Right Turns



Section 4F.11 Signal Indications for Permissive Only Mode Right-Turn Movements in a Separate Signal Face

Standard:

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

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

03 If a separate right-turn signal face is being operated in a permissive only right-turn mode and a flashing right-turn yellow arrow signal indication is provided, it shall meet the following requirements (see Figure 4F-9):

- **A. It shall be capable of displaying one of the following sets of signal indications:**
  1. **Steady right-turn RED ARROW, steady right-turn YELLOW ARROW, and flashing right-turn YELLOW ARROW. Only one of the three indications shall be displayed at any given time.**
  2. **Steady CIRCULAR RED, steady right-turn YELLOW ARROW, and flashing right-turn YELLOW ARROW. Only one of the three indications shall be displayed at any given time. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lane(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (see Section 2B.59) shall be used unless the CIRCULAR RED signal indication in the separate right-turn signal face is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).**
- **B. During the permissive right-turn movement, a flashing right-turn YELLOW ARROW signal indication shall be displayed.**
- **C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the flashing right-turn YELLOW ARROW signal indication.**

D. When the separate right-turn signal face is providing a message to stop and remain stopped, a steady right-turn RED ARROW signal indication shall be displayed if it is intended that right turns on red not be permitted (except when a traffic control device is in place permitting a turn on a steady RED ARROW signal indication) or a steady CIRCULAR RED signal indication shall be displayed if it is intended that right turns on red be permitted.

E. It shall be permitted to display a flashing right-turn YELLOW ARROW signal indication for a permissive right-turn movement while the signal faces for the adjacent through movement display steady CIRCULAR RED signal indications.

F. During steady mode (stop-and-go) operation, the signal section that displays the steady right-turn YELLOW ARROW signal indication during change intervals shall not be used to display the flashing right-turn YELLOW ARROW signal indication for permissive right 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 during variable right-turn mode operation~~.

MoDOT does not use bimodal signal indications. Revised Dec. 2025

G. During flashing mode operation (see ~~Chapter 4G~~EPG 902.7), the display of a flashing right-turn YELLOW ARROW signal indication shall be only from the signal section that displays a steady right-turn YELLOW ARROW signal indication during steady mode (stop-and-go) operation.

H. If the permissive only mode is not the only right-turn mode used for the approach, the signal face shall be the same separate right-turn signal face with a flashing YELLOW ARROW signal indication that is used for the protected/permissive mode (see ~~Section 4F.15~~EPG 902.6.15) except that the right-turn GREEN ARROW signal indication shall not be displayed when operating in the permissive only mode.

~~Option:~~

~~04 When an engineering study determines that each and every vehicle must successively come to a full stop before making a permissive right turn, a separate right-turn signal face with a flashing right-turn RED ARROW signal indication during the permissive right-turn movement may be used.~~

MoDOT does not use flashing right turn red arrows. Revised Dec. 2025

~~**Standard:**~~

~~**05 If a separate right-turn signal face is being operated in a permissive only right-turn mode and a flashing right-turn RED arrow signal indication is provided, it shall meet the following requirements (see Figure 4F-10):**~~

~~**A. It shall be capable of displaying one of the following sets of signal indications:**~~

~~**1. Steady or flashing right-turn RED ARROW, steady right-turn YELLOW ARROW, and right-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.**~~

~~**2. Steady CIRCULAR RED on the left and steady right-turn RED ARROW on the right of the top position, steady right-turn YELLOW ARROW in the middle position, and right-turn GREEN ARROW in the bottom position. Only one of the four indications shall be displayed at any given time. The GREEN ARROW indication is required in order to provide three vertical positions, but shall not be displayed during the permissive only mode. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lane(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (see Section 2B.59) shall be used unless the CIRCULAR RED signal indication in the separate right-turn signal face is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).**~~

~~**B. During the permissive right-turn movement, a flashing right-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 right turn.**~~

C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the flashing right-turn RED ARROW signal indication.

D. When the separate right-turn signal face is providing a message to stop and remain stopped, a steady right-turn RED ARROW signal indication shall be displayed if it is intended that right turns on red not be permitted (except when a traffic control device is in place permitting a turn on a steady RED ARROW signal indication) or a steady CIRCULAR RED signal indication shall be displayed if it is intended that right turns on red be permitted.

E. The display of a flashing right-turn RED ARROW signal indication for a permissive right-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 shall be permitted.

F. A supplementary sign shall not be required. If used, it shall be a RIGHT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign (see Section 2B.59).

MoDOT does not use flashing right turn red arrows. Revised Dec. 2025

Option:

06 The requirements of Item A.1 in Paragraph 5 of this Section may be met by a vertically arranged signal face with a horizontal cluster of two right-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-10).

MoDOT does not use clusters of two right-turn red arrows. Revised Dec. 2025

Figure 4F-9. Typical Position and Arrangements of Separate Signal Faces with Flashing Yellow Arrow for Permissive Only Mode Right Turns

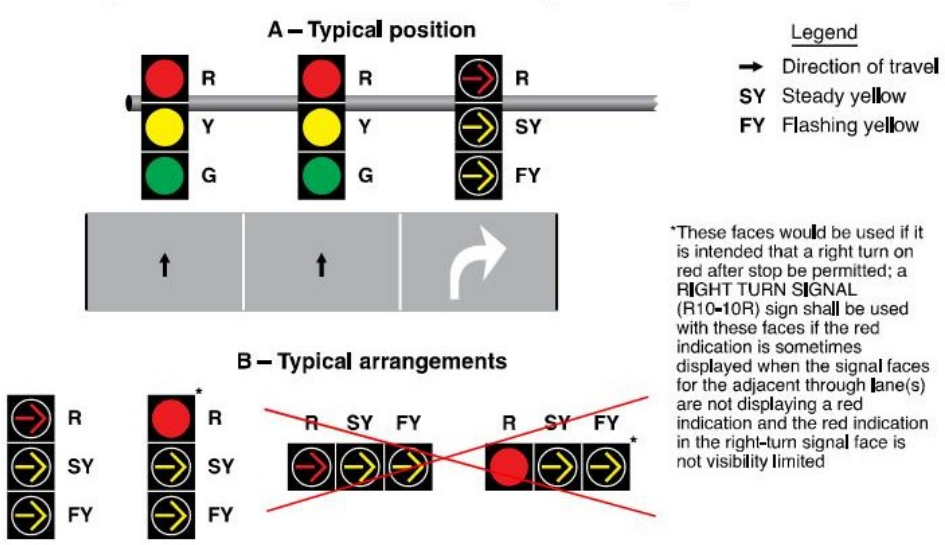
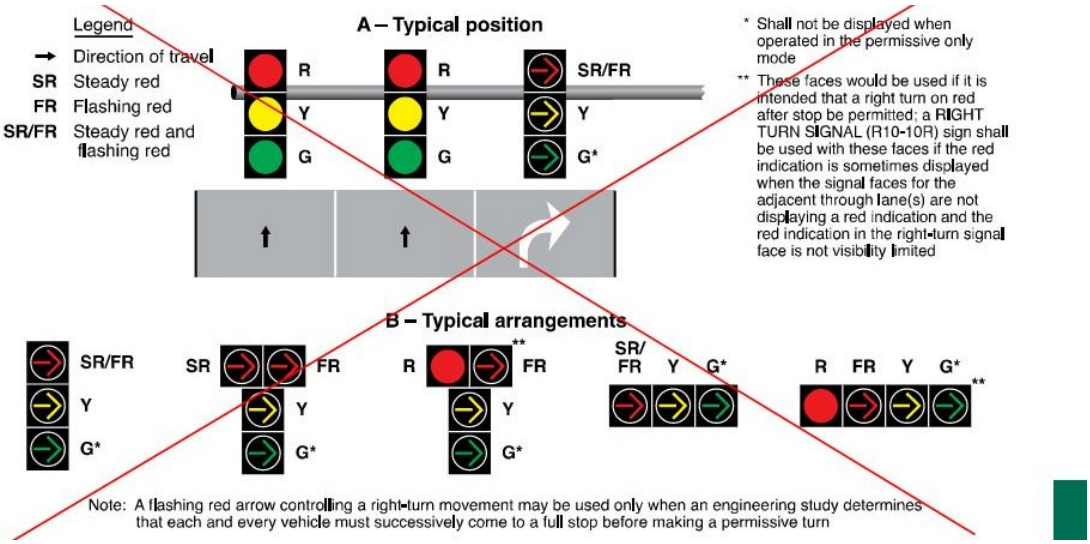


Figure 4F-10. Typical Position and Arrangements of Separate Signal Faces with Flashing Red Arrow for Permissive Only Mode and Protected/Permissive Mode Right Turns



MoDOT does not use flashing red right-turn arrows. Revised Dec. 2025

Section 4F.12 Signal Indications for Protected Only Mode Right-Turn Movements in a Shared Signal Face

Standard:

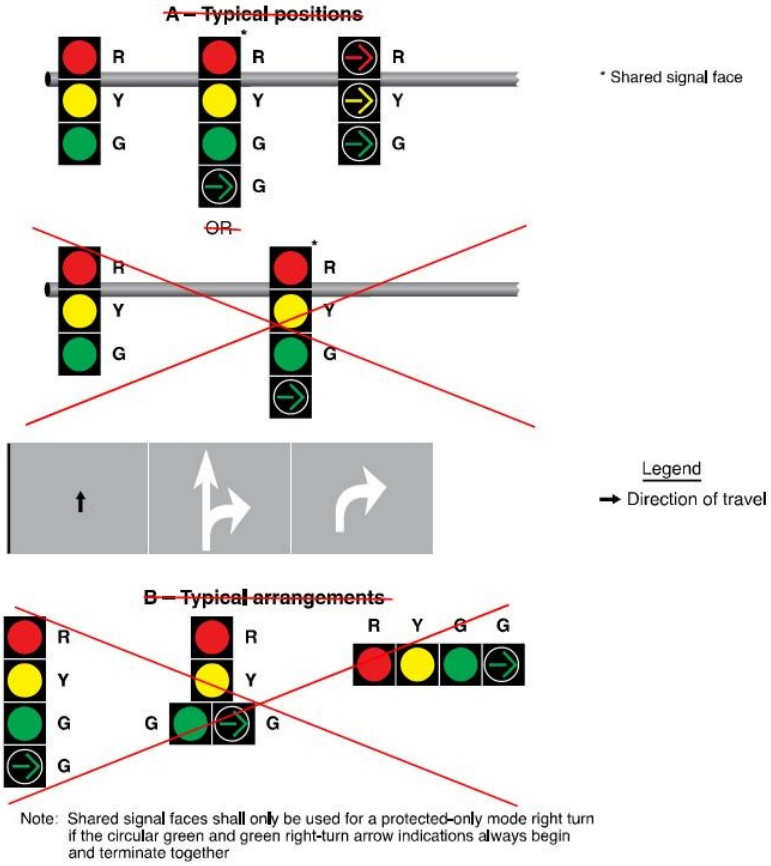
01 A shared signal face shall not be used for protected only mode right turns unless the CIRCULAR GREEN and right-turn GREEN ARROW signal indications always begin and terminate together. If a shared signal face is provided for a protected only right turn, it shall meet the following requirements (see Figure 4F-11):

- **A. It shall be capable of displaying the following signal indications: steady CIRCULAR RED, steady CIRCULAR YELLOW, CIRCULAR GREEN, and right-turn GREEN ARROW. Only one of the three colors shall be displayed at any given time.**
- **B. During the protected right-turn movement, the shared signal face shall simultaneously display both a CIRCULAR GREEN signal indication and a right-turn GREEN ARROW signal indication.**
- **C. The shared signal face shall always simultaneously display the same color of circular indication that the adjacent through signal face or faces display.**
- **D. If the protected only mode is not the only right-turn mode used for the approach, the signal face shall be the same shared signal face that is used for the protected/permissive mode (see ~~Section 4F.15~~EPG 902.6.15).**

Option:

02 A straight-through GREEN ARROW signal indication may be used instead of the CIRCULAR GREEN signal indication in Items A and B in ~~Paragraph 1~~the preceding paragraph ~~of this Section~~ on an approach where a straight-through GREEN ARROW signal indication is also used instead of a CIRCULAR GREEN signal indication in the other signal face(s) for through traffic.

Figure 4F-11. Typical Position of Shared Signal Faces for Protected Only Mode Right Turns



Section 4F.13 Signal Indications for Protected Only Mode Right-Turn Movements in a Separate Signal Face

Standard:

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

02 If a separate right-turn signal face is provided for a protected only mode right turn, it shall meet the following requirements (see Figure 4F-12):

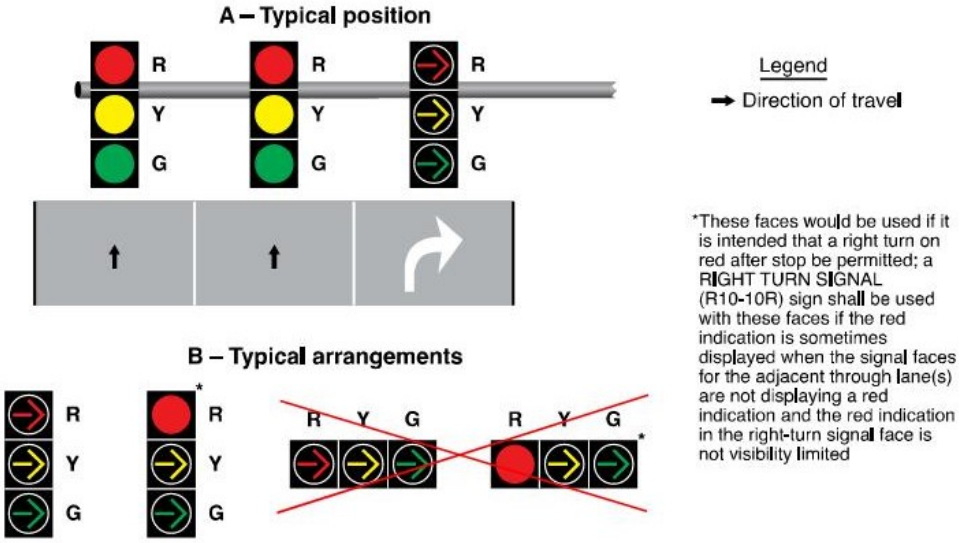
- **A. It shall be capable of displaying one of the following sets of signal indications:**
  1. **Steady right-turn RED ARROW, steady right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the three indications shall be displayed at any given time.**
  2. **Steady CIRCULAR RED, steady right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of three indications shall be displayed at any given time. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lane(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (see Section 2B.59) shall be used unless the CIRCULAR RED signal indication is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).**
- **B. During the protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed.**
- **C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication.**
- **D. When the separate signal face is providing a message to stop and remain stopped, a steady right-turn RED ARROW signal indication shall be displayed with a NO TURN ON RED (R10-**

11) sign, if it is intended that right turns on red not be permitted ~~(except when a traffic control device is in place permitting a turn on a steady RED ARROW signal indication) or a steady CIRCULAR RED signal indication shall be displayed if it is intended that right turns on red be permitted~~.

EPG requires a NO TURN ON RED sign. Revised Dec. 2025

E. If the protected only mode is not the only right-turn mode used for the approach, the signal face shall be the same separate right-turn signal face that is used for the protected/permissive mode (see ~~Section 4F.15~~EPG 902.6.15) except that a flashing right-turn YELLOW ARROW ~~or flashing right-turn RED ARROW~~ signal indication shall not be displayed when operating in the protected only mode.

Figure 4F-12. Typical Position and Arrangements of Separate Signal Faces for Protected Only Mode Right Turns



Section 4F.14 Signal Indications for Protected/Permissive Mode Right-Turn Movements in a Shared Signal Face

Standard:

01 If a shared signal face is provided for a protected/permissive mode right turn, it shall meet the following requirements (see Figure 4F-13):

A. **It shall be capable of displaying the following signal indications: steady CIRCULAR RED, steady CIRCULAR YELLOW, CIRCULAR green, steady right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the three circular indications shall be displayed at any given time. Only one of the two arrow indications shall be displayed at any given time. If the right-turn GREEN ARROW signal indication and the CIRCULAR GREEN signal indication(s) for the adjacent through movement are always terminated together, the steady right-turn YELLOW ARROW signal indication shall not be required.**

B. **During the protected right-turn movement, the shared signal face shall simultaneously display a right-turn GREEN ARROW signal indication and a circular signal indication that is the same color as the signal indication for the adjacent through lane on the same approach as the protected right turn.**

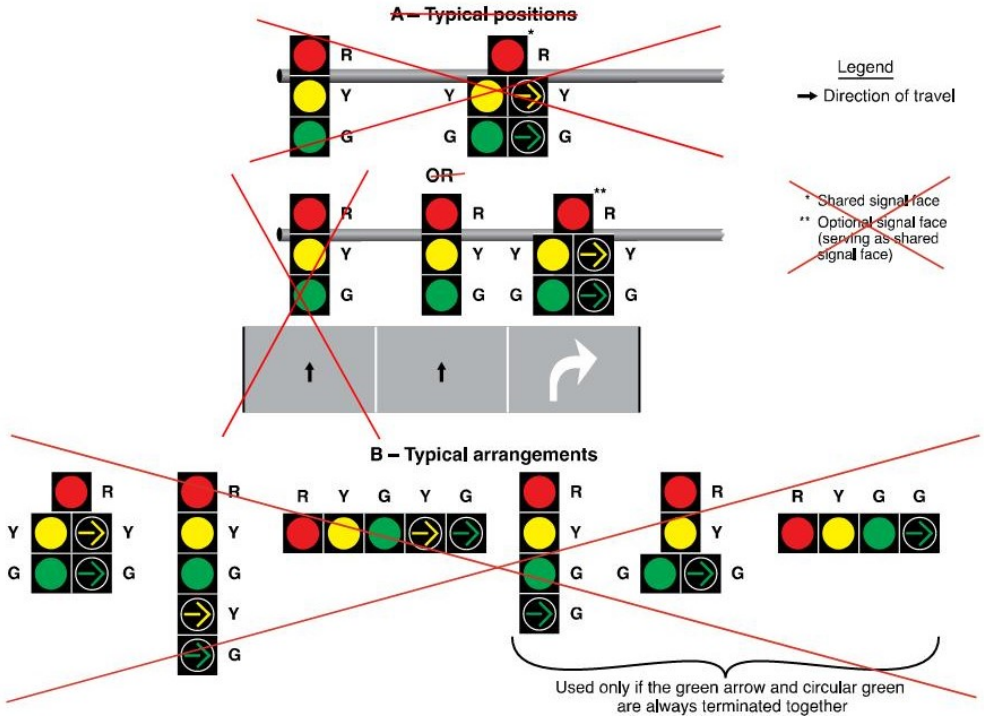
C. **A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication, unless the right-turn GREEN ARROW signal indication and the CIRCULAR GREEN signal indication(s) for the adjacent through movement are being terminated together. When the right-turn GREEN ARROW and CIRCULAR**

GREEN signal indications are being terminated together, the required display following the right-turn GREEN ARROW signal indication shall be either the display of a CIRCULAR YELLOW signal indication alone or the simultaneous display of the CIRCULAR YELLOW and right-turn YELLOW ARROW signal indications.

D. During the permissive right-turn movement, the shared signal face shall display only a CIRCULAR GREEN signal indication.

E. A protected/permissive shared signal face, regardless of where it is positioned and regardless of how many adjacent through signal faces are provided, shall always simultaneously display the same color of circular indication that the adjacent through signal face or faces display.

Figure 4F-13. Typical Position of Shared Signal Faces for Protected/Permissive Mode Right Turns



Section 4F.15 Signal Indications for Protected/Permissive Mode Right-Turn Movements in a Separate Signal Face

Standard:

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

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

03 If a separate right-turn signal face is being operated in a protected/permissive right-turn mode and a flashing right-turn yellow arrow signal indication is provided, it shall meet the following requirements (see Figure 4F-14):

- **A. It shall be capable of displaying one of the following sets of signal indications:**
  1. **Steady right-turn RED ARROW, steady right-turn YELLOW ARROW, flashing right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the four indications shall be displayed at any given time.**
  2. **Steady CIRCULAR RED, steady right-turn YELLOW ARROW, flashing right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the four indications shall be displayed at any given time. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lane(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (see Section 2B.59) shall be used unless the CIRCULAR RED signal indication in the separate right-turn signal face is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).**
- **B. During the protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed.**
- **C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication. It shall be permitted to display a steady right-turn RED ARROW signal indication immediately following the steady right-turn YELLOW ARROW signal indication to provide a red clearance interval.**
- **D. During the permissive right-turn movement, a flashing right-turn YELLOW ARROW signal indication shall be displayed.**
- **E. A steady right-turn YELLOW ARROW signal indication shall be displayed following the flashing right-turn YELLOW ARROW signal indication if the permissive right-turn movement is being terminated and the separate right-turn signal face will subsequently display a steady red indication.**
- **F. When a permissive right-turn movement is changing to a protected right-turn movement:**
  1. **If a permissive left-turn movement from the opposing approach is being terminated simultaneously with the termination of the permissive right-turn movement, a steady right-turn YELLOW ARROW signal indication shall be displayed following the flashing right-turn YELLOW ARROW signal indication. To provide a red clearance interval, it shall be permitted to display a steady right-turn RED ARROW signal indication immediately following the steady right-turn YELLOW ARROW signal indication.**
  2. **If a permissive left-turn movement from the opposing approach that is being terminated simultaneously with the termination of the permissive right-turn movement is not present, a right-turn GREEN ARROW signal indication shall be displayed immediately upon the termination of the flashing right-turn YELLOW ARROW signal indication. In this situation, a steady right-turn YELLOW ARROW signal indication shall not be displayed between the display of the flashing right-turn YELLOW ARROW signal indication and the display of the steady right-turn GREEN ARROW signal indication.**
- **G. When the separate right-turn signal face is providing a message to stop and remain stopped, a steady right-turn RED ARROW signal indication shall be displayed if it is intended that right turns on red not be permitted (except when a traffic control device is in place permitting a turn**

on a steady RED ARROW signal indication) or a steady CIRCULAR RED signal indication shall be displayed if it is intended that right turns on red be permitted.

H. It shall be permitted to display a flashing right-turn YELLOW ARROW signal indication for a permissive right-turn movement while the signal faces for the adjacent through movement display steady CIRCULAR RED signal indications.

I. The display shall be ~~either:~~

~~1. A~~ a four-section signal face with the steady right-turn YELLOW ARROW signal indication being displayed in a different section than the flashing right-turn YELLOW ARROW signal indication~~, or~~

~~2. A three-section signal face with the steady right-turn YELLOW ARROW signal indication and the flashing right-turn YELLOW ARROW signal indication being displayed in the same bimodal signal section~~.

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

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

MoDOT does not use bimodal signal indications. Revised Dec. 2025

~~Option:~~

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

MoDOT does not use bimodal signal indications. Revised Dec. 2025

~~05 When an engineering study determines that each and every vehicle must successively come to a full stop before making a permissive right turn, a separate signal face that has a flashing right-turn RED ARROW signal indication during the permissive right-turn movement may be used.~~

~~Standard:~~

~~06 If a separate right-turn signal face is being operated in a protected/permissive right-turn mode and a flashing right-turn RED arrow signal indication is provided, it shall meet the following requirements (see Figure 4F-10):~~

~~A. It shall be capable of displaying one of the following sets of signal indications:~~

~~1. Steady or flashing right-turn RED ARROW, steady right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the three indications shall be displayed at any given time.~~

~~2. Steady CIRCULAR RED on the left and steady or flashing right-turn RED ARROW on the right of the top position, steady right-turn YELLOW ARROW in the middle position, and right-turn GREEN ARROW in the bottom position. Only one of the four indications shall be displayed at any given time. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lane(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (see Section 2B.59) shall be used unless the CIRCULAR RED signal indication in the separate right-turn signal face is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).~~

~~B. During the protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed.~~

C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication.

D. During the permissive right-turn movement, the separate right-turn signal face shall display a flashing right-turn RED ARROW signal indication.

E. A steady right-turn YELLOW ARROW signal indication shall be displayed following the flashing right-turn RED ARROW signal indication if the permissive right-turn movement is being terminated and the separate right-turn signal face will subsequently display a steady red indication.

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

G. When the separate right-turn signal face is providing a message to stop and remain stopped, a steady right-turn RED ARROW signal indication shall be displayed if it is intended that right turns on red not be permitted (except when a traffic control device is in place permitting a turn on a steady RED ARROW signal indication) or a steady CIRCULAR RED signal indication shall be displayed if it is intended that right turns on red be permitted.

H. It shall be permitted to display a flashing right-turn RED ARROW signal indication for a permissive right-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.

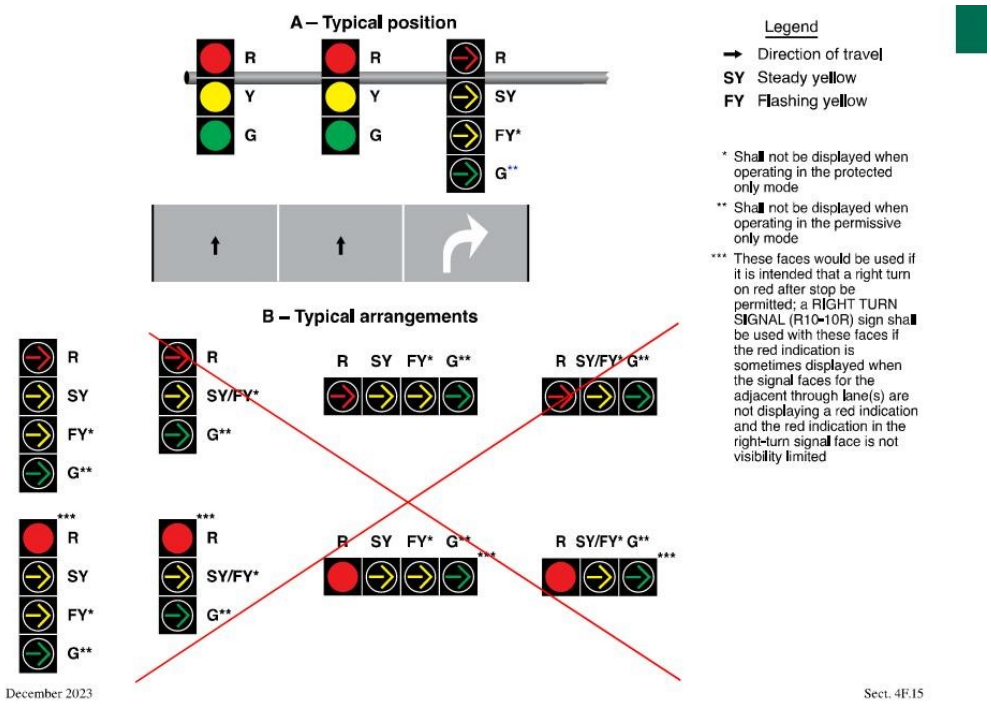
I. A supplementary sign shall not be required. If used, it shall be a RIGHT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign (see Section 2B.59).

Option:

07 The requirements of Item A.1 in Paragraph 6 of this Section may be met by a vertically-arranged signal face with a horizontal cluster of two right-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-10).

MoDOT does not use flashing right turn red arrows. Revised Dec. 2025

Figure 4F-14. Typical Position and Arrangements of Separate Signal Faces with Flashing Yellow Arrow for Protected/Permissive Mode and Variable Mode Right Turns



Section 4F.16 Signal Indications for Approaches with No Through Movement

Support:

01 The provisions of this ~~section~~ Article apply only to approaches where no through movement exists, such as the stem of a T-intersection or where the opposite approach is a one-way roadway in the opposing direction.

Standard:

02 Except for single-lane approaches, a minimum of two primary signal faces shall be provided for the signalized turning movement that is considered to be the major movement from the approach (see Section 4D.05).

~~Option:~~

~~03 The required two primary signal faces and any supplemental primary signal faces may continuously display a steady CIRCULAR RED signal indication while steady or flashing YELLOW and steady GREEN ARROW signal indications are displayed during times when the traffic control signal is being operated in the steady (stop-and-go) mode. The continuous display of steady CIRCULAR RED is intended to reinforce that there is no through movement for safety-critical locations.~~

MoDOT does not adopt this option statement. Rev. 12/02/2025

~~**Standard:**~~

04 CIRCULAR GREEN and CIRCULAR YELLOW signal indications shall not be displayed to an approach with no through movement if:

- **A. The posted or statutory speed limit on the approach is 35 mph or higher,**
- **B. The one-way roadway that opposes the approach is an exit ramp from a freeway or expressway, or**
- **C. The one-way roadway that opposes the approach has a posted or statutory speed limit of 35 mph or higher.**

Support:

05 A lane from which left-turn and right-turn movements can both be made is sometimes provided on an approach that has no through movement, either as the only approach lane or as one of several approach lanes.

Option:

06 If all of the lanes on the approach are designated as mandatory turn lanes and no lane is designated as a combined left-turn/right-turn lane, the left-turn and right-turn movements may start and terminate independently, and the left-turn and right-turn movements each may be operated in one or more of the modes of operation as described in ~~Sections 4F.02~~EPG 902.6.2 through ~~4F.15~~902.6.15.

Standard:

07 When a combined left-turn/right-turn lane exists on an approach, the left-turn and right-turn movements shall start and terminate simultaneously and the red signal indication used in each of the signal faces on the approach shall be a CIRCULAR RED.

Support:

08 This requirement for the use of CIRCULAR RED signal indications in signal faces for approaches having a combined lane for left-turn and right-turn movements is a specific exception to other provisions in this ~~Chapter~~Article that would otherwise require the use of RED ARROW signal indications.

Standard:

09 The signal faces provided for an approach with a combined left-turn/right-turn lane and no through movement shall be one of the following:

- **A. Except as provided in ~~Paragraph 6~~the second option paragraph of ~~Section 4F.01~~EPG 902.6.1 and ~~Paragraph 4~~the second standard paragraph of this ~~Section~~Article, two or more signal faces, each capable of displaying CIRCULAR RED, CIRCULAR YELLOW, and CIRCULAR GREEN signal indications, shall be provided for the approach. This display shall be permissible regardless of the number of mandatory left-turn and/or right-turn lanes that exist on the approach in addition to the combined left-turn/right-turn lane and regardless of whether or not there are pedestrian or opposing vehicular movements that conflict with the left-turn or right-turn movements. However, if there is an opposing approach and the signal phasing protects the left-turn movement on the approach with the combined left-turn/right-turn lane from conflicts with the opposing vehicular movements and any signalized pedestrian movements, a left-turn GREEN ARROW signal indication shall also be included in the left-most signal face and shall be displayed simultaneously with the CIRCULAR GREEN signal indication.**
- **B. If the approach has one or more mandatory turn lanes in addition to the combined left-turn/right-turn lane and there is no conflict with a signalized vehicular or pedestrian movement, and GREEN ARROW signal indications are used in place of CIRCULAR GREEN signal indications on the approach, the signal faces for the approach shall be:**
  1. **A signal face(s) capable of displaying CIRCULAR RED, YELLOW ARROW, and GREEN ARROW signal indications for the mandatory turn lane(s), with the arrows pointing in the direction of the turn, and**
  2. **A shared left-turn/right-turn signal face capable of displaying CIRCULAR RED, left-turn YELLOW ARROW, left-turn GREEN ARROW, right-turn YELLOW ARROW, and right-turn GREEN ARROW signal indications, in an arrangement of signal sections that complies with the provisions of ~~Section 4E.04~~EPG 902.5.4 or ~~4E.05~~902.5.5.**
- **C. If the approach has one or more mandatory turn lanes in addition to the combined left-turn/right-turn lane and there is a conflict with a signalized vehicular or pedestrian movement, and flashing YELLOW ARROW signal indications are used in place of CIRCULAR GREEN signal indications on the approach, the signal faces for the approach shall be as described in Items B.1 and B.2 of this Paragraph, except that flashing YELLOW ARROW signal indications shall be used in place of the GREEN ARROW signal indications for the turning movement(s) that conflicts with the signalized vehicular or pedestrian movement.**

Support:

10 Figure 4F-15 illustrates application of these Standards on approaches that have only a combined left-turn/right-turn lane, and on approaches that have one or more mandatory turn lanes in addition to the combined left-turn/right-turn lane.

~~Option:~~

~~11 If the lane-use regulations on an approach are variable such that at certain times all of the lanes on the approach are designated as mandatory turn lanes and no lane is designated as a combined left-turn/right-turn lane:~~

~~A. During the times that no lane is designated as a combined left-turn/right-turn lane, the left-turn and right-turn movements may start and terminate independently, and the left-turn and right-turn movements may be operated in one or more of the modes of operation as described in Sections 4F.02 through 4F.15; and~~

~~B. If a protected/permissive mode is used, the operation of the shared left-turn/right-turn signal face provided in Paragraph 9 may be modified to display the steady left-turn (right-turn) YELLOW ARROW signal indication and the flashing left-turn (right-turn) YELLOW ARROW signal indication in the same section in order to not exceed the maximum of five sections per signal face provided in Section 4E.03.~~

Option not included in EPG. Revised Dec. 2025

Figure 4F-15. Signal Indications for Approaches with a Combined Left-Turn/Right-Turn Lane and No Through Movement (Sheet 1 of 3)

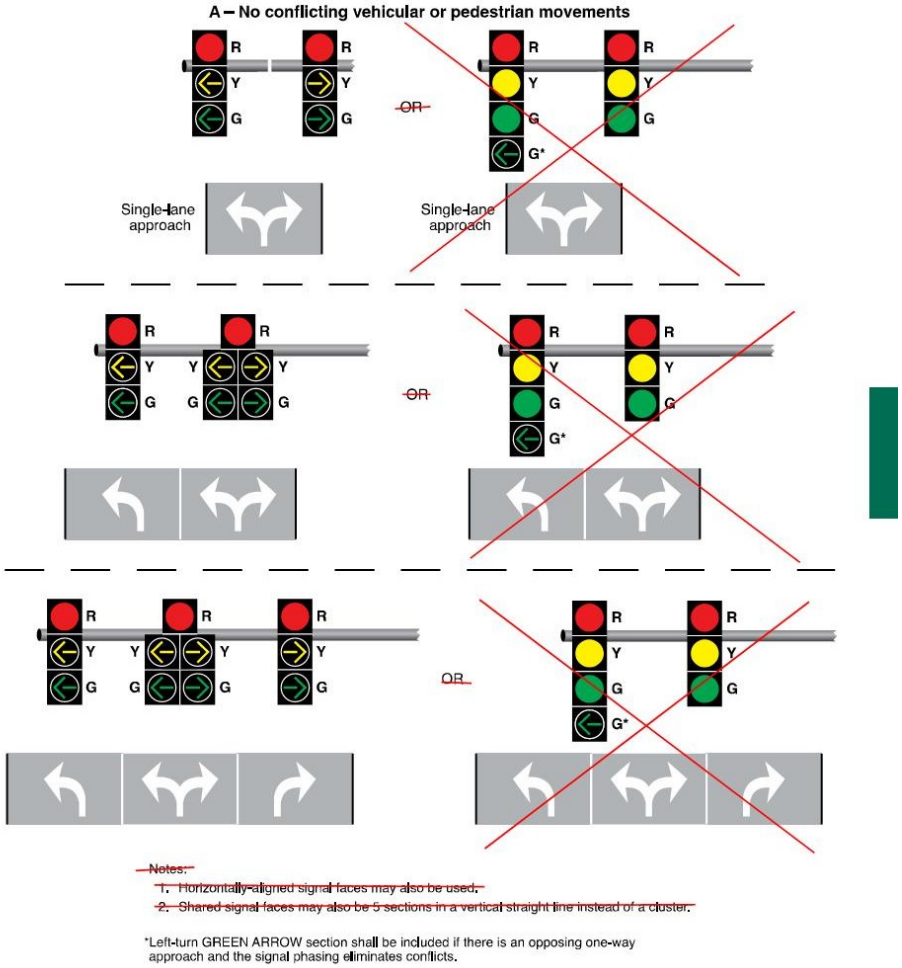
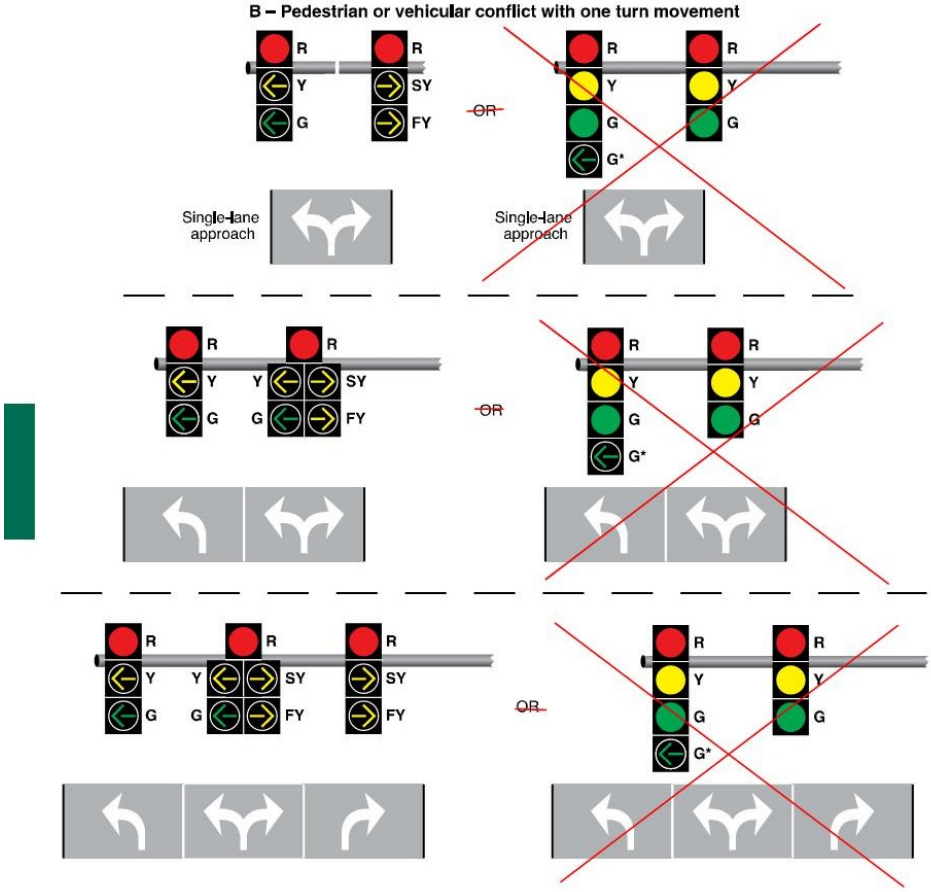


Figure 4F-15. Signal Indications for Approaches with a Combined Left-Turn/Right-Turn Lane and No Through Movement (Sheet 2 of 3)

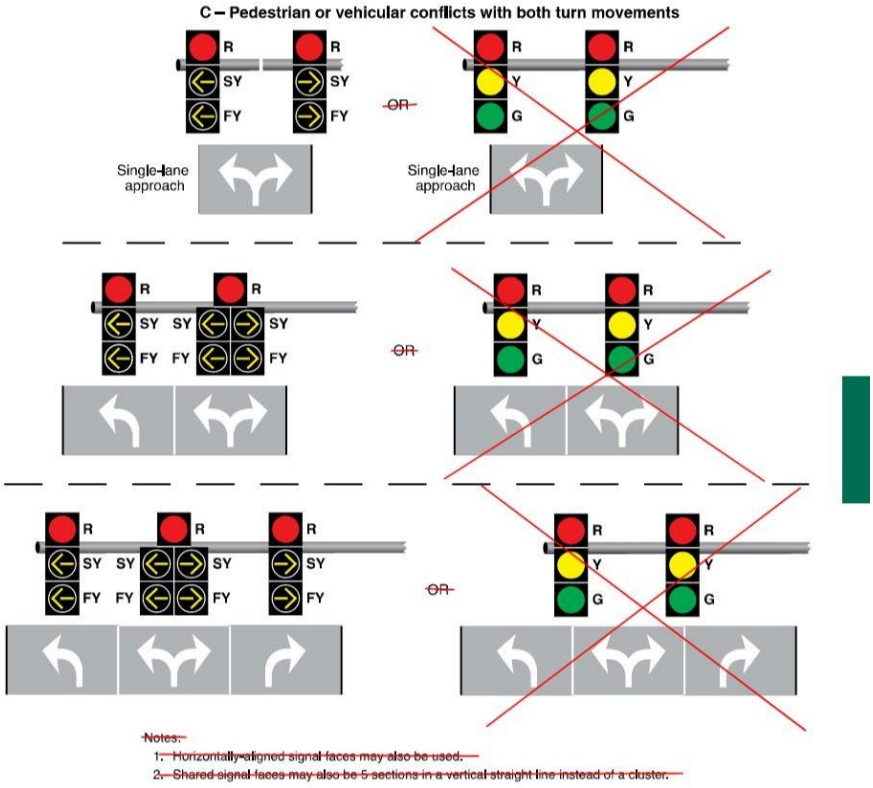


Notes:

1. A conflict with the right-turn movement is illustrated.
2. ~~Horizontally-aligned signal faces may also be used.~~
3. ~~Shared signal faces may also be 5 sections in a vertical straight line instead of a cluster.~~

*Left-turn GREEN ARROW section shall be included if there is an opposing one-way approach and the signal phasing eliminates conflicts.

Figure 4F-15. Signal Indications for Approaches with a Combined Left-Turn/Right-Turn Lane and No Through Movement (Sheet 3 of 3)



Section 4F.17 Yellow Change and Red Clearance Intervals

Support:

01 The exclusive function of the yellow change interval is to warn traffic approaching a signalized location that their permission to proceed is being terminated after which they will be directed to stop, or in the case of a protected/permissive turning movement that their protected movement is being terminated after which they will need to perform their turn in a permissive manner.

Standard:

02 A steady yellow signal indication shall be displayed following every CIRCULAR GREEN or GREEN ARROW signal indication and following every flashing YELLOW ARROW ~~or flashing RED ARROW~~ signal indication displayed as a part of a steady mode operation. This requirement shall not apply when a CIRCULAR GREEN, a flashing YELLOW ARROW~~, or a flashing RED ARROW~~ signal indication is followed immediately by a GREEN ARROW signal indication.

03 The duration of the yellow change interval shall be determined using engineering practices.

Support:

M03A See EPG 902.21 when determining the yellow change interval.

Reference to MoDOT specific provisions for the yellow change interval in "Designing a MoDOT Traffic Signal".

Revised Dec. 2025

~~Support:~~

04 ~~Section 4F.01~~EPG 902.6.1 contains provisions regarding the display of steady CIRCULAR YELLOW signal indications to approaches from which drivers are allowed to make permissive left turns.

Standard ~~Guidance~~:

05 When indicated by the application of engineering practices, the yellow change interval ~~should~~ shall be followed by a red clearance interval to provide additional time before conflicting traffic movements, including pedestrians, are released.

~~Standard:~~

06 When used, the duration of the red clearance interval shall be determined using engineering practices.

Support:

M06A See EPG 902.21 when determining the duration of the red clearance interval.

Reference to MoDOT specific provisions for the red clearance interval in "Designing a MoDOT Traffic Signal".

Revised Dec. 2025

Standard:

07 The durations of yellow change intervals and red clearance intervals shall be consistent with the determined values within the technical capabilities of the controller unit.

08 The duration of a yellow change interval shall not vary on a cycle-by-cycle basis within the same signal timing plan.

09 Except as provided in ~~Paragraph 10~~the third option paragraph of this ~~Section~~Article, the duration of a red clearance interval shall not be decreased or omitted on a cycle-by-cycle basis within the same signal timing plan.

Option:

10 The duration of a red clearance interval may be extended from its predetermined value for a given cycle based upon the detection of a vehicle that is predicted to violate the red signal indication.

11 When an actuated signal sequence includes a signal phase for permissive/protected (lagging) left-turn movements in both directions, the red clearance interval may be shown during those cycles when the lagging left-turn signal phase is skipped and may be omitted during those cycles when the lagging left-turn signal phase is shown.

12 The duration of a yellow change interval or a red clearance interval may be different in different signal timing plans for the same controller unit.

Standard:

M12A The yellow change interval shall not be less than three seconds.

MoDOT specific standard from the EPG. Revised Dec. 2025

Guidance:

13 A yellow change interval should have ~~a minimum duration of 3 seconds, and~~ a maximum duration of 6 seconds. The longer intervals should be reserved for use on approaches with higher speeds. Except when clearing a one-lane, two-way facility (see Section 4O.02) or when clearing an exceptionally wide intersection, a red clearance interval should have a duration not exceeding 6 seconds.

MoDOT specific guidance from the EPG. Revised Dec. 2025

Standard:

14 Except for Warning Beacons mounted on advance warning signs on the approach to a signalized location (see Section 2C.35), signal displays that are intended to provide a "pre-yellow warning" interval, such as flashing green signal indications, vehicular countdown displays, or other similar displays, shall not be used at a signalized location.

Support:

15 The use of signal displays (other than Warning Beacons mounted on advance warning signs) that convey a "pre-yellow warning" have been found by research to increase the frequency of crashes.

Section 4F.18 Preemption and Priority Control of Traffic Control Signals – General

Option:

01 Traffic control signals may be designed and operated to respond to certain classes of approaching vehicles by altering the normal signal timing and phasing plan(s) during the approach and passage of those vehicles. The alternative plan(s) may be as simple as extending a currently displayed green interval or as complex as replacing the entire set of signal phases and timing.

Support:

02 Some types or classes of vehicles supersede others when a traffic control signal responds to more than one type or class. In general, a vehicle that is more difficult to control supersedes a vehicle that is easier to control.

Option:

03 Preemption or priority control of traffic control signals may also be a means of indicating to specified classes of vehicles at certain non-intersection locations, such as on approaches to one-lane bridges and tunnels, ~~movable bridges,~~ highway maintenance and construction activities, metered freeway entrance ramps, and transit operations, that they are permitted to proceed.

Guidance:

04 When a traffic control signal that is returning to a steady mode from a dark mode (typically upon restoration from a power failure) receives a preemption or priority request, care should be exercised to minimize the possibility of vehicles or pedestrians being misdirected into a conflict with the vehicle making the request.

Option:

05 During the change from a dark mode to a steady mode under a preemption or priority request, the display of signal indications that could misdirect road users may be prevented by one or more of the following methods:

A. Having the traffic control signal remain in the dark mode,
B. Having the traffic control signal remain in the flashing mode,
C. Altering the flashing mode,
D. Executing the normal start-up routine before responding, or
E. Responding directly to initial or dwell period.

Guidance:

06 Traffic control signals operating under preemption control or under priority control should be operated in a manner designed to keep traffic moving.

07 Traffic control signals that are designed to respond under preemption or priority control to more than one type or class of vehicle should be designed to respond in the relative order of importance or difficulty in stopping the type or class of vehicle. The order of priority should be: train, ~~boat,~~ heavy vehicle (fire vehicle, emergency medical service), light vehicle (law enforcement), light rail transit, rubber-tired transit.

There are no movable bridges on MoDOT facilities. Revised Dec. 2025

Option:

08 If engineering judgment indicates that light rail transit signal indications would reduce road user confusion that might otherwise occur if standard traffic signal indications were used to control these movements, light rail transit signal indications complying with Section 8D.15 and as illustrated in Figure 8D-3 may be used for preemption or priority control of the following exclusive movements at signalized intersections:

A. Public transit buses in "queue jumper" lanes, and
B. Public transit buses in semi-exclusive or mixed-use alignments.

Guidance:

M09 LRT signals are not currently used on MoDOT facilities. When considering the use of LRT signals the Highway Safety and Traffic Division should be contacted for guidance.

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 only when the traffic control signal is being preempted because rail traffic is approaching a grade crossing.

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.

Clarification to reduce risk to pedestrians that could occur during emergency vehicle preemption. Revised Dec. 2025

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.~~

~~There are no movable bridges on MoDOT facilities. Revised Dec. 2025~~

~~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.

Section 4F.20 Priority Control of Traffic Control Signals

Support:

01 Priority control (see definition in Section 1C.02) is typically given to certain non-emergency vehicles such as light-rail transit vehicles operating in a mixed-use alignment and buses.

02 Examples of priority control include the following:

A. The displaying of early or extended green signal indications at an intersection to assist public transit vehicles improve operations, and
B. Special phasing to assist public transit vehicles in entering the travel stream ahead of other waiting traffic.

Standard:

03 During priority control and during the transition into or out of priority control:

A. The shortening or omission of any yellow change interval, and of any red clearance interval that follows, shall not be permitted.

B. The shortening of any pedestrian walk interval below that time described in Section 4I.06 shall not be permitted.

C. The omission of a pedestrian walk interval and its associated change interval shall not be permitted unless the associated vehicular phase is also omitted or the pedestrian phase is exclusive.

D. The shortening or omission of any pedestrian change interval shall not be permitted.

E. A signal indication sequence from a steady yellow signal indication to a green signal indication shall not be permitted.

CHAPTER 4G. FLASHING OPERATION OF TRAFFIC CONTROL SIGNALS [EPG 902.7]

Section 4G.01 Flashing Operation of Traffic Control Signals – General

Standard:

01 The light source of a flashing signal indication shall be flashed continuously at a rate of not less than 50 or more than 60 times per minute.

02 The displayed period of each flash shall be a minimum of ½ and a maximum of ⅔ of the total flash cycle.

03 Flashing signal indications shall comply with the requirements of other Sections of this Manual regarding visibility limiting or positioning of conflicting signal indications, except that flashing yellow signal indications for through traffic shall not be required to be visibility limited or positioned to minimize visual conflict for road users in separately-controlled turn lanes.

04 Each traffic control signal shall be provided with an independent flasher mechanism that operates in compliance with this ~~Chapter~~Article.

05 A manual switch shall be provided to initiate the flashing mode. A conflict monitor (malfunction management unit) circuit and, if appropriate, an automatic means shall also be provided to initiate the flashing mode.

06 The flashing operation shall not be terminated by removing or turning off the controller unit or the conflict monitor (malfunction management unit) or both.

~~Option:~~

~~07 Based on engineering study or engineering judgment, traffic control signals may be operated in the flashing mode on a scheduled basis during one or more periods of the day rather than operated continuously in the steady (stop-and-go) mode.~~

MoDOT does not adopt Option Paragraph 7. Instead, specific content is provided in the EPG regarding flashing operation in the paragraphs below. Rev. 12/01/2025

Support:

M07A There are two types of flashing operation:

A. All-direction cabinet flash – This type of flashing operation is initiated by the cabinet. The cabinet can be put to flash via a manual switch, or if the signalized intersection is operating inappropriately via a conflict monitor (malfunction monitoring unit).

B. All-direction programmed flash – This type of flash operation is programmed into the controller to flash the signal during specific times every day.

Standard:

M07B All-direction cabinet flash shall be permitted to be made at any time.

M07D Actuated intersections shall run steady (stop-and-go) mode at all times and shall not utilize all-direction programmed flash, except for school signals as covered in EPG 902.11.3. For pretimed intersections, every effort shall be made to upgrade the signalized intersection from pretimed to actuated operation.

Guidance:

M07E Several factors should be used with good engineering judgment when making the decision to implement all-direction programmed flashing operation for pretimed intersections. Among these is crash history, presence of pedestrian signal indications, and sight distance. If correctable crashes were a significant factor in the justification for installation of the signal, then all-direction flashing operation should not be acceptable at any time.

Standard:

M07F If stopping sight distance is below the values listed in Table 903.3.1, then flashing operation shall not be considered.

Guidance:

M07G Fully actuated signals within a coordinated system should be analyzed for possible free operation when other signals within the system are operating in all-direction programmed flash.

Support:

M07H An in-house MoDOT safety study identified that crashes at locations with late night/early morning flash tend to occur before 2 a.m. and in FHWA's publication Signalized Intersections: Informational Guide (FHWA-HRT-04-091), it was found that that an estimated 78% reduction in right-angle collisions and an estimated 32% reduction in all collisions can be expected with the removal from late night/early morning flash mode.

08 Sections 4I.06 and 4K.04 contain information regarding the operation of pedestrian signal heads and accessible pedestrian signal detector push button locator tones, respectively, during flashing operation.

Section 4G.02 Flashing Operation – Transition Into Flashing Mode

Option:

01 The transition from steady (stop-and-go) mode to flashing mode, if initiated by a conflict monitor (malfunction management unit) or by a manual switch, may be made at any time it is in fail safe operation.

Additional language included in EPG. Revised Dec. 2025

Standard:

02 Programmed changes from steady (stop-and-go) mode to flashing mode shall be made under either of the following circumstances:

- **A. At the end of the common major-street red interval (such as just prior to the start of the green in both directions on the major street), or**
- **B. Directly from a CIRCULAR GREEN signal indication to a flashing CIRCULAR YELLOW signal indication, or from a GREEN ARROW signal indication to a flashing YELLOW ARROW signal indication, or from a flashing YELLOW ARROW signal indication (see ~~Sections 4F.02~~EPG 902.6.2, ~~4F.04~~902.6.4, ~~4F.08~~902.6.8, ~~4F.09~~902.6.9, ~~4F.11~~902.6.11, and ~~4F.15~~902.6.15) to a flashing YELLOW ARROW signal indication ~~(~~in a different signal section ~~if the signal face displays the steady YELLOW ARROW signal indication in a different section than the flashing YELLOW ARROW signal indication)~~.**

MoDOT does not permit flashing yellow arrow and steady yellow arrows indications in the same signal face. Revised Dec. 2025

03 During programmed changes into flashing mode, no green signal indication or flashing yellow signal indication shall be terminated and immediately followed by a steady red or flashing red signal indication without first displaying the steady yellow signal indication.

Section 4G.03 Flashing Operation – Signal Indications During Flashing Mode

Guidance:

01 When a traffic control signal is operated in the flashing mode, there are two possible types of operation:

- *A. Yellow-red flashing mode: For intersections where traffic volumes during flashing operation on the major street are significantly greater than traffic volumes on the minor street, a flashing yellow signal indication should be used for the major street and a flashing red signal indication should be used for the other approaches ~~unless flashing red signal indications are used on all approaches~~.*
- *B. Red-red flashing mode: For intersections where traffic volumes during flashing operation on all approaches are approximately equal, a flashing red signal indication should be used for all approaches. Complex intersections (5-leg, large widths, multiple dual left turn approaches) also operate with red indications for all approaches during flashing operation, regardless of traffic volumes.*

M01A When a system of interconnected signals is flashed, care should be taken to be consistent in flash color for the major street so as not to violate driver expectancy.

MoDOT policy for flashing operations. Revised Dec. 2025

Support:

M01B A red/red flashing signal in the middle of a system of yellow/red flashing signals could lead to violations of the flashing red along the major street due to the expectancy of yellow flashing indications.

M01C Fail-safe operation for a malfunctioning signal leads to all-direction flashing operation when tripped by a conflict monitor. Cabinet wiring determines all-direction flashing operation when a malfunction has occurred, this generally means malfunction flash will be red-red mode since it is wired the same as the start up from dark flash (see EPG 902.23.9).

Additional language included in EPG. Revised Dec. 2025

Standard:

02 When a traffic control signal is operated in the flashing mode, all of the green signal indications at the signalized location shall be dark (non-illuminated) and shall not be displayed in either a steady or flashing manner, except for single-section GREEN ARROW signal indications as provided in ~~Paragraph 6~~the fourth standard paragraph of this ~~Section~~Article.

03 Flashing yellow signal indications shall be used on more than one approach to a signalized location only if those approaches do not conflict with each other.

04 ~~Except as provided in Paragraph 5 of this Section, w~~When a traffic control signal is operated in the flashing mode, one and only one signal indication in every signal face at the signalized location shall be flashed.

~~Option:~~

~~05 If a signal face has two identical CIRCULAR RED or RED ARROW signal indications (see Section 4E.04), both of those identical signal indications may be flashed simultaneously.~~

MoDOT does not use two identical signal indications in the same face. Revised Dec. 2025

~~**Standard:**~~

06 No steady indications, other than a single-section signal face consisting of a continuously-displayed GREEN ARROW signal indication that is used alone to indicate a continuous movement in the steady (stop-and-go) mode, shall be displayed at the signalized location during the flashing mode. A single-section GREEN ARROW signal indication shall remain continuously displayed when the traffic control signal is operated in the flashing mode.

07 If a signal face includes both circular and arrow signal indications of the color that is to be flashed, only the circular signal indication shall be flashed.

08 All signal faces that are flashed on an approach shall flash the same color, either yellow or red, except that separate turn signal faces (see ~~Sections 4F.04~~EPG 902.6.4, ~~4F.06~~902.6.6, ~~4F.08~~902.6.8, ~~4F.11~~902.6.11, ~~4F.13~~902.6.13, and ~~4F.15~~902.6.15) shall be permitted to flash a RED ARROW signal indication when the adjacent through movement signal indications are flashed yellow. Shared signal faces (see ~~Sections 4F.03~~EPG 902.6.3, ~~4F.05~~902.6.5, ~~4F.07~~902.6.7, ~~4F.10~~902.6.10, ~~4F.12~~902.6.12, and ~~4F.14~~902.6.14) for turn movements shall not be permitted to flash a CIRCULAR RED signal indication when the adjacent through movement signal indications are flashed yellow.

09 The appropriate RED ARROW or YELLOW ARROW signal indication shall be flashed when a signal face consists entirely of arrow indications. A signal face that consists entirely of arrow indications and that provides a protected only turn movement during the steady (stop-and-go) mode or that provides a flashing YELLOW ARROW ~~or flashing red arrow~~ signal indication for a permissive turn movement during the steady (stop-and-go) mode shall be permitted to flash the YELLOW ARROW signal indication during the flashing mode if the adjacent through movement signal indications are flashed yellow and if it is intended that a permissive turn movement not requiring a full stop by each turning vehicle be provided during the flashing mode.

Guidance:

M09A For dual or protected-only left turns programmed to flash, the indications should flash yellow arrow when the phasing was determined based on high traffic volumes. When the phasing was determined for intersection safety, the indications for the left-turn should flash red.

M09B Whether the signal flashes by cabinet wiring or controller programming, all signal indications should not flash simultaneously.

Support:

M09C Flashing all signal indications simultaneously causes a severe load fluctuation that reduces the life of the electrical equipment and can lead to malfunctions when the signal is in operation.

Additional language included in EPG. Revised Dec. 2025

Section 4G.04 Flashing Operation – Transition Out of Flashing Mode

Standard:

01 All changes from flashing mode to steady (stop-and-go) mode shall be made under one of the following procedures:

A. Yellow-red flashing mode: Changes from flashing mode to steady (stop-and-go) mode shall be made at the beginning of the major-street green interval (when a green signal indication is displayed to through traffic in both directions on the major street), or if there is no common major-street green interval, at the beginning of the green interval for the major traffic movement on the major street.

B. Red-red flashing mode: Changes from flashing mode to steady (stop-and-go) mode shall be made by changing the flashing red indications to steady red indications followed by appropriate green indications to begin the steady mode cycle. These green indications shall be the beginning of the major-street green interval (when a green signal indication is displayed to through traffic in both directions on the major street) or if there is no common major-street green interval, at the beginning of the green interval for the major traffic movement on the major street.

~~*Guidance:*~~

02 The steady red clearance interval provided during the change from red-red flashing mode to steady (stop-and-go) mode ~~*should*~~ shall have a minimum duration of 6 seconds.

EPG includes P2 as a Standard. Revised Dec. 2025

03 When changing from the yellow-red flashing mode to steady (stop-and-go) mode at a location where there is a common major-street green interval, the flashing red signal indications for the minor street ~~*should*~~ shall immediately change to steady red signal indications, and the flashing yellow signal indications for the through movements on the major street ~~*should*~~ shall change to green signal indications in both directions (after the minor-street signal indications have been steady red for a short time, if desired), or the flashing yellow signal indications for the through movements on the major street ~~*should*~~ shall change to steady yellow signal indications followed by a steady red clearance interval before changing to green signal indications in both directions.

MoDOT wants to upgrade new Guidance paragraph to a Standard. Revised Dec. 2025

Guidance:

04 When changing from the yellow-red flashing mode to steady (stop-and-go) mode at a location where there is no common major-street green interval, the flashing red signal indications for the minor street should immediately change to steady red signal indications, and the flashing yellow signal indications for the through movements on the major street should change to steady yellow signal indications followed by a steady red clearance interval before changing to green signal indications for the major traffic movement on the major street.

Standard:

05 During programmed changes out of flashing mode, no flashing yellow signal indication shall be terminated and immediately followed by a steady red or flashing red signal indication without first displaying a steady yellow signal indication.

~~Option:~~

~~06 Because special midblock signals that rest in flashing circular yellow in the position normally occupied by the green signal indication do not have a green signal indication in the signal face, these signals~~

~~may go directly from flashing circular yellow (in the position normally occupied by the green signal indication) to steady yellow without going first to a green signal indication.~~

CHAPTER 4H. BICYCLE SIGNALS [EPG 902.8]

Section 4H.01 Use of Bicycle Signal Faces

Guidance:

M00 Bicycle signals are not currently used on MoDOT facilities. When considering the use of bicycle signals the Highway Safety and Traffic Division should be contacted for guidance.

Option:

01 A bicycle signal face may be used to provide separate control of a bicyclist movement for various situations, including the following:

A. To provide a protected bicycle signal phase or a leading or lagging bicycle interval;
B. To continue a through bicycle lane on the right-hand side of a mandatory right-turn lane (or on the left-hand side of a mandatory left-turn lane) that would otherwise be in non-compliance with ~~Paragraph 1 of Section 9E.02 or Paragraph 7 of Section 9E.06~~the first paragraph of EPG 914.5.2 or the seventh paragraph of EPG 914.5.6;
C. To provide a bicycle interval for a counter-flow bicycle facility; or
D. To provide for unusual or unexpected arrangements of the bicyclist movement through complex intersections, conflict areas, or signal control.

02 A bicycle signal face may be used at a mid-block traffic control signal where there are no motor vehicle movements parallel to the bicycle crossing.

Support:

03 Chapter 4C contains information on warrants for the installation of a new traffic control signal.

Guidance:

04 The decision as to whether to incorporate a bicycle signal face(s) into a new traffic control signal design should be made during the engineering study performed in accordance with ~~Paragraph 1 of Section 4C.01~~the first standard paragraph of EPG 902.3.1.

05 Engineering judgment should be exercised in determining whether or not it would be advantageous or beneficial to install a bicycle signal face(s) at an existing traffic control signal.

Support:

06 Retrofitting existing circular traffic signals that are operated as bicycle signal faces with bicycle symbol signal faces is analogous to retrofitting existing traffic signals with pedestrian signals where such a determination is not required through an engineering study.

07 For the purpose of warrant analyses, provisions for classifying bicycles are provided in ~~Paragraph 16 of Section 4C.01 and Paragraph 2 of Section 9F.01~~the fifth option paragraph of EPG 902.3.1 and the second paragraph of EPG 914.6.1.

Standard:

08 If used, a bicycle signal face shall only be used to control bicyclist movements from a designated bicycle lane or from a separate facility, such as a shared-use path.

09 If used, a bicycle signal face shall only be used to control bicyclist movements where bicyclists moving on a GREEN BICYCLE or YELLOW BICYCLE signal indication are not in conflict with any simultaneous motor vehicle movement at the signalized location, including right (or left) turns on red.

Guidance:

10 If used where motor vehicle traffic can make the same movements as bicyclists, a bicycle signal face should only be used if the bicyclist movement controlled by the bicycle signal face is sometimes allowed to proceed or sometimes required to stop at times when motor vehicle traffic, making the same movement and controlled by other vehicular signal faces, is required to stop or allowed to proceed, respectively.

Section 4H.02 Prohibited Uses of Bicycle Signal Faces

Standard:

01 Bicycle signal faces shall not be used to control conflicting bicyclist movements from perpendicular or nearly perpendicular directions.

02 Bicycle signal faces shall not be used for controlling any bicyclist movement that is sharing an approach lane with motor vehicle traffic.

03 Bicycle signal faces shall not be used in any manner with respect to the design and operation of a hybrid beacon.

Section 4H.03 Bicycle Signal Signs

Support:

01 The primary purposes of the Bicycle Signal (R10-40, R10-40a, R10-41, R10-41a, R10-41b) sign (see Section 9B.22) are to inform road users that the signal indications in the bicycle signal face are intended only for bicyclists, and to inform bicyclists which specific bicyclist movements are controlled by the bicycle signal face.

Standard:

02 Except as provided in ~~Paragraph 3~~the subsequent paragraph ~~of this Section~~, a Bicycle Signal (R10-40, R10-40a, R10-41, R10-41a, or R10-41b) sign shall be installed immediately adjacent to (including above or below) every bicycle signal face. The Bicycle Signal sign shall have a minimum size of 24 inches x 36 inches if it is placed next to an overhead-mounted bicycle signal face and shall have a minimum size of 12 inches x 21 inches if it is placed next to a post-mounted bicycle signal face.

Option:

03 The Bicycle Signal sign may be omitted adjacent to a supplemental near-side bicycle signal face containing 4-inch indications.

Section 4H.04 Application of Bicycle Symbol Signal Indications during Steady (Stop-and-Go) Operation

Standard:

01 Steady bicycle symbol signal indications shall be applied as follows:

- **A. A steady RED BICYCLE signal indication shall be displayed when it is intended to prohibit bicyclists in a designated bicycle lane or from a separate facility such as a shared-use path from entering the intersection or other controlled area. Turning after stopping shall be permitted as stated in Item C in ~~Paragraph 1 of Section 4A.05~~the first Standard paragraph of EPG 902.1.5.**
- **B. A steady YELLOW BICYCLE signal indication shall be displayed following a GREEN BICYCLE signal indication in the same bicycle signal face. A YELLOW BICYCLE signal indication shall not be displayed in conjunction with the change from the RED BICYCLE signal indication to a GREEN BICYCLE signal indication. The YELLOW BICYCLE signal indication shall be followed by a RED BICYCLE signal indication.**
- **C. A steady GREEN BICYCLE signal indication shall be displayed only when it is intended to permit bicyclists in a designated bicycle lane or from a separate facility such as a shared-use path to enter the intersection as discussed in Section 4A.05.**

Section 4H.05 Application of Bicycle Symbol Signal Indications during Flashing Operation

Standard:

01 The mode of operation of the bicycle signal faces at a traffic control signal shall be the same as the mode of operation of the other traffic signal faces at the same signalized location. Bicycle signal faces shall operate in the steady (stop-and-go) mode when the other traffic signal faces are operating in the steady (stop-and-go) mode. Bicycle signal faces shall operate in the flashing mode when the other signal faces are operating in the flashing mode. Bicycle signal faces shall not be placed in a dark mode when other vehicular traffic signal faces are operating in the flashing mode.

Guidance:

02 When a traffic control signal is operated in the flashing mode, bicycle signal faces should display a flashing RED BICYCLE signal indication if the other vehicular signal faces on the same approach are displaying flashing red signal indications or if there are no other vehicular signal faces on the same approach.

03 When a traffic control signal is operated in the flashing mode, bicycle signal faces should display a flashing YELLOW BICYCLE signal indication if the other vehicular signal faces for the through lanes on the same approach are displaying flashing yellow signal indications unless it is determined by engineering judgment that a flashing RED BICYCLE signal indication would provide a safer operation.

Section 4H.06 Layout of Bicycle Signal Faces

Standard:

01 Bicycle signal faces shall consist of all bicycle symbol signal indications (see Figure 4H-1). Circular or arrow signal indications shall not be used in a bicycle signal face.

Option:

02 Bicycle signal faces may be oriented vertically or horizontally.

Standard:

03 The layouts and arrangements of the bicycle signal face shall be in accordance with the following provisions:

- **A. Only the bicycle symbol shown on Page 6-7 in the FHWA 2004 Standard Highway Signs publication (see Section 1A.05) shall be used for bicycle symbol signal indications and shall be proportioned to fit within the signal lens. The bicycle symbol shall only be positioned horizontally and shall face to the left.**
- **B. The RED BICYCLE, YELLOW BICYCLE, and GREEN BICYCLE signal indications shall be in the same relative position to each other as specified for the CIRCULAR RED, CIRCULAR YELLOW, and CIRCULAR GREEN signal indications, respectively, in Sections 4E.04 and 4E.05.**
- **C. As a specific exception to ~~Paragraph 5~~the first option paragraph of ~~Section 4E.04~~EPG 902.5.4, two YELLOW BICYCLE signal indications or two GREEN BICYCLE signal indications shall not be arranged horizontally adjacent to each other at right angles to the basic straight line arrangement to form a clustered signal face.**

Option:

04 Backplates (see ~~Paragraphs 18 and 19 in Section 4D.06~~the second support paragraph and tenth standard paragraph of EPG 902.4.6) may be used with bicycle signal faces.

05 If a bicycle signal face having 4-inch signal indications is used, the accompanying visors may be omitted.

Figure 4H-1. Typical Arrangements of Bicycle Signal Faces



Section 4H.07 Size of Bicycle Symbol Signal Indications

Standard:

01 There shall be three nominal diameter sizes for bicycle signal indications: 4 inches, 8 inches, and 12 inches.

M01A All signal indications to be maintained by MoDOT shall be 12 inches.

Standardizing the size is beneficial for maintenance. Revised Dec. 2025

02 All signal indications in a bicycle signal face shall be of the same size.

03 Four-inch signal indications shall not be used for any bicycle signal face other than a supplemental, post-mounted, near-side bicycle signal face.

Section 4H.08 Placement of Bicycle Signal Faces

Standard:

01 The provisions of Sections 4D.05 through 4D.08 shall apply to the placement of the bicycle signal faces except as follows:

- **A. As a specific exception to Item A in ~~Paragraph 1 of Section 4D.05~~the first standard paragraph of EPG 902.4.5, a minimum of one primary bicycle signal face shall be provided to control traffic for the bicyclist movement, even if a bicyclist through movement exists.**
- **B. The primary bicycle signal face shall have either 8-inch or 12-inch signal indications, even if it is located at the near side of the signal-controlled location.**
- **C. When the primary bicycle signal face is located more than 120 feet beyond the stop line, a supplemental near-side bicycle signal face shall be provided.**

Guidance:

02 When the primary bicycle signal face is located more than 80 feet and up to 120 feet beyond the stop line, a supplemental near-side bicycle signal face should be provided.

03 A bicycle signal face should be separated horizontally or vertically from the nearest vehicular traffic signal face for the same approach by at least 3 feet measured either horizontally perpendicular to the approach between the centers of the signal faces or vertically from the center of the lowest signal indication of the top signal face to the center of the highest signal indication of the bottom signal face. If horizontally-arranged or clustered signal faces are used, the minimum 3-foot horizontal separation between the two signal faces should be measured from the center of the right-most signal indication in the signal face on the left to the center of the left-most signal indication in the signal face on the right.

04 Bicycle signal faces should be placed such that visibility is maximized for bicyclists and minimized for adjacent or conflicting vehicle movements not controlled by the bicycle signal face. Consideration should be given to using visibility-limited bicycle signal faces in situations where drivers not controlled by the bicycle signal face might be confused by viewing the bicycle signal indications, such as when the bicyclist movement controlled by the bicycle signal face is sometimes allowed to proceed or sometimes required to stop at times when motor vehicle traffic, making the same movement and controlled by other vehicular signal faces, is required to stop or allowed to proceed, respectively.

Section 4H.09 Mounting Height of Bicycle Signal Faces

Standard:

01 The provisions of Section 4D.09 shall apply to the mounting height of bicycle signal faces except as follows:

- **A. The bottom of the signal housing (including brackets) of a bicycle signal face that is not located over a roadway or shoulder shall be a minimum of 7 feet above the sidewalk or ground, and**
- **B. If 4-inch signal indications are used in a supplemental, post-mounted, near-side bicycle signal face, the bottom of the signal housing (including brackets) shall be a minimum of 4 feet and a maximum of 8 feet above the sidewalk or ground. Bicycle signal faces with 4-inch signal indications installed above a pedestrian sidewalk or pathway shall not project more than 4 inches into the pedestrian facility.**

Section 4H.10 Intensity and Light Distribution of Bicycle Signal Faces

Guidance:

01 Except for the 4-inch nominal size of the lens diameter, the intensity and distribution of light from each illuminated bicycle signal face should be similar to that recommended for vehicular traffic signal faces

in accordance with ~~Paragraph 11~~the tenth standard paragraph of ~~Section 4E.01~~EPG 902.5.1 to the extent practical.

Section 4H.11 Yellow Change and Red Clearance Intervals for Bicycle Signal Faces

Standard:

01 The provisions of ~~Section 4F.17~~EPG 902.6.17 shall apply to the duration of the yellow change and the red clearance intervals of a bicycle signal phase.

Guidance:

02 The minimum duration of the yellow change interval of a bicycle signal phase should be 3 seconds.

Support:

03 The function of the yellow change interval is to warn bicyclists approaching a signalized location that their permission to proceed is being terminated after which they will be directed to stop. Providing clearance time for a bicyclist to travel through the intersection or conflict area is the purpose of the red clearance interval rather than the yellow change interval.

Section 4H.12 Bicycle Push Buttons

Option:

01 Bicycle push buttons may be used for bicycle detection.

Support:

02 The location of bicycle push buttons intended only for use by bicyclists and not pedestrians are determined by engineering judgment considering a reasonable reach without requiring most bicyclists to dismount.

Standard:

03 Where used, push buttons intended to be used by both pedestrians and bicyclists shall be located and operated to meet all accessibility requirements (see Section 4I.05).

04 Bicycle push buttons shall be accompanied by an appropriate regulatory sign (R10-4, R10-24, or R10-26) explaining the purpose and operation of the push button (see Sections 2B.58 and 9B.20).

CHAPTER 4I. PEDESTRIAN CONTROL FEATURES [EPG 902.9]

Section 4I.01 Pedestrian Signal Heads

Support:

01 Pedestrian signal heads provide special types of traffic signal indications exclusively intended for controlling pedestrians. These signal indications consist of the illuminated symbols of a WALKING PERSON (symbolizing WALK) and an UPRAISED HAND (symbolizing DONT WALK).

02 Section 4D.02 contains information on when to use pedestrian signal heads.

03 Accessible pedestrian~~s~~ signals (see ~~Chapter 4K~~EPG 902.11) where pedestrian signal heads 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.

04 ~~Chapter 4J~~EPG 902.10 contains information regarding the use of pedestrian hybrid beacons and ~~Chapter 4U~~EPG 902.20 contains information regarding the use of In-Roadway Warning Lights at unsignalized marked crosswalks.

Section 4I.02 Size, Design, and Illumination of Pedestrian Signal Head Indications

Guidance:

M00 All pedestrian signal head indications at an intersection should be of the same size and design.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

01 All new pedestrian signal head indications shall be displayed within a rectangular background and shall consist of symbolized messages (see Figure 4I-1), except that existing pedestrian signal head indications with lettered or outline style symbol messages shall be permitted to be retained for the remainder of their useful service life. The symbol designs that are set forth in the "Standard Highway Signs" publication (see Section 1A.05) shall be used. Each pedestrian signal head indication shall be independently displayed and emit a single color.

M01A All new pedestrian signal indications shall be Light Emitting Diode (LED).

MoDOT requires all signal indications to be single section LED's with countdown timers. Revised Dec. 2025

02 ~~If a two-section pedestrian signal head is used, the UPRAISED HAND (symbolizing DONT WALK) signal section shall be mounted directly above the WALKING PERSON (symbolizing WALK) signal section. If a one-section pedestrian signal head is used, the~~ One section pedestrian signal heads shall include the UPRAISED HAND (symbolizing DONT WALK) and the WALKING PERSON (symbolizing WALK) symbols ~~shall be either~~ overlaid upon each other ~~or arranged side-by-side with the UPRAISED HAND symbol to the left of the WALKING PERSON symbol~~, and a light source that can display each symbol independently shall be used.

03 The WALKING PERSON (symbolizing WALK) signal indication shall be white~~, with all except the symbol obscured by an opaque material for signal optical units that use incandescent lamps within optical assemblies that include lenses~~. The UPRAISED HAND (symbolizing DONT WALK) signal indication shall be Portland orange~~, with all except the symbol obscured by an opaque material for signal optical units that use incandescent lamps within optical assemblies that include lenses~~.

04 ~~Except as provided in Paragraph 5 of this Section, the requirements of Chapter 3 of the publication entitled "Equipment and Materials Standards of the Institute of Transportation Engineers," 2008, ITE, that pertain to the aspects of the pedestrian signal head design that affect the display of the signal indications shall be met for signal optical units that use incandescent lamps within optical assemblies that include lenses. Except as provided in Paragraph 5 of this Section, t~~The requirements of the publication entitled "Pedestrian Traffic Control Signal Indicators – Light Emitting Diode (LED) Signal Modules," 2011, ITE, that pertain to the aspects of the signal head design that affect the display of the signal indications shall be met for light-emitting diode (LED) pedestrian signal head modules.

Guidance:

05 The intensity and distribution of light from each ~~illuminated pedestrian signal lens or~~ LED pedestrian signal head module should comply with the publications specified in ~~Paragraph 4 of~~ the preceding paragraph ~~this Section~~, as appropriate.

Standard:

06 When not illuminated, the WALKING PERSON (symbolizing WALK) and UPRAISED HAND (symbolizing DONT WALK) symbols ~~should~~ shall not be readily visible to pedestrians at the far end of the crosswalk that the pedestrian signal head indications control.

MoDOT modifies this statement to a Standard, as it was in the 2009 Edition. Revised Dec. 2025

~~**Standard:**~~

07 For pedestrian signal head indications, the symbols shall be at least 9 ~~6~~ inches high.

MoDOT requires 9-inch symbols for pedestrian signal indications. Revised Dec. 2025

08 The light source of a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication shall be flashed continuously at a rate of not less than 50 or more than 60 times per minute. The displayed period of each flash shall be a minimum of ½ and a maximum of ⅔ of the total flash cycle.

Guidance:

09 Pedestrian signal head indications should be conspicuous and recognizable to pedestrians at all distances from the beginning of the controlled crosswalk to a point 10 feet from the end of the controlled crosswalk during both day and night.

~~*10 For crosswalks where the pedestrian enters the crosswalk more than 100 feet from the pedestrian signal head indications, the symbols should be at least 9 inches high.*~~

In paragraph 7, MoDOT requires 9 inches high for pedestrian signal indications. Revised Dec. 2025

11 If the pedestrian signal indication is so bright that it causes excessive glare in nighttime conditions, some form of automatic dimming should be used to reduce the brilliance of the signal indication.

~~Option:~~

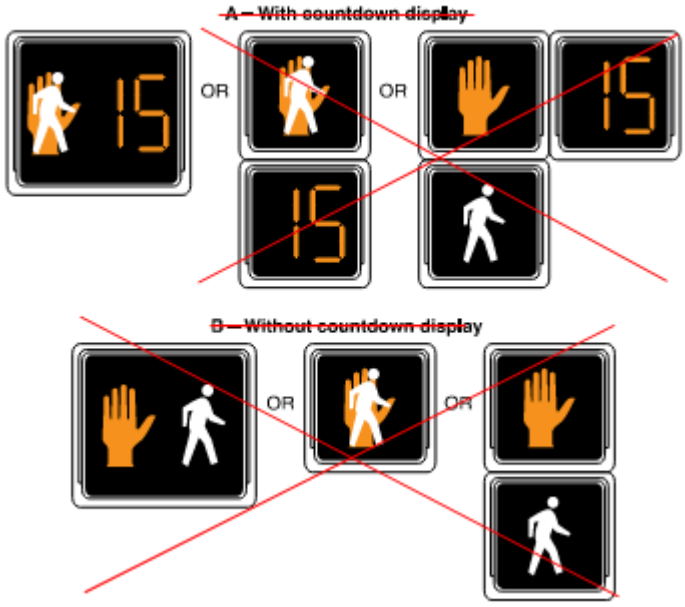
~~12 An animated eyes symbol may be added to a pedestrian signal head in order to prompt pedestrians to look for vehicles in the intersection during the time that the WALKING PERSON (symbolizing WALK) signal indication is displayed.~~

~~**Standard:**~~

~~**13 If used, the animated eyes symbol shall consist of an outline of a pair of white steadily illuminated eyes with white eyeballs that scan from side to side at a rate of approximately once per second. The animated eyes symbol shall be at least 12 inches wide with each eye having a width of at least 5 inches and a height of at least 2.5 inches. The animated eyes symbol shall be illuminated at the start of the walk interval and shall terminate at the end of the walk interval.**~~

MoDOT does not use the animated eyes symbol. Revised Dec. 2025

Figure 4I-1. Typical Pedestrian Signal Indications



Section 4I.03 Location and Height of Pedestrian Signal Heads

Standard:

01 Pedestrian signal heads shall be mounted with the bottom of the signal housing including brackets not less than 7 feet or more than 10 feet above sidewalk level, and shall be positioned and adjusted to provide maximum visibility at the beginning of the controlled sidewalk.

Guidance:

02 If pedestrian signal heads are mounted on the same support as vehicular signal heads, there should be a physical separation between them.

Section 4I.04 Countdown Pedestrian Signals

Standard:

01 All pedestrian signal heads used at crosswalks ~~where the pedestrian change interval is more than 7 seconds~~ shall include a pedestrian change interval countdown display in order to inform pedestrians of the number of seconds remaining in the pedestrian change interval.

~~Option:~~

~~02 Pedestrian signal heads used at crosswalks where the pedestrian change interval is 7 seconds or less may include a pedestrian change interval countdown display in order to inform pedestrians of the number of seconds remaining in the pedestrian change interval.~~

MoDOT uses countdown displays for all pedestrian signal heads. Revised Dec. 2025

Standard:

03 ~~Where countdown pedestrian signals are used, the~~ The countdown display shall always be displayed simultaneously with the flashing UPRAISED HAND (symbolizing DONT WALK) signal indication displayed for that crosswalk.

04 Countdown pedestrian signals shall consist of Portland orange numbers that are at least 9 ~~6~~ inches in height on a black opaque background. The countdown pedestrian signal shall be located immediately adjacent to the associated UPRAISED HAND (symbolizing DONT WALK) pedestrian signal head indication (see Figure 4I-1).

MoDOT requires numbers to be 9 inches high for countdown displays. Revised Dec. 2025

05 The display of the number of remaining seconds shall begin only at the beginning of the pedestrian change interval (flashing UPRAISED HAND). After the countdown displays zero, the display shall remain dark until the beginning of the next countdown.

06 The countdown pedestrian signal shall display the number of seconds remaining until the termination of the pedestrian change interval (flashing UPRAISED HAND). Countdown displays shall not be used during the walk interval. Countdown displays shall not be used during the red clearance interval of a concurrent vehicular phase that is ending simultaneously with or after the end of the pedestrian phase.

Guidance:

07 If used with a pedestrian signal head that does not have a concurrent vehicular phase, the pedestrian change interval (flashing UPRAISED HAND) should be set to be approximately 4 seconds less than the required pedestrian clearance time (see ~~Section 4I.06~~EPG 902.9.6) and an additional clearance interval (during which a steady UPRAISED HAND is displayed) should be provided prior to the start of the conflicting vehicular phase.

~~*08 For crosswalks where the pedestrian enters the crosswalk more than 100 feet from the countdown pedestrian signal display, the numbers should be at least 9 inches in height.*~~

In paragraph 4, MoDOT requires numbers to be 9 inches high for countdown displays. Revised Dec. 2025

09 Because some technology includes the countdown pedestrian signal logic in a separate timing device that is independent of the timing in the traffic signal controller, care should be exercised by the engineer when timing changes are made to pedestrian change intervals.

10 If the pedestrian change interval is interrupted or shortened as a part of a transition into a preemption sequence (see Section 4F.19), the countdown pedestrian signal display should be discontinued and go dark immediately upon activation of the preemption transition.

Section 4I.05 Pedestrian Detectors

Option:

01 Pedestrian detectors may be push buttons or passive detection devices.

Support:

02 Passive detection devices register the presence of a pedestrian in a position indicative of a desire to cross, without requiring the pedestrian to push a button. Some passive detection devices are capable of tracking the progress of a pedestrian as the pedestrian crosses the roadway for the purpose of extending or shortening the duration of certain pedestrian timing intervals.

03 The provisions in this ~~Section~~Article place pedestrian push buttons within easy reach of pedestrians who are intending to cross each crosswalk and make it obvious which push button is associated with each crosswalk. These provisions also position push button poles in optimal locations for installation of accessible pedestrian signals (see ~~Chapter 4K~~EPG 902.11). Information regarding reach ranges can be found in the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Guidance:

04 If pedestrian push buttons are used, they should be capable of easy activation requiring no more than 3.5 ~~5~~ pounds of force, should not require tight grasping, pinching, or twisting of the wrist, and should be conveniently located near each end of the crosswalks. Except as provided in ~~Paragraphs 5 and 6 of~~ the two subsequent paragraphs ~~this Section~~, pedestrian push buttons should be located to meet all of the following criteria (see Figure 4I-2):

A. Unobstructed and accessible within one or more of the reach ranges specified in Section 308, and from a clear ground space as specified in Section 305, of the 2010 ADA Standards for Accessible Design;

B. To provide a wheelchair accessible route from the push button to the ramp;

C. On the side of the curb ramp which is farthest from the center of the intersection;

D. *Not greater than 10 feet from the edge of the associated curb ramp which is farther from the center of the intersection;*

E. *Not greater than 5 feet from the outside edge of the marked crosswalk farthest from the center of the intersection;*

F. *Not farther from the crosswalk than the stop line is, if present;*

G. *Between ~~1.5~~ 30 inches and 6 feet from the face of the curb or from the outside edge of the shoulder (or if no shoulder exists, from the edge of the pavement);*

H. *With the face of the push button parallel to the crosswalk to be used;*

I. *At a mounting height of approximately 3.5 feet, but no more than 4 feet, above the sidewalk;*

J. *Allowing a minimum 4-foot continuous clear width for a pedestrian access route; and*

K. *Outside the flared side of the curb ramp, if present.*

MoDOT modifies some push button requirements to make them more stringent. Revised Dec. 2025

05 Where there are physical constraints that make it impracticable to place the pedestrian push button adjacent to a level all-weather surface, the surface should be as level as feasible.

06 Where there are physical constraints that make it impracticable to place the pedestrian push button between ~~1.5~~ 30 inches and 6 feet from the face of the curb or from the outside edge of the shoulder (or if no shoulder exists, from the edge of the pavement), it should not be farther than 10 feet from the face of the curb or from the outside edge of the shoulder (or if no shoulder exists, from the edge of the pavement).

07 Except as provided in ~~Paragraph 8 of~~ the subsequent paragraph ~~this Section~~, where two pedestrian push buttons are provided on the same corner of a signalized location, the push buttons should be separated by a distance of at least 10 feet.

Option:

08 Where there are physical constraints on a particular corner that make it impracticable to provide the 10-foot separation between the two pedestrian push buttons the push buttons may be placed closer together or on the same pole.

Support:

09 Figure 4I-3 shows typical pedestrian push button locations for a variety of situations.

Standard:

10 If a pedestrian push button is provided, a sign (see Section 2B.58) shall also be installed adjacent to the pedestrian push button detector explaining the purpose and use.

Option:

11 At certain locations, a supplemental sign in a more visible location may be used to call attention to the pedestrian push button.

Standard:

12 The positioning of pedestrian push buttons and the legends on the pedestrian push button signs shall indicate which crosswalk signal is actuated by each pedestrian push button.

13 If the pedestrian clearance time is sufficient only to cross from the curb or shoulder to a median of sufficient width for pedestrians to wait and the signals are pedestrian actuated, an additional pedestrian detector shall be provided in the median.

Guidance:

14 The use of additional pedestrian detectors on islands or medians where a pedestrian might become stranded should be considered.

15 If used, special purpose push buttons (to be operated only by authorized persons) should include a housing capable of being locked to prevent access by the general public and do not need an instructional sign.

Standard:

16 If used, a pilot light or other means of indication installed with a pedestrian push button shall not be illuminated until actuation. Once it is actuated, the pilot light shall remain illuminated until the pedestrian's green or WALKING PERSON (symbolizing WALK) signal indication is displayed.

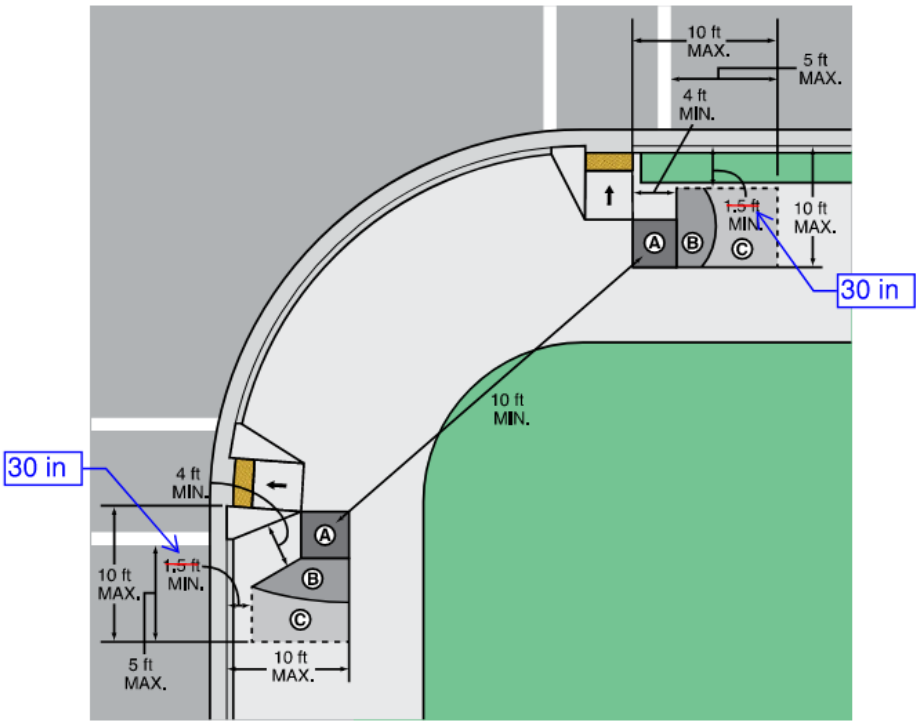
~~Option:~~

~~17 At signalized locations with a demonstrated need and subject to equipment capabilities, pedestrians with special needs may be provided with additional crossing time by means of an extended push button press.~~

~~**Standard:**~~

~~**18 If additional crossing time is provided by means of an extended push button press, a PUSH BUTTON FOR 2 SECONDS FOR EXTRA CROSSING TIME (R10-32P) plaque (see Figure 2B-27) shall be installed adjacent to the pedestrian push button detector.**~~

Figure 4I-2. Preferred Push Button Location Area



Notes:

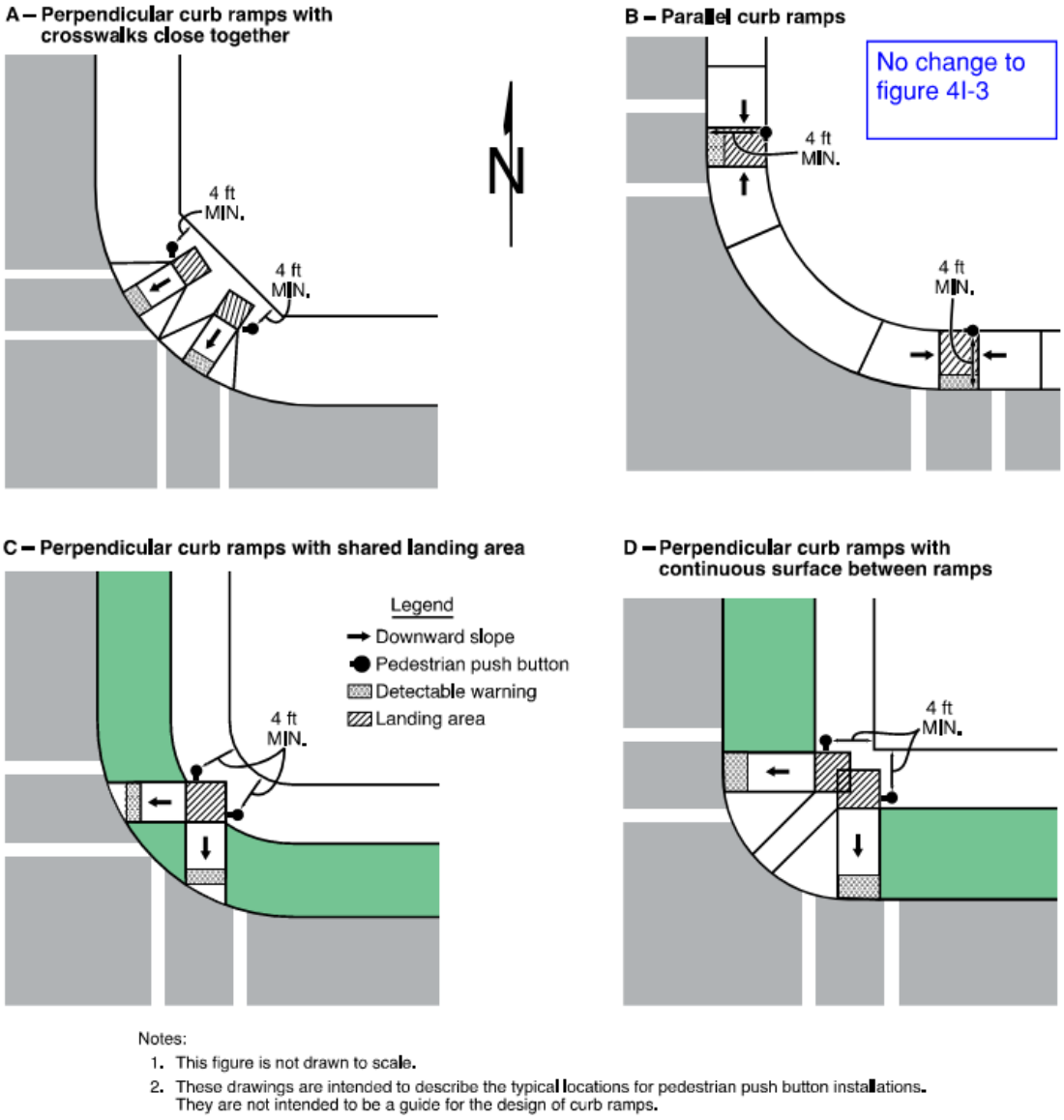
1. The push button detector should be located 5 feet or less from the outside edge of the marked crosswalk farthest from the intersection.
2. The push button detector should be located no farther from the crosswalk than the stop line, if one is present.
3. A 4-foot minimum unobstructed pedestrian access route should be maintained.
4. The maximum (MAX.) and minimum (MIN.) dimensions shown in this figure are recommendations.
5. Two pedestrian push buttons on the same corner should be separated by at least 10 feet. The 10-foot dimension shown in this figure is in reference to the placement of the push buttons within their respective areas.
6. Figure 4I-3 shows typical push button locations.
7. This figure is not drawn to scale.



Legend

- Downward slope
- A — Preferred location for push button
- B — Acceptable location for push button
- C — Acceptable, but less desirable

Figure 4I-3. Typical Push Button Locations



Notes:
1. This figure is not drawn to scale.
2. These drawings are intended to describe the typical locations for pedestrian push button installations. They are not intended to be a guide for the design of curb ramps.

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~~ the third standard paragraph of EPG 902.10.3, 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. This requirement for a steady red signal indication does not apply to permissive turning movements.

Statement added for clarification of paragraph 2. Revised Dec. 2025

~~**Standard:**~~

M02A A WALKING PERSON (symbolizing WALK) signal indication or a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication shall not be active during a phase or interval which leads vehicles into the crosswalk.

MoDOT specific content from the EPG. Revised Dec. 2025

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~~3 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~~ from the ninth through nineteenth paragraphs of this ~~Section~~Article). The buffer interval shall not begin later than the beginning of the red clearance interval, if used.

MoDOT uses a 3 second buffer as was included in the 2009 Edition of the MUTCD. This modification is made to provide added safety for vulnerable road users. Revised Dec. 2025

Option:

05 During the yellow change interval, the UPRAISED HAND (symbolizing DON'T WALK) signal indication 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.

M06A See EPG 903.23 for information related to MoDOT signal phasing and timing.

Guidance:

07 Except as provided in ~~Paragraph 8~~the subsequent paragraph ~~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 documented engineering judgement supports the use. ~~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.~~

MoDOT specific content from the EPG. Revised because MoDOT does not use the extended push button function to extend pedestrian clearance times and does not want pedestrian clearance times automatically adjusted. Revised Dec. 2025

~~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.~~

MoDOT does not use the extended push button function for extended pedestrian clearance times. Revised Dec. 2025

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~~the subsequent paragraph ~~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.

M13A Confusion is common among pedestrians as to the meaning of the pedestrian signal indications. This can result in a pedestrian turning back once the walk interval expires and not using the pedestrian change interval (flashing UPRAISED HAND) to complete their crossing. Countdown pedestrian indications (see EPG 902.9.4) and traffic signal pedestrian and bicyclist actuation signs (see Section 2B.58) can help mitigate confusion issues instead of lengthening the walk interval, since the pedestrian change interval is the critical time.

MoDOT specific content from the EPG. Revised Dec. 2025

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:

M14A An exclusive pedestrian phase may be needed for pedestrian movements as determined by engineering judgement.

MoDOT specific content from the EPG. Revised Dec. 2025

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~~EPG 902.9.5 and ~~4K.01~~902.11.1) 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~~EPG 902.11) 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~~ 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~~EPG 902.11) 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.

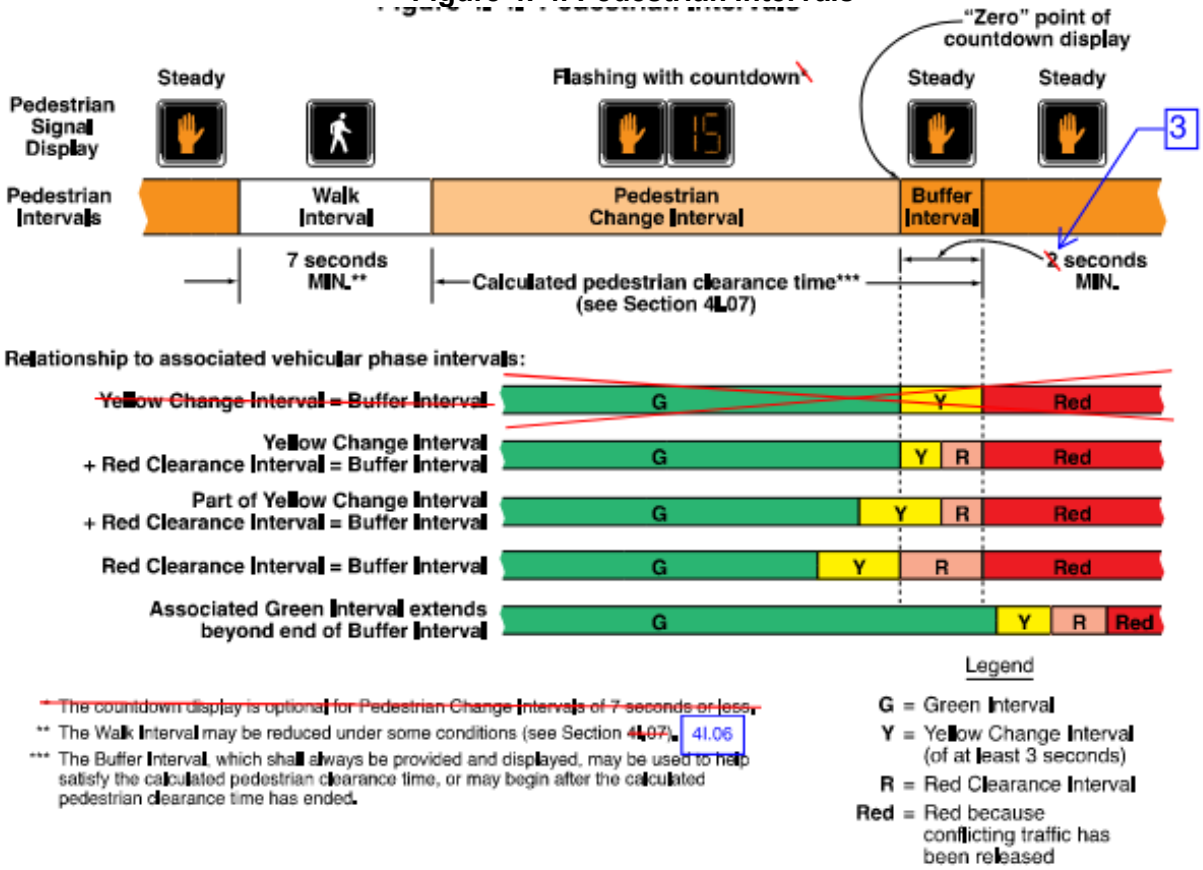
23 If a leading pedestrian interval is used, consideration should be given to prohibiting turns across the crosswalk during the leading pedestrian interval.

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.

Figure 4I-4. Pedestrian Intervals



CHAPTER 4J. PEDESTRIAN HYBRID BEACONS [EPG 902.10]

Section 4J.01 Application of Pedestrian Hybrid Beacons

Support:

01 A pedestrian hybrid beacon is a special type of 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.

Option:

02 A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C), or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal.

Standard:

03 If used, pedestrian hybrid beacons shall be used in conjunction with signs and pavement markings (see ~~Section 4J.02~~EPG 902.10.2) to warn and control traffic at locations where pedestrians enter or cross a street or highway. A pedestrian hybrid beacon shall only be installed at a marked crosswalk.

Guidance:

04 If one of the signal warrants of Chapter 4C is met and a traffic control signal is justified by an engineering study, and if a decision is made to install a traffic control signal, it should be installed based upon the provisions of Chapters 4D through 4I and 4K.

05 If a traffic control signal is not justified under the signal warrants of Chapter 4C and if gaps in traffic are not adequate to permit pedestrians to cross, or if the speed for vehicles approaching on the major street is too high to permit pedestrians to cross, or if pedestrian delay is excessive, the need for a pedestrian hybrid beacon should be considered on the basis of an engineering study that considers major-street volumes, speeds, widths, and gaps in conjunction with pedestrian volumes, walking speeds, and delay.

06 For a major street where the posted or statutory speed limit or the 85th-percentile speed is 35 mph or less, the need for a pedestrian hybrid beacon should be considered if the engineering study finds that the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding total of all pedestrians crossing the major street for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4J-1 for the length of the crosswalk.

07 For a major street where the posted or statutory speed limit or the 85th-percentile speed exceeds 35 mph, the need for a pedestrian hybrid beacon should be considered if the engineering study finds that the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding total of all pedestrians crossing the major street for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4J-2 for the length of the crosswalk.

08 For crosswalks that have lengths other than the four that are specifically shown in Figures 4J-1 and 4J-2, the values should be interpolated between the curves.

Option:

09 The criteria for the pedestrian volume crossing the major street shown in Figures 4J-1 and 4J-2 may be reduced as much as 50 percent if the 15th-percentile crossing speed of pedestrians is less than 3.5 feet per second.

10 Where there is a divided street having a median of sufficient width for pedestrians to wait, the criteria for the major-street traffic volume shown in Figures 4J-1 and 4J-2 may be applied separately to each direction of vehicular traffic. Satisfaction of the criteria for one direction of traffic allows for installation of a pedestrian hybrid beacon for the entire crossing.

Clarification for situations where the criteria is met for installation of pedestrian hybrid beacons for only one direction of travel. Revised Dec. 2025

Standard:

M11 If a pedestrian hybrid beacon is considered for a location that does not meet the criterion listed in this article, an engineering study shall be submitted and approved by the State Traffic Engineer prior to installation.

Figure 4J-1. Guidelines for the Installation of Pedestrian Hybrid Beacons on Low-Speed Roadways

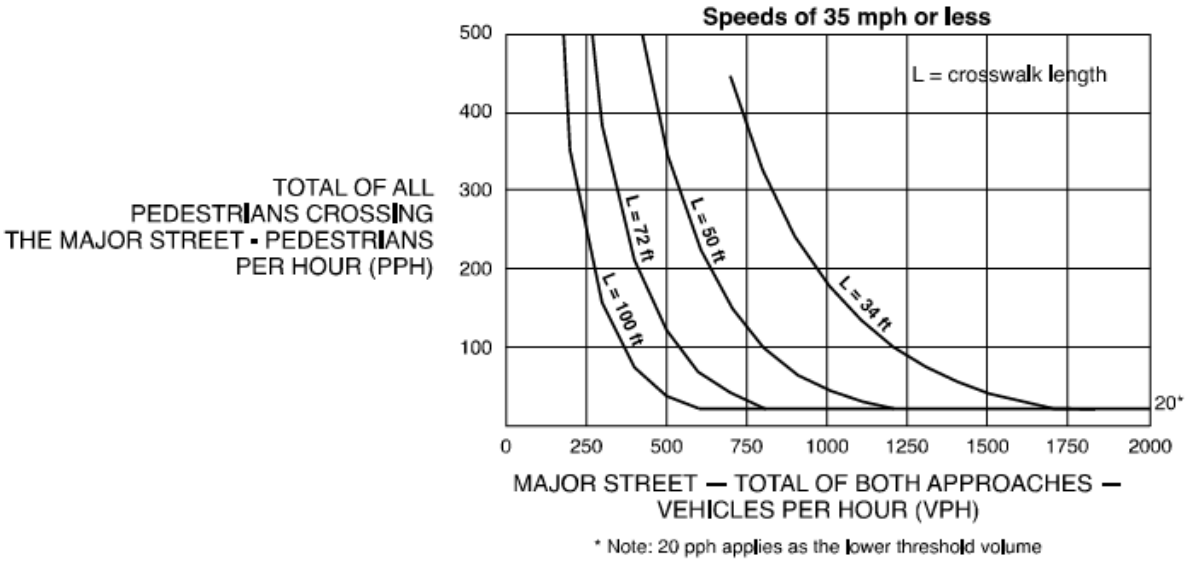
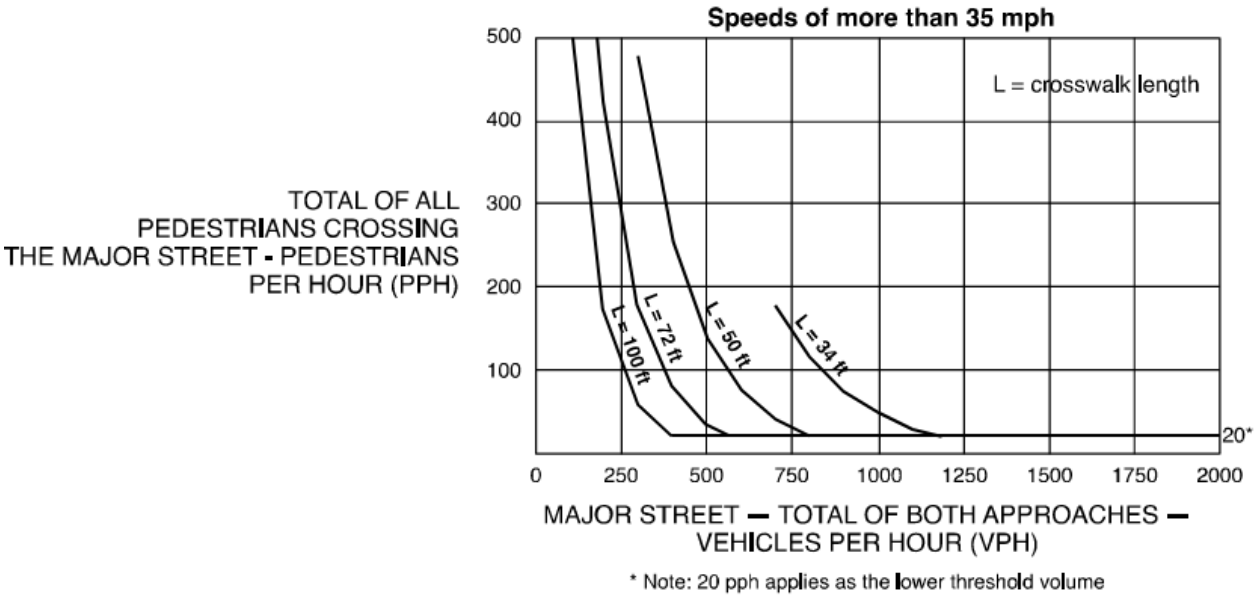


Figure 4J-2. Guidelines for the Installation of Pedestrian Hybrid Beacons on High-Speed Roadways



Section 4J.02 Design of Pedestrian Hybrid Beacons

Standard:

01 Except as otherwise provided in this ~~Section~~Article, a pedestrian hybrid beacon shall meet the provisions of Chapters 4D through 4G, ~~4I~~902.9, and ~~4J~~902.10.

02 A pedestrian hybrid beacon face shall consist of three signal sections, with a CIRCULAR YELLOW signal indication centered below two horizontally-aligned CIRCULAR RED signal indications (see Figure 4J-3).

03 When an engineering study finds that installation of a pedestrian hybrid beacon is justified, then:

- **A. At least two pedestrian hybrid beacon faces shall be installed for each approach of the major street;**
- **B. A stop line shall be installed for each approach to the crosswalk;**
- **C. A pedestrian signal head complying with the provisions set forth in ~~Chapter 4I~~EPG 902.9 shall be installed at each end of the marked crosswalk;**
- **D. The pedestrian hybrid beacon shall be pedestrian actuated; and**
- **E. If the pedestrian hybrid beacon is installed at or immediately adjacent to an intersection with a minor street, a STOP sign shall be installed for each minor-street approach.**

Guidance:

04 When an engineering study finds that installation of a pedestrian hybrid beacon is justified, then:

- *A. Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk, or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance; and*
- *B. If installed within a signal system, the pedestrian hybrid beacon should be coordinated.*

05 On approaches having posted or statutory speed limits or 85th-percentile speeds in excess of 35 mph and on approaches having traffic or operating conditions that would tend to obscure visibility of roadside hybrid beacon face locations, both of the minimum of two pedestrian hybrid beacon faces should be installed over the roadway.

06 On multi-lane approaches having posted or statutory speed limits or 85th-percentile speeds of 35 mph or less, either a pedestrian hybrid beacon face should be installed on each side of the approach (if a median of sufficient width exists) or at least one of the pedestrian hybrid beacon faces should be installed over the roadway.

07 A pedestrian hybrid beacon should comply with the signal face location provisions described in Sections 4D.05 through 4D.10.

~~Option~~ **Standard:**

08 A CROSSWALK—STOP ON RED (symbolic circular red) (R10-23) or a STOP ON ~~STEADY~~ RED—YIELD ON FLASHING RED AFTER STOP (R10-23a) sign (see Section 2B.59) ~~may be installed facing~~ shall be mounted adjacent to a pedestrian hybrid beacon face on each major street approach. If an overhead pedestrian hybrid beacon face is provided, the sign shall be mounted adjacent to the overhead signal face.

MoDOT maintains the language from the 2009 Edition for this paragraph. Revised Dec. 2025

Option:

09 A W11-2 (Pedestrian), S1-1 (School), or W11-15 (Trail) crossing warning sign with an AHEAD (W16-9P) supplemental plaque may be placed in advance of a pedestrian hybrid beacon. A Warning Beacon may be installed to supplement the W11-2, S1-1, or W11-15 sign.

Standard:

10 Backplates (see Section 4D.06) ~~may~~ shall be used with pedestrian hybrid beacons.

MoDOT uses backplates for pedestrian hybrid beacons. Revised Dec. 2025

Support:

11 Accessible pedestrian signals (see ~~Chapter 4K~~EPG 902.11) where a pedestrian hybrid beacon is 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.

Guidance:

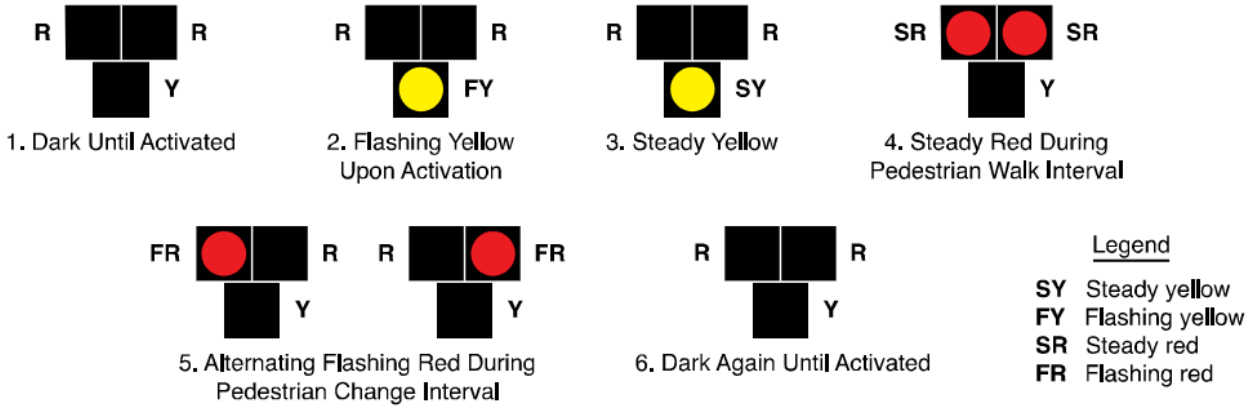
12 If a Warning Beacon supplements a W11-2 sign in advance of a pedestrian hybrid beacon, it should be programmed to flash only when the pedestrian hybrid beacon is not in the dark mode.

Standard:

13 If a Warning Beacon is installed to supplement the W11-2 sign, the design and location of the Warning Beacon shall comply with the provisions of ~~Sections 4S.01~~EPG 902.18.1 and ~~4S.03~~902.18.3.

14 Bicycle signal faces (see Chapter 4H) shall not be used at a pedestrian hybrid beacon.

Figure 4J-3. Sequence for a Pedestrian Hybrid Beacon



Note: An optional steady red clearance interval may be added after Interval 3, and an optional short buffer interval (alternating flashing red while the pedestrian signal heads are displaying a steady UPRAISED HAND) may be added after Interval 5.

Section 4J.03 Operation of Pedestrian Hybrid Beacons

Standard:

01 Pedestrian hybrid beacon indications shall be dark (not illuminated) during periods between actuations.

02 Following an actuation by a pedestrian, a pedestrian hybrid beacon face shall display a flashing CIRCULAR YELLOW signal indication, followed by a steady CIRCULAR YELLOW signal indication, followed by both steady CIRCULAR RED signal indications during the pedestrian walk interval, followed by alternating flashing CIRCULAR RED signal indications during the pedestrian change interval (see Figure 4J-3). Upon termination of the pedestrian change interval, the pedestrian hybrid beacon faces shall revert to a dark (not illuminated) condition.

03 Except as provided in ~~Paragraph 4~~the subsequent paragraph ~~of this Section~~, the pedestrian signal heads shall continue to display a steady UPRAISED HAND (symbolizing DONT WALK) signal indication when the pedestrian hybrid beacon faces are either dark or displaying flashing or steady CIRCULAR YELLOW signal indications. The pedestrian signal heads shall display a WALKING PERSON (symbolizing WALK) signal indication when the pedestrian hybrid beacon faces are displaying steady CIRCULAR RED signal indications. The pedestrian signal heads shall display a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication when the pedestrian hybrid beacon faces are displaying alternating flashing CIRCULAR RED signal indications. Upon termination of the pedestrian change interval, the pedestrian signal heads shall revert to a steady UPRAISED HAND (symbolizing DONT WALK) signal indication.

Option:

04 Where the pedestrian hybrid beacon is installed adjacent to a roundabout to facilitate crossings by pedestrians with vision disabilities and an engineering study determines that pedestrians without vision disabilities can be allowed to cross the roadway without actuating the pedestrian hybrid beacon, the pedestrian signal heads may be dark (not illuminated) when the pedestrian hybrid beacon faces are dark.

Guidance:

05 The duration of the flashing yellow interval should be determined by engineering judgment.

06 The duration of the flashing yellow interval should not vary on a cycle-by-cycle basis.

07 If the pedestrian hybrid beacon is coordinated as a part of a signal system, it should remain in the dark condition after a pedestrian actuation has been received until the point in the background cycle when the predetermined duration of the flashing yellow interval needs to be initiated in order to achieve the appropriate coordinated offset.

Option:

08 If a minimum dark time between activations of the pedestrian hybrid beacon has been set on the controller, the pedestrian hybrid beacon may remain in the dark condition after a pedestrian actuation has been received until the minimum dark time has been provided.

Support:

09 The minimum dark time is a preprogrammed time set in the controller that provides time between the pedestrian actuation and beginning of the flashing yellow interval. At locations in coordinated signal systems, the dark time can be variable based on when the pedestrian actuation occurs in the coordinated signal timing sequence.

Standard:

10 The duration of the steady yellow change interval shall be determined using engineering practices in accordance with the provisions in Section 4F.17.

Guidance:

11 A steady yellow change interval should have a minimum duration of 3 seconds and a maximum duration of 6 seconds (see Section 4F.17). The longer intervals should be reserved for use on approaches with higher speeds.

Option:

12 A steady red clearance interval may be used after the steady yellow change interval.

13 The alternating flashing CIRCULAR RED signal indications may continue to flash for a short period after the pedestrian change interval has terminated to provide a buffer interval for pedestrians.

Guidance:

14 A pedestrian hybrid beacon that is located 200 feet or less from an active grade crossing should be preempted in accordance with the applicable provisions in Sections 4F.19 and 8D.09.

Standard:

15 If a pedestrian hybrid beacon is placed into a flashing mode by a conflict monitor (malfunction management unit) or by a manual switch, the pedestrian hybrid beacon faces shall display flashing CIRCULAR YELLOW signal indications to each approach of the major street and the pedestrian signal heads shall revert to a dark (not illuminated) condition.

CHAPTER 4K. ACCESSIBLE PEDESTRIAN SIGNALS AND DETECTORS [EPG 902.11]

Section 4K.01 General

Standard:

M00 Accessible pedestrian signals and detectors shall be included as part of the design at new signalized intersections where pedestrians are present and shall be considered at existing intersections being altered See EPG 642.4 Impact of the Project Category on ADA for additional guidance on the impact of the project category on Americans with Disabilities Act.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

01 Accessible pedestrian signals and detectors provide information in non-visual formats (such as audible tones and/or speech messages, and vibrating surfaces). The decision of when to use accessible pedestrian signals is subject to requirements of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973.

02 The primary technique that pedestrians with vision disabilities use to cross streets at signalized locations is to initiate their crossing when they hear the traffic in front of them stop and the traffic alongside them begin to move, which often corresponds to the onset of the green interval. The existing environment is often not sufficient to provide the information that pedestrians with vision disabilities need to cross a roadway at a signalized location.

03 The following factors are relevant in determining whether a particular signalized location presents difficulties for pedestrians with vision disabilities to cross the roadway:

A. Potential demand for accessible pedestrian signals;
B. A request for accessible pedestrian signals;
C. Traffic volumes during times when pedestrians might be present, including periods of low traffic volumes or high turn-on-red volumes;
D. The complexity of the traffic signal phasing (such as split phases, protected turn phases, leading pedestrian intervals, and exclusive pedestrian phases); and
E. The complexity of the intersection geometry.

04 The factors that make crossing at a signalized location difficult for pedestrians with vision disabilities include: increasingly quiet vehicles, turns on red (which mask the beginning of the through phase), continuous turning movements, complex signal operations, circular intersections, and wide streets. In addition, low traffic volumes might make it difficult for pedestrians with vision disabilities to discern signal phase changes.

05 State and local organizations providing support services to pedestrians with vision and/or hearing disabilities can provide advice to the traffic engineer on site-specific accessibility decisions. In addition, orientation and mobility specialists or similar staff can provide advice to inform such decisions. The U.S. Access Board (www.access-board.gov) provides technical assistance for making pedestrian signal information accessible to persons with vision disabilities.

Standard:

06 When used, accessible pedestrian signals shall be used in combination with pedestrian signal timing.

07 The information provided by an accessible pedestrian signal shall indicate which pedestrian crossing is served by each device.

08 Under steady (stop-and-go) operation, accessible pedestrian signals shall not be limited in operation by the time of day or day of week.

~~Option:~~

09 Accessible pedestrian signal detectors ~~may~~ shall be push buttons or passive detection devices.

MoDOT modifies this paragraph to be a standard. Revised Dec. 2025

Option:

10 At locations with pretimed traffic control signals or non-actuated approaches, pedestrian push buttons may be used to activate the accessible pedestrian signals.

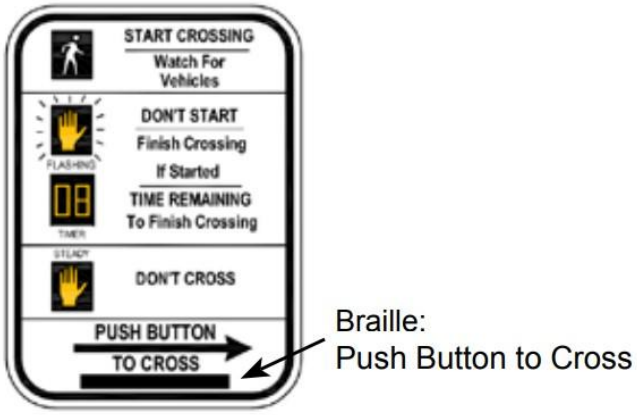
Support:

11 Accessible pedestrian signals are typically integrated into the pedestrian detector (push button), so the audible tones and/or messages come from the push button housing. They have a push button locator tone and a vibrotactile arrow, and can include audible beaconing and other special features.

Option:

12 If deemed appropriate by MoDOT district traffic staff, the ~~The~~ name of the street to be crossed may also be provided in accessible format, such as Braille or raised characters (see Figure 902.11.1). Tactile maps of crosswalks may also be provided.

Figure 902.11.1. Example of Braille Sign Legend for Accessible Pedestrian Signals



MoDOT figure from the EPG. Revised Dec. 2025

Support:

13 Specifications regarding Braille or raised characters can be found in the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Standard:

14 At accessible pedestrian signal locations where pressing the pedestrian push button is necessary to activate the walk interval, pressing the pedestrian push button shall activate both the walk interval and the accessible pedestrian signals.

Section 4K.02 Location

Support:

01 Accessible pedestrian signals that are located as close as possible to pedestrians waiting to cross the street provide the clearest and least ambiguous indication of which pedestrian crossing is served by a device.

Guidance:

02 Push buttons for accessible pedestrian signals should be located in accordance with the provisions of ~~Section 4I.05~~EPG 902.9.5 and should be located as close as possible to the crosswalk line furthest from the center of the intersection and as close as possible to the curb ramp.

Standard:

M02A If the curb ramp is not aligned with the crosswalk, the accessible pedestrian signal assembly shall be positioned with the face of the push button parallel to the crosswalk to be used, and not in the direction of the curb ramp orientation.

MoDOT specific content from the EPG. Revised Dec. 2025

03 Except for the situation regarding simultaneous walk indications for all crosswalks, if two accessible pedestrian push buttons are placed less than 10 feet apart or on the same pole (see ~~Paragraphs 7 and 8 in Section 4I.05~~ the seventh and eighth paragraphs of EPG 902.9.5), each accessible pedestrian push button shall be provided with the following features:

A. A push button locator tone,

B. A vibrotactile walk indication,

C. A speech walk message for the WALKING PERSON (symbolizing WALK) indication (see ~~Section 4K.03~~EPG 902.11.3), and

D. A speech push button information message (see ~~Section 4K.05~~EPG 902.11.5).

M03A If two accessible pedestrian pushbuttons are placed greater than 10 feet apart, each accessible pedestrian pushbutton shall be provided with the following features:

A. A push button locator tone,

B. A vibrotactile walk indication,

C. A percussive tone for the WALKING PERSON (symbolizing WALK) indication.

MoDOT specific content from the EPG. Revised Dec. 2025

04 If the pedestrian clearance time is sufficient only to cross from the curb or edge of pavement to a median of sufficient width for pedestrians to wait and accessible pedestrian signal detectors are used, an additional accessible pedestrian signal detector shall be provided in the median.

Section 4K.03 Walk Indications

Support:

01 Technology that provides different sounds for each non-concurrent signal phase has frequently been found to provide ambiguous information. Research indicates that a rapid percussive tone for each crossing coming from accessible pedestrian signal devices on separated poles located close to each crosswalk provides unambiguous information to pedestrians with vision disabilities. Vibrotactile indications provide information to pedestrians who are blind and deaf and are also used by pedestrians who are blind or who have low vision to confirm the walk signal in noisy situations.

Standard:

02 Accessible pedestrian signals shall have both audible and vibrotactile walk indications.

03 Vibrotactile walk indications shall be provided by a vibrotactile arrow that is located on the push button (see ~~Paragraph 1 in Section 4K.04~~the first standard paragraph of EPG 902.11.4). The vibrotactile arrow shall vibrate during the walk interval.

04 Accessible pedestrian signals shall have an audible walk indication during the walk interval only.

05 The audible walk indication shall be audible at the beginning of the associated crosswalk. The accessible walk indication shall have the same duration as the pedestrian walk signal except when the pedestrian signal rests in walk.

Guidance:

06 If the pedestrian signal rests in walk, the accessible walk indication should be limited to the first 7 seconds of the walk interval. The accessible walk indication should be recalled by a button press during the walk interval provided that the crossing time remaining is longer than the pedestrian change interval.

Standard:

07 Where two accessible pedestrian signals on one corner, or in a median, that are associated with different phases are placed less than 10 feet apart, the audible walk indication shall be a speech walk message (see ~~Paragraph 3 in Section 4K.02~~the second standard paragraph of EPG 902.11.2). In all other cases, including at midblock crossings, on corners where only one accessible pedestrian signal is present, in a median, and on corners where two accessible pedestrian signals are separated by a distance of at least 10 feet, the audible walk indication shall be a percussive tone.

Support:

M07A At any given intersection, there may be a combination of speech messages and percussive tones depending on placement of accessible pedestrian pushbuttons at any given curb ramp.

Guidance:

M07B Each curb ramp should be evaluated individually for including speech messages and percussive tones.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

08 Audible tone walk indications shall repeat at eight to ten ticks per second. Audible tones used as walk indications shall consist of multiple frequencies with a dominant component at 880 Hz.

Guidance:

09 The volume of audible walk indications and push button locator tones (see ~~Section 4K.04~~EPG 902.11.4) should be set to be a maximum of 5 dBA louder than ambient sound, except when audible beaconing is provided in response to an extended push button press.

MoDOT upgrades P9 to a standard statement. Revised Dec. 2025

Standard:

10 Automatic volume adjustment up to a maximum volume of 100 dBA in response to ambient traffic sound level shall be provided.

Guidance:

11 The sound level of audible walk indications and push button locator tones should be adjusted to be low enough to avoid misleading pedestrians with vision disabilities when the following conditions exist:

A. Where there is an island that allows unsignalized right turns across a crosswalk between the island and the sidewalk.

B. Where multi-leg approaches or complex signal phasing require more than two pedestrian phases, such that it might be unclear which crosswalk is served by each audible tone.

C. At intersections where a diagonal pedestrian crossing is allowed, or where one street receives a WALKING PERSON (symbolizing WALK) signal indication simultaneously with another street.

Option:

12 An alert tone, which is a very brief burst of high-frequency sound at the beginning of the audible walk indication that rapidly decays to the frequency of the walk tone, may be used to alert pedestrians to the beginning of the walk interval.

Support:

13 An alert tone can be particularly useful if the walk tone is not easily audible in some traffic conditions.

14 Speech walk messages communicate to pedestrians which street has the walk interval. To be a useful system, the words and their meaning need to be correctly understood by all users in the context of the street environment where they are used. Because of this, tones are the preferred means of providing audible walk indications except where two accessible pedestrian signals on one corner are not separated by a distance of at least 10 feet.

15 If speech walk messages are used, pedestrians have to know the names of the streets that they are crossing in order for the speech walk messages to be unambiguous. In getting directions to travel to a new location, pedestrians with vision disabilities do not always get the name of each street to be crossed. Therefore, it is desirable to give users of accessible pedestrian signals the name of the street controlled by the push button. This can be done by means of a speech push button information message (see ~~Section 4K.05~~EPG 902.11.5) during the flashing or steady UPRAISED HAND intervals, or by raised print and Braille labels on the push button housing.

M15A If speech walk messages are used, colloquial street names as shown on local signs are more likely to be understood by all users. For example, a speech walk message that includes “Broadway. Walk sign is on to cross Broadway.” is less ambiguous than “Business 65. Walk sign is on to cross Business 65.”

16 By combining the information from the push button message or Braille label, the vibrotactile arrow aligned in the direction of travel on the relevant crosswalk, and the speech walk message, pedestrians with

vision disabilities are able to correctly respond to speech walk messages even if there are two push buttons on the same pole.

Standard:

17 If speech walk messages are used to communicate the walk interval, they shall provide a clear message that the walk interval is in effect, as well as to which crossing it applies.

~~*Guidance:*~~

18 Speech walk messages that are used at intersections having pedestrian phasing that is concurrent with vehicular phasing ~~*should*~~ shall be patterned after the model: "Broadway. Walk sign is on to cross Broadway."

19 Speech walk messages that are used at intersections having exclusive pedestrian phasing ~~*should*~~ shall be patterned after the model: "Walk sign is on for all crossings."

20 Speech walk messages ~~*should*~~ shall not contain any additional information, except they ~~*should*~~ shall include designations such as "Street" or "Avenue" where this information is necessary to avoid ambiguity at a particular location.

EPG upgrades paragraphs 18 through 20 to standard statements, as they were in the 2009 Edition of the MUTCD. Revised Dec. 2025

Guidance:

21 Speech walk messages should not state or imply a command to the pedestrian, such as "Cross Broadway now." Speech walk messages should not tell pedestrians that it is "safe to cross," because it is always the pedestrian's responsibility to check actual traffic conditions.

Standard:

22 A speech walk message is not required at times when the walk interval is not timing, but, if provided:

- **A. It shall begin with the term "wait."**
- **B. It need not be repeated for the entire time that the walk interval is not timing.**

23 If a pilot light (see ~~Section 4I.05~~EPG 902.9.5) is used at an accessible pedestrian signal location, each actuation shall be accompanied by the speech message "wait."

Option:

24 Accessible pedestrian signals that provide speech walk messages may provide similar messages in languages other than English, if needed.

Standard:

25 If used, speech walk messages in a language other than English shall be stated first in English, and then repeated in the second language, alternating back and forth while the walk interval is timing.

Section 4K.04 Vibrotactile Arrows and Locator Tones

Standard:

01 To enable pedestrians with vision disabilities to distinguish and locate the appropriate push button at an accessible pedestrian signal location, and to help them align with the crosswalk, each push button shall clearly indicate by means of a vibrotactile arrow which crosswalk signal is actuated by the push button. Vibrotactile arrows shall be located on the button of the push button assembly, shall have high visual contrast (light on dark or dark on light), and shall be aligned parallel to the direction of travel on the associated crosswalk.

02 A locator tone shall be incorporated into the accessible pedestrian signal equipment to help pedestrians with vision disabilities locate the vibrotactile arrow, and the associated push button if a push button is provided.

Support:

03 A push button locator tone is a repeating sound that informs approaching pedestrians that a push button to actuate pedestrian timing or receive additional information exists, and that enables pedestrians with vision disabilities to locate the push button.

Standard:

04 Push button locator tones shall have a duration of 0.15 seconds or less, and except as provided in ~~Paragraph 5~~the subsequent paragraph ~~of this Section~~, push button locator tones shall repeat at 1-second intervals at all times that the audible walk indication is not active, including during the pedestrian change interval and during the time that the pedestrian signal is resting in walk (see ~~Paragraph 6 in Section 4K.03~~the first guidance paragraph of EPG 902.11.3).

Option:

05 The push button locator tone may default to a deactivated mode during periods when the steady UPRAISED HAND (symbolizing DON'T WALK) signal indication is being displayed for the associated crosswalk if a passive pedestrian detection system is implemented that activates the locator tone at all times (other than when the audible walk indication is active) that a pedestrian is present within a 12-foot radius from the push button location. Where pedestrian facilities (such as sidewalks) are present, the passive detection requirement may be reduced such that it only applies to pedestrians who are on the pedestrian facilities within the 12-foot radius from the push button location.

Standard:

06 Push button locator tones shall be deactivated when the traffic control signal or pedestrian hybrid beacon is operating in a flashing mode. This requirement shall not apply to traffic control signals or pedestrian hybrid beacons that are activated from a flashing or dark mode to a steady (stop-and-go) mode by pedestrian actuations.

07 Push button locator tones shall be intensity responsive to ambient sound.

Guidance:

08 Push button locator tones should be audible 6 to 12 feet from the push button, or to the building line, whichever is less.

Support:

09 ~~Section 4K.03~~EPG 902.11.3 contains additional provisions regarding the volume and sound level of push button locator tones.

Section 4K.05 Extended Push Button Press Features

Option:

01 Pedestrians may be provided with additional features such as ~~increased crossing time,~~ audible beaconing, or a speech push button information message as a result of an extended push button press.

Standard:

02 If an extended push button press (see ~~Paragraph 18 in~~ Section 4I.05) is used to provide any additional feature(s), a push button press of less than one second shall actuate only the pedestrian timing and any associated accessible walk indication, and a push button press of one second or more shall actuate the pedestrian timing, any associated accessible walk indication, and any additional feature(s).

~~03 If additional crossing time is provided by means of an extended push button press, a PUSH BUTTON FOR 2 SECONDS FOR EXTRA CROSSING TIME (R10-32P) plaque (see Section 4I.05) shall be installed adjacent to the pedestrian push button detector.~~

Support:

04 Audible beaconing is the use of an audible signal in such a way that pedestrians with vision disabilities can home in on the signal that is located on the far end of the crosswalk as they cross the street.

05 Not all crosswalks at an intersection need audible beaconing. Audible beaconing is not appropriate at locations with channelized turns or split phasing, because of the possibility of confusion.

Guidance:

06 Audible beaconing should be considered following an engineering study at:

A. Crosswalks longer than 70 feet, unless those crosswalks are divided by a median that has another accessible pedestrian signal with a locator tone;

B. Crosswalks that are skewed;

C. Intersections with irregular geometry, such as more than four legs;

D. Crosswalks where audible beaconing is requested by a person with vision disabilities; or

E. Other locations where a study indicates audible beaconing would be beneficial.

07 If audible beaconing is used, it should be initiated by an extended push button press.

Standard:

08 If audible beaconing is used, the volume of the push button locator tone during the pedestrian change interval of the called pedestrian phase shall be increased up to a maximum of 100 dBA, and shall come from a loudspeaker that is mounted at the far end of the crosswalk at a height of 7 to 10 feet above the pavement.

Guidance:

09 The audible beaconing loudspeaker mounted at the far end of the crosswalk should be within the width of the crosswalk.

Support:

10 When the locator tone is active during the pedestrian change interval at a traffic control signal or pedestrian hybrid beacon where audible beaconing is used, the locator tone from the audible beaconing loudspeaker is at an elevated volume, while the locator tone from the accessible pedestrian signal is at its normal, quiet setting.

Option:

11 The sound level of the accessible pedestrian signal walk indication and subsequent push button locator tone may be increased by an extended push button press.

12 Speech push button information messages may provide intersection identification, as well as information about unusual intersection signalization and geometry, such as notification regarding exclusive pedestrian phasing, leading pedestrian intervals, split phasing, diagonal crosswalks, and medians or islands.

Standard:

13 If speech push button information messages are made available by actuating the accessible pedestrian signal detector, they shall only be actuated when the walk interval is not timing. They shall begin with the term "Wait," followed by intersection identification information modeled after: "Wait to cross Broadway at Grand." If information on intersection signalization or geometry is also given, it shall follow the intersection identification information.

Guidance:

14 Speech push button information messages should not be used to provide landmark information or to inform pedestrians with vision disabilities about detours or temporary traffic control situations.

Support:

15 Additional information on the structure and wording of speech push button information messages is included in the Institute of Transportation Engineers' "Electronic Toolbox for Making Intersections More Accessible for Pedestrians Who Are Blind or Visually Impaired."

CHAPTER 4L. RECTANGULAR RAPID FLASHING BEACONS [EPG 902.12]

Section 4L.01 Application of Rectangular Rapid Flashing Beacons

Option:

01 A pedestrian-activated and/or bicyclist-activated rectangular rapid flashing beacon (RRFB) may be used to provide supplemental emphasis to pedestrian, school, and trail warning signs at marked crosswalks across uncontrolled approaches.

Standard:

02 An RRFB shall only be installed to function as a Warning Beacon (see ~~Section 4S.03~~EPG 902.18.3). Except as otherwise provided in this ~~Chapter~~ Article, all other provisions of the MUTCD applicable to Warning Beacons shall apply to RRFBs.

03 An RRFB shall only be used to supplement a post-mounted W11-2 (Pedestrian), S1-1 (School), or W11-15 (Trail) crossing warning sign with a diagonal downward arrow (W16-7P) plaque, or an overhead-mounted W11-2 , S1-1, or W11-15 crossing warning sign, located at or immediately adjacent to a marked crosswalk.

04 Except for crosswalks across the approach to or egress from a roundabout, or crosswalks across free-flow turn lanes separated by a channelizing island, an RRFB shall not be used for crosswalks across approaches controlled by YIELD signs, STOP signs, traffic control signals, or pedestrian hybrid beacons.

Option:

05 An additional RRFB may be installed on that approach in advance of the crosswalk, as a Warning Beacon to supplement a W11-2 (Pedestrian), S1-1 (School), or W11-15 (Trail) crossing warning sign with an AHEAD (W16-9P) or distance (W16-2P or W16-2aP) plaque.

Standard:

06 If an additional RRFB is installed on the approach in advance of the crosswalk, it shall be supplemental to and not a replacement for the RRFB at the crosswalk itself.

Section 4L.02 Design of Rectangular Rapid Flashing Beacons

Standard:

01 Each RRFB unit shall consist of two rapidly-flashed rectangular-shaped yellow indications, each with an LED-array based pulsing light source. The size of each RRFB indication shall be at least 5 inches wide by at least 2 inches high.

02 The two RRFB indications for each RRFB unit shall be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of at least 7 inches, measured from nearest edge of one indication to the nearest edge of the other indication. The outside edges of the RRFB indications, including any housings, shall not project beyond the outside edges of the W11-2, S1-1, or W11-15 sign that it supplements.

03 An RRFB unit shall not be installed independent of the crossing warning signs for the approach that the RRFB faces. If the RRFB unit is supplementing a post-mounted sign, the RRFB unit shall be installed on the same support as the associated W11-2, S1-1, or W11-15 crossing warning sign and plaque. If the RRFB unit is supplementing an overhead-mounted sign, the RRFB unit shall be mounted directly above the top of sign or below the bottom of the sign.

Option:

04 As a specific exception to ~~Paragraph 6~~the first guidance paragraph of ~~Section 4S.01~~EPG 902.18.1, the RRFB unit associated with a post-mounted sign and plaque may be located between and immediately adjacent to the bottom of the crossing warning sign and the top of the supplemental downward diagonal arrow plaque (or, in the case of a supplemental advance sign, the AHEAD or distance plaque) or within 12 inches above the crossing warning sign, rather than the recommended minimum of 12 inches above or below the sign assembly.

~~05 Signal visors and backplates, with or without a yellow retroreflective strip, may be used with RRFB units based on provisions in Section 4D.06.~~

MoDOT does not use visors or backplates for RRFB's. Revised Dec. 2025

Standard:

06 For any approach on which RRFBs are used to supplement post-mounted signs, at least two W11-2 , S1-1, or W11-15 crossing warning signs (each with an RRFB unit and a W16-7P plaque) shall be installed at the crosswalk, one on the right-hand side of the roadway and one on the left-hand side of the roadway.

Guidance:

07 On a divided highway, the left-hand side RRFB assembly should be installed ~~on~~ in the median, if practicable, rather than on the far left side of the highway.

M07A When a pedestrian refuge island is installed in the middle of an undivided highway, an RRFB assembly should be installed on the raised median, if practicable, in addition to on the far left side of the highway, for a total of three RRFB assemblies facing each direction of traffic.

M07B Where the median island width is less than 10', a single RRFB assembly should be installed in the middle of the island with signs and beacons facing both directions of traffic.

M07C Where the median island width is greater than 10' an RRFB assembly should be installed on each side of the median island. Each RRFB assembly should have a sign and beacon facing traffic nearest to it.

MoDOT specific guidance for RRFB installations at pedestrian refuge islands. Revised Dec. 2025

Standard:

08 For any approach on which RRFBs are used to supplement an overhead-mounted sign, at least one W11-2 , S1-1, or W11-15 crossing warning sign (without a W16-7P plaque) located approximately over the center of the lanes of the approach (or where optimum visibility can be achieved) shall be installed at the crosswalk.

~~**Standard:**~~

09 If used at intersections, the design of the RRFBs shall conform to the requirements for post-mounted or overhead placement described in ~~Paragraph 3~~the third standard paragraph of this ~~Section~~ Article.

Option:

10 RRFBs may be installed at intersections with more than one crosswalk on the same uncontrolled approach (see Figure 4L-1).

Support:

M10A Devices for typical RRFB applications are shown in the RRFB Special Sheet Detail.

11 If used at intersections with two crosswalks on an uncontrolled approach, post-mounted RRFBs may be installed to face only one direction of travel at the first crosswalk that traffic encounters (see Figure 4L-1).

Standard:

12 The light intensity of the yellow indications during daytime conditions shall meet the minimum specifications for Class 1 yellow peak luminous intensity in the publication "Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles J595," 2005, Society of Automotive Engineers (SAE).

Option:

13 If the RRFB indications are so bright that they cause excessive glare during nighttime conditions, an automatic signal dimming device may be used to reduce the brilliance of the RRFB indications during nighttime conditions.

Standard:

14 If pedestrian push button detectors (rather than passive detection) are used to actuate the RRFB indications, a PUSH BUTTON FOR ~~TO TURN ON~~ WARNING LIGHTS/~~A~~WAIT FOR GAP IN TRAFFIC (R10-25) sign (see Section 2B.58) shall be installed adjacent to a pedestrian push button detector explaining the purpose and use of the pedestrian push button detector.

Paragraph modified to clarify sign location, and to correct known error. Revised Dec. 2025

Support:

15 ~~Section 4I.05~~EPG 902.9.5 contains further information about pedestrian push button detector location criteria.

16 Section 4H.12 contains information about bicyclist push buttons.

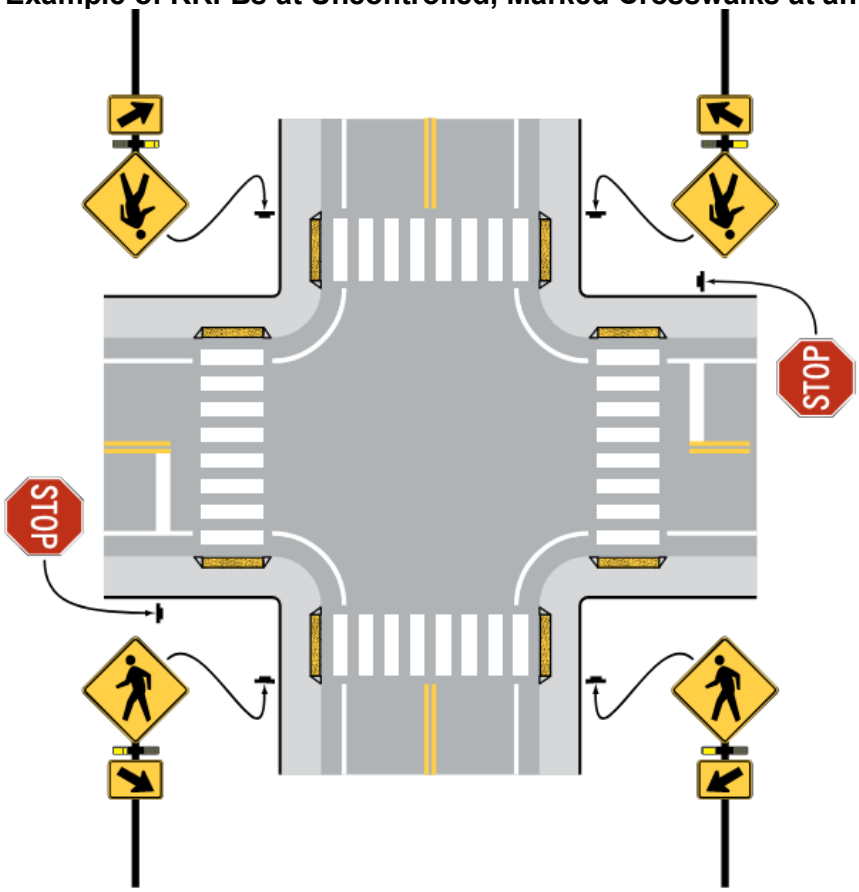
Guidance:

17 An audible information device should be used with RRFBs to assist pedestrians with vision disabilities.

Option:

18 A small light directed at and visible to pedestrians in the crosswalk may be installed integral to the RRFB or pedestrian push button detector to give confirmation that the RRFB is in operation.

Figure 4L-1. Example of RRFBs at Uncontrolled, Marked Crosswalks at an Intersection



Notes:

1. When activated, the RRFBs on both approaches shall simultaneously commence operation of their rapid flashing indications and shall cease operation simultaneously.
2. If placed overhead, follow the requirements of Paragraph 8 of Section 4L.02, except that the signs may be placed approximately over the center of the intersection.

Section 4L.03 Operation of Rectangular Rapid Flashing Beacons

Standard:

01 The RRFB shall be normally dark, shall initiate operation only upon pedestrian actuation, and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk.

02 All RRFB units associated with a given crosswalk (including those with an advance crossing sign, if used) shall, when activated, simultaneously commence operation of their rapid flashing indications and shall cease operation simultaneously.

Guidance:

03 The minimum duration of a predetermined period of operation of the RRFBs following each actuation should be based on the procedures for the timing of pedestrian clearance times for pedestrian signals (see ~~Section 4I.06~~EPG 902.9.6).

Support:

04 One consideration for lengthening the duration of the predetermined period of operation of the RRFBs is adding the perception/reaction time for pedestrians to confirm that a vehicle will yield or stop.

Standard:

05 The predetermined flash period shall be immediately initiated each and every time that a pedestrian is detected either through passive detection or as a result of a pedestrian pressing a push button detector, including when pedestrians are detected while the RRFBs are already flashing and when pedestrians are detected immediately after the RRFBs have ceased flashing.

06 When activated, the two yellow indications in each RRFB unit shall flash in a rapidly flashing sequence. As a specific exception to the requirements for the flash rate of beacons provided in ~~Paragraph 3~~the second standard paragraph of ~~Section 4S.01~~EPG 902.18.1, RRFBs shall use a much faster flash rate and shall provide 75 flashing sequences per minute.

07 Except as provided in ~~Paragraph 8~~the subsequent paragraph ~~of this Section~~, during each 800-millisecond flashing sequence, the left and right RRFB indications shall operate using the following sequence:

- **A. The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds.**
- **B. Both RRFB indications shall be dark for approximately 50 milliseconds.**
- **C. The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds.**
- **D. Both RRFB indications shall be dark for approximately 50 milliseconds.**
- **E. The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds.**
- **F. Both RRFB indications shall be dark for approximately 50 milliseconds.**
- **G. The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds.**
- **H. Both RRFB indications shall be dark for approximately 50 milliseconds.**
- **I. Both RRFB indications shall be illuminated for approximately 50 milliseconds.**
- **J. Both RRFB indications shall be dark for approximately 50 milliseconds.**
- **K. Both RRFB indications shall be illuminated for approximately 50 milliseconds.**
- **L. Both RRFB indications shall be dark for approximately 250 milliseconds.**

08 The flash rate of each individual RRFB indication, as applied over the full flashing sequence, shall not be more than 5 flashes per second, to avoid frequencies that might cause seizures.

09 If an audible information device is used in conjunction with an RRFB, the audible information device shall not use vibrotactile indications or percussive indications. The audible information device

shall include a speech message that says, "Warning lights are flashing." The audible message shall be spoken twice.

~~*Guidance:*~~

~~*10 If an audible information device is used in conjunction with an RRFB, the audible message should be a speech message that says, "Warning lights are flashing." The audible message should be spoken twice.*~~

MoDOT combines paragraphs 9 and 10 into one standard requiring a speech message. Revised Dec. 2025

CHAPTER 4M. TRAFFIC CONTROL SIGNALS FOR EMERGENCY-VEHICLE ACCESS [EPG 902.13]

Section 4M.01 Application of Emergency-Vehicle Traffic Control Signals

Support:

01 An emergency-vehicle traffic control signal is a special 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.

Standard:

M01A An Emergency-Vehicle Traffic Control Signal shall be installed only at intersections where an emergency vehicle facility is located on a state highway and the emergency vehicle, upon leaving the facility, enters directly onto that highway.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

02 An emergency-vehicle traffic control signal may be installed at a location that does not meet other traffic signal warrants such as at an intersection or other location to permit direct access from a building housing the emergency vehicle.

03 An emergency-vehicle hybrid beacon may be installed instead of an emergency-vehicle traffic control signal under the conditions described in ~~Section 4N.01~~EPG 902.14.1.

Guidance:

04 If a traffic control signal is not justified under the signal warrants of Chapter 4C and if gaps in traffic are not adequate to permit the timely entrance of emergency vehicles, or the stopping sight distance for vehicles approaching on the major street is insufficient for emergency vehicles, installing an emergency-vehicle traffic control signal should be considered. If one of the signal warrants of Chapter 4C is met and a traffic control signal is justified by an engineering study, and if a decision is made to install a traffic control signal, it should be installed based upon the provisions of Chapters 4D through 4I and 4K.

05 The sight distance determination should be based on the location of the visibility obstruction for the critical approach lane for each street or drive and the posted or statutory speed limit or 85th-percentile speed on the major street, whichever is higher.

Standard:

M06 For a new emergency vehicle signal installation, the emergency entity, city, or other organization having control over the emergency equipment, shall be required to pay the full cost of construction and will be required to maintain the equipment.

Support:

M07 The MoDOT district uses the applicant's request and supporting data to approve the installation. If approval is given, a contract is executed between the Missouri Highway and Transportation Commission and the proper local authorities or organization that covers the installation, maintenance, and operation of such a signal.

M08 Normally, a push button is located in the emergency facility. The push button and the connection (wireless or wired) to the signal will be provided and maintained by the emergency facility.

M09 Upon completion of the installation, the requesting party will be responsible for all maintenance, replacement costs, and power costs.

M10 The TR06 Emergency Vehicle Signal Agreement is the standard agreement to be used.

M11 See EPG 902.5.38 for preemption.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 4M.02 Design of Emergency-Vehicle Traffic Control Signals

Standard:

01 Except as otherwise provided in this ~~Section~~Article, an emergency-vehicle traffic control signal shall meet the requirements of ~~this Manual~~ the EPG.

02 An Emergency Vehicle (W11-8) sign (see Section 2C.54) with an EMERGENCY SIGNAL AHEAD (W11-12P) supplemental plaque shall be placed in advance of all emergency-vehicle traffic control signals. If a Warning Beacon is installed to supplement the W11-8 sign, the design and location of the beacon shall comply with the Standards of ~~Sections 4S.01~~EPG 902.18.1 and ~~4S.03~~902.18.3.

Guidance:

03 At least one of the two required signal faces for each approach on the major street should be located over the roadway.

Standard:

04 12-inch diameter signal indications shall be used for emergency-vehicle traffic control signals. ~~The following size signal indications should be used for emergency-vehicle traffic control signals: 12-inch diameter for steady red and steady yellow circular signal indications and any arrow indications, and 8-inch diameter for green or flashing yellow circular signal indications.~~

MoDOT uses 12 inch indications for all vehicular signal heads. Revised Dec. 2025

~~**Standard:**~~

05 An EMERGENCY SIGNAL (R10-13) sign (see Section 2B.59) shall be installed facing each major-street approach.

06 If an overhead signal face is provided, the EMERGENCY SIGNAL sign shall be mounted adjacent to the overhead signal face.

~~Option:~~ *Guidance:*

07 An approach that only serves emergency vehicles ~~may~~ should be provided with only one signal face consisting of one or more signal sections.

Modified MUTCD language to be consistent with MoDOT practice. Revised Dec. 2025

~~08 Besides using an 8-inch diameter signal indication, other appropriate means to reduce the flashing yellow light output may be used.~~

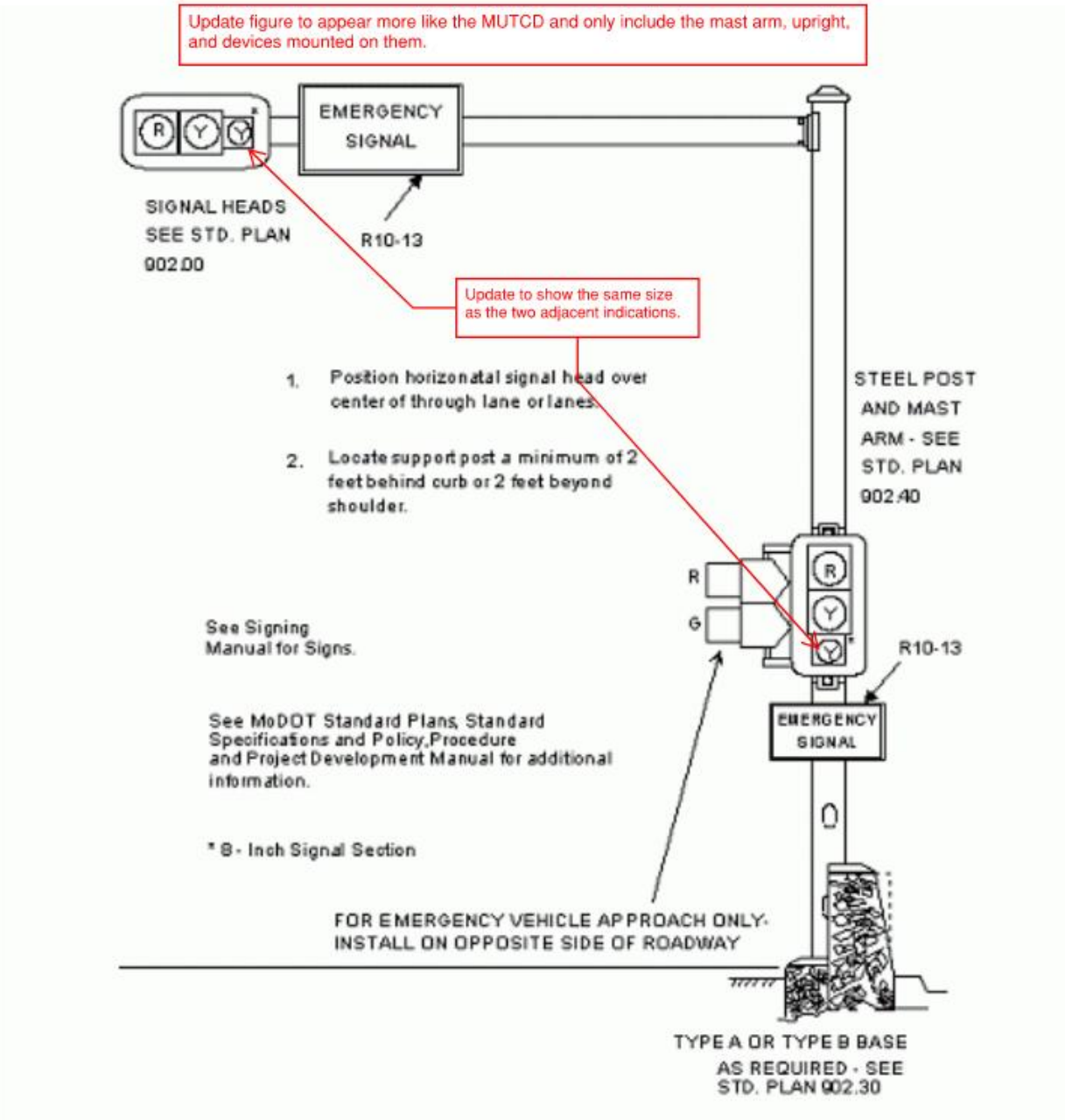
Option not included in the EPG. Revised Dec. 2025

Support:

09 See Figure 902.13.2 below for standard emergency vehicle signal installation.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 902.13.2. Typical Emergency Vehicle Signal Layouts



Section 4M.03 Operation of Emergency-Vehicle Traffic Control Signals

Standard:

01 Green signal indications for emergency vehicles at signalized locations operating in the steady (stop-and-go) mode shall be obtained as provided in Section 4F.19.

02 As a minimum, the signal indications, sequence, and manner of operation of an emergency-vehicle traffic control signal installed at a midblock location shall be as follows:

A. The signal indication, between emergency-vehicle actuations, shall be ~~either green or~~ flashing yellow. ~~If the~~ The flashing yellow signal indication ~~is used instead of the green signal indication, it~~ shall be displayed in the normal position of the green signal indication, while the steady red and steady yellow signal indications shall be displayed in their normal positions.

B. When an emergency-vehicle actuation occurs, a steady yellow change interval followed by a steady red interval shall be displayed to traffic on the major street.

C. A yellow change interval is not required following the green interval for the emergency-vehicle driveway.

MoDOT does not use green indications for highway traffic at Emergency-Vehicle Traffic Control Signals. Revised Dec. 2025

~~*Guidance*~~ **Standard:**

03 Emergency-vehicle traffic control signals located at intersections ~~*should*~~ shall either be operated in the flashing mode (see Sections 4G.01 and 4G.03) between emergency-vehicle actuations or be full-actuated or semi-actuated to accommodate normal vehicular and pedestrian traffic on the streets.

04 Warning Beacons, if used with an emergency-vehicle traffic control signal, ~~*should*~~ shall be flashed only:

A. For an appropriate time in advance of and during the steady yellow change interval for the major street, and

B. During the steady red interval for the major street.

EPG upgrades paragraphs 3 and 4 to standard statements, as they were in the 2009 Edition of the MUTCD. Revised Dec. 2025

~~*Guidance:*~~

~~*05 The duration of the steady red interval for traffic on the major street should be determined by on-site test run time studies, but should not exceed 1.5 times the time required for the emergency vehicle to clear the path of conflicting vehicles.*~~

MoDOT does not adopt paragraph 5. MoDOT has signal timing policies that are applicable to emergency vehicle signals. Revised Dec. 2025

Option:

06 An emergency-vehicle traffic control signal sequence may be initiated manually from a local control point such as a fire station ~~or~~, law enforcement headquarters, other emergency vehicle facility, or from an emergency vehicle equipped for remote operation of the signal.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 4N. HYBRID BEACONS FOR EMERGENCY-VEHICLE ACCESS [EPG 902.14]

Section 4N.01 Application of Emergency-Vehicle Hybrid Beacons

Standard:

01 Emergency-vehicle hybrid beacons shall be used only in conjunction with signs to warn and control traffic at an unsignalized location where emergency vehicles enter or cross a street or highway. Emergency-vehicle hybrid beacons shall be actuated only by authorized emergency or maintenance personnel.

Guidance:

02 Emergency-vehicle hybrid beacons should only be used when all of the following criteria are satisfied:

A. *The conditions justifying an emergency-vehicle traffic control signal (see ~~Section 4M.01~~EPG 902.13.1) are met;*
B. *An engineering study, considering the road width, approach speeds, and other pertinent factors, determines that emergency-vehicle hybrid beacons can be designed and located in compliance with the requirements contained in this ~~Chapter~~ Article and in ~~Section 4S.01~~EPG 902.18.1, such that they effectively warn and control traffic at the location; and*
C. *The location is not at or within 100 feet from an intersection or driveway where the side road or driveway is controlled by a STOP or YIELD sign.*

Section 4N.02 Design of Emergency-Vehicle Hybrid Beacons

Standard:

01 Except as otherwise provided in this ~~Section~~Article, an emergency-vehicle hybrid beacon shall meet the requirements of ~~this Manual~~ the EPG.

02 An emergency-vehicle hybrid beacon face shall consist of three signal sections, with a CIRCULAR YELLOW signal indication centered below two horizontally aligned CIRCULAR RED signal indications (see Figure 4N-1).

03 At least two emergency-vehicle hybrid beacon faces shall be installed for each approach of the major street and at least one of the emergency-vehicle hybrid beacon faces shall be installed over the roadway.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

04 On approaches having posted or statutory speed limits or 85th-percentile speeds in excess of 40 mph, and on approaches having traffic or operating conditions that would tend to obscure visibility of roadside beacon faces, both of the minimum of two emergency-vehicle hybrid beacon faces should be installed over the roadway.

~~*05 On multi-lane approaches having posted or statutory speed limits or 85th-percentile speeds of 40 mph or less, either an emergency-vehicle hybrid beacon face should be installed on each side of the approach (if a median of sufficient width exists) or at least one of the emergency-vehicle hybrid beacon faces should be installed over the roadway.*~~

Paragraph is unnecessary with the modification to Paragraph 3. Revised Dec. 2025

06 An emergency-vehicle hybrid beacon should comply with the signal face location provisions described in Sections 4D.05 through 4D.10.

Standard:

07 Stop lines and EMERGENCY SIGNAL—STOP ON FLASHING RED (R10-14 or R10-14a) signs (see Section 2B.59) shall be used with emergency-vehicle hybrid beacons for each approach of the major street.

Option:

08 If needed for extra emphasis, a STOP HERE ON FLASHING RED (R10-14b) sign (see Section 2B.59) may be installed with an emergency-vehicle hybrid beacon.

09 Emergency-vehicle hybrid beacons may be equipped with a light or other display visible to the operator of the egressing emergency vehicle to provide confirmation that the beacons are operating.

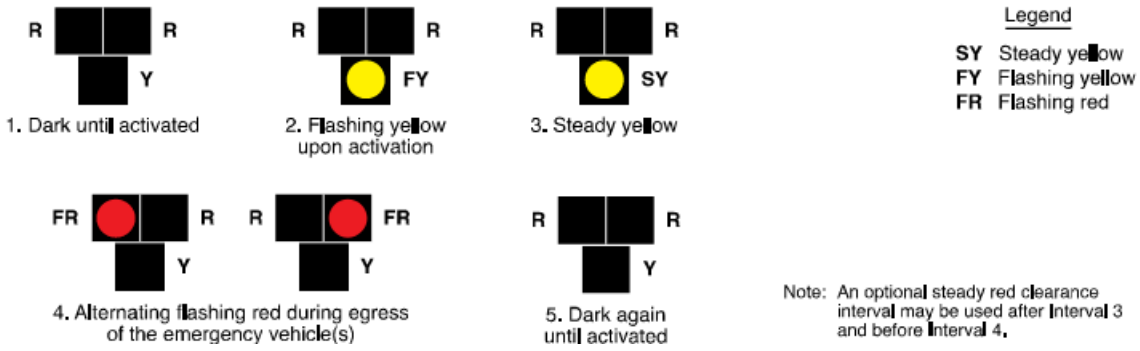
10 Emergency-vehicle hybrid beacons may be supplemented with an advance warning sign, which may also be supplemented with a Warning Beacon (see ~~Section 4S.03~~EPG 902.18.3).

~~*Guidance*~~ **Standard:**

11 If a Warning Beacon is used to supplement the advance warning sign, it ~~*should*~~ shall be programmed to flash only when the emergency-vehicle hybrid beacon is not in the dark mode.

MoDOT upgrades this statement to a Standard in the EPG. Revised Dec.2025

Figure 4N-1. Sequence for an Emergency-Vehicle Hybrid Beacon



Section 4N.03 Operation of Emergency-Vehicle Hybrid Beacons

Standard:

01 Emergency-vehicle hybrid beacons shall be placed in a dark mode (no indications displayed) during periods between actuations.

02 Upon actuation by authorized emergency personnel, the emergency-vehicle hybrid beacon faces shall each display a flashing yellow signal indication, followed by a steady yellow change interval, prior to displaying two CIRCULAR RED signal indications in an alternating flashing array for a duration of time adequate for egress of the emergency vehicles (see Figure 4N-1). The alternating flashing red signal indications shall only be displayed when it is required that drivers on the major street stop and then proceed subject to the rules applicable after making a stop at a STOP sign. Upon termination of the flashing red signal indications, the emergency-vehicle hybrid beacons shall revert to a dark mode (no indications displayed) condition.

Guidance:

03 The duration of the flashing yellow interval should be determined by engineering judgment.

Standard:

04 The duration of the steady yellow change interval shall be determined using engineering practices in accordance with the provisions in Section 4F.17.

Guidance:

05 A yellow change interval should have a minimum duration of 3 seconds and a maximum duration of 6 seconds (see Section 4F.17). The longer intervals should be reserved for use on approaches with higher speeds.

Option:

06 A steady red clearance interval may be used after the steady yellow change interval.

Guidance:

07 An emergency-vehicle hybrid beacon that is located 200 feet or less from an active grade crossing should be preempted in accordance with the applicable provisions in Sections 4F.19 and 8D.09.

Standard:

08 If an emergency-vehicle hybrid beacon is placed into a flashing mode by a conflict monitor (malfunction management unit) or by a manual switch, the emergency-vehicle hybrid beacon faces shall display flashing yellow signal indications to each approach of the major street.

CHAPTER 4O. TRAFFIC CONTROL SIGNALS FOR ONE-LANE, TWO-WAY FACILITIES [EPG 902.15]

Section 4O.01 Application of Traffic Control Signals for One-Lane, Two-Way Facilities

Support:

01 A traffic control signal at a narrow bridge, tunnel, or roadway section that is not of sufficient width for two opposing vehicles to pass is a special signal that alternates which direction of travel is permitted to proceed.

02 Temporary traffic control signals (see Sections 4D.11 and 6L.01) are the most frequent application of traffic control signals for one-lane, two-way facilities.

Guidance:

03 Sight distance across or through the one-lane, two-way facility should be considered as well as the approach speed and sight distance approaching the facility when determining whether traffic control signals should be installed.

Option:

04 At a narrow bridge, tunnel, or roadway section where a traffic control signal is not justified under the conditions of Chapter 4C, a traffic control signal may be used if gaps in opposing traffic do not permit the flow of traffic through the one-lane section of roadway.

Section 4O.02 Design of Traffic Control Signals for One-Lane, Two-Way Facilities

Standard:

01 The provisions of Chapters 4D through 4G shall apply to traffic control signals for one-lane, two-way facilities, except that:

- **A. The durations of the red clearance intervals shall be adequate to clear the one-lane section of conflicting vehicles; and**
- **B. Adequate means, such as interconnection, shall be provided to prevent conflicting signal indications, such as green and green, at opposite ends of the section.**

Section 4O.03 Operation of Traffic Control Signals for One-Lane, Two-Way Facilities

Guidance:

01 Traffic control signals at one-lane, two-way facilities should operate in a manner consistent with traffic requirements.

02 Adequate time should be provided to allow traffic to clear the narrow facility before opposing traffic is allowed to move. Engineering judgment should be used to determine the proper timing for the signal.

Standard:

03 When in the flashing mode, the signal indications shall flash red.

CHAPTER 4P. TRAFFIC CONTROL SIGNALS FOR FREEWAY ENTRANCE RAMPS [EPG 902.16]

Section 4P.01 Application of Freeway Entrance Ramp Control Signals

Support:

01 Ramp control signals are traffic control signals that control the flow of traffic entering the freeway facility. This is often referred to as "ramp metering."

02 Freeway entrance ramp control signals are sometimes used if controlling traffic entering the freeway could reduce the total expected delay to traffic in the freeway corridor, including freeway ramps and local streets.

Guidance:

03 The installation of ramp control signals should be preceded by an engineering study of the physical and traffic conditions on the highway facilities likely to be affected. The study should include the ramps and ramp connections and the surface streets that would be affected by the ramp control, as well as the freeway section concerned.

Support:

04 Information on conditions that might justify freeway entrance ramp control signals, factors to be evaluated in traffic engineering studies for ramp control signals, design of ramp control signals, and operation of ramp control signals can be found in the FHWA's "Ramp Management and Control Handbook."

Section 4P.02 Design of Freeway Entrance Ramp Control Signals

Standard:

01 Ramp control signals shall meet all of the standard design specifications for traffic control signals, except as otherwise provided in this ~~Section~~Article.

02 The signal face for freeway entrance ramp control signals shall be either a two-section signal face containing red and green signal indications or a three-section signal face containing red, yellow, and green signal indications.

Option:

03 Ramp control signals may be placed in the dark mode (no indications displayed) when not in use.

04 Ramp control signals may be used to control some, but not all, lanes on a ramp, such as when non-metered HOV bypass lanes are provided on a ramp.

Standard:

05 If only one controlled lane is present on an entrance ramp, or if more than one controlled lane is present on an entrance ramp and the ramp control signals are operated such that green signal indications are always displayed simultaneously to all of the controlled lanes on the ramp, then a minimum of two signal faces per ramp shall face entering traffic.

06 If two controlled lanes are present on an entrance ramp and the ramp control signals are operated such that green signal indications are not always displayed simultaneously to both of the controlled lanes on the ramp, then one signal face shall be provided over the approximate center of each separately-controlled lane.

07 If three or more controlled lanes are present on an entrance ramp and the ramp control signals are operated such that green signal indications are not always displayed simultaneously to all of the controlled lanes on the ramp, then one signal face shall be provided over the approximate center of each separately-controlled lane.

Guidance:

08 Additional side-mounted signal faces should be considered for ramps with three or more separately-controlled lanes.

Option:

09 For entrance ramps with only one controlled lane, the two required signal faces may both be mounted at the side of the roadway on a single pole (as a specific exception to the normal 8-foot minimum lateral separation of signal faces required by Section 4D.07), with the lower signal face installed at a minimum mounting height of 4.5 feet.

10 For entrance ramps with two or more controlled lanes, if two signal faces are installed for the right-hand lane or for the left-hand lane, the two signal faces for that lane may both be mounted at the closest side of the roadway on a single pole (as a specific exception to the normal 8-foot minimum lateral separation of signal faces required by Section 4D.07), with the lower signal face installed at a minimum mounting height of 4.5 feet.

~~*Guidance*~~ **Standard:**

11 Ramp control signals ~~*should*~~ shall be located and designed to minimize their viewing by mainline freeway traffic.

EPG upgrades paragraph 11 to a standard statement, as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

Guidance:

12 Regulatory signs with legends appropriate to the control, such as XX VEHICLE(S) PER GREEN or XX VEHICLE(S) PER GREEN EACH LANE (see Section 2B.61), should be installed.

13 When ramp control signals are installed on a freeway-to-freeway ramp, special consideration should be given to assuring adequate visibility of the ramp control signals, and multiple advance warning signs with flashing Warning Beacons should be installed to warn road users of the metered operation.

Section 4P.03 Operation of Freeway Entrance Ramp Control Signals

Guidance:

01 Operational strategies for ramp control signals, such as periods of operation, metering rates and algorithms, and queue management, should be determined by the operating agency prior to the installation of the ramp control signals and should be closely monitored and adjusted as needed thereafter.

02 When the ramp control signals are operated only during certain periods of the day, a RAMP METERED WHEN FLASHING (W3-8) sign (see Section 2C.37) should be installed in advance of the ramp control signal near the entrance to the ramp, or on the arterial on the approach to the ramp, to alert road users to the presence and operation of ramp meters.

Standard:

03 The RAMP METERED WHEN FLASHING sign shall be supplemented with a Warning Beacon (see ~~Section 4S.03~~EPG 902.18.3) that flashes when the ramp control signal is in operation (controlling the flow of traffic entering the freeway). Flashing light-emitting diode (LED) units shall not be used within the legend or border of the sign.

Support:

04 The use of LEDs in the legend or border of signs is described in Section 2A.12.

Clarification on the use of LEDs for enhanced conspicuity. Revised Dec. 2025

CHAPTER 4Q. TRAFFIC CONTROL FOR MOVABLE BRIDGES

Chapter 4Q is not adopted because there are no movable bridges on the MoDOT system, and it is not likely that there ever will be.

Section 4Q.01 Application of Traffic Control for Movable Bridges

Support:

01 Traffic signals for movable bridges are a special type of highway traffic signal installed at movable bridges to notify road users to stop because of a road closure rather than alternately controlling the flow of conflicting traffic movements. The signals are operated in coordination with the opening and closing of the movable bridge, and with the operation of movable bridge warning and resistance gates, or other devices and features used to warn, control, and stop traffic.

02 Movable bridge warning gates installed at movable bridges decrease the likelihood of vehicles and pedestrians passing the stop line and entering an area where potential hazards exist because of bridge operations.

03 A movable bridge resistance gate is sometimes used at movable bridges and located downstream of the movable bridge warning gate. A movable bridge resistance gate provides a physical deterrent to road users when placed in the appropriate position. The movable bridge resistance gates are considered a design feature and not a traffic control device; requirements for them are contained in AASHTO's "Standard Specifications for Movable Highway Bridges."

Standard:

04 Traffic control at movable bridges shall include both signals and gates, except in the following cases:

- **A. Neither is required if other traffic control devices or measures considered appropriate are used under either of the following conditions:**
  - **1. On low-volume roads (roads of less than 400 vehicles average daily traffic), or**
  - **2. At manually-operated bridges if electric power is not available.**
- **B. Only signals are required in urban areas if intersecting streets or driveways make gates ineffective.**
- **C. Only movable bridge warning gates are required if a traffic control signal that is controlled as part of the bridge operations exists within 500 feet of the movable bridge resistance gates and no intervening traffic entrances exist.**

Section 4Q.02 Design and Location of Movable Bridge Signals and Gates

Standard:

01 The signal faces and mountings of movable bridge signals shall comply with the provisions of Chapters 4D through 4G except as provided in this Section.

02 Signal faces with 12-inch diameter signal indications shall be used for all new movable bridge signals.

Option:

03 Existing signal faces with 8-inch diameter lenses may be retained for the remainder of their useful service life.

Standard:

04 Since movable bridge operations cover a variable range of time periods between openings, the signal faces shall be one of the following types:

- **A. Three-section signal faces with red, yellow, and green signal indications; or**
- **B. Two one-section signal faces with red signal indications in a vertical array separated by a STOP HERE ON RED (R10-6) sign (see Section 2B.59).**

05 Regardless of which signal type is selected, at least two signal faces shall be provided for each approach to the movable span and a stop line (see Section 3B.19) shall be installed to indicate the point behind which vehicles are required to stop.

Guidance:

06 If movable bridge operation is frequent, the use of three-section signal faces should be considered.

07 Insofar as practicable, the height and lateral placement of signal faces should comply with the requirements for other traffic control signals in accordance with Chapter 4D. They should be located no more than 50 feet in advance of the movable bridge warning gate.

Option:

08 Movable bridge signals may be supplemented with audible warning devices to provide additional warning to drivers and pedestrians.

Guidance:

09 A DRAW BRIDGE (W3-6) sign (see Section 2C.36) should be used in advance of movable bridge signals and gates to give warning to road users, except in urban conditions where such signing would not be practical.

Standard:

10 If physical conditions prevent a road user from having a continuous view of at least two signal indications for the distance specified in Table 4D-2, an auxiliary device (either a supplemental signal face or the DRAW BRIDGE (W3-6) sign to which has been added a Warning Beacon that is interconnected with the movable bridge controller unit) shall be provided in advance of movable bridge signals and gates.

Option:

11 The DRAW BRIDGE (W3-6) sign may be supplemented by a Warning Beacon (see Section 4S.03).

Support:

12 If two sets of gates (both a warning and a resistance gate) are used for a single direction, highway traffic signals are not required to accompany the resistance gate nearest the span opening.

Standard:

13 Movable bridge warning gates, if used, shall be at least standard railroad size, striped with 16-inch alternate vertical, fully-reflectorized red and white stripes. Flashing red lights in accordance with the Standards for those on railroad gates (see Section 8D.03) shall be included on the gate arm and they shall only be operated if the gate is closed or in the process of being opened or closed.

Guidance:

14 In the horizontal position, the top of the gate should be approximately 4 feet above the pavement.

15 Movable bridge warning gates should be of lightweight construction. In its normal upright position, the gate arm should provide adequate lateral clearance.

Option:

16 The movable bridge resistance gates may be delineated, if practical, in a manner similar to the movable bridge warning gate.

Guidance:

17 Movable bridge warning gates, if used, should extend at least across the full width of the approach lanes if movable bridge resistance gates are used. On divided highways in which the roadways are separated by a barrier median, movable bridge warning gates, if used, should extend across all roadway lanes approaching the span openings.

18 If movable bridge resistance gates are not used on undivided highways, movable bridge warning gates, if used, should extend across the full width of the roadway.

Option:

19 A single full-width gate or two half-width gates may be used.

Support:

20 The locations of movable bridge signals and gates are determined by the location of the movable bridge resistance gate (if used) rather than by the location of the movable spans. The movable bridge

resistance gates for high-speed highways are preferably located 50 feet or more from the span opening except for bascule and lift bridges, where they are often attached to, or are a part of, the structure.

Guidance:

21 Except where physical conditions make it impracticable, movable bridge warning gates should be located 100 feet or more from the movable bridge resistance gates or, if movable bridge resistance gates are not used, 100 feet or more from the movable span.

22 On bridges or causeways that cross a long reach of water and that might be hit by large marine vessels, within the limits of practicality, traffic should not be halted on a section of the bridge or causeway that is subject to impact.

23 In cases where it is impractical to halt traffic on a span that is not subject to impact, traffic should be halted at least one span from the opening. If traffic is halted by signals and gates more than 330 feet from the movable bridge warning gates (or from the span opening if movable bridge warning gates are not used), a second set of gates should be installed approximately 100 feet from the gate or span opening.

24 If the movable bridge is close to a grade crossing and traffic might possibly be stopped on the crossing as a result of the bridge opening, a traffic control device should notify the road users to not stop on the railroad tracks.

Section 4Q.03 Operation of Movable Bridge Signals and Gates

Standard:

01 Traffic control devices at movable bridges shall be coordinated with the movable spans, so that the signals, gates, and movable spans are controlled by the bridge tender through an interlocked control.

02 If the three-section type of signal face is used, the green signal indication shall be displayed at all times between bridge openings, except that if the bridge is not expected to open during continuous periods in excess of 5 hours, a flashing yellow signal indication shall be permitted to be used. The signal shall display a steady red signal indication when traffic is required to stop. The duration of the yellow change interval between the display of the green and steady red signal indications, or flashing yellow and steady red signal indications, shall be determined using engineering practices (see Section 4F.17).

03 If the vertical array of red signal indications is the type of signal face selected, the red signal indications shall flash alternately only when traffic is required to stop.

Guidance:

04 Traffic control signals on adjacent streets and highways should be interconnected with the movable bridge control if indicated by engineering judgment. When such interconnection is provided, the traffic control signals at adjacent intersections should be preempted by the operation of the movable bridge in the manner described in Section 4F.19.

CHAPTER 4R. HIGHWAY TRAFFIC SIGNALS AT TOLL PLAZAS [EPG 902.17]

Not Currently Used by MoDOT

Chapter 4R is not adopted because there are currently no toll facilities on the MoDOT system.

~~Section 4R.01 Traffic Signals at Toll Plazas~~

~~**Standard:**~~

~~**01 Traffic control signals or devices that closely resemble traffic control signals that use red or green circular indications shall not be used at toll plazas to indicate the open or closed status of the toll plaza lanes.**~~

~~*Guidance:*~~

~~*02 Traffic control signals or devices that closely resemble traffic control signals that use red or green circular indications should not be used for new or reconstructed installations at toll plazas to indicate the success or failure of electronic toll payments or to alternately direct drivers making cash toll payments to stop and then proceed.*~~

~~Section 4R.02 Lane-Use Control Signals at or Near Toll Plazas~~

~~**Standard:**~~

~~**01 Lane-use control signals used at toll plazas shall comply with the provisions of Chapter 4T except as otherwise provided in this Section.**~~

~~**02 At toll plazas with multiple lanes where one or more lanes is sometimes closed to traffic, a lane-use control signal shall be installed above the center of each toll plaza lane to indicate the open or closed status of the controlled lane.**~~

~~Option:~~

~~03 The bottom of the signal housing of a lane-use control signal above a toll plaza lane having a canopy may be mounted lower than 15 feet above the pavement, but not lower than the vertical clearance of the canopy structure.~~

~~04 Lane-use control signals may also be used to indicate the open or closed status of an Open Road ETC lane as a supplement to other devices used for the temporary closure of a lane (see Part 6).~~

~~Section 4R.03 Warning Beacons at Toll Plazas~~

~~**Standard:**~~

~~**01 Warning Beacons used at toll plazas shall comply with the provisions of Chapter 4S except as otherwise provided in this Section.**~~

~~*Guidance:*~~

~~*02 Warning Beacons, if used with a toll plaza canopy sign (see Section 2F.16) to assist drivers of such vehicles in locating the dedicated ETC Account-Only lane(s), should be installed in a manner such that the beacons are distinctly separate from the lane-use control signals (see Section 4T.01) for the toll plaza lane.*~~

~~Option:~~

~~03 Warning Beacons that are mounted on toll plaza islands, behind impact attenuators in front of toll plaza islands, and/or on toll booth pylons (ramparts) to identify them as objects in the roadway may be mounted at a height that is appropriate for viewing in a toll plaza context, even if that height is lower than the normal minimum of 8 feet above the pavement.~~

CHAPTER 4S. FLASHING BEACONS [EPG 902.18]

Section 4S.01 General Design and Operation of Flashing Beacons

Support:

01 A flashing beacon is a highway traffic signal with one or more signal sections that operates in a flashing mode. It can provide traffic control when used as an Intersection Control Beacon (see ~~Section 4S.02~~EPG 902.18.2) or it can provide warning when used in other applications (see ~~Sections 4S.03, 4S.04, and 4S.05~~EPG 902.18.3 902.18.4, and 902.18.5).

M01A A flashing beacon can be installed by MoDOT or by outside parties. An engineering study is to be performed to determine the need for them.

M01B The removal or installation of a flashing beacon on the State Highway System requires approval of the District Traffic Engineer or designee.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

02 Flashing beacon units, their mountings, signal visors, and backplates shall comply with the provisions of Chapters 4D and 4E, except as otherwise provided in this ~~Chapter~~Article.

03 Beacons shall be flashed at a rate of not less than 50 or more than 60 times per minute. The illuminated period of each flash shall be a minimum of ½ and a maximum of ⅔ of the total cycle.

04 A beacon shall not be included within the border of a sign except for Interchange Exit Direction signs with advisory speed panels (see Section 2E.25).

05 ~~There shall be two nominal diameter sizes for~~ All flashing beacon signal indications~~: 8 inches and~~ shall be 12 inches in diameter.

MoDOT uses 12-inch indications for all beacons. Revised Dec. 2025

Guidance:

06 If used to supplement a warning or regulatory sign, the edge of the beacon signal housing should normally be located no closer than 12 inches outside of the nearest edge of the sign or from the nearest edge of any of the signs and plaques in a sign assembly.

Option:

07 An automatic dimming device may be used to reduce the brilliance of flashing yellow signal indications during night operation.

08 Backplates (see Section 4D.06) may be used with flashing beacons.

Section 4S.02 Intersection Control Beacon

Standard:

01 An Intersection Control Beacon shall consist of one or more signal faces directed toward each approach to an intersection. Each signal face shall consist of one or more signal sections of a standard traffic signal face, with flashing CIRCULAR YELLOW or CIRCULAR RED signal indications in each signal face. They shall be installed and used only at an intersection to control two or more directions of travel.

02 Application of Intersection Control Beacon signal indications shall be limited to the following:

- **A. Yellow on one route (normally the major street) and red for the remaining approaches that are controlled by STOP signs, or**
- **B. Red for all approaches (if all of the intersection approaches are controlled by STOP signs).**

03 Flashing yellow signal indications shall not face conflicting vehicular approaches.

04 A STOP sign (see Section 2B.04) shall be used on approaches to which a flashing red signal indication is displayed on an Intersection Control Beacon.

05 If two horizontally-aligned red signal indications are used on an approach for an Intersection Control Beacon, they shall be flashed simultaneously to avoid being confused with grade crossing flashing-light signals. If two vertically-aligned red signal indications that have a physical separation

between them are used on an approach for an Intersection Control Beacon, they shall be flashed alternately.

06 Twelve-inch signal indications shall be used for Intersection Control Beacons ~~facing approaches where:~~

~~A. Road users view both Intersection Control Beacon and lane-use control signal indications simultaneously; or~~

~~B. The nearest Intersection Control Beacon signal face is more than 120 feet beyond the stop line, unless a supplemental near-side Intersection Control Beacon signal face is provided~~.

MoDOT uses only 12-inch signal indications. Revised Dec. 2025

M06A When an overhead flasher is authorized for installation at an intersection, the support pole shall be placed in accordance with the AASHTO *Roadside Design Guide* clear zone guidelines.

M06B All intersection control beacons shall be installed and/or maintained to provide a minimum clearance of 16 feet and a maximum clearance of 19 feet above the pavement grade.

M06C A pole on state right of way owned by others shall not be used to support a span wire flasher. If an adjustment of the location for a department installed pole cannot be made, the existing pole shall be moved at the expense of the owner.

Support:

M06D Hybrid beacons (pedestrian and emergency) are not considered intersection control beacons and are not subject to provisions stated in the section.

M06E Provisions for pedestrian hybrid beacons are described in EPG 902.10.

M06F Provisions for emergency hybrid beacons are described in EPG 902.14.

Guidance:

M06G An intersection control beacon should be considered at intersections when any of the following conditions apply:

A. A required stop after a long period of uninterrupted speed,

B. A required stop on a long tangent section of roadway where cross-street traffic may have trouble judging the distance and speed of an oncoming vehicle,

C. A stop condition not readily visible to the approaching driver,

D. A situation where traffic on the major roadway may not be aware of cross-street traffic.

MoDOT specific content from the EPG. Revised Dec. 2025

~~*07 Twelve-inch signal indications should be used for Intersection Control Beacons facing approaches where:*~~

~~*A. The posted or statutory speed limit or the 85th-percentile approach speed is higher than 40 mph, or*~~

~~*B. Where only post-mounted flashing beacon signal faces are used.*~~

Paragraph 7 is unnecessary because MoDOT uses only 12-inch signal indications as modified in paragraph 6. Revised Dec. 2025

08 An Intersection Control Beacon should not be mounted on a pedestal in the roadway unless the pedestal is within the confines of a traffic or pedestrian island.

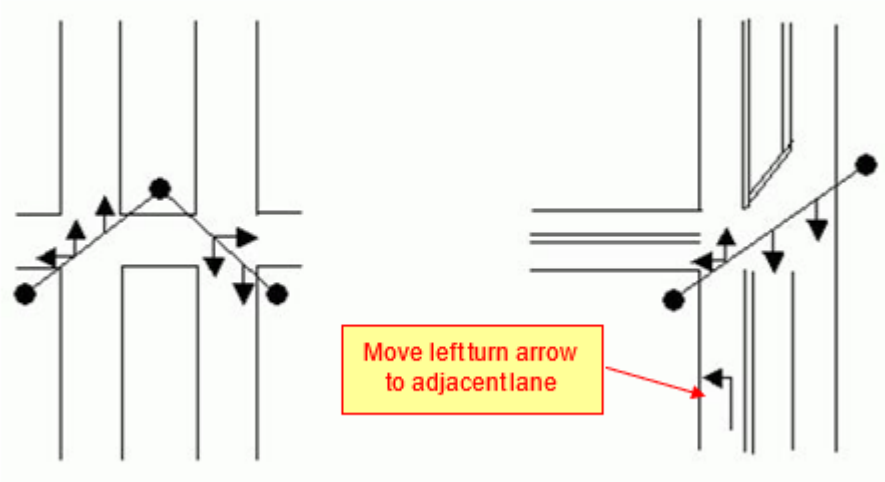
Option:

09 Supplemental signal indications may be used on one or more approaches in order to provide adequate visibility to approaching road users.

10 Intersection Control Beacons may be used at intersections where traffic or physical conditions do not justify conventional traffic control signals but crash rates indicate the possibility of a special need.

11 An Intersection Control Beacon is generally located over the center of an intersection; however, it may be used at other suitable locations.

Typical Flasher Layouts



MoDOT figure from the EPG. Revised Dec. 2025

Section 4S.03 Warning Beacon

Support:

01 Typical applications of Warning Beacons include the following:

A. As supplemental emphasis to signs or object markers on or in front of obstructions that are in or immediately adjacent to the roadway;

B. As supplemental emphasis to warning signs;

C. As emphasis for midblock crosswalks;

D. As supplemental emphasis to regulatory signs, except STOP, DO NOT ENTER, WRONG WAY, and SPEED LIMIT signs; and

E. In conjunction with a regulatory or warning sign that includes the phrase WHEN FLASHING in its legend ~~on a supplemental plaque~~ to indicate that the regulation is in effect or that the condition is present only at certain times. Section 2A.12 prohibits the use flashing light-emitting diode (LED) units within the legend or border of the sign in conjunction with the phrase WHEN FLASHING in its legend ~~or on a supplemental plaque~~.

MoDOT does not use the WHEN FLASHING text on supplemental plaques. Revised Dec. 2025

Standard:

02 A Warning Beacon shall consist of one or more signal sections of a standard traffic signal face with a flashing CIRCULAR YELLOW signal indication in each signal section.

03 A Warning Beacon shall be used only to supplement an appropriate warning or regulatory sign or marker.

04 Warning Beacons, if used at intersections, shall not face conflicting vehicular approaches.

Guidance:

05 The condition or regulation justifying Warning Beacons should largely govern their location with respect to the roadway.

06 If an obstruction is in or adjacent to the roadway, illumination of the lower portion or the beginning of the obstruction or illumination of the sign on or in front of the obstruction, in addition to the beacon, should be considered.

07 Warning Beacons should be operated only during those periods or times when the condition or regulation exists.

Option:

08 If Warning Beacons have more than one signal section, they may be flashed either alternately or simultaneously.

~~09 A Warning Beacon interconnected with a traffic signal controller assembly may be used with a BE PREPARED TO STOP (W3-4) sign and a WHEN FLASHING (W16-13P) plaque (see Section 2C.35).~~

MoDOT does not use the WHEN FLASHING supplemental plaque. The plaque is to be used if a Beacon is installed with a BE PREPARED TO STOP sign per Section 2C.35. Revised Dec. 2025

10 Warning Beacons that are actuated by pedestrians, bicyclists, or other road users may be used as appropriate to provide additional warning to vehicles approaching a crossing or other location.

Guidance:

11 An audible information device should be used with pedestrian-actuated Warning Beacons to assist pedestrians with vision disabilities.

Standard:

12 If an audible information device is used in conjunction with a pedestrian-actuated Warning Beacon at a pedestrian crossing, the audible information device shall not use vibrotactile indications or percussive indications. The audible information device shall include a speech message that says, "Warning lights are flashing." The audible message shall be spoken twice.

~~*Guidance:*~~

~~*13 If an audible information device is used in conjunction with a pedestrian-actuated Warning Beacon at a pedestrian crossing, the audible message should be a speech message that says, "Warning lights are flashing." The audible message should be spoken twice.*~~

MoDOT combines paragraphs 12 and 13 into one standard requiring a speech message. Revised Dec. 2025

Option:

M14 Warning Beacons may be installed in conjunction with School Zone signing (See Section 7B.02) at the request of the school district and at their cost.

M15 Warning Beacons may be installed in conjunction with Emergency Vehicle (W11-8) signs (See Section 2C.54) at the request of the emergency vehicle service district and at their cost.

Standard:

M16 Warning Beacons installed in conjunction with school zone signing shall only operate when there is activity at the school.

Support:

M17 Emergency vehicle Warning Beacons are set up to operate only when emergency vehicles are exiting the station or garage on a duly authorized emergency run. These Warning Beacons enhance the meaning of the advanced signing by only flashing when emergency activity is occurring.

M18 See EPG 902.12.7 for additional information regarding school and emergency vehicle warning beacons.

MoDOT specific content from the EPG related to warning beacons. Revised Dec. 2025

Section 4S.04 Speed Limit Sign Beacon

Standard:

01 A Speed Limit Sign Beacon shall be used only to supplement a Speed Limit sign.

02 A Speed Limit Sign Beacon shall consist of one or more signal sections of a standard traffic control signal face, with a flashing CIRCULAR YELLOW signal indication in each signal section. The signal indications shall have a nominal diameter of not less than 12 inches. If two signal indications are used, they shall be vertically aligned. If two ~~or more~~ signal indications are used, they shall be alternately flashed.

MoDOT includes paragraph 2 similar to the 2009 Edition of the MUTCD. Revised Dec. 2025

Option:

03 A Speed Limit Sign Beacon may be used with a fixed or variable Speed Limit sign. If applicable, a flashing Speed Limit Sign Beacon (with an appropriate accompanying sign) may be used to indicate that the displayed speed limit is in effect.

M04 Speed Limit Sign beacons may be installed in conjunction with School Speed Limit signing (See Section 7B.05) at the request of the school district and at their cost.

Standard:

M05 When School Speed Limit signing (See Section 7B.05) is installed, Speed Limit Sign Beacons shall be installed in conjunction with the School Speed Limit Signing.

M06 Speed Limit Sign Beacons installed in conjunction with School Speed Limit signing shall only operate at times when the school speed limit applies.

MoDOT specific content from the EPG related to speed limit sign beacons. Revised Dec. 2025

Section 4S.05 Stop Beacon

Standard:

01 A Stop Beacon shall be used only to supplement a STOP sign, a DO NOT ENTER sign, or a WRONG WAY sign.

02 A Stop Beacon shall consist of one or more signal sections of a standard traffic signal face with a flashing CIRCULAR RED signal indication in each signal section. If two horizontally-aligned signal indications are used for a Stop Beacon, they shall be flashed simultaneously to avoid being confused with grade crossing flashing-light signals. If two vertically-aligned signal indications are used for a Stop Beacon, they shall be flashed alternately.

~~*Guidance:*~~

03 The edge of the signal housing of a Stop Beacon ~~*should*~~ shall be not less than 12 inches or more than 24 inches from the nearest edge of the STOP sign, DO NOT ENTER sign, or WRONG WAY sign that it supplements.

EPG upgrades paragraph 3 to a standard statement, as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

Section 4S.05A Interactive Flashing Beacon

Option:

M01 Types of interactive flashing beacons may be any of the previously mentioned types of beacons. These beacons may be accompanied with signs that reinforce the message. Examples include: beacons activated by approaching traffic or excessive speed, beacons used to give advance warning of a yellow change interval at a signalized intersection or beacons used to notify motorists of traffic stopped ahead. Beacons activated when motorists exceed a posted speed may be used where conditions require a reduction in traffic speed. Examples of this use include low speed curves or where drivers regularly exceed the posted speed limit. Beacons activated a few seconds before (or at the start of) the yellow change interval at a signalized intersection may be used to give high speed traffic advance warning of the signal changing from green to yellow.

Standard:

M02 Interactive flashing beacons shall be activated only when required.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 4S.05B Procedures for Advance Beacon Installations by Outside Parties

Standard:

M01 Advance beacons such as school warning, school speed limit, and emergency vehicle warning beacons are installed under contract. The district will obtain appropriate signed contracts and will follow execution guidelines in EPG 153.21 Traffic. These contracts deal with the installation and transfer of ownership of the installation from the outside party to the Commission.

Support:

M02 The following standard contracts are available:

- TR8 - Installation of Roadside Flashers for School Operation
- TR26 - Installation of Roadside Flashers for Emergency Vehicle Operation

Standard:

M03 Plans for installation shall be the responsibility of the outside party and shall conform to the latest standards of MoDOT.

M04 Once the contract is executed, a permit to work on MoDOT's right-of-way shall be obtained by the outside party. Once issued, the outside party may proceed to install the beacons. A contractor or the outside party shall complete the installation; however, a licensed electrician shall supervise the installation. The outside party needs to coordinate with MoDOT prior to installation of the flasher to have MoDOT personnel verify hardware and equipment is acceptable for use on the state highway system. Upon completion of installation, MoDOT personnel shall verify correct installation prior to release of the permit and acceptance of the flasher.

M05 General layouts for an intersection control beacon are illustrated in Figure 902.18.2.

M06 All costs shall be the responsibility of the outside party. This includes but is not limited to installation and power; however, the signs and mounting brackets shall be supplied by MoDOT. All specifications shall be met to ensure the proper installation is in place.

M07 Beacons shall be active only during those times when the conditions of the advance signing are applicable or when the enhancement of the signed message is needed. The times of operation, timing, and method of operation are approved by MoDOT.

M08 The contract shall establish responsibility for future maintenance, power costs, programming ownership, and replacement equipment.

M09 Flashing beacons shall only be installed on advanced signing or on school speed limit signing.

M10 Only one flasher assembly shall be permitted per approach.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 4T. LANE-USE CONTROL SIGNALS [EPG 902.19]

Not Currently Used by MoDOT

Chapter 4T is not adopted because there are currently no lane-use control signals on the MoDOT system.

Section 4T.01 Application of Lane-Use Control Signals

Support:

01 Lane-use control signals are special overhead signals that permit or prohibit the use of specific lanes of a street or highway or that indicate the impending prohibition of their use. Lane-use control signals are distinguished by placement of special signal faces over a certain lane or lanes of the roadway, over a shoulder where driving is permitted at certain times, and by their distinctive shapes and symbols. Supplementary signs are sometimes used to explain their meaning and intent.

02 Lane-use control signals are most commonly used for reversible lane control, but are also used in certain non-reversible lane applications and for toll plaza lanes (see Section 4R.02).

Guidance:

03 An engineering study should be conducted to determine whether a reversible lane operation can be controlled satisfactorily by static signs (see Section 2B.34) or whether lane-use control signals are necessary. Lane-use control signals should be used to control reversible-lane operations if any of the following conditions are present:

- *A. More than one lane is reversed in direction;*
- *B. Two-way or one-way left turns are allowed during peak-period reversible operations, but those turns are from a different lane than used during off-peak periods;*
- *C. Other unusual or complex operations are included in the reversible lane pattern;*
- *D. Demonstrated crash experience occurring with reversible lane operation controlled by static signs that can be corrected by using lane-use control signals at the times of transition between peak and off-peak patterns; and/or*
- *E. An engineering study indicates that the safety and efficiency of the traffic operations of a reversible-lane system would be improved by lane-use control signals.*

Standard:

04 Pavement markings (see Section 3B.04) shall be used in conjunction with reversible-lane control signals.

Option:

05 Lane-use control signals may also be used if there is no intent or need to reverse lanes, but there is a need to indicate the open or closed status of one or more lanes, such as:

- A. On a freeway, if it is desired to close certain lanes at certain hours to facilitate the merging of traffic from a ramp or other freeway;
- B. On a freeway, near its terminus, to indicate a lane that ends;
- C. On a freeway or long bridge, to indicate that a lane may be temporarily blocked by a crash, breakdown, construction or maintenance activities, or similar temporary conditions; and
- D. On a conventional road or driveway, at access or egress points to or from a facility, such as a parking garage, where one or more lanes of the access or egress are opened or closed at various times.

06 A USE LANE(S) WITH GREEN ARROW (R10-8) sign (see Section 2B.59) may be used in conjunction with lane-use control signals.

Section 4T.02 Meaning of Lane-Use Control Signal Indications

Standard:

01 The meanings of lane-use control signal indications (see Figure 4T-1) shall be as follows:

- **A. A steady DOWNWARD GREEN ARROW signal indication shall mean that the lane which the arrow signal indication is located over is open to vehicle travel in that direction.**
- **B. A steady YELLOW X signal indication shall mean that the lane which the Yellow X signal indication is located over is about to be closed to vehicle traffic in that direction and shall be**

followed by a steady RED X signal indication (either within the same signal face or in a downstream signal face).

C. A steady RED X signal indication shall mean that the lane which the Red X signal indication is located over is closed to vehicle traffic in the direction viewed by the road user.

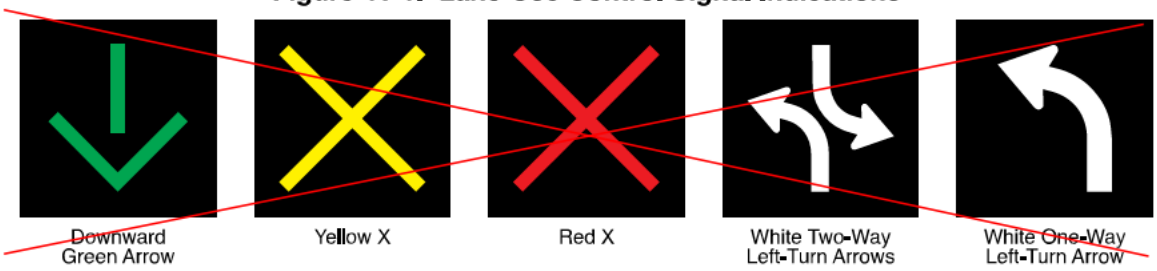
D. A steady WHITE TWO-WAY LEFT-TURN ARROW signal indication shall mean that the lane which the turning arrows indication is located over is open to traffic making a left turn from either direction of travel, but not for through travel.

E. A steady WHITE ONE-WAY LEFT-TURN ARROW signal indication shall mean that the lane which the turning arrow indication is located over is open to traffic making a left turn in that direction (without opposing turns in the same lane), but not for through travel.

Figure 4T-1. Lane-Use Control Signal Indications

Do not include figure

Figure 4T-1. Lane-Use Control Signal Indications



Section 4T.03 Design of Lane-Use Control Signals

Standard:

01 All lane-use control signal indications shall be in units with rectangular signal faces and shall have opaque backgrounds. Except as provided in Paragraph 13 of this Section, the nominal minimum height and width of each DOWNWARD GREEN ARROW, YELLOW X, and RED X signal face shall be 18 inches for typical applications. Except as provided in Paragraph 13 of this Section, the WHITE TWO-WAY LEFT-TURN ARROW and WHITE ONE-WAY LEFT-TURN ARROW signal faces shall have a nominal minimum height and width of 30 inches.

02 Each lane to be reversed or closed shall have signal faces with at least a DOWNWARD GREEN ARROW and a RED X symbol.

03 Each reversible lane that also operates as a two-way or one-way left-turn lane during certain periods shall have signal faces that also include the applicable WHITE TWO-WAY LEFT-TURN ARROW or WHITE ONE-WAY LEFT-TURN ARROW symbol.

04 Each non-reversible lane immediately adjacent to a reversible lane shall have signal indications that display a DOWNWARD GREEN ARROW to traffic traveling in the permitted direction and a RED X to traffic traveling in the opposite direction.

05 If in separate signal sections, the relative positions, from left to right, of the signal indications shall be RED X, YELLOW X, DOWNWARD GREEN ARROW, WHITE TWO-WAY LEFT-TURN ARROW, WHITE ONE-WAY LEFT-TURN ARROW.

Guidance:

06 The color of lane-use control signal indications should be clearly visible for at least 2,300 feet at all times under normal atmospheric conditions, unless otherwise physically obstructed.

07 Lane-use control signal faces should be located approximately over the center of the controlled lane.

08 If the area to be controlled is more than 2,300 feet in length, or if the vertical or horizontal alignment is curved, intermediate lane-use control signal faces should be located over each controlled lane at frequent intervals. This location should be such that road users will at all times be able to see at least one signal

indication and preferably two along the roadway, and will have a definite indication of the lanes specifically reserved for their use.

09 All lane-use control signal faces should be located in a straight line across the roadway approximately at right angles to the roadway alignment.

10 On roadways having intersections controlled by traffic control signals, the lane-use control signal face should be located sufficiently far in advance of or beyond such traffic control signals to prevent them from being misconstrued as traffic control signals.

Standard:

11 Except as provided in Paragraph 12 of this Section, the bottom of the signal housing of any lane-use control signal face shall be a minimum of 15 16 feet and a maximum of 19 feet above the pavement grade.

Option:

12 The bottom of a lane-use control signal housing may be lower than 15 16 feet above the pavement if it is mounted on a canopy or other structure over the pavement, but not lower than the vertical clearance of the structure.

13 Except for lane-use control signals at toll plazas (see Section 4R.02), Lane-use control signal faces with nominal height and width of 12 inches for the DOWNWARD GREEN ARROW, YELLOW X, and RED X signal faces, and lane-use control signal faces with nominal height and width of 18 inches for the WHITE TWO-WAY LEFT-TURN ARROW and WHITE ONE-WAY LEFT-TURN ARROW signal faces may be used in areas with minimal visual clutter and with speeds of less than 40 mph.

14 Other sizes of lane-use control signal faces larger than 18 inches with proportional dimensions and with message recognition distances appropriate to signal spacing may be used for the DOWNWARD GREEN ARROW, YELLOW X, and RED X signal faces.

15 Non-reversible lanes not immediately adjacent to a reversible lane on any street so controlled may also be provided with signal indications that display a DOWNWARD GREEN ARROW to traffic traveling in the permitted direction and a RED X to traffic traveling in the opposite direction.

16 The signal indications provided for each lane may be in separate signal sections or may be superimposed in the same signal section.

Section 4T.04 Operation of Lane-Use Control Signals

Standard:

01 All lane-use control signals shall be coordinated so that all the signal indications along the controlled section of roadway are operated uniformly and consistently. The lane-use control signal system shall be designed to reliably guard against showing any prohibited combination of signal indications to any traffic at any point in the controlled lanes.

02 For reversible lane control signals, the following combination of signal indications shall not be simultaneously displayed over the same lane to both directions of travel:

- **A. DOWNWARD GREEN ARROW in both directions,**
- **B. YELLOW X in both directions,**
- **C. WHITE ONE-WAY LEFT-TURN ARROW in both directions,**
- **D. DOWNWARD GREEN ARROW in one direction and YELLOW X in the other direction,**
- **E. WHITE TWO-WAY LEFT-TURN ARROW or WHITE ONE-WAY LEFT-TURN ARROW in one direction and DOWNWARD GREEN ARROW in the other direction,**
- **F. WHITE TWO-WAY LEFT-TURN ARROW in one direction and WHITE ONE-WAY LEFT-TURN ARROW in the other direction, and**
- **G. WHITE ONE-WAY LEFT-TURN ARROW in one direction and YELLOW X in the other direction.**

03 A moving condition in one direction shall be terminated either by the immediate display of a RED X signal indication or by a YELLOW X signal indication followed by a RED X signal indication.

04 In either case, the duration of the RED X signal indication shall be an appropriate duration to allow traffic time to vacate the lane before any moving condition is allowed in the opposing direction.

05 Whenever a DOWNWARD GREEN ARROW signal indication is changed to a WHITE TWO-WAY LEFT-TURN ARROW signal indication, the RED X signal indication shall continue to be displayed to the opposite direction of travel for an appropriate duration to allow traffic time to vacate the lane being converted to a two-way left-turn lane.

06 If an automatic control system is used, a manual control to override the automatic control shall be provided.

Guidance:

07 The type of control provided for reversible lane operation should be such as to permit either automatic or manual operation of the lane-use control signals.

Standard:

08 If used, lane-use control signals shall be operated continuously, except that lane-use control signals that are used only for special events or other infrequent occurrences and lane-use control signals on non-reversible freeway lanes are permitted to be darkened when not in operation. The change from normal operation to non-operation shall occur only when the lane-use control signals display signal indications that are appropriate for the lane use that applies when the signals are not operated. The lane-use control signals shall display signal indications that are appropriate for the existing lane use when changed from non-operation to normal operations. Also, traffic control devices shall clearly indicate the proper lane use when the lane-use control signals are not in operation.

Support:

09 Section 2B.34 contains additional information concerning considerations involving left-turn prohibitions in conjunction with reversible lane operations. Section 2G.24 contains additional information concerning lane-use control signals used for part-time travel on a shoulder. Section 2G.25 contains additional information concerning lane-use control signals used for active lane management on freeways and expressways.

CHAPTER 4U. IN-ROADWAY WARNING LIGHTS [EPG 902.20]

Section 4U.01 Application of In-Roadway Warning Lights

Support:

01 In-Roadway Warning Lights are special types of highway traffic signals 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 their speed and/or come to a stop. This includes situations warning of marked school crosswalks, marked midblock crosswalks, marked crosswalks on uncontrolled approaches, marked crosswalks in advance of roundabouts as described in Chapter 3D, and other roadway situations involving pedestrian crossings.

Standard:

02 In-Roadway Warning Lights shall not be used for any application that is not described in this ~~Chapter~~Article.

03 When used, In-Roadway Warning Lights shall be flashed and shall not be steadily illuminated.

Support:

04 Steadily illuminated lights installed in the roadway surface are considered to be internally illuminated raised pavement markers (see Section 3B.14).

Option:

05 In-Roadway Warning Lights may be flashed in a manner that includes a continuous flash of varying intensity and time duration that is repeated to provide a flickering effect (see ~~Section 4U.02~~EPG 902.20.2).

~~*Guidance*~~ **Standard:**

06 If used, In-Roadway Warning Lights ~~*should*~~ shall not exceed a height of ¾ inch above the roadway surface.

EPG upgrades paragraph 6 to a standard statement, as it was in the 2009 Edition of the MUTCD. Revised Dec. 2025

Section 4U.02 In-Roadway Warning Lights at Crosswalks

Option:

01 In-Roadway Warning Lights may be installed at certain marked crosswalks, based on an engineering study or engineering judgment, to provide additional warning to road users.

Standard:

02 If used, In-Roadway Warning Lights at crosswalks shall be installed only at marked crosswalks with applicable warning signs. They shall not be used at crosswalks controlled by YIELD signs, STOP signs, traffic control signals, or pedestrian hybrid beacons.

03 If In-Roadway Warning Lights are used at a crosswalk, the following requirements shall apply:

- **A. Except as provided in ~~Paragraphs 7 and 8~~the third and fourth option paragraphs of this ~~Section~~Article, they shall be installed along both sides of the crosswalk and shall span its entire length.**
- **B. They shall initiate operation based on pedestrian actuation and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk.**
- **C. They shall display a flashing yellow light when actuated. The flash rate shall be at least 50, but not more than 60, flash periods per minute. If they are flashed in a manner that includes a continuous flash of varying intensity and time duration that is repeated to provide a flickering effect, the flickers or pulses shall not repeat at a rate that is between 5 and 30 per second to avoid frequencies that might cause seizures.**
- **D. They shall be installed in the area between the outside edge of the crosswalk line and 10 feet from the outside edge of the crosswalk.**

E. They shall face away from the crosswalk if unidirectional, or shall face away from and across the crosswalk if bidirectional.

~~03~~04 **If used on one-lane, one-way roadways, a minimum of two In-Roadway Warning Lights shall be installed on the approach side of the crosswalk. If used on two-lane roadways, a minimum of three In-Roadway Warning Lights shall be installed along both sides of the crosswalk. If used on roadways with more than two lanes, a minimum of one In-Roadway Warning Light per lane shall be installed along both sides of the crosswalk.**

Guidance:

~~04~~05 *If used, In-Roadway Warning Lights should be installed in the center of each travel lane, at the center line of the roadway, at each edge of the roadway or parking lanes, or at other suitable locations away from the normal tire track paths.*

~~05~~06 *The location of the In-Roadway Warning Lights within the lanes should be based on engineering judgment.*

Option:

~~06~~07 On one-way streets, In-Roadway Warning Lights may be omitted on the departure side of the crosswalk.

~~07~~08 Based on engineering judgment, the In-Roadway Warning Lights on the departure side of the crosswalk on the left-hand side of a median may be omitted.

~~08~~09 Unidirectional In-Roadway Warning Lights installed at crosswalk locations may have an optional, additional yellow light indication in each unit that is visible to pedestrians in the crosswalk to indicate to pedestrians in the crosswalk that the In-Roadway Warning Lights are in fact flashing as they cross the street. These yellow lights may flash with and at the same flash rate as the light module in which each is installed.

Guidance:

~~09~~10 *If used, the period of operation of the In-Roadway Warning Lights following each actuation should be sufficient to allow a pedestrian crossing in the crosswalk to leave the curb or shoulder and 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. 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 period of operation.*

~~10~~11 *An audible information device should be used with In-Roadway Warning Lights to provide assistance for pedestrians with vision disabilities.*

Standard:

~~11~~12 **If pedestrian push buttons (rather than passive detection) are used to actuate the In-Roadway Warning Lights, a PUSH BUTTON FOR~~To Turn On~~ WARNING LIGHTS/WAIT FOR GAP IN TRAFFIC (R10-25) sign (see Section 2B.58) shall be installed adjacent to a pedestrian push button detector explaining the purpose and use of the pedestrian push button detector.**

Paragraph modified to clarify sign location, and to correct known error. Revised Dec. 2025

~~12~~13 **Where the period of operation is sufficient only for crossing from a curb or shoulder to a median of sufficient width for pedestrians to wait, median-mounted pedestrian actuators shall be provided.**

~~13~~14 **If an audible information device is used in conjunction with In-Roadway Warning Lights, the audible information device shall not use vibrotactile indications or percussive indications.**

Guidance:

~~14~~15 *If an audible information device is used in conjunction with In-Roadway Warning Lights, the audible message during the time that the lights are flashing should be a speech message that says, "Warning lights are flashing." The audible message should be spoken twice.*

PART 5 [EPG 912]
TRAFFIC CONTROL DEVICE CONSIDERATIONS FOR AUTOMATED VEHICLES
CHAPTER 5A. GENERAL

Section 5A.01 Scope and Purpose

Support:

M00 MoDOT adopts Part 5 of the MUTCD as Category 912 of the EPG with minimal modifications. The information in EPG 912 includes general considerations related to automated vehicles (AVs). This information does not fully describe MoDOT policies and directions. Refer to other categories of the EPG for specific information regarding traffic control devices.

01 The scope of the provisions in this Part are intended for consideration of traffic control devices that are specifically being designed to accommodate automated vehicles capable of performing partial or full real-time operational functions in general traffic on a sustained basis. This Part does not require agencies to use these provisions in their accommodation of automated vehicles on their roadways. Rather, the purpose of these provisions is to provide agencies with general considerations and guidance for traffic control devices that can be more helpful in the accommodation of such vehicles, while at the same time being more beneficial to road users.

02 It is important for early implementers of automated vehicles to understand the ramifications of traffic control devices in a mixed fleet environment and to consider the needs of both human and machine-led road users. Partial automation technologies are already commercially available in the vehicle fleet and are operating under current infrastructure conditions. The overall effectiveness of the automation is impacted by the uniformity and consistent application of the highway infrastructure, including traffic control devices.

03 This Chapter provides an overview of foundational driving automation system (see definition in Section 5A.03) technology terminology, key principles, considerations for traffic control device selection, and topics for agencies to consider. The MUTCD does not address standardization of digital infrastructure, geometric road design, traffic control device maintenance levels, minimum pavement conditions, or other items that might be important for safe and effective operation of driving automation system technologies.

Section 5A.02 Overview of Automated Vehicles and Connected Vehicles

Support:

01 Driving automation system technology automates some or all aspects of the driving tasks to assist or replace the human driver and can include driver assistance technology generally known as advanced driver assistance systems (ADAS). Automated vehicles (AVs) are vehicles in which at least one element of vehicle control (such as steering, speed control, or braking) occurs without direct human driver input. AVs function by gathering information from a suite of sensors that can include, but are not limited to:

A. Cameras,
B. Radar,
C. Light detection and ranging (LiDAR),
D. Ultrasonic, and
E. Infrared.

02 AVs can combine sensor data with other inputs including detailed map data and information from other connected vehicles or infrastructure. AVs might be able to detect and classify objects in their surroundings and might predict how they are likely to behave.

03 Connected vehicle technology enables cars, buses, trucks, trains, roads, and roadside infrastructure, as well as other devices such as cellular telephones, to communicate with one another.

Connected vehicle technology enabling vehicles to communicate with each other is known as vehicle-to-vehicle (V2V). Connected vehicle technology enabling vehicles to communicate with infrastructure is known as vehicle-to-infrastructure (V2I). Connected vehicle technology enables equipped vehicles on the road to be aware of the location and status of other nearby equipped vehicles or devices. Road users could receive notifications and alerts of dangerous situations, such as a vehicle that is about to run a red traffic signal as it nears an intersection, or an oncoming car, that is out of sight beyond a curve swerving into the opposing lane to avoid an object on the road.

Section 5A.03 Definitions and Terms

Support:

01 The definitions and terms shown in Items A through G below, which are found in the Society of Automotive Engineers standard SAE J3016 and other sources, are used extensively in automated vehicle technology. Their definitions, which are summarized below for reference and for use with the provisions of this Manual, are as follows:

A. Advanced Driver Assistance Systems (ADAS) – Electronic systems that aid a vehicle driver with one or more driving tasks while driving. They are intended to increase the safe operation of a vehicle and include applications such as automatic braking, lane keeping assistance, adaptive cruise control, and others.

B. Automated Driving System (ADS) – The hardware and software that are collectively capable of performing the entire Dynamic Driving Task (DDT) on a sustained basis, regardless of whether it is limited to a specific Operational Design Domain (ODD); this term is used specifically to describe a Level 3, 4, or 5 driving automation system.

C. Automation Levels – The levels of automation that are described in Table 5A-1.

D. Cooperative Automation – Technology that enables communication with other vehicles and the infrastructure to coordinate automated vehicle operation.

E. Driving Automation System – The hardware and software that are collectively capable of performing part or all of the DDT on a sustained basis; this term is used generically to describe any system capable of Levels 1 through 5 driving automation.

F. Dynamic Driving Task (DDT) – All of the real-time operational and tactical functions required to operate a vehicle in on-road traffic, excluding the strategic functions such as trip scheduling and selection of destinations and waypoints.

G. Operational Design Domain (ODD) – Operating conditions under which a given driving automation system or feature thereof is specifically designed to function, including, but not limited to, environmental, geographical, and time-of-day restrictions, and/or the requisite presence or absence of certain traffic or roadway characteristics.

Section 5A.04 Traffic Control Device Design and Use Considerations

Support:

01 The interaction of traffic control devices with driving automation systems can create many challenges for agencies in determining traffic control device selection and application. The lack of tolerance of driving automation systems for non-uniformity in traffic control device design and application is a limiting factor of current driving automation system sophistication. This is because driving automation systems have a limited ability to interpolate across gaps in traffic control device cues to the vehicle in the following types of situations:

A. The driving automation system technology's ability to adapt to existing traffic control device design and typical quality, such as the refresh rates of electronic changeable message sign displays or the overall quality of a device that has been in service on the roadway for many years;

B. The color perception of signs;

C. The electronically perceptible conspicuity and contrast of markings in different environments and lighting conditions;

D. The driving automation system camera technology and device photometric characteristics in interpreting various types of traffic signals;

E. The ability to discern and comprehend temporary traffic control devices and their varying applications, such as active electronic display devices or flaggers; and

F. The ability to decipher traffic control at highway-rail or highway-LRT grade crossings, especially at passive grade crossings.

02 These and other challenges might limit the functionality of driving automation systems, thus making them less effective or functional, with potential implications for safety and traffic operations. The uniform design and consistent application of standardized traffic control devices supports the functionality of driving automation system technology in many situations. Similarly, good traffic control device maintenance practices and programs will help improve the potential for driving automation systems to operate properly in many roadway environments.

Guidance:

03 Agencies should adopt traffic control device maintenance policies and or practices with consideration to both the human driver and driving automation system technology needs (see Sections 1D.10, 2A.19, 3A.05 and 4A.10).

04 Engineering judgment (see Section 1D.03) used to determine traffic control device selection and placement should consider uniformity in application and location needed to support both the human driver and driving automation system technology.

Support:

05 A systematic approach to traffic control device selection, application, and maintenance taking into consideration certain fundamental principles, will help agencies considering the inclusion of AVs on their roadways. Generally, improvements to traffic control device uniformity and improved maintenance policies and practices that keep traffic control devices in good working order with high levels of conspicuity that are beneficial to the human driver will be beneficial to AVs as well.

Guidance:

06 Agencies should apply the following fundamental principles and considerations as they evaluate traffic control devices and other maintenance practices to support driving automation system technologies during maintenance and infrastructure improvements:

A. Applying uniform and consistent traffic control devices on each type of roadway, and applying a similar approach to traffic control at similar locations in similar situations.

B. Establishing maintenance policies that incorporate effective practices to identify and then fix or replace in a timely manner any traffic control device that is reaching the end of its useful life, or that is damaged or otherwise no longer serviceable.

C. Making sure that temporary or emergency traffic control, to the extent practicable, is planned in advance using devices that comply with the provisions of this Manual and that follow policies designed to provide uniformity throughout the site and across jurisdictions.

D. Removing extraneous devices that are no longer necessary or that provide limited benefit to vehicle operation or navigation.

CHAPTER 5B. PROVISIONS FOR TRAFFIC CONTROL DEVICES

Section 5B.01 Signs

Support:

M00 This section of the MUTCD is included in the EPG for reference only. MoDOT has developed specific policies for signing to enhance safety and uniformity of traffic control devices that will be beneficial to AVs. Refer to EPG 903 Highway Signing for information related to signs.

01 Driving automation systems use sensors, algorithms, and processing to locate, read, and comprehend traffic signs and assist the human driver or AV in appropriately making vehicle operational decisions. Location, condition, uniformity, design characteristics, and consistent application all affect the ability of driving automation systems to perform these functions.

Standard:

02 When scanning graphics (see Section 2A.04) of any type are used on a sign for support of driving automation systems, the scanning graphics shall not be visible to the human eye and the sign shall have no apparent loss of resolution or recognition for the road user.

Guidance:

03 Agencies seeking to better accommodate driving automation systems to support AVs, while also potentially benefitting human drivers, should consider:

A. Clearly associating the sign location and application with the displayed message to the specific lane or road to which it applies, such as in the case of parallel roads or lanes with different speed limits or restrictions.

B. The practice of sign and information spreading (see Section 2A.20) to limit the amount of information displayed in one location or on one sign to minimize sign clutter.

C. Signs with designs that are otherwise not provided for in this Manual or the FHWA "Standard Highway Signs" publication (see Section 1A.05) are designed based on the standardized sign design practices and features as provided for in this Manual for the type of sign, the location, and the characteristics of the roadway on which it is used.

D. *The refresh rate of LEDs in the illuminated portion of electronic-display signs to provide for greater consistency in driving automation system detection.*

Section 5B.02 Markings

Support:

M00 This section of the MUTCD is included in the EPG for reference only. MoDOT has developed policies for markings to enhance safety and uniformity of traffic control devices that will be beneficial to AVs. Refer to EPG 620 Pavement Marking for specific information related to markings.

01 Driving automation systems use sensors, algorithms, and processing to locate, read, and comprehend pavement markings. Location, condition, uniformity, design characteristics, and consistent application all have some effect on the ability of driving automation systems to perform this function. Certain pavement marking applications and practices have been shown through research to better support driving automation system technology, while also benefitting, or at least not detracting from, the performance of the human operator.

Guidance:

02 Agencies seeking to better accommodate driving automation system to support AVs, while also potentially benefitting human drivers, should consider:

A. Normal width longitudinal lines of at least 6 inches in width (see Section 3A.04).

B. Edge lines of at least 6 inches in width (see Sections 3A.04 and 3B.09).

C. *Dotted edge line extensions along all entrance and exit ramps, all auxiliary lanes, and all tapers where a deceleration or auxiliary lane is added (see Section 3B.11).*

D. *Chevron markings in the neutral areas of exit gores to distinguish them from travel lanes (see Section 3B.25).*

E. ~~*Raised*~~ *Inlaid pavement markers only as a supplement to, rather than as a substitute for, pavement markings (see Section~~s 3B.16 and 3B.17~~ 3B.14).*

MoDOT does not use raised pavement markers. Sections 3B.16 and 3B.17 are not adopted by MoDOT. Revised Dec. 2025

F. *Uniform contrast markings on light-colored pavements to create greater contrast.*

G. *Broken lines with uniform marking and gap length (see Section 3A.04).*

Section 5B.03 Highway Traffic Signals

Support:

M00 This section of the MUTCD is included in the EPG for reference only. MoDOT has developed policies for traffic signals to enhance safety and uniformity of traffic control devices that will be beneficial to AVs. Refer to EPG 902 Signals for specific information related to traffic signals.

Guidance:

01 Agencies seeking to better accommodate driving automation systems to support AVs, while also potentially benefitting human drivers, should consider:

A. *Consistent signal face placement along corridors with respect to overhead mounting versus post mounting on the side of the roadway.*

B. *Consistent number of signal faces for approach lanes and the selection of signal indications and signal clusters along a corridor to promote uniform displays for identical or similar situations.*

C. *The refresh rate of LED traffic signals to provide for greater consistency in driving automation system detection.*

D. *Providing signal faces with backplates (see Section 4D.06) having retroreflective borders to enhance signal face conspicuity and detection by driving automation system sensors.*

E. *Using FLASHING YELLOW ARROW signal indications for permissive turns.*

Support:

02 Signal faces that display a CIRCULAR GREEN indication and that are located over or directly in line with a mandatory turn lane can be less effective for driving automation systems to recognize as a traffic signal face controlling permissive turning movements.

03 Achieving uniformity along a corridor is desirable for driving automation systems, but can be challenging. Multiple options are available for traffic signal displays to allow design variations based on specific intersection variables such as available overhead clearance, utility conflicts, signal support design constraints, and other factors. V2I capabilities can complement driving automation system recognition of traffic signals to provide redundancy, and to improve reliability and accuracy.

Section 5B.04 Temporary Traffic Control

Support:

M00 This section of the MUTCD is included in the EPG for reference only. MoDOT has developed policies for temporary traffic control to enhance safety and uniformity of traffic control devices that will be beneficial to AVs. Refer to EPG 616 Temporary Traffic Control for specific information related to temporary traffic control.

Guidance:

01 Agencies seeking to better accommodate driving automation systems to support AVs, while also potentially benefitting human drivers, in and through temporary traffic control (TTC) zones should consider:

A. Consistent type, spacing, and mounting height of signs (see Sections 6B.04 and 6F.02).

B. Use of the END ROAD WORK (G20-2) sign to establish the end of the TTC zone (see Section 6H.36).

C. Wider retroreflective material on, or reduced spacing of, channelizing devices to better accommodate driving automation system sensors in nighttime and adverse weather conditions (see Chapter 6K).

D. Continuous markings at the beginning of TTC zones and in lane transitions.

E. Temporary raised pavement markers only as a supplement to, rather than as a substitute for, pavement markings.

F. Removal or obliteration of pavement markings that are no longer applicable as soon as practicable, for long-term stationary operations in the temporary traveled way (see Section 6J.01).

Support:

02 Pavement markings that are not fully removed and pavement scarring are of particular concern as there can be misinterpretation by driving automation systems that can result in erroneous vehicle positioning in TTC zones.

03 V2I communications can complement driving automation systems recognition in TTC zones by communicating the presence of a TTC zone to vehicles.

04 Section 6J.01 describes the use of pavement markings in TTC zones and the removal or obliteration of existing pavement markings.

05 Section 6J.02 describes the use of temporary pavement markings in TTC zones.

Section 5B.05 Traffic Control for Highway-Rail and Highway-Light Rail Transit Grade Crossings

Support:

M00 This section of the MUTCD is included in the EPG for reference only. MoDOT has developed policies for highway-rail grade crossings to enhance safety and uniformity of traffic control devices that will be beneficial to AVs. Refer to EPG 913 Highway-Rail and Highway-Light Rail Transit Grade Crossings for specific information related to highway-rail grade crossings.

Guidance:

01 Agencies seeking to better accommodate driving automation systems to support AVs, while also potentially benefitting human drivers, at grade crossings should consider:

A. Consistent placement of signs and markings for passive and active grade crossings along a corridor to promote uniformity and to improve the ability of driving automation system technology to recognize grade crossings.

B. Removal of signs and pavement markings associated with grade crossings that are out of service (see Section 8A.09).

Support:

02 V2I communications can complement driving automation system recognition of grade crossings to improve reliability and accuracy, and to relay information on the arrival or presence of a train or LRT vehicle at a grade crossing.

Section 5B.06 Traffic Control for Bicycle Facilities

Support:

M00 This section of the MUTCD is included in the EPG for reference only. MoDOT has developed policies for bicycle facilities to enhance safety and uniformity of traffic control devices that will be beneficial to AVs. Refer to EPG 914 Bicycle Facilities for specific information related to bicycle facilities.

Guidance:

01 Agencies seeking to better accommodate driving automation systems to support AVs, while also potentially benefitting human road users, should consider:

A. Use of an END (R3-9dP) plaque with a BIKE LANE (R3-17) sign to indicate the end of a bicycle lane that is merging with other traffic (see Section~~s 2B.33 and~~ 9B.04).

Section 2B.33 is not adopted by MoDOT. Revised Dec. 2025

B. Use of Bicycle Lane Ends (W9-5) and Bicycle Merging (W9-5a) warning signs in advance of the end of a bicycle lane and where a merging maneuver might occur (see Section 9C.07).

Support:

02 Bicycle facilities that are physically separated from motor vehicle traffic using vertical objects or vertical separation can facilitate detection from driving automation system sensors (see Section 9E.07).

PART 6 [EPG 616]
TEMPORARY TRAFFIC CONTROL
CHAPTER 6A. GENERAL [EPG 616.1]

Section 6A.01 General

Support:

01 Whenever the acronym "TTC" is used in ~~Part 6~~EPG 616, it refers to "temporary traffic control."

Standard:

02 The needs and control of all road users (motorists, bicyclists, and pedestrians within the highway, or on a site roadway open to public travel (see definition in Section 1C.02), including persons with disabilities) through a TTC zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents.

Support:

03 When the normal function of the roadway, or a site roadway open to public travel is suspended, TTC planning provides for continuity of the movement of motor vehicle, bicycle, and pedestrian traffic (including accessible passage) (see EPG 616.28); transit operations; and access (and accessibility) to property and utilities.

04 The primary function of TTC is to facilitate movement of road users through or around TTC zones while protecting road users, workers, responders to traffic incidents, and equipment.

05 Of equal importance to the public traveling through the TTC zone is the safety of workers performing the many varied tasks within the work space. TTC zones present constantly changing conditions that are unexpected by the road user. This creates an even higher degree of vulnerability for the workers and incident management responders on or near the roadway (see Section 6C.04). At the same time, the TTC zone provides for the efficient completion of whatever activity interrupted the normal use of the roadway.

06 Consideration for road user safety, worker and responder safety, and the efficiency of road user flow is an integral element of every TTC zone, from planning through completion. A concurrent objective of the TTC is the efficient construction and maintenance of the highway and the efficient resolution of traffic incidents.

07 No one set of TTC devices can satisfy all conditions for a given project or incident. At the same time, defining details that would be adequate to cover all applications is impractical. Instead, ~~Part 6~~ EPG 616 displays typical applications that depict common applications of TTC devices. The TTC selected for each situation depends on the type of highway, road user conditions, the duration of operation, physical constraints, and the nearness of the work space or incident management activity to road users.

08 The TTC needs on 400 AADT or lower volume ~~low-volume and special-purpose~~ roads will sometimes be minimal, especially for shorter-term durations and for lower-speed roads. The use of maintenance vehicle warning flashers, a limited number of signs, or a single flagger could be adequate for these situations.

09 Improved road user performance might be realized through a well-prepared public relations effort that covers the nature of the work, the time and duration of its execution, the anticipated effects upon road users, and possible alternate routes and modes of travel. Such programs have been found to result in a significant reduction in the number of road users traveling through the TTC zone, which reduces the possible number of conflicts.

10 Operational improvements might be realized by using intelligent transportation systems (ITS) in work zones. The use in work zones of ITS technology, such as portable camera systems, highway advisory radio, variable speed limits, ramp metering, traveler information, merge guidance, warning systems for vehicles exiting the work space, and queue detection information, is aimed at increasing safety for both workers and road users and helping to ensure a more efficient traffic flow. The use in work zones of ITS technologies has been found to be effective in providing traffic monitoring and management, data collection, and traveler information. See EPG 910 for additional information regarding ITS.

Standard:

11 TTC plans and devices shall be the responsibility of the public body or official or the owners of site roadways open to public travel having jurisdiction for guiding road users.

Guidance:

12 There should be adequate statutory authority for the implementation and enforcement of needed road user regulations, parking controls, speed zoning, and the management of traffic incidents. Such statutes should provide sufficient flexibility in the application of TTC to meet the needs of changing conditions in the TTC zone.

Support:

13 The provisions of ~~Part 6~~ EPG 616 apply to both rural and urban areas. A rural highway is normally characterized by lower volumes, higher speeds, fewer turning conflicts, and less conflict with pedestrians or other vulnerable road users. An urban street is typically characterized by relatively low speeds, wide ranges of road user volumes, narrower roadway lanes, frequent intersections and driveways, significant vulnerable road user activity, and more businesses and houses.

~~14 The determination as to whether a particular facility at a particular time of day can be considered to be a high-volume roadway or can be considered to be a low-volume roadway is made by the public agency, or official having jurisdiction.~~

15 Special plans preparation and coordination with transit (see EPG 616.21 Transit Considerations), other highway agencies, law enforcement and other emergency units (see EPG 616.22 Law Enforcement Services), utilities, schools, trucking associations, and railroad companies might be needed to reduce unexpected and unusual road user operation situations.

Section 6A.02 Fundamental Principles of Temporary Traffic Control

Guidance:

01 Road user and worker safety and accessibility in TTC zones should be an integral and high-priority element of every project from planning through design and construction. Similarly, maintenance and utility work should be planned and conducted with the safety and accessibility of all motorists, bicyclists, pedestrians (including those with disabilities), and workers being considered at all times. If the TTC zone includes a grade crossing, early coordination with the railroad company or light rail transit agency should take place.

02 The following are the seven fundamental principles of TTC:

A. General plans or guidelines should be developed to provide safety for motorists, bicyclists, pedestrians, workers, enforcement/emergency officials, and equipment, with the following factors being considered:

1. The basic safety principles governing the design of permanent roadways and roadsides should also govern the design of TTC zones. The goal should be to route road users through such zones using roadway geometrics, roadside features, and TTC devices as nearly as possible comparable to those for normal highway situations.

2. A TTC plan, in detail appropriate to the complexity of the work project or incident, should be prepared and understood by all responsible parties before the site is occupied. Any changes in the TTC plan should be approved by an official who is knowledgeable, ~~(for example,~~ trained, and~~/or certified)~~ in proper TTC practices.

B. Road user movement should be inhibited as little as practical, based on the following considerations:

1. TTC at work and incident sites should be designed on the assumption that drivers will only reduce their speeds if they clearly perceive a need to do so (see Section 6B.01).

2. Frequent and abrupt changes in geometrics such as lane narrowing, dropped lanes, or main roadway transitions that require rapid maneuvers, should be avoided.

3. Work should be scheduled in a manner that minimizes the need for lane closures or alternate routes, while still getting the work completed safely and quickly and the lanes or roadway open to traffic as soon as possible.

4. Attempts should be made to reduce the volume of traffic using the roadway or freeway to match the restricted capacity conditions. Road users should be encouraged to use alternative routes.

When the roadway capacity is reduced because of lane closures, the demand could exceed the available capacity, which might result in either a lengthy stopped or slow moving queue of vehicles that might extend past the normal location of the signs shown in the typical advance warning area. An assessment of the expected queue length, which should be a part of the TTC plan design process, might result in adjustments to the sign spacing and number of signs as well as the use of more conspicuous devices to increase the distance and conspicuity of the advance warning area. For high-volume roadways and freeways, the closure of selected entrance ramps or other access points and the use of signed diversion routes should be evaluated.

5. *Bicyclists and pedestrians, including those with disabilities, should be provided with access and passage through the TTC zone.*
6. *If work operations permit, lane closures on high-volume streets and highways should be scheduled during off-peak hours. Night work should be considered if the work can be accomplished safely with a series of short-term operations.*
7. *Early coordination with officials having jurisdiction over the affected cross streets and providing emergency services should occur if significant impacts to roadway operations are anticipated.*

C. *Motorists, bicyclists, and pedestrians should be guided in a clear and positive manner while approaching and traversing TTC zones and incident sites. The following principles should be applied:*

1. *Adequate warning, delineation, and channelization should be provided to assist in guiding road users in advance of and through the TTC zone or incident site by using proper pavement marking, signing, or other devices that are effective under varying conditions. Information should be provided in usable formats for pedestrians with vision disabilities.*
2. *TTC devices inconsistent with intended travel paths through TTC zones should be removed or covered. However, in intermediate-term stationary, short-term, and mobile operations, where visible permanent devices are inconsistent with intended travel paths, devices that highlight or emphasize the appropriate path should be used. Traffic control devices should provide information in usable formats for pedestrians with vision disabilities.*
3. *Flagging procedures, when used, should provide positive guidance to road users traversing the TTC zone.*

D. *To provide acceptable levels of operations, routine day and night inspections of TTC elements should be performed as follows:*

1. *Individuals who are knowledgeable, ~~(for example,~~ trained, and~~/or~~ certified~~)~~ in the principles of proper TTC should be assigned responsibility for safety in TTC zones. The most important duty of these individuals is to ~~check~~ ensure that TTC devices on the project are consistent with the TTC plan and are effective for motorists, bicyclists, pedestrians, and workers.*
2. *As the work progresses, temporary traffic controls and/or working conditions should be modified, as needed, to facilitate road user movement and provide worker safety. The individual responsible for TTC should have the authority to halt work until applicable or remedial safety measures are taken.*
3. *TTC zones should be carefully monitored under varying conditions of road user volumes, light, and weather to check that applicable TTC devices are effective, clearly visible, clean, and in compliance with the TTC plan.*
4. *When warranted, an engineering study should be made (in cooperation with law enforcement officials) of reported crashes occurring within the TTC zone. Crash records in TTC zones should be monitored to identify the need for changes in the TTC zone.*

E. *Attention should be given to the maintenance of roadside safety during the life of the TTC zone by applying the following principles:*

1. *To accommodate run-off-the-road incidents, disabled vehicles, or emergency situations, unencumbered roadside recovery areas or clear zones should be provided where practical.*
2. *Channelization of road users should be accomplished by the use of pavement markings, signing, and crashworthy, detectable channelizing devices.*
3. *Work equipment, workers' private vehicles, materials, and debris should be stored in such a manner to reduce the probability of being impacted by run-off-the-road vehicles.*

F. *Each person whose actions affect TTC zone safety, from the upper-level management through the field workers, should receive training appropriate to the job decisions each individual is required to make. Only those individuals who are trained and certified in proper TTC practices and have a basic understanding of the principles (established by applicable standards and guidelines, including those of ~~this Manual~~ the EPG) should supervise the selection, placement, and maintenance of TTC devices used for TTC zones and for incident management.*

G. *Good public relations should be maintained by applying the following principles:*

1. *The needs of all road users should be assessed such that appropriate advance notice is given and clearly defined alternative paths are provided.*
2. *The cooperation of the various news media should be sought in publicizing the existence of and reasons for TTC zones because news releases can assist in keeping the road users well informed.*
3. *The needs of abutting property owners, residents, and businesses should be assessed and appropriate accommodations made.*
4. *The needs of emergency service providers (law enforcement, fire, and medical) should be assessed and appropriate coordination and accommodations made.*
5. *The needs of railroads and transit should be assessed and appropriate coordination and accommodations made.*
6. *The needs of operators of commercial vehicles such as buses and large trucks should be assessed and appropriate accommodations made.*
7. *Early coordination should occur with school officials to discuss potential impacts on picking up and dropping off schoolchildren, on school bus routing, and on safe routes to school patterns.*

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 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.

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~~ the EPG.

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.

Section 6A.04 Crashworthiness of TTC Devices

Support:

01 Various Sections of the MUTCD require certain traffic control devices, their supports, and/or related appurtenances to be crashworthy (see definition in Section 1C.02). Such MUTCD crashworthiness provisions apply to all streets, highways, and site roadways open to public travel.

Standard:

M02 FHWA Category 2 and 3 TTC devices shall be compliant with MASH 2016 Test Level 3 (TL-3) unless a waiver is in place. For contract or permit projects, documentation from the contractor or permittee shall be furnished to the engineer.

Guidance:

M03 For maintenance work, all products should be crashworthy based on statewide bids and purchasing documents.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6A.05 Night Work

Support:

01 Conducting highway construction and maintenance activities during night hours could provide an advantage when traditional daytime traffic control strategies cannot achieve an acceptable balance between worker and public safety, traffic and community impact, and constructability. The two basic advantages of working at night are reduced traffic congestion and less involvement with business activities. However, the two basic conditions that must normally be met for night work to offer any advantage are reduced traffic volumes and easy set up and removal of the traffic control patterns on a nightly basis.

02 Shifting work activities to night hours, when traffic volumes are lower and normal business is less active, might offer an advantage in some cases, as long as the necessary work can be completed and the worksite restored to essentially normal operating conditions to carry the higher traffic volume during non-construction hours.

03 Although working at night might offer advantages, it also includes safety issues. Reduced visibility inherent in night work impacts the performance of both drivers and workers. Because traffic volumes are lower and congestion is minimized, speeds are often higher at night necessitating greater visibility at a time when visibility is reduced. Finally, the incidence of impaired (alcohol or drugs), fatigued, or drowsy drivers might be higher at night.

04 Working at night also involves other factors, including construction productivity and quality, social impacts, economics, and environmental issues. A decision to perform construction or maintenance activities at night normally involves some consideration of the advantages to be gained compared to the safety and other issues that might be impacted.

05 Section 6N.18 contains specific provisions on TTC for work during nighttime hours.

CHAPTER 6B. TEMPORARY TRAFFIC CONTROL ELEMENTS [EPG 616.2]

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~~ the EPG, Missouri Standard Plans for Highway Construction,~~, 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.

M03A The TTC plan is an integral part of the planning and design of a project. The scope of the TTC plan is determined by the complexity of the project and is developed by the designer in the district in cooperation with district construction, maintenance, and traffic staff.

Standard:

M03B A TTC plan shall be developed for every project. Typical traffic control set-ups shall be shown for each work activity within the work zone. The location of all traffic control devices shall be provided in the TTC plan.

Guidance:

M03C When staged construction is used, the stages should be clearly defined in the TTC plan. Each stage should have a description of the type of work being done during that phase. Stationing is to be shown, if applicable.

M03D A preliminary field check with district construction and traffic should be conducted to ensure the TTC plan will be compatible with field conditions.

Option:

M03E Traffic count data may be obtained from Transportation Planning to aid in the development of the TTC plan. This is especially the case where traffic capacity is a significant factor in the design of the TTC plan. Intersection traffic count data may also be requested from district traffic personnel. Hourly volumes can assist in determining the type of traffic control used, working hour restrictions and other aspects of the TTC plan. The use of Highway Capacity Software, VISSIM, CORSIM or other computer programs may aid in estimating queue lengths, delays, etc. resulting from the work zone.

Support:

M03F For additional information related to traffic flow through work zones, see EPG 616.19 Work Zone Capacity, Queue and Travel Delay.

M03G For additional plan sheet guidance see EPG 237.

MoDOT specific content from the EPG. Revised Dec. 2025

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~~.

The EPG does not include Hazardous Materials and National Network signs. Revised Dec. 2025

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. Consideration should also be given to snow plowing operations in TTC zones.

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. Designers should be familiar with the traffic control sheets of the Missouri Standard Plans for Highway Construction and the Missouri Standard Specifications for Highway Construction.

MoDOT specific content from the EPG. Revised Dec. 2025

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~~ MoDOT district staff and/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.~~

Support:

M18A See EPG 616.18 Work Zone Speed Limits for additional provisions regarding work zone speed limits.

~~*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.~~

MoDOT includes information about work zone speed limits in a separate EPG article, EPG 616.18. Revised Dec. 2025

21 ~~Chapter 6P~~ EPG 616.16 contains typical applications (TAs) of TTC zones that are organized according to duration, location, type of work, and highway type. Table 6P-1 of the MUTCD is an index of ~~these~~ typical applications for contract projects (see EPG 616.12). EPG 616.16.3 includes typical applications for internal use by MoDOT employees. 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.

Section 6B.02 Temporary Traffic Control Zones

Support:

01 A TTC zone is an area of a highway where road user conditions are changed because of a work zone, an incident zone, or a planned special event through the use of TTC devices, uniformed law enforcement officers, or other authorized personnel.

02 A work zone is an area of a highway with construction, maintenance, or utility work activities. A work zone is typically marked by signs, channelizing devices, barriers, pavement markings, and/or work vehicles. It extends from the first warning sign or high-intensity rotating, flashing, oscillating, or strobe lights on a vehicle to the END ROAD WORK sign or the last TTC device.

03 An incident zone is an area of a highway where temporary traffic controls are imposed by authorized officials in response to a traffic incident (see Section 6O.01). It extends from the first warning device (such as a sign, light, or cone) to the last TTC device or to a point where road users return to the original lane alignment and are clear of the incident.

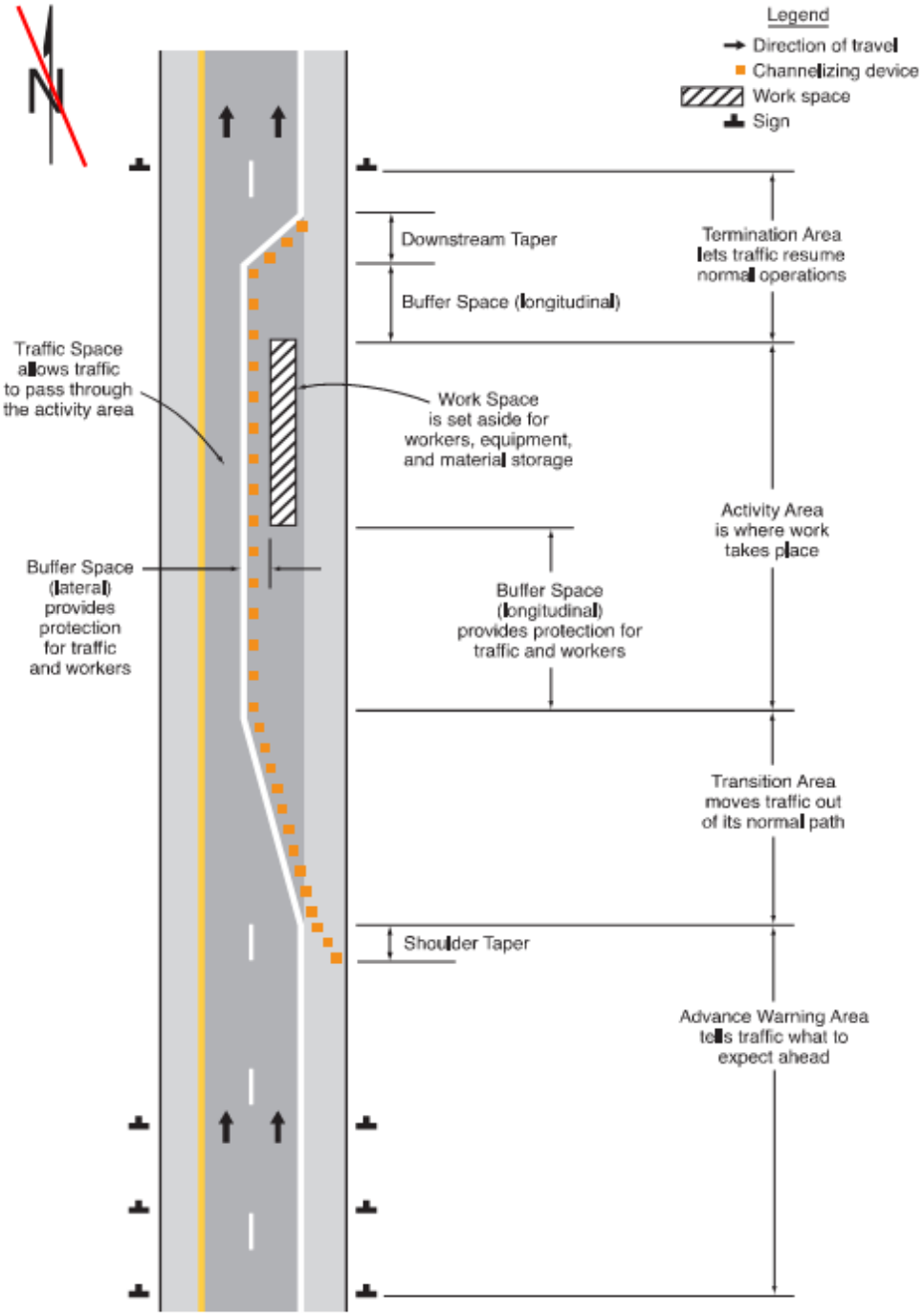
04 A planned special event often creates the need to establish altered traffic patterns to handle the increased traffic volumes generated by the event. The size of the TTC zone associated with a planned special event can be small, such as closing a street for a festival, or can extend throughout a municipality for larger events. The duration of the TTC zone is determined by the duration of the planned special event.

Section 6B.03 Components of Temporary Traffic Control Zones

Support:

01 A TTC zone is often divided into four areas as needed, based on engineering judgment: the advance warning area, the transition area, the activity area (which includes workspace and buffer spaces), and the termination area. Figure 6B-1 illustrates the four areas typically included in a TTC zone. These four areas are described in Sections 6B.04 through 6B.07.

Figure 6B-1. Component Parts of a Temporary Traffic Control Zone



Section 6B.04 Advance Warning Area

Support:

01 The advance warning area is the section of highway where road users are informed about the upcoming transition and activity areas or incident area.

Option:

02 The advance warning area may vary from a single sign or high-intensity rotating, flashing, oscillating, or strobe lights on a vehicle to a series of signs in advance of the TTC zone activity area.

Guidance:

M02A The signs or other warning devices should be positioned to give the driver sufficient time to react to the conditions. Warning devices should not be placed too far in advance, as the warning message will lose effectiveness.

MoDOT specific content from the EPG. Revised Dec. 2025

~~*Guidance:*~~

03 Typical distances for placement of advance warning signs on freeways and expressways should be longer because drivers are conditioned to uninterrupted flow. Therefore, the advance warning sign placement should extend on these facilities as far as ½ mile or more.

04 On urban streets, the effective placement of the nearest warning sign to the TTC zone, in feet, should range from 4 to 8 times the speed limit in mph, with the high end of the range being used when speeds are relatively high. When two or more advance warning signs are used on higher-speed streets, such as major arterials, the advance warning area should extend a greater distance (see Table 6B-1).

Option:

05 When a single advance warning sign is used (in cases such as low-speed residential streets), the advance warning area may be as short as 100 feet.

Guidance:

06 Since rural highways are normally characterized by higher speeds, the effective placement of the first warning sign in feet should be substantially longer—from 8 to 12 times the speed limit in mph. Since two or more advance warning signs are normally used for these conditions, the advance warning area should extend 1,500 feet or more for open highway conditions (see Table 6B-1).

Table 6B-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by the highway agency or owner of site roadways open to public travel.

** The column headings A, B, and C are the dimensions shown in Figures 6P-1 through 6P-54. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

MUTCD

Insert period here

07 The distances contained in Table 6B-1 are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted for field conditions, if necessary, by increasing or decreasing the recommended distances.

Support:

08 The need to provide additional reaction time for a condition is one example of justification for increasing the sign spacing. Conversely, decreasing the sign spacing might be justified in order to place a sign immediately downstream of an intersection or major driveway such that traffic turning onto the roadway in the direction of the TTC zone will be warned of the upcoming condition.

Option:

09 Advance warning may be eliminated when the activity area is sufficiently removed from the road users' path so that it does not interfere with the normal flow.

M10 In some cases on high volume routes, traffic backups due to the work activity may extend past the normal advance warning area. In this case, additional signing may be required to warn drivers before they reach the backup. For longer-term activities, alternate route signing and interactive devices or changeable message signs may be considered. Computer programs are available to aid in estimating back ups and delays due to work zones.

M11 In some cases, particularly in urban areas, the advance warning area may extend through an intersection or interchange. Special considerations such as additional advance signs or adjustments to sign spacing may be needed to assure all approaching drivers are informed of the conditions.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6B.05 Transition Area

Support:

01 The transition area is that section of highway where road users are redirected out of their normal path. Transition areas usually involve strategic use of tapers, which because of their importance are discussed separately in detail.

Standard:

02 Except for mobile operations, when redirection of the road users' normal path is required, road users shall be directed from the normal path to a new path with appropriate channelizing devices, traffic control devices, and/or TTC methods.

Option:

03 Because it is impracticable in mobile operations to redirect the road users' normal path with stationary channelization, more dominant vehicle-mounted traffic control devices, such as arrow boards, portable changeable message signs, and high-intensity rotating, flashing, oscillating, or strobe lights, may be used instead of channelizing devices to establish a transition area.

Section 6B.06 Activity Area

Support:

01 The activity area is the section of the highway where the work activity takes place. It is comprised of the work space, the traffic space, and the buffer space.

02 The work space is that portion of the highway closed to road users and set aside for workers, equipment, ~~and~~ material, and a shadow vehicle; if one is used upstream. Work spaces are usually delineated for road users by channelizing devices or, to exclude vehicles and pedestrians, by temporary barriers.

Option:

03 The work space may be stationary or may move as work progresses.

Guidance:

04 Since there might be several work spaces (some even separated by several miles) within the project limits, each work space should be adequately signed to inform road users and reduce confusion.

Option:

M04A The workspace may be supplemented by channelizers and/or barricades placed perpendicular to the flow of traffic to deter non-construction related use of closed lanes.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

05 The traffic space is the portion of the highway in which road users are routed through the activity area.

06 The buffer space is a lateral and/or longitudinal area that separates road user flow from the work space or an unsafe area, and might provide some recovery space for an errant vehicle.

Guidance:

07 Neither work activity nor storage of equipment, vehicles, or material should occur within a buffer space.

Option:

08 Buffer spaces may be positioned either longitudinally or laterally with respect to the direction of road user flow. The activity area may contain one or more lateral or longitudinal buffer spaces.

09 A longitudinal buffer space may be placed in advance of a work space.

10 The longitudinal buffer space may also be used to separate opposing road user flows that use portions of the same traffic lane, as shown in Figure 6B-2.

11 If a longitudinal buffer space is used, the values shown in Table 6B-2 may be used to determine the length of the longitudinal buffer space.

Table 6B-2. Stopping Sight Distance as a Function of Speed

Speed*	Distance
20 mph	115 feet
25 mph	155 feet
30 mph	200 feet
35 mph	250 feet
40 mph	305 feet
45 mph	360 feet
50 mph	425 feet
55 mph	495 feet
60 mph	570 feet
65 mph	645 feet
70 mph	730 feet
~~75 mph~~	~~820 feet~~

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed

Support:

12 Typically, the buffer space is formed as a traffic island and defined by channelizing devices.

13 When a shadow vehicle, arrow board, or changeable message sign is placed in a closed lane in advance of a work space, only the area upstream of the vehicle, arrow board, or changeable message sign constitutes the buffer space.

Option:

14 The lateral buffer space may be used to separate the traffic space from the work space, as shown in Figures 6B-1 and 6B-2, or such areas as excavations or pavement-edge drop-offs. A lateral buffer space also may be used between two travel lanes, especially those carrying opposing flows.

Guidance:

15 The width of a lateral buffer space should be determined by engineering judgment.

Option:

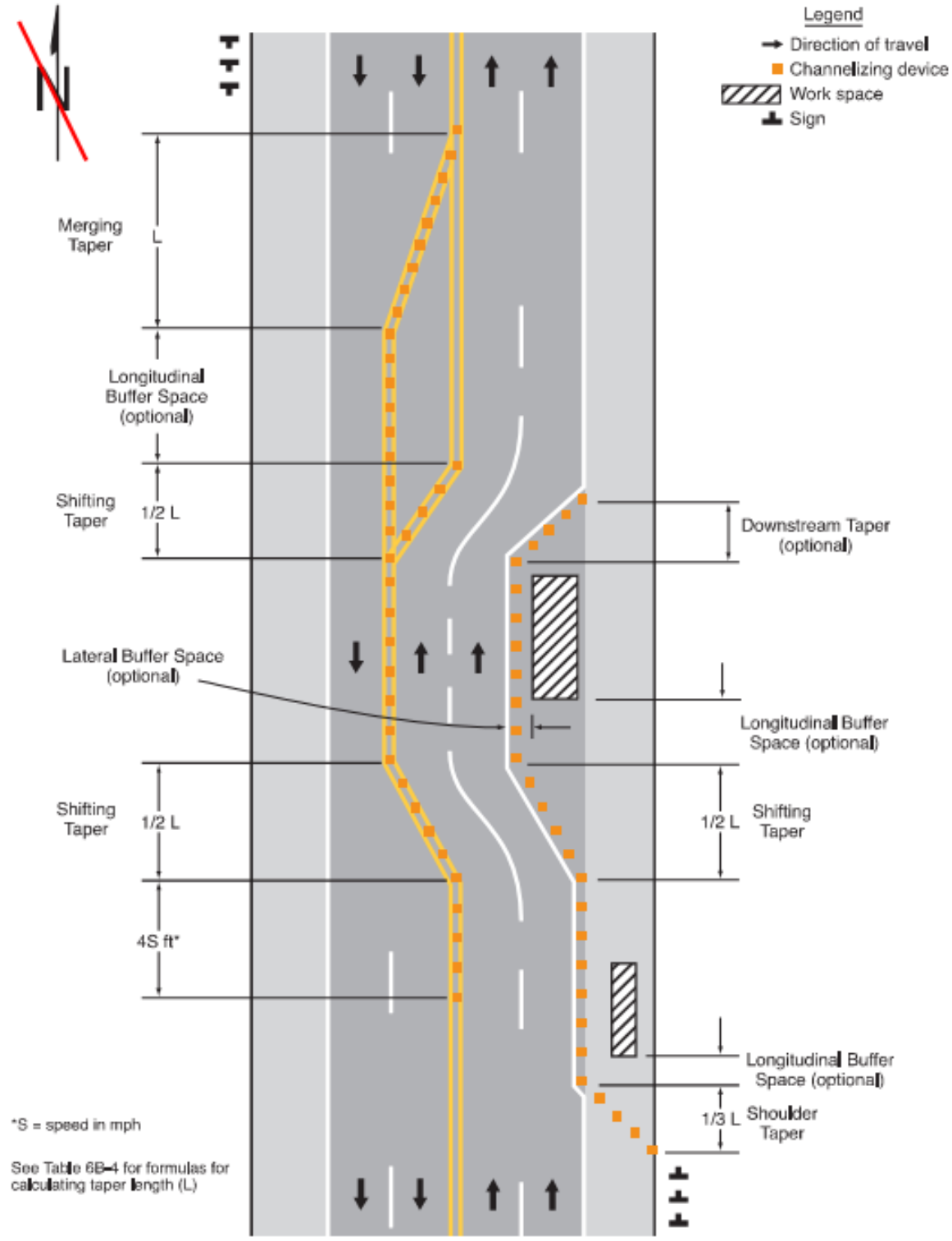
16 When work occurs on a high-volume, highly-congested facility, a vehicle storage or staging space may be provided for incident response and emergency vehicles (for example, tow trucks and fire apparatus) so that these vehicles can respond quickly to road user incidents. This may involve providing storage space at the beginning or end of the activity area or both.

Guidance:

M16A Vehicle storage or staging space should not extend into any portion of the buffer space.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 6B-2. Types of Tapers and Buffer Spaces



Section 6B.07 Termination Area

Support:

01 The termination area is the section of the highway where road users are returned to their normal driving path. The termination area extends from the downstream end of the work area to the last TTC device such as END ROAD WORK signs, if posted.

Option:

02 An END ROAD WORK sign, a Speed Limit sign, or other signs may be used to inform road users that they can resume normal operations.

03 A longitudinal buffer space may be used between the work space and the beginning of the downstream taper.

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.

Table 6B-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	at least 0.5 L
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

Table 6B-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	L = WS

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

Merging Tapers

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.

M06A Except as provided in the last Guidance paragraph of this article, merging tapers should be used to close a lane or combine traffic lanes on multilane facilities. Full-length tapers L (see Tables 6B-3 and 6B-4) should be used where practical. For long-term operations, lane line markings should be removed through the merging taper and temporary edge lines should be provided to guide drivers through the taper and work area.

MoDOT specific content from the EPG. Revised Dec. 2025

Shifting Tapers

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 A shifting taper should have a length of approximately ½ L (see Tables 6B-3 and 6B-4). Where shifting tapers are used, REVERSE CURVE or REVERSE TURN signs, along with any required advisory speed plaques, are to be posted prior to the shift. For long-term operations, conflicting pavement markings are removed and temporary markings provided to guide drivers through the tapers and work area. For short-term operations where it is not practical to modify pavement markings, devices should be placed at a spacing of approximately 10 feet.

MoDOT specific content from the EPG. Revised Dec. 2025

Shoulder Tapers

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.

Downstream or Closing Tapers

Support:

11 A downstream (closing) 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 (closing) taper should have ~~a minimum length of 50 feet and a maximum~~ an approximate length of 100 feet with devices placed at a spacing of approximately 20 feet.

MoDOT specific modifications from the EPG. Revised Dec. 2025

One-Lane Two-Way Tapers

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~~ an approximate 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.

MoDOT specific modifications from the EPG. Revised Dec. 2025

Support:

15 An example of a one-lane, two-way traffic taper is shown in Figure 6B-3.

Guidance:

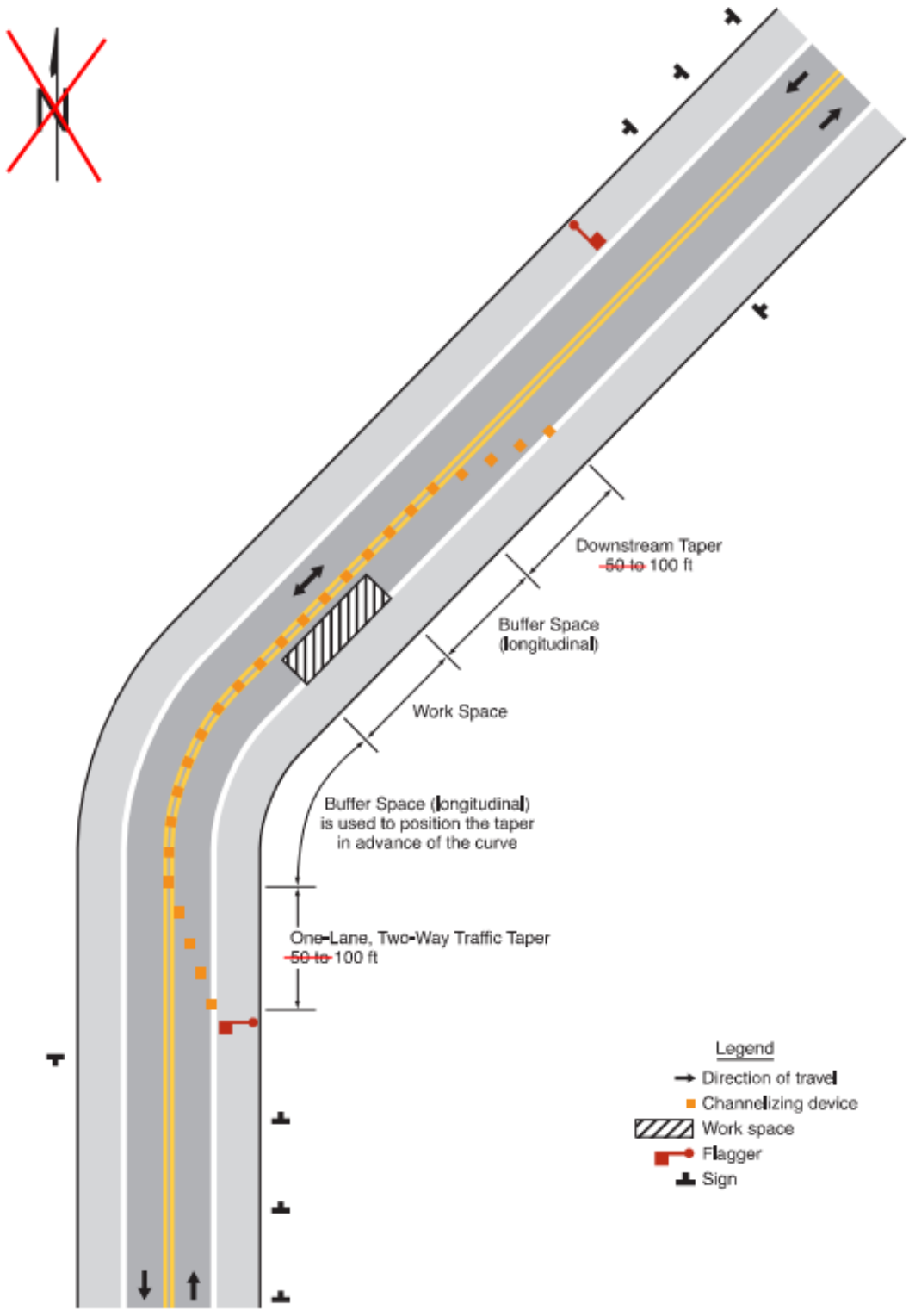
M16 Except as provided in the paragraph below, the minimum taper length for the closure of a two-way center turn lane should be ½ L. (See Tables 6B-3 and 6B-4).

Option:

M17 A shorter taper length may be used when space is limited.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 6B-3. Example of a One-Lane, Two-Way Traffic Taper



Section 6B.09 Detours and Diversions

Support:

01 A detour is a temporary rerouting of road users onto an existing highway in order to avoid a TTC zone.

M01A Detours are used when other methods of traffic control such as one-lane, two-way operations, lane closures or temporary bypasses cannot be used. Detours are provided over the shortest possible route around the closure that can sufficiently accommodate the traffic.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

02 Detours should be clearly signed over their entire length so that road users can easily use existing highways to return to the original highway.

M02A Any proposed detour route should be evaluated to determine the condition of the pavement, capacity of the roadway and geometrics. The existing traffic (AADT) on the roadway being closed and the detour route, as well as the facility types should be considered when determining detour routes. State routes should be used for detours.

Option:

M02B Based on engineering judgment, projects located on routes with less than 400 AADT may not require signed detour routes.

M02C Outer roadways may be constructed early in the project phasing or enhanced to serve as detours.

M02D Local facilities may be considered for detours based on engineering judgement. City streets or county roads may be improved for use as detour routes

Standard:

M02E If other agencies' facilities are used as detour routes, an agreement with the agency having jurisdiction over the roadway shall be required.

Support:

03 A diversion is a temporary rerouting of road users onto a temporary highway or alignment placed around the work area.

Option:

M04 Alternate route signing may be used where lane closures or physical height or width restrictions will have a significant effect on traffic and a viable alternate route is available. Alternate route signing may also be used where temporary bridge weight restrictions are imposed during construction.

Support:

M05 For information regarding notification of detour routes, see EPG 616.20.3.2.2Community Relations' Managers and/or Customer Service Representatives, EPG 616.20.10 Work Zone Transportation Management Plan, and EPG 616.20.11 General Public Information.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 6C. PEDESTRIAN AND WORKER SAFETY [EPG 616.3]

Section 6C.01 Pedestrian and Worker Safety – General

Standard:

01 The various TTC provisions for pedestrian and worker safety set forth in Part 6 shall be applied by knowledgeable (for example, trained and/or certified) persons after appropriate evaluation and engineering judgment.

Section 6C.02 Pedestrian Considerations

Support:

01 A wide range of pedestrians might be affected by TTC zones, including the young, elderly, and people with disabilities such as hearing, vision, or mobility. Pedestrians need a clearly delineated and usable travel path. Considerations for pedestrians with disabilities are addressed in Section 6C.03.

Guidance:

02 Prior to closing a sidewalk or other pedestrian facility, the maintaining agency should advise users of the future closure.

Standard:

03 If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided.

Option:

04 If establishing or maintaining an alternate pedestrian route is not feasible during the project, an alternate means of providing for pedestrians may be used, such as adding free bus service around the project or assigning someone the responsibility to assist pedestrians with disabilities through the project limits.

05 If an existing pedestrian route is impacted by a short duration or a short-term stationary work zone that is attended with project personnel, establishing an alternate pedestrian route may not be necessary if the work can be stopped and pedestrians can navigate the work zone. Pedestrians may be delayed for a short period of time for project personnel to move equipment and material to facilitate passage. Work zone personnel may also provide assistance to pedestrians as necessary**.**

Support:

06 Pedestrians are reluctant to retrace their steps to a prior intersection for a crossing or to add distance or out-of-the-way travel to a destination.

Guidance:

07 The following three items should be considered when planning for pedestrians in TTC zones:

A. Pedestrians should not be led into conflicts with vehicles, equipment, and operations.
B. Pedestrians should not be led into conflicts with vehicles moving through or around the worksite.
C. Pedestrians should be provided with a convenient and accessible path that replicates as nearly as practical the most desirable characteristics of the existing sidewalk(s) or footpath(s).

08 A pedestrian route should not be severed and/or moved for non-construction activities such as parking for vehicles and equipment.

09 TTC zones should be designed to minimize conflicts between vehicular and pedestrian movements. Consideration should be made to separate pedestrian movements from both worksite activity and vehicular traffic. Unless an acceptable route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock worksites that will induce them to attempt skirting the worksite or making a midblock crossing.

Support:

10 Figures 6P-28 and 6P-29 show typical TTC device usage and techniques for pedestrian movement through work zones.

M10A See EPG 616.28 Traffic Control for Non-Motorized Traffic for additional information regarding pedestrian movement through work zones.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

11 To accommodate the needs of pedestrians, including those with disabilities, the following considerations should be addressed when temporary pedestrian pathways in TTC zones are designed or modified:

- *A. Provisions for continuity of accessible paths for pedestrians should be incorporated into the TTC plan.*
- *B. Access to transit stops should be maintained.*
- *C. A smooth, continuous hard surface should be provided throughout the entire length of the temporary pedestrian facility. There should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to pedestrians with disabilities. The geometry and alignment of the facility should meet the applicable requirements of the "U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990."*
- *D. The width of the existing pedestrian facility should be provided for the temporary facility if practical. Traffic control devices and other construction materials and features should not intrude into the usable width of the sidewalk, temporary pathway, or other pedestrian facility. When it is not possible to maintain a minimum width of 60 inches throughout the entire length of the pedestrian pathway, a 60 x 60-inch passing space should be provided at least every 200 feet to allow individuals in wheelchairs to pass.*
- *E. Blocked routes, alternate crossings, and sign and signal information should be communicated to pedestrians with vision disabilities by providing devices such as audible information devices or barriers and channelizing devices that are detectable to the pedestrians traveling with the aid of a long cane or who have vision disabilities.*
- *F. When channelization is used to delineate a pedestrian pathway, a continuous detectable edging should be provided throughout the length of the facility such that pedestrians using a long cane can follow it. These detectable edgings should comply with the provisions of Section 6M.04.*
- *G. Signs and other devices mounted lower than 7 feet above the temporary pedestrian pathway should not project more than 4 inches into accessible pedestrian facilities.*

Support:

12 Where pedestrians in TTC zones are routed on temporary pedestrian pathways, providing information in non-visual formats (such as accessible pedestrian signals with audible tones and/or speech messages, and vibrotactile surfaces) aids pedestrians with vision disabilities so they can navigate the temporary pathway. Section 6C.03 contains additional information on accessibility considerations in TTC zones. Section 4K.01 contains information on accessible pedestrian signals.

Option:

13 Whenever it is feasible, the worksite may be closed off from pedestrian intrusion if doing so is determined to be preferable to channelizing pedestrians along the site with TTC devices.

Guidance:

14 Fencing should not create sight distance restrictions for road users. Fences should not be constructed of materials that would be hazardous if impacted by vehicles. Wooden railing, fencing, and similar systems placed immediately adjacent to motor vehicle traffic should not be used as substitutes for crashworthy temporary traffic barriers.

15 Ballast for TTC devices should be kept to the minimum amount needed and should be mounted low to prevent penetration of the vehicle windshield.

16 Movement by work vehicles and equipment across designated pedestrian paths should be minimized and, when necessary, should be controlled by flaggers or other TTC. Staging or stopping of work vehicles or equipment along the side of pedestrian paths should be avoided, since it encourages movement of workers, equipment, and materials across the pedestrian path.

17 Access to the work space by workers and equipment across pedestrian walkways should be minimized because the access often creates unacceptable changes in grade, and rough or muddy terrain, and pedestrians will tend to avoid these areas by attempting non-intersection crossings where no curb ramps are available.

Option:

18 A canopied walkway may be used to protect pedestrians from falling debris, and to provide a covered passage for pedestrians.

Guidance:

19 Covered walkways should be sturdily constructed and adequately lighted for nighttime use.

20 When pedestrian and vehicle paths are rerouted to a closer proximity to each other, consideration should be given to separating them by a temporary traffic barrier.

21 If a temporary traffic barrier is used to shield pedestrians, it should be designed to accommodate site conditions.

Support:

22 Depending on the possible vehicular speed and angle of impact, temporary traffic barriers might deflect upon impact by an errant vehicle. Guidance for locating and designing temporary traffic barriers can be found in Chapter 9 of the "Roadside Design Guide," 4th Edition, 2011, AASHTO.

Standard:

23 Normal vertical curbing shall not be used as a substitute for temporary traffic barriers when temporary traffic barriers are needed.

Option:

24 Temporary traffic barriers or longitudinal channelizing devices may be used to discourage pedestrians from unauthorized movements into the work space. They may also be used to inhibit conflicts with vehicular traffic by minimizing the possibility of midblock crossings.

Support:

25 A major concern for pedestrians is building construction encroaching onto the contiguous sidewalks, which forces pedestrians off the curb into direct conflict with moving vehicles.

Guidance:

26 If a significant potential exists for vehicle incursions into the pedestrian path, pedestrians should be rerouted or temporary traffic barriers should be installed.

Support:

27 TTC devices, temporary traffic barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.

Guidance:

28 Tape, rope, or plastic chain strung between devices should not be used as a control for pedestrian movements because they are not detectable and are therefore not accessible to and usable by individuals with disabilities.

29 In general, pedestrian routes should be preserved in urban and commercial suburban areas. Alternative routing should be discouraged.

30 The highway agency in charge of the TTC zone should regularly inspect the activity area so that effective pedestrian TTC is maintained.

Section 6C.03 Accessibility Considerations

Support:

01 Additional information on the design and construction of accessible temporary facilities is found in the "Guidelines for Accessible Pedestrian Signals (NCHRP Web-Only Document 117B)," 2008 Edition (TRB) and the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

02 Where pedestrians are detoured to a temporary traffic control signal, an accessible pedestrian signal (see Chapter 4K) provides 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 along the alternate route.

Guidance:

03 Adequate provisions should be made for pedestrians with disabilities. The extent of needs for such provisions should be determined through engineering judgment or by the individual responsible for each TTC zone situation.

Standard:

04 When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. A barrier that is detectable by a person with a vision disability traveling with the aid of a long cane shall be placed across the full width of the closed pedestrian facility.

Support:

05 Maintaining a detectable, channelized pedestrian route is much more useful to pedestrians with vision disabilities than closing a walkway and providing audible directions to an alternate route involving additional crossings and a return to the original route. Braille is not useful in conveying such information because it is difficult to find. Audible instructions might be provided, but the extra distance and additional street crossings might add complexity to a trip.

Guidance:

06 Because printed signs and surface delineation are not usable by pedestrians with vision disabilities, blocked routes, alternate crossings, and sign and signal information should be communicated to pedestrians with vision disabilities by providing audible information devices, tactile and/or vibrating surface devices, and barriers and channelizing devices that are detectable to pedestrians traveling with the aid of a long cane or who have vision disabilities.

Support:

07 The most desirable way to provide information to pedestrians with vision disabilities that is equivalent to visual signing for notification of sidewalk closures is a speech message provided by an audible information device. Devices that provide speech messages in response to passive pedestrian actuation are the most desirable. Other devices that continuously emit a message, or that emit a message in response to use of a pushbutton, are also acceptable. Audible information devices might not be needed if detectable channelizing devices make an alternate route of travel evident to pedestrians with vision disabilities.

Guidance:

08 If a pushbutton is used to provide equivalent TTC information to pedestrians with vision disabilities, the pushbutton should be equipped with a locator tone to notify pedestrians with vision disabilities that a special accommodation is available, and to help them locate the pushbutton.

Section 6C.04 Worker Safety Considerations

Support:

01 Equally as important as the safety of road users traveling through the TTC zone is the safety of workers. TTC zones present temporary and constantly changing conditions that are unexpected by road users. This creates an even higher degree of vulnerability for workers on or near the roadway.

02 Maintaining TTC zones with road user flow inhibited as little as possible, and using TTC devices that get the road users' attention and provide positive direction are of particular importance. Likewise, equipment and vehicles moving within the activity area create a risk to workers on foot. When possible, the separation of moving equipment and construction vehicles from workers on foot provides the operators of these vehicles with a greater separation clearance and improved sight lines to minimize exposure to the hazards of moving vehicles and equipment.

Guidance:

03 The following are the key elements of worker safety and TTC management that should be considered to improve worker safety:

A. Training—all workers should be trained on how to work next to motor vehicle traffic in ways that minimize their vulnerability. Workers having specific TTC responsibilities should be trained in TTC techniques, device usage, and placement.

B. Temporary Traffic Barriers—temporary traffic barriers should be placed along the work space depending on factors such as lateral clearance of workers from adjacent traffic, speed of traffic, duration and type of operations, time of day, and volume of traffic.

C. Speed Management—reducing the speed of vehicular traffic, mainly through regulatory speed zoning, funneling, lane reduction, and/or the use of speed safety cameras, uniformed law enforcement officers or flaggers should be considered. See EPG 616.22 for additional information about Law Enforcement Services for work zones.

D. Activity Area—operations entering and departing the work space, and within the work space, should be planned to minimize backing maneuvers by construction vehicles and equipment to minimize the risk of run-over and back-over crashes.

E. Worker Safety Planning—a trained person designated by the employer should conduct a basic hazard assessment for the worksite and job classifications required in the activity area. This safety professional should determine whether engineering, administrative, or personal protection measures should be implemented. This plan should be in accordance with the Occupational Safety and Health Act of 1970, as amended, "General Duty Clause" Section 5(a)(1) - Public Law 91-596, 84 Stat. 1590, December 29, 1970, as amended, and with the requirement to assess worker risk exposures for each job site and job classification, as per 29 CFR 1926.20 (b)(2) of "Occupational Safety and Health Administration Regulations, General Safety and Health Provisions."

F. Safety Apparel (see Section 6C.05).

MoDOT adds Safety Apparel to this list. Revised Dec. 2025

Option:

04 The following are additional elements of TTC management that may be considered to improve worker safety:

A. Shadow Vehicle—in the case of mobile and constantly moving operations, such as pothole patching and striping operations, a shadow vehicle, equipped with appropriate lights and warning signs, may be used to protect the workers from impacts by errant vehicles. The shadow vehicle may be equipped with a rear-mounted impact attenuator.

B. Road Closure—if alternate routes are available to handle road users, the road may be closed temporarily to facilitate project completion and thus further reduce worker vulnerability.

C. Law Enforcement Use—in highly vulnerable work situations, particularly those of relatively short-duration, law enforcement units may be stationed to heighten the awareness of passing vehicular traffic and to improve safety through the TTC zone.

D. Lighting—for nighttime work, the TTC zone and approaches may be lighted.

E. Special Devices—these include rumble strips, changeable message signs, hazard identification beacons, and flags~~, and warning lights~~. Intrusion warning devices may be used to alert workers to the approach of errant vehicles.

MoDOT does not use warning lights in TTC zones. Revised Dec. 2025

Support:

05 Judicious use of the special devices described in Item E in ~~Paragraph 4 of this Section~~ the preceding paragraph might be helpful for certain difficult TTC situations, but misuse or overuse of special devices or techniques might lessen their effectiveness.

Section 6C.05 High-Visibility Safety Apparel

Support:

M00 MoDOT has unique requirements for safety apparel that exceed MUTCD criteria. MoDOT requirements are included in this article. A graphical representation of personal protective equipment is available.

Standard:

01 For daytime ~~and nighttime~~ activity, all workers, including emergency responders, within the right-of-way who are within the TTC zone shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107–2015 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear," or equivalent revisions, except as provided in ~~Paragraph 4 of this Section~~ the first Option paragraph below. For daytime activity, all workers shall wear a hard hat, safety glasses, a Performance Class 3 top or a Performance Class 2 top, and safety footwear. A person designated by the employer to be responsible for worker safety shall make the selection of the appropriate class of garment.

MoDOT requirements for daytime workers are unique and different than for nighttime workers. Revised Dec. 2025

M01A For nighttime activity, all workers, including emergency responders, within the right-of-way who are within the TTC zone shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107–2015 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear," or equivalent revisions, except as provided in the first Option paragraph below. For nighttime activity, all workers shall wear a hard hat, safety glasses, a Performance Class 3 top OR a Performance Class 2 top and a Class E bottom, and safety footwear. A person designated by the employer to be responsible for worker safety shall make the selection of the appropriate class of garment.

MoDOT requirements for nighttime workers are unique and different than for daytime workers. Revised Dec. 2025

M01B MoDOT employees shall wear personal protective equipment (PPE) appropriate for each hazard. The department will provide required protective equipment for use by the employees. Supervisors shall control the issuance and replacement of this equipment. When PPE is furnished to the employee, it is the responsibility of the employee to use and maintain it as specified by MoDOT and the manufacturer.

MoDOT specific content from the EPG. Revised Dec. 2025

02 The apparel background (outer) material color shall be fluorescent orange-red, fluorescent yellow-green, or a combination of the two as defined in the ANSI standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors.

03 When uniformed law enforcement personnel are used to direct traffic, to investigate crashes, or to handle lane closures, obstructed roadways, and disasters, high-visibility safety apparel as described in this ~~Section~~ article shall be worn by the law enforcement personnel.

Option:

04 Emergency and incident responders and law enforcement personnel within the TTC zone may wear high-visibility safety apparel that meets the performance requirements of the ANSI/ISEA 207-2006 publication entitled "American National Standard for High-Visibility Public Safety Vests," or equivalent revisions, and labeled as ANSI 207-2006, in lieu of ANSI/ISEA 107-2015 apparel.

Standard:

05 Except as provided in ~~Paragraph 6 of this Section~~ the Option paragraph below, firefighters or other emergency responders working within the right-of-way shall wear high-visibility safety apparel as described in this Section.

Option:

06 Firefighters or other emergency responders working within the right-of-way and engaged in emergency operations that directly expose them to flame, fire, heat, and/or hazardous materials may wear retroreflective turn-out gear that is specified and regulated by other organizations, such as the National Fire Protection Association.

~~*Guidance:*~~ **Standard:**

07 For flagger wear during nighttime activity, high-visibility safety apparel that meets the Performance Class 3 requirements of the ANSI/ISEA 107–2015 publication entitled "American National Standard for High-Visibility Apparel and Headwear," or equivalent revision, and labeled as meeting the ANSI 107-2015 standard performance for Class 3 risk exposure ~~*should*~~ shall be worn.

M07A For nighttime activity, all flaggers shall also wear a high visibility/reflective hard hat, safety glasses, a Performance Class 3 top, and a Class E bottom or a Performance Class 2 top and a Class E bottom, and safety footwear. Hard hats other than high-visibility/reflective orange or green hard hat shall be covered with a high visibility orange or green covering.

MoDOT requirements for nighttime flaggers are unique. Revised Dec. 2025

M07B For flagger wear during daytime activity, high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107–2015 publication entitled "American National Standard for High-Visibility Apparel and Headwear," or equivalent revision, and labeled as meeting the ANSI 107-2015 standard performance for Class 3 risk exposure shall be worn. For daytime activity, all flaggers shall also wear a high-visibility hard hat, safety glasses, a Performance Class 3 top or a Performance Class 2 top, and safety footwear. Hard hats shall be high-visibility/reflective.

MoDOT has unique requirements for daytime flaggers. Revised Dec. 2025

CHAPTER 6D. FLAGGER CONTROL [EPG 616.4]

Section 6D.01 Qualifications for Flaggers

Standard:

M00A Except when performed under emergency conditions, workers engaged in flagging operations on the state highway system shall have successfully completed a recognized flagger training course. Flagger re-certification is required every four years. Contract and permit flaggers shall be certified in accordance with Standard Specifications Section 616.4.3.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

01 Because flaggers are responsible for public safety and make the greatest number of contacts with the public of all highway workers, they should be trained in proper traffic control practices and public contact techniques. Flaggers should be able to satisfactorily demonstrate the following abilities:

- *A. Ability to receive and communicate specific instructions clearly, firmly, and courteously;*
- *B. Ability to move and maneuver quickly in order to avoid danger from errant vehicles;*
- *C. Ability to control signaling devices (such as paddles and flags) in order to provide clear and positive guidance to drivers approaching a TTC zone in frequently changing situations;*
- *D. Ability to understand and apply proper traffic control practices, sometimes in stressful or emergency situations; and*
- *E. Ability to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury.*

Section 6D.02 STOP/SLOW Paddle for Hand-Signaling

Guidance:

01 The STOP/SLOW paddle (see Figure 6D-1 ~~and Table 6G-1~~) should be the primary and preferred hand-signaling device because the STOP/SLOW paddle gives road users more positive guidance than red flags.

Standard:

02 The STOP/SLOW paddle (R1-1 and WO20-8) shall have an octagonal shape on a rigid handle. When used at night, the STOP/SLOW paddle shall be retroreflectorized.

Option

03 A STOP/STOP or a SLOW/SLOW paddle may be used in certain situations (see Section 6D.05), provided the device meets the size and shape requirements for the STOP/SLOW paddle.

Guidance:

04 The STOP/SLOW paddle should be fabricated from light semi-rigid material.

Support:

05 The optimum method of displaying a STOP or SLOW message is to place the STOP/SLOW paddle on a rigid staff that is tall enough that when the end of the staff is resting on the ground, the message is high enough to be seen by approaching or stopped traffic.

Option:

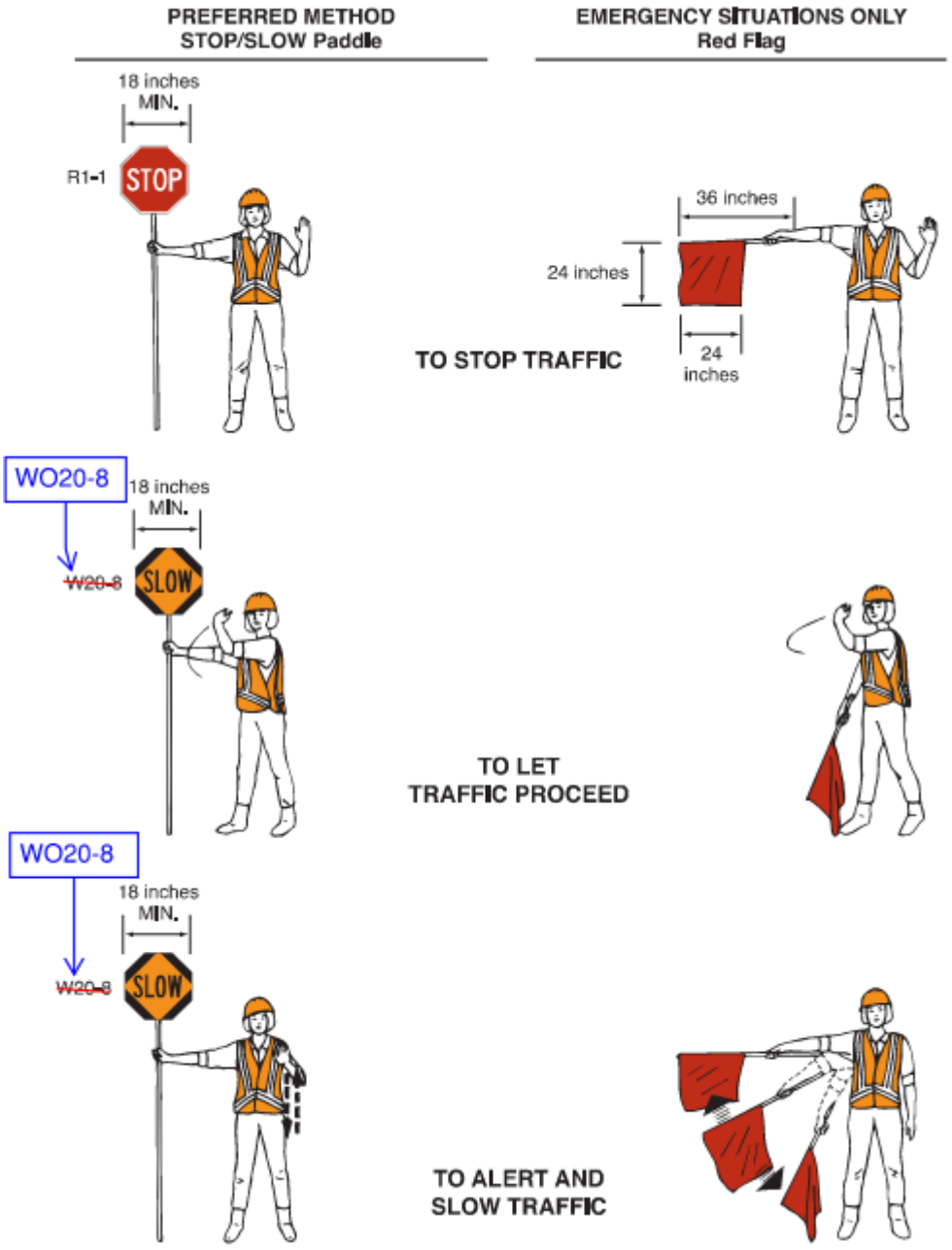
06 The STOP/SLOW paddle may be modified to improve conspicuity by incorporating either white or red flashing lights on the STOP face, and either white or yellow flashing lights on the SLOW face. The flashing lights may be arranged in any of the following patterns:

- A. Two white or red lights, one centered vertically above and one centered vertically below the STOP legend; and/or two white or yellow lights, one centered vertically above and one centered vertically below the SLOW legend;
- B. Two white or red lights, one centered horizontally on each side of the STOP legend; and/or two white or yellow lights, one centered horizontally on each side of the SLOW legend;
- C. One white or red light centered below the STOP legend; and/or one white or yellow light centered below the SLOW legend;

D. A series of eight or more small white or red lights no larger than ¼ inch in diameter along the outer edge of the paddle, arranged in an octagonal pattern at the eight corners of the border of the STOP face; and/or a series of eight or more small white or yellow lights no larger than ¼ inch in diameter along the outer edge of the paddle, arranged in a diamond pattern along the border of the SLOW face; or

E. A series of white lights forming the shapes of the letters in the legend.

Figure 6D-1. Use of Hand-Signaling Devices by Flaggers



Standard:

07 If flashing lights are used on the STOP face of the paddle, their colors shall be all white or all red. If flashing lights are used on the SLOW face of the paddle, their colors shall be all white or all yellow.

08 If more than eight flashing lights are used, the lights shall be arranged such that they clearly convey the octagonal shape of the STOP face of the paddle and/or the diamond shape of the SLOW face of the paddle.

09 If flashing lights are used on the STOP/SLOW paddle, the flash rate shall be at least 50, but not more than 60, flashes per minute.

Section 6D.03 Flag for Hand-Signaling

Guidance:

01 Use of flags should be limited to emergency situations.

Standard:

02 Flags, when used, shall be red or fluorescent orange-red in color, shall be a minimum of 24 inches square, and shall be securely fastened to a staff that is approximately 36 inches in length. Flags shall only be used until a STOP/SLOW paddle is available.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

03 The free edge of a flag should be weighted so the flag will hang vertically, even in heavy winds.

Standard:

04 When used at nighttime, flags shall be retroreflectorized.

Section 6D.04 Flashlight for Hand-Signaling

Option:

01 When flagging in an emergency situation at night in a non-illuminated flagger station, a flagger may use a flashlight with a red glow cone to supplement the STOP/SLOW paddle or flag.

Standard:

02 When a flashlight is used for flagging in an emergency situation at night in a non-illuminated flagger station, the flagger shall hold the flashlight in the left hand, shall hold the paddle or flag in the right hand as shown in Figure 6D-1, and shall use the flashlight in the following manner to control approaching road users:

- **A. To inform road users to stop, the flagger shall hold the flashlight with the left arm extended and pointed down toward the ground, and then shall slowly wave the flashlight in front of the body in a slow arc from left to right such that the arc reaches no farther than 45 degrees from vertical.**
- **B. To inform road users to proceed, the flagger shall point the flashlight at the vehicle's bumper, slowly aim the flashlight toward the open lane, then hold the flashlight in that position. The flagger shall not wave the flashlight.**
- **C. To alert or slow traffic, the flagger shall point the flashlight toward oncoming traffic and quickly wave the flashlight in a Figure eight motion.**

Section 6D.05 Flagger Procedures

Support:

01 The use of paddles and flags by flaggers is illustrated in Figure 6D-1.

Standard:

02 Flaggers shall use a STOP/SLOW paddle, a flag, or an Automated Flagger Assistance Device (AFAD) (see Sections 6L.02 through 6L.04) to control road users approaching a TTC zone. The use of hand movements alone without a paddle, flag, or AFAD to control road users shall be prohibited when

controlling traffic in a one-lane two-way operation except when the control is provided by emergency responders at incident scenes as described in Section 6O.01 or provided by uniformed law enforcement officers.

03 The following methods of signaling with a paddle shall be used:

A. To stop road users, the flagger shall stand on the shoulder, face road users and aim the STOP paddle face toward road users in a stationary position with the arm extended horizontally away from the body. The free arm shall be held with the palm of the hand above shoulder level toward approaching traffic.

B. To direct stopped road users to proceed, the flagger shall stand on the shoulder and face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body. The flagger shall motion with the free hand in a sweeping motion for road users to proceed.

C. To alert or slow traffic, the flagger shall stand on the shoulder, face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body. The flagger shall motion up and down with the free hand, palm down.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Option:~~

~~4 To further alert or slow traffic, the flagger holding the SLOW paddle face toward road users may motion up and down with the free hand, palm down.~~

Option Paragraph 4 is incorporated into Item C of Paragraph 3. Revised Dec. 2025

Standard:

05 The following methods of signaling with a flag shall be used:

A. To stop road users, the flagger shall stand on the shoulder, face road users and extend the flag staff horizontally across the road users' lane in a stationary position so that the full area of the flag is visibly hanging below the staff. The free arm shall be held with the palm of the hand above shoulder level toward approaching traffic.

B. To direct stopped road users to proceed, the flagger shall stand on the shoulder and face road users with the flag and arm lowered from the view of the road users, and shall motion with the free hand in a sweeping motion for road users to proceed. Flags shall not be used to signal road users to proceed.

C. To alert or slow traffic, the flagger shall stand on shoulder, face road users and slowly wave the flag in a sweeping motion of the extended arm from shoulder level to straight down without raising the arm above a horizontal position. The flagger shall keep the free hand down.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

06 The flagger should stand ~~either~~ on the shoulder adjacent to the road user being controlled ~~or in the closed lane~~ prior to stopping road users. The flagger may walk from the shoulder toward the center line of the roadway after making eye contact with the driver of the first approaching vehicle. A flagger should only stand in the lane being used by moving road users after road users have stopped. The flagger should be clearly visible to the first approaching road user at all times. The flagger also should be visible to other road users. The flagger should be stationed sufficiently in advance of the workers to warn them (for example, with audible warning devices such as horns or whistles) of approaching danger by out-of-control vehicles. The flagger should stand alone, away from other workers, work vehicles, or equipment.

Paragraph edited for MoDOT procedures for flaggers. Revised Dec. 2025

Option:

07 In certain conditions, it may be more appropriate for a flagger to use a STOP/STOP or a SLOW/SLOW paddle to convey the appropriate message to approaching road users and avoid confusing those that are approaching the operation from the opposing direction.

Section 6D.06 Flagger Stations

Standard:

01 Except as provided in ~~Paragraph 2 of this Section~~ the following Option paragraph, flagger stations shall be located such that approaching road users will have sufficient distance to stop at an intended stopping point.

Option:

02 If sufficient stopping sight distance is not achievable, the location of the flagger station may be modified based on engineering judgment.

03 The distances shown in Table 6B-2, which provides information regarding the stopping sight distance as a function of speed, may be used for the location of a flagger station. These distances may be increased for downgrades and other conditions that affect stopping distance.

Guidance:

04 Flagger stations should be located such that an errant vehicle has additional space to stop without entering the work space. The flagger should identify an escape route that can be used to avoid being struck by an errant vehicle.

Standard:

05 Except in emergency situations, flagger stations shall be preceded by an advance warning sign or signs. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night. The minimum required illuminance for flagging operation activity is 5 foot-candles.

MoDOT requirement for nighttime flagging. Revised Dec. 2025

M06 Spacing between flagger and flagger symbol sign shall not exceed one mile.

Option:

M07 When the maximum allowable work zone length cannot be attained due to this limitation, additional flagger symbol signs may be staged throughout the length of the work zone. In such instances, the flagger symbol signs are set up and removed as work progresses so only one sign is displayed in each direction and that sign is no more than one mile in advance of the flagger.

CHAPTER 6E. ONE-LANE, TWO-WAY TRAFFIC CONTROL [EPG 616.5]

Section 6E.01 One-Lane, Two-Way Traffic Control – General

Standard:

01 ~~Except as provided in Paragraph 4 of this Section, w~~ When traffic in both directions must use a single lane for a limited distance, movements from each end shall be coordinated.

Guidance:

M01A Temporary one-lane, two-way traffic control operations are considered on a case-by-case basis. One-lane, two-way operations should be avoided when hourly volumes exceed 600 vehicles per hour. When hourly volumes exceed 600 vehicles per hour or conditions in the following articles cannot be met, alternative construction methods should be considered, such as night work, shoulder improvements for maintaining two-way traffic, time restrictions for lane closures, construction during off-peak hours, detours, or diversions.

MoDOT specific content from the EPG. Revised Dec. 2025

02 Provisions should be made for alternate one-way movement through the constricted section via methods such as flagger control, a flag transfer, a pilot car, or traffic control signals~~, or stop or yield control~~.

03 Control points at each end should be chosen to permit easy passing of opposing lanes of vehicles.

MoDOT does not use stop or yield control for one-lane, two-way TTC zones. Revised Dec. 2025

~~Option:~~

~~04 If the work space on a low-volume street or road is short and road users from both directions are able to see the traffic approaching from the opposite direction through and beyond the worksite, the movement of traffic through a one-lane, two-way constriction may be self-regulating.~~

MoDOT uses one of the methods of control listed in Paragraph 2 for control for one-lane, two-way TTC zones. Revised Dec. 2025

M05 Provisions should be made for the control of movements from intersecting side roads or access points within a one-way, two-lane TTC zone. See Typical Application 616.8.10g - MT.

Option:

M06 Individual residences along the highway within the work area may be personally contacted and informed of the process for entering and exiting their property.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6E.02 Flagger Method

Guidance:

01 ~~Except as provided in Paragraph 2 of this Section~~ traffic should be controlled by a flagger at each end of a constricted section of roadway. One of the flaggers should be designated as the coordinator. To provide coordination of the control of the traffic, the flaggers should be able to communicate with each other orally, electronically, or with manual signals. These manual signals should not be mistaken for flagging signals. When more than one flagger is being used, all communication procedures should be clear before any flagging begins.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Option:~~

~~02 When a one-lane, two-way TTC zone is short enough to allow a flagger to see from one end of the zone to the other, traffic may be controlled by either a single flagger or by a flagger at each end of the section.~~

~~*Guidance:*~~

~~*03 When a single flagger is used, the flagger should be stationed on the shoulder opposite the constriction or work space, or in a position where good visibility and traffic control can be maintained at all times. When good visibility and traffic control cannot be maintained by one flagger station, traffic should be controlled by a flagger at each end of the section.*~~

MoDOT does not control two-way traffic with one flagger. Revised Dec. 2025

Support:

M04 Flagger segments are generally not longer than three miles for rural highways and one mile for urban highways. The maximum length is specified on the TTC plan so the contractor can properly stage the work.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6E.03 Flag Transfer Method

Support:

01 The driver of the last vehicle proceeding into the one-lane section is given a red flag (or other token) and instructed to deliver it to the flagger at the other end. The opposite flagger, upon receipt of the flag, then knows that traffic can be permitted to move in the other direction. A variation of this method is to replace the use of a flag with an official pilot car that follows the last road user vehicle proceeding through the section.

Guidance:

02 The flag transfer method should be employed only where the one-way traffic is confined to a relatively short length of a road, usually no more than 1 mile in length.

Section 6E.04 Pilot Car Method

Option:

01 A pilot car may be used to guide a queue of vehicles through the TTC zone or detour.

M01A Pilot vehicles may be specified to supplement flaggers when the length of the one-lane, two-way operation exceeds one-half mile.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

02 The pilot car should have the name of the contractor or contracting authority prominently displayed.

Standard:

03 The PILOT CAR FOLLOW ME (GO20-4) sign ~~(see Figure 6H-1)~~ shall be mounted on the top or on the rear of the pilot vehicle (see Section 6H.37).

04 The pilot car operation shall be coordinated with flagging operations or other methods of control at each end of the one lane section of the work zone.

05 If an Automated Flagger Assistance Device (AFAD) (see Section 6L.02) is used in pilot car operations, the AFAD shall be operated by a flagger positioned near and within the line of sight of the AFAD. The AFAD shall not be left unattended at any time that the AFAD is being used.

Guidance:

M05A The access control and signing for each side road located within the work area of the one-lane, two-way operation should be determined as discussed in Section 6E.01. Where applicable, the signing sequence for the side road should be supplemented with the PILOT CAR IN USE WAIT & FOLLOW (GO20-4a) sign (see Figure 616.8.10g).

MoDOT specific content from the EPG. Revised Dec. 2025

06 If temporary traffic control signals are used in pilot car operations and long wait times will be encountered by road users, consideration should be given to using signs to notify drivers of the wait time and/or pilot car operation, based on engineering judgment.

M06D When a pilot vehicle is used, traffic delays should be limited to 15 minutes.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6E.05 Temporary Traffic Control Signal Method

Option:

01 Traffic control signals may be used to control vehicular traffic movements in one-lane, two-way TTC zones (see Figure 6P-12 and Chapter 4O).

M02 Portable Signal Flagger Device (PSFD) Control. PSFDs are portable traffic control systems that may be used by the contractor to replace flagging operations for short-term lane closures on two-lane highways. In a typical flagging operation, a PSFD system requires four units with two units placed on either side of the roadway, in each direction. The primary benefit of the PSFD is the safety enhancement to the flaggers.

MoDOT specific content from the EPG. Revised Dec. 2025

~~**Section 6E.06 Stop or Yield Control Method**~~

~~Option:~~

~~01 STOP or YIELD signs may be used to control traffic on low-volume roads at a one-lane, two-way TTC zone when drivers are able to see the other end of the one-lane, two-way operation and have sufficient visibility of approaching vehicles.~~

~~*Guidance:*~~

~~*02 If the STOP or YIELD sign is installed for only one direction, then the STOP or YIELD sign should face road users who are driving on the side of the roadway that is closed for the work activity area.*~~

CHAPTER 6F. TEMPORARY TRAFFIC CONTROL ZONE SIGNS – GENERAL

[EPG 616.6]

Section 6F.01 General Characteristics of TTC Zone Signs

Support:

01 TTC zone signs convey both general and specific messages by means of words, symbols, and/or arrows and have the same three categories as all road user signs: regulatory, warning, and guide.

~~Option~~ *Guidance:*

02 Where the color orange is required, the fluorescent orange color ~~may~~ should also be used.

Support:

03 The fluorescent version of orange provides higher conspicuity than standard orange, especially during twilight.

Option:

04 ~~Standard orange flags, and/or~~ flashing beacons (see Chapter 4S)~~, and/or flashing warning lights~~ may be used in conjunction with signs.

Standard:

05 When ~~standard orange flags, or~~ flashing beacons~~, and/or flashing warning lights~~ are used in conjunction with a sign, they shall not block the sign face.

MoDOT does not use flashing warning lights on signs. Information related to flags is included at the end of this section. Revised Dec. 2025

~~**06 Except as provided in Section 2A.07, the sizes for TTC signs and plaques shall be as shown in Tables 6G-1, 6H-1, and 6I-1. The sizes in the minimum column shall only be used on low-volume rural roads, local streets, or roadways where the operating speed is 30 mph or less.**~~

Sign dimensions are addressed in Paragraphs 9A and 9B below. Revised Dec. 2025

~~Option:~~

~~07 The dimensions of signs and plaques shown in Tables 6G-1, 6H-1, and 6I-1 may be increased wherever necessary for greater legibility or emphasis.~~

~~*Guidance:*~~

~~*08 Deviations from standard sizes as prescribed in this Manual should be in 6-inch increments.*~~

Deviations are addressed in Paragraph 10A below. Revised Dec. 2025

Support:

~~09 Sign design details are contained in the "Standard Highway Signs" publication (see Section 1A.05).~~

M9A Work zone warning signs are typically 48 in. x 48 in., diamond-shaped, black on fluorescent orange signs with Type 9 or 11 sheeting. Work zone regulatory signs are identical to permanent regulatory signs with Type 4 sheeting. Work zone guide signs are generally rectangular in shape and have a black legend and border on a fluorescent orange background with Type 9 or 11 sheeting; but can come in different sizes, shapes, colors and sheeting depending on type and purpose of the signing. Sometimes a plate or plaque is affixed to a work zone sign or mounted below it to customize the sign.

M9B Sign dimensions for contract projects are located in Standard Plan 616.10 and for maintenance projects are located in the MGS-04-01 Roll-up Signs.

MoDOT specific content from the EPG. Revised Dec. 2025

10 Section 2A.04 contains additional information regarding the design of signs, including an Option allowing the development of special word message signs if a standard word message or symbol sign is not available to convey the necessary regulatory, warning, or guidance information.

Guidance:

M10A Non-standard work zone signs (i.e., legends or sizes not shown on Standard Plan 616.10) should be designed with the assistance of the Highway Safety and Traffic Division. Correspondence with the Highway

Safety and Traffic Division on this design is to indicate these are work zone signs. The non-standard work zone signs should be detailed in the plans and listed under "Miscellaneous Signs" on the D-2BS sheet.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

11 All signs used at night shall be ~~either~~ retroreflective ~~or illuminated to show the same shape and similar color both day and night~~.

~~12 The requirement for sign illumination shall not be considered to be satisfied by street, highway, or strobe lighting.~~

Option:

~~13 Sign illumination may be either internal or external.~~

MoDOT does not use illuminated signs for TTC applications. Revised Dec. 2025

14 Signs may be made of rigid or flexible material.

EPG 616.6.1.1 Flags

Option:

M15 Standard orange flags may be used in conjunction with signs during daytime hours. It is allowable to leave flags on signs when daytime work continues into nighttime.

Standard:

M16 When standard orange flags are used in conjunction with a sign, they shall not block the sign face.

Content from Paragraphs 4 and 5 modified specifically for flags. Revised Dec. 2025

EPG 616.6.1.2 Existing Sign Use

Option:

M17 Existing warning signs that are still applicable may remain in place within a TTC zone.

Guidance:

M18 All existing signs within the project limits should be shown on the TTC plan with a descriptive note indicating "UIP" (use in place), "cover" or "remove".

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6F.02 Sign Placement

EPG 616.6.2.1 Sign Location

Guidance:

01 Signs should be located on the right-hand side of the roadway unless otherwise provided in ~~this Manual~~ the EPG.

M01A To ensure maximum visibility, existing signs and other physical features (trees, sidewalks, billboards, commercial signs, etc.) should be considered when locating work zone signs.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

02 Where special emphasis is needed, signs may be placed on both the left-hand and right-hand sides of the roadway. Signs mounted on portable supports may be placed within the roadway itself. Signs may also be mounted on or above barricades.

EPG 616.6.2.2 Sign Mounting Height

Support:

03 The provisions of this ~~Section~~ article regarding mounting height apply unless otherwise provided for a particular sign elsewhere in ~~this Manual~~ the EPG.

Standard:

04 Rural Undivided Highways - The minimum height, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement, of signs installed at the side of ~~the road~~ undivided highways in rural areas shall be 5 feet (see ~~Figure 6F-1~~ Standard Plan 616.10).

05 Urban Highways or Rural Divided Highways - The minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of signs installed at the side of the ~~road~~ divided highways or highways in business, commercial, or residential areas where parking or pedestrian movements are likely to occur, or where the view of the sign might be obstructed, shall be 7 feet (see ~~Figure 6F-1~~ Standard Plan 616.10).

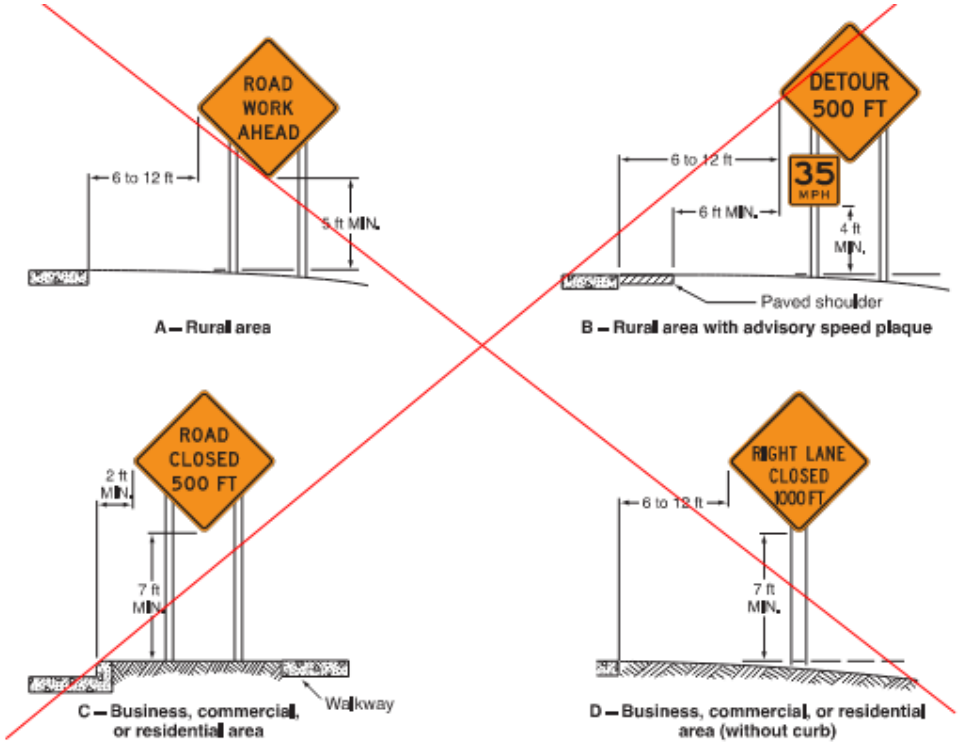
06 The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet.

07 The bottom of a sign mounted on a barricade, or other portable support, shall be at least 1 foot above the traveled way.

Option:

08 The height to the bottom of a secondary sign mounted below another sign may be 1 foot less than the height provided in Paragraphs 4 through 6 of this Section.

Figure 6F-1. Height and Lateral Location of Signs-Typical Installations



EPG 616.6.2.3 Sign Supports

Guidance:

09 Neither portable nor permanent sign supports should be located on sidewalks, bicycle facilities, or areas designated for pedestrians or bicyclists.

Standard:

10 Signs shall be mounted and placed in accordance with Section 307 of the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Guidance:

11 Except as provided in ~~Paragraph 12 of this Section~~ the following option paragraph, signs mounted on portable sign supports that do not meet the minimum mounting heights provided in ~~Part 2~~ EPG 903 should not be used for a duration of more than 3 days.

Option:

12 The R9-8 through R9-11a series, R11 series, W1-6 through W1-8 series, M4-10, E5-1, or other similar type signs ~~(see Figures 6G-1, 6H-1, and 6I-1)~~ may be used on portable sign supports that do not meet the minimum mounting heights provided in ~~Part 2~~ EPG 903 for longer than 3 days.

Support:

13 Methods of mounting signs other than on posts are illustrated in Figure 6F-2.

Guidance:

14 Signs mounted on Type 3 Barricades should not cover more than 50 percent of the top two rails or 33 percent of the total area of the three rails.

Standard:

15 Signs and sign supports used together shall be crashworthy (see Section 6A.04). Where large signs having an area exceeding 50 square feet are installed on multiple breakaway posts, the clearance from the ground to the bottom of the sign shall be at least 7 feet.

Option:

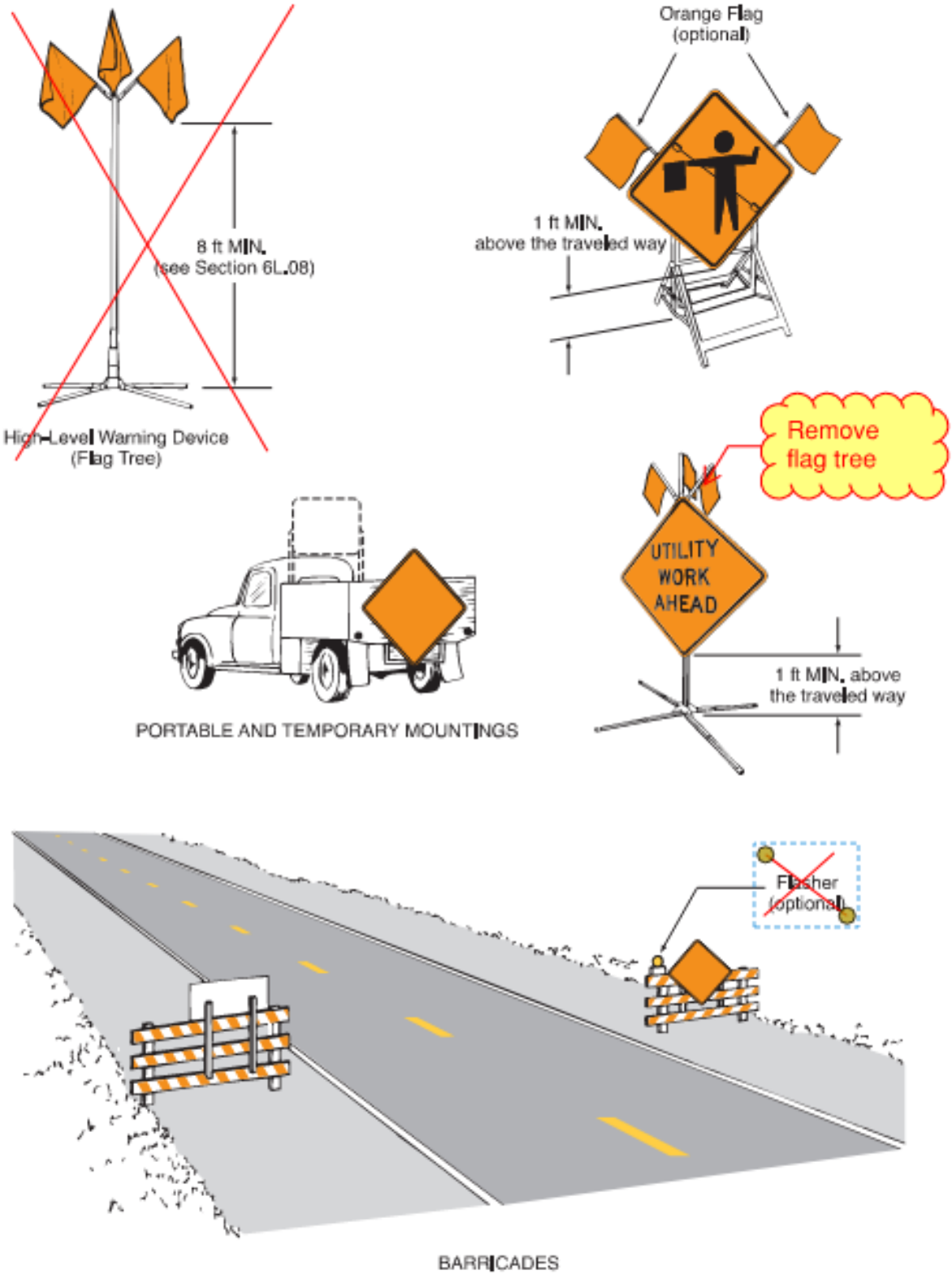
16 For mobile operations, a sign may be mounted on a work vehicle, a shadow vehicle, or a trailer stationed in advance of the TTC zone or moving along with it.

Support:

M17 Standard Plan 616.10 shows sign mounting requirements, post size and quantities requirements, and post installation details. The standard plans show detailed information for use of signs on posts, barrier, vehicles, and barricades.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 6F-2. Methods of Mounting Signs Other Than on Posts



Section 6F.03 Sign Maintenance

Guidance:

01 Signs should be properly maintained for cleanliness, visibility, retroreflectivity, and correct positioning.

02 Signs that have lost significant legibility should be promptly replaced.

Support:

M02A EPG 616.24 Quality Standards for Temporary Traffic Control Devices provides examples of sign maintenance.

MoDOT specific content from the EPG. Revised Dec. 2025

03 Section 2A.21 contains information regarding the retroreflectivity of signs, including the signs that are used in TTC zones.

CHAPTER 6G. TTC ZONE REGULATORY SIGNS [EPG 616.7]

Section 6G.01 Regulatory Sign Authority

Support:

01 Regulatory signs ~~such as those shown in Figure 6G-1~~ inform road users of traffic laws or regulations and indicate the applicability of legal requirements that would not otherwise be apparent.

Standard:

02 Regulatory signs shall be authorized by the public agency or official having jurisdiction and shall conform with Chapter 2B.

Section 6G.02 Regulatory Sign Design and Size

Standard:

01 TTC regulatory signs shall comply with the Standards for regulatory signs presented in Part 2 and in the FHWA's "Standard Highway Signs" publication (see Section 1A.05).

02 The sizes for TTC regulatory signs shall be as shown in ~~Table 6G-1~~Standard Plan 616.10.

Section 6G.03 Regulatory Sign Applications

Standard:

01 If a TTC zone requires regulatory measures different from those existing, the existing permanent regulatory devices shall be removed or covered and superseded by the appropriate temporary regulatory signs. This change shall be made in compliance with applicable ordinances or statutes of the jurisdiction.

Section 6G.04 Road Closed Signs (R11-2 Series)

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 (see Fig. 616.8.8 - MT and Fig. 616.8.9 - MT).

~~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.~~

MoDOT does not use Street Closed, Bridge Out, or Path Closed text. Revised Dec. 2025

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.

Section 6G.05 Local Traffic Only Signs (R11-3 Series and R11-4)

Guidance:

01 The Local Traffic Only signs ~~(see Figure 6G-1)~~ should be used where road user flow detours to avoid a closure some distance beyond the sign, but where local road users can use the roadway to the point of closure. These signs should be accompanied by appropriate warning and detour signing (see Fig. 616.8.8 - MT and Fig. 616.8.9 - MT).

02 In rural applications, the Local Traffic Only sign should have the legend ROAD CLOSED XX MILES AHEAD, LOCAL TRAFFIC ONLY (R11-3).

~~Option:~~

03 In urban areas, a *ROAD* ~~(STREET)~~ *CLOSED TO THRU TRAFFIC (R11-*4) *sign* ~~or the legend ROAD CLOSED, LOCAL TRAFFIC ONLY may~~ *should be used.*

~~04 In urban areas, a word message that includes the name of an intersecting street name or well-known destination may be substituted for the words XX MILES AHEAD on the R11-3 sign where applicable.~~

~~05 A STREET CLOSED (R11-3a) or BRIDGE OUT (R11-3b) sign may be substituted for an R11-3 sign, where applicable.~~

~~06 The words BRIDGE OUT, BRIDGE CLOSED, or STREET CLOSED may be substituted for the words ROAD CLOSED on the R11-4 sign where applicable.~~

MoDOT does not use Street Closed or Bridge Out text. Revised Dec. 2025

Section 6G.06 Weight Limit Signs (R12-1~~, R12-2, and R12-5~~)

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.07 STAY IN LANE Signs (R4-9 and R4-9a)~~

~~Option:~~

~~01 A STAY IN LANE (R4-9) sign (see Figure 6G-1) may be used where a multi-lane shift has been incorporated as part of the TTC on a highway to direct road users around road work that occupies part of the roadway on a multi-lane highway.~~

~~*Guidance:*~~

~~*02 A STAY IN LANE TO MERGE POINT (R4-9a) sign (see Figure 6G-1) should be used during late merge operations (see Section 6N.19) to direct traffic to use all available lanes until the merge point is reached.*~~

MoDOT does not use R4-9 or R4-9a signs. Revised Dec. 2025

Section 6G.08 Work Zone and Higher Fines Signs and Plaques

Standard:

M00A A WORK ZONE (GO20-5aP) plaque shall be mounted above all SPEED LIMIT signs within a TTC zone, except on the SPEED LIMIT signs at the end of the work zone to return traffic to the normal posted speed. These plaques shall be mounted above all DO NOT PASS signs within a TTC zone. These signs shall be used on the above signs regardless of whether the WORK ZONE FINE sign is used.

M00B WORK ZONE FINE sign and SPEEDING/PASSING (plate) information and guidelines is available in EPG 616.18 Work Zone Speed Limits.

MoDOT specific content from the EPG. Revised Dec. 2025

~~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.*~~

~~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.~~

MoDOT does not use the R2-10, R2-11, or R2-12 signs. Revised Dec. 2025

Section 6G.09 PEDESTRIAN CROSSWALK Sign (R9-8)

Option:

01 The PEDESTRIAN CROSSWALK (R9-8) sign ~~(see Figure 6G-1)~~ may be used to indicate where a temporary crosswalk has been established.

Standard:

02 If a temporary crosswalk is established, it shall be accessible to pedestrians with disabilities in accordance with Section 6C.03.

Section 6G.10 SIDEWALK CLOSED Signs (R9-9, R9-10, R9-11, and R9-11a)

Guidance:

01 SIDEWALK CLOSED signs ~~(see Figure 6G-1)~~ should be used where pedestrian flow is restricted. Bicyclist/Pedestrian Detour (MO4-9a) signs or Pedestrian Detour (MO4-9b) signs should be used where pedestrian flow is rerouted (see Section 6I.02).

02 The SIDEWALK CLOSED (R9-9) sign should be installed at the beginning of the closed sidewalk, at the intersections preceding the closed sidewalk, and elsewhere along the closed sidewalk as needed.

03 The SIDEWALK CLOSED, (ARROW) USE OTHER SIDE (R9-10) sign should be installed at the beginning of the restricted sidewalk when a parallel sidewalk exists on the other side of the roadway.

04 The SIDEWALK CLOSED AHEAD, (ARROW) CROSS HERE (R9-11) sign should be used to indicate to pedestrians that sidewalks beyond the sign are closed and to direct them to open crosswalks, sidewalks, or other travel paths.

05 The SIDEWALK CLOSED, (ARROW) CROSS HERE (R9-11a) sign should be installed just beyond the point to which pedestrians are being redirected.

Support:

06 These signs are typically mounted on a detectable barricade to encourage compliance and to communicate with pedestrians that the sidewalk is closed. Printed signs are not useful to many pedestrians with vision disabilities. A barrier or barricade detectable by a person with a vision disability is sufficient to indicate that a sidewalk is closed. If the barrier is continuous with detectable channelizing devices for an alternate route, accessible signing might not be necessary.

M06A See EPG 616.3 and EPG 616.28 for additional information.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6G.11 TURN OFF 2-WAY RADIO AND CELL PHONE Sign (R22-2)

~~**Standard:**~~

~~**01 The TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) sign (see Figure 6G-1) shall be used to require road users to turn off mobile radio transmitters and cellular telephones where blasting operations occur.**~~

Support:

~~02 Section 6H.25 contains information about the full sequence of signs for blasting zones and the specific requirements for location of this regulatory sign.~~

M03 See EPG 616.8.22 for signing at blasting areas.

EPG has a general statement regarding blasting area signs. Revised Dec. 2025

Section 6G.12 Other Regulatory Signs

Option:

01 Regulatory word message signs other than those classified and specified in ~~this Manual~~ the EPG and the "Standard Highways Signs" publication (see Section 1A.05) may be developed and used based on engineering judgment to aid the enforcement of other laws or regulations in TTC zones.

Standard:

M01A All special regulatory signs shall be designed with the assistance of the Highway Safety and Traffic Division.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

02 Special regulatory signs should comply with the general requirements of color, shape, and alphabet size and series. The sign message should be brief, legible, and clear.

CHAPTER 6H. TTC ZONE WARNING SIGNS [EPG 616.8]

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

Support:

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

Standard:

02 TTC warning signs shall comply with the Standards for warning signs presented in Part 2 and in the FHWA's "Standard Highway Signs" publication (see Section 1A.05).

Support:

M04A The letter "O" is added to the TTC sign designation of WO and GO to represent the color orange, which provides a separate nomenclature from the permanent warning signs.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

03 The sizes for TTC warning signs shall be as shown in ~~Table 6H-1~~Standard Plan 616.10.

04 Except as provided in ~~Paragraph 5 of this Section~~ the first option paragraph below, TTC warning signs shall be diamond-shaped with a black legend and border on a~~n~~ fluorescent orange background, except for the Grade Crossing Advance Warning (WO10-1) sign, which shall have a black legend and border on a fluorescent yellow background.

Option:

05 Warning signs that are required or recommended in Parts 2 or 7 to have a fluorescent yellow-green background may have that color background in TTC zones.

06 Existing warning signs with a yellow background that are still applicable may remain in place.

07 Warning signs used for TTC incident management situations may have a black legend and border on a fluorescent pink background.

08 Mounting or space considerations may justify a change from the standard diamond shape to a rectangular shape.

09 In emergencies with coordination from district work zone coordinators, available warning signs having yellow backgrounds may be used if signs with orange or fluorescent pink backgrounds are not at hand.

Guidance:

~~*10 Where roadway or road user conditions require greater emphasis, larger than standard size warning signs should be used, with the symbol or legend enlarged approximately in proportion to the outside dimensions.*~~

MoDOT has standardized sign sizes in Chapter 2C. Revised Dec. 2025

11 Where any part of the roadway is obstructed or closed by work activities or incidents, advance warning signs should be installed to alert road users well in advance of these obstructions or restrictions.

12 Where road users include pedestrians, the provision of supplemental audible information or detectable barriers or barricades should be provided for people with vision disabilities.

Support:

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

Option:

14 Advance warning signs may be used singly or in combination.

15 Where distances are not displayed on warning signs as part of the message, a supplemental plaque with the distance legend may be mounted immediately below the sign on the same support.

Section 6H.02 Position of Advance Warning Signs

Guidance:

01 Where highway conditions permit, warning signs should be placed in advance of the transition and activity areas at varying distances depending on roadway type, condition, and posted speed. Table 6B-1

contains information regarding the spacing of advance warning signs. ~~Where a series of two or more advance warning signs is used, the closest sign to the transition and activity areas should be placed approximately 100 feet for low-speed urban streets to 1,000 feet or more for freeways and expressways.~~

MoDOT has standardized sign sizes in Chapter 2C. Revised Dec. 2025

02 Where multiple advance warning signs are needed on the approach to a transition and activity area, the ROAD WORK AHEAD (WO20-1) sign should be the first advance warning sign encountered by road users.

Support:

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

Option:

04 As an alternative to a specific distance on advance warning signs, the word AHEAD may be used.

~~Support:~~

~~05 At TTC zones on lightly-traveled roads, all of the advance warning signs prescribed for major construction might not be needed.+~~

MoDOT has standardized sign sizes in Chapter 2C. Revised Dec. 2025

~~Option:~~

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

Guidance:

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

Section 6H.03 ROAD ~~(STREET)~~(BRIDGE) (RAMP) WORK Sign (WO20-1)

Guidance:

01 The ROAD (BRIDGE) (RAMP) ~~(STREET)~~ WORK (WO20-1) sign ~~(see Figure 6H-1)~~, which serves as a general warning of obstructions or restrictions, should be located in advance of the work space or any detour, on the road where the work is taking place.

02 Where traffic can enter a TTC zone from a crossroad or a major (high-volume) driveway, an advance warning sign should be used on the crossroad or major driveway.

Option**:**

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

MoDOT does not use the STREET legend, but does allow the RAMP or BRIDGE legend. Revised Dec. 2025

Section 6H.04 DETOUR Sign (WO20-2)

Guidance:

01 The DETOUR (WO20-2) sign ~~(see Figure 6H-1)~~ should be used in advance of a road user detour over a different roadway or route.

M01A The DETOUR sign should only be installed on the route being detoured. The DETOUR sign should not be used with temporary bypasses or connections unless part of or the entire route is over other existing roadways.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

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

Support:

M03 See EPG 616.2.9 for additional information regarding detour routes.

M04 See EPG 616.9.2 for additional information regarding detour route signing.

Section 6H.05 ROAD ~~(STREET)~~ CLOSED Sign (WO20-3)

Guidance:

01 The ROAD ~~(STREET)~~ CLOSED (WO20-3) sign ~~(see Figure 6H-1)~~ should be used in advance of the point where a highway is closed to all road users, or to all but local road users.

Option:

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

Section 6H.06 ONE LANE ROAD Sign (WO20-4)

Standard:

01 The ONE LANE ROAD (WO20-4) sign ~~(see Figure 6H-1)~~ shall be used only in advance of that point where motor vehicle traffic in both directions must use a common single lane (see Section 6E.01).

Option:

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

Section 6H.07 Lane(s) Closed Signs (WO20-5, WO20-5a, and WO9-3)

Standard:

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

02 For a single lane closure, the Lane Closed (WO20-5) sign ~~(see Figure 6H-1)~~ shall use the legend RIGHT (LEFT) LANE CLOSED. Where two or more adjacent lanes are closed, the WO20-5a sign (~~see Figure 6H-1~~) shall use the legend XX RIGHT (LEFT) LANES CLOSED.

Option:

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

Guidance:

04 The Interior Lane Shift (WO9-3) sign ~~(see Figure 6H-1)~~ should be used in advance of that point where work occupies an interior lane(s) and approaching motor vehicle traffic is directed to the right or left of the work zone in the lane(s) by using a shifting taper to route traffic around the closed interior lane(s).

Section 6H.08 Lane Ends Signs (WO4-2 and WO9-2a)

Option:

01 The Lane Ends (WO4-2) sign ~~(see Figure 6H-1)~~ may be used to warn drivers of the reduction in the number of lanes for moving motor vehicle traffic in the direction of travel on a multi-lane roadway.

Guidance:

02 The MERGE HERE TAKE TURNS (WO9-2a) sign ~~(see Figure 6H-1)~~ should be used to identify the merge point at which vehicles from alternate lanes take turns merging during Late Merge applications (see Section 6N.19).

Section 6H.09 ON RAMP Plaque (WO13-4P)

Guidance:

01 When work is being done on a ramp, but the ramp remains open, the ON RAMP (WO13-4P) plaque ~~(see Figure 6H-1)~~ should be used to supplement the advance ROAD WORK sign.

Support:

M02 It may not be possible to install an ON RAMP plaque on signs mounted for short duration or mobile operations.

Section 6H.10 RAMP NARROWS Sign (WO5-4)

Guidance:

01 The RAMP NARROWS (WO5-4) sign ~~(see Figure 6H-1)~~ should be used in advance of the point where work on a ramp reduces the normal width of the ramp along a part or all of the ramp.

Support:

M02 See Section 2C.17 for additional information regarding the ROAD NARROWS (WO5-1) sign.

M03 See Section 2C.18 for additional information regarding the NARROW BRIDGE (WO5-2) sign.

MoDOT allow the RAMP or BRIDGE legend. Revised Dec. 2025

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

~~Option:~~

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

MoDOT does not use the W23-1 sign. Revised Dec. 2025

Section 6H12.A EXIT GORE sign (EO5-1)

Guidance:

M01 Temporary EXIT GORE (EO5-1) signs should be provided when work in the vicinity of off-ramps shifts the gore point of the ramp.

EPG includes specific content for the Exit Gore sign. Revised Dec. 2025

Section 6H.12 EXIT OPEN and EXIT CLOSED Signs (EO5-2 and EO5-2a)

Option:

01 An EXIT OPEN (EO5-2) or EXIT CLOSED (EO5-2a) sign ~~(see Figure 6H-1)~~ may be used to supplement other warning signs where work is being conducted in the vicinity of an exit ramp and where the exit maneuver for vehicular traffic using the ramp is different from the normal condition.

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

~~Option:~~

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

MoDOT does not use the E5-3 sign. Revised Dec. 2025

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

~~Option:~~

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

~~*Guidance:*~~

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

MoDOT does not use the W23-2 sign. Revised Dec. 2025

Section 6H.15 Flagger Signs (WO20-7 ~~and WO20-7a~~)

Guidance:

01 The Flagger (WO20-7) sign ~~(see Figure 6H-1)~~ should be used in advance of any point where a flagger is stationed to control road users. These signs should be displayed when a flagger is present and should be covered or removed when the flagger is not present.

Option:

~~02 A distance legend may be displayed on a supplemental plaque below the Flagger sign.~~ The flagger sign may be used ~~with appropriate legends or~~ in conjunction with ~~other warning signs, such as~~ the BE PREPARED TO STOP (WO3-4) sign ~~(see Figure 6H-1).~~

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

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.15A BE PREPARED TO STOP sign (WO3-4)

Option:

M01 The BE PREPARED TO STOP (WO3-4) sign may be used where conditions require traffic to stop for flagger-controlled truck/equipment crossings or entrances and temporary road closures where traffic is allowed to proceed unimpeded until access is needed. This sign may also be used in one-lane, two-way flagging operations where no work zone speed limit is established.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.16 Two-Way Traffic Sign (WO6-3)

Guidance:

01 When one roadway of a normally-divided highway is closed, with two-way vehicular traffic maintained on the other roadway, the Two-Way Traffic (WO6-3) sign ~~(see Figure 6H-1)~~ should be used at the beginning of the two-way vehicular traffic section and at intervals to remind road users of opposing vehicular traffic.

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

~~**Standard:**~~

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

~~Support:~~

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

~~**Standard:**~~

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

MoDOT does not use the W6-4 sign. Revised Dec. 2025

Section 6H.18 Workers Signs (WO21-1 and WO21-1a)

Option:

01 A Workers (WO21-1) sign ~~(see Figure 6H-1)~~ may be used to alert road users of workers in or near the roadway.

Guidance:

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

Option:

03 The WORKERS (WO21-1a) word message sign may be used as an alternate to the Workers (W21-1) symbol sign.

Section 6H.19 ~~FRESH OIL (TAR) Sign~~ Surface Condition Signs (WO21-2 and WO8-7)

Guidance:

01 The FRESH OIL ~~(TAR)~~ (WO21-2), LOOSE GRAVEL (WO8-7), and FRESH OIL/LOOSE GRAVEL signs *~~(see Figure 6H-1)~~ should be used to warn road users of the surface treatment.*

MoDOT specific content from the EPG. Revised Dec. 2025

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

~~Option:~~

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

MoDOT does not use the W21-3 sign. Revised Dec. 2025

Section 6H.21 Motorized Traffic Signs (WO8-6 and WO8-6c~~W11-10~~)

Option:

01 ~~Motorized Traffic (W8-6 and W11-10)~~TRUCK CROSSING (WO8-6) and TRUCK ENTRANCE (WO8-6c) signs may be used to alert road users to locations where unexpected travel on the roadway or entries into or departures from the roadway by construction vehicles might occur. ~~The TRUCK CROSSING (W8-6) word message sign may be used as an alternate to the Truck (W11-10) symbol sign (see Figure 6H-1) where there is an established construction vehicle crossing of the roadway.~~

Support:

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

Section 6H.22 Shoulder Work Signs (WO21-5, WO21-5a, and WO21-5b)

Support:

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

Standard:

02 The Shoulder Work sign shall have the legend SHOULDER WORK (WO21-5), RIGHT (LEFT) SHOULDER CLOSED (WO21-5a), or RIGHT (LEFT) SHOULDER CLOSED XX FT or AHEAD (WO21-5b).

Option:

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

Guidance:

04 On freeways and expressways, the RIGHT (LEFT) SHOULDER CLOSED XX FT or AHEAD (WO21-5b) sign followed by RIGHT (LEFT) SHOULDER CLOSED (WO21-5a) sign should be used in advance of the point where the shoulder work occurs and should be preceded by a ROAD WORK AHEAD sign.

Section 6H.23 SURVEY CREW Sign (WO21-6)

Guidance:

01 The SURVEY CREW (WO21-6) sign ~~(see Figure 6H-1)~~ should be used to warn of surveying crews working in or adjacent to the roadway.

Section 6H.24 UTILITY WORK Sign (WO21-7)

Option:

01 For permit projects, ~~T~~the UTILITY WORK (WO21-7) sign ~~(see Figure 6H-1)~~ may be used as an alternate to the ROAD (STREET) WORK (WO20-1) sign for utility operations on or adjacent to a highway.

~~Support:~~

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

Option:

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

Section 6H.25 Signs for Blasting Areas

Support:

M00A These signs are not shown on the traffic control plan due to the various methods of detonation and various locations within a project that may require blasting. Reference to Blasting Area requirements are located in the following: Specification Section 616, EPG 203 Roadway and Drainage Excavation, Embankment, and Compaction, MUTCD Section 6H.25, and MUTCD Figure 6P-2: Blasting Zone.

MoDOT specific content from the EPG. Revised Dec. 2025

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

Standard:

02 Road users shall be warned where blasting operations occur. A sequence of signs shall be prominently displayed to warn all road users of blasting operations and to direct operators of mobile radio equipment, including cellular telephones, to turn off transmitters in a blasting area. These signs shall be covered or removed when there are no explosives in the area or the area is otherwise secured.

~~03 The BLASTING ZONE AHEAD (W22-1) sign (see Figure 6H-1) shall be used in advance of any TTC zone where explosives are being used. The TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) and END BLASTING ZONE (W22-3) signs shall be used in sequence with this sign.~~

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

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

~~Option:~~

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

Section 6H.26 Shoulder Signs and Plaque (WO8-4, ~~W8-9,~~ WO8-17, and WO8-17P)

Option:

01 The SOFT SHOULDER (WO8-4) sign ~~(see Figure 6H-1)~~ may be used to warn of a soft shoulder condition.

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

MoDOT does not use the W8-9 sign. Revised Dec. 2025

Guidance:

03 The Shoulder Drop Off (WO8-17) sign ~~(see Figure 6H-1)~~ should be used when an unprotected shoulder drop-off, adjacent to the travel lane, exceeds ~~3~~2 inches in depth for a continuous length along the roadway, based on engineering judgment.

M03A When the SHOULDER DROP-OFF signs are installed for greater than three days, the SHOULDER DROP-OFF (W8-17p) supplemental plaque should be mounted below the W8-17sign.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Option:~~

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

Section 6H.27 UNEVEN LANES Sign (WO8-11)

Guidance:

01 The UNEVEN LANES (WO8-11) sign ~~(see Figure 6H-1)~~ should be used during operations that create a difference in elevation between adjacent lanes that are open to travel.

Support:

M02 This sign is to be used as shown in Standard Plans 619.10 and 620.10.

Section 6H.28 STEEL PLATE AHEAD Sign (WO8-24)

Option:

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

M02 Unprotected excavations or repairs located within a roadway are usually backfilled when workers are not present, but may also be covered with steel plates. While plating is generally used by Maintenance employees on low speed (under 45 mph) roadways, it may also be appropriate within contract and permit work zones. A design exception may be needed to use steel plates in contract and permit work zones.

Guidance:

M03 When steel plates are used, STEEL PLATE AHEAD (WO8-24) signs should be used to warn road users that the presence of a temporary steel plate(s) might make the road surface uneven and might create slippery conditions during wet weather (see Typical Applications 616.8.47a and 616.8.47b).

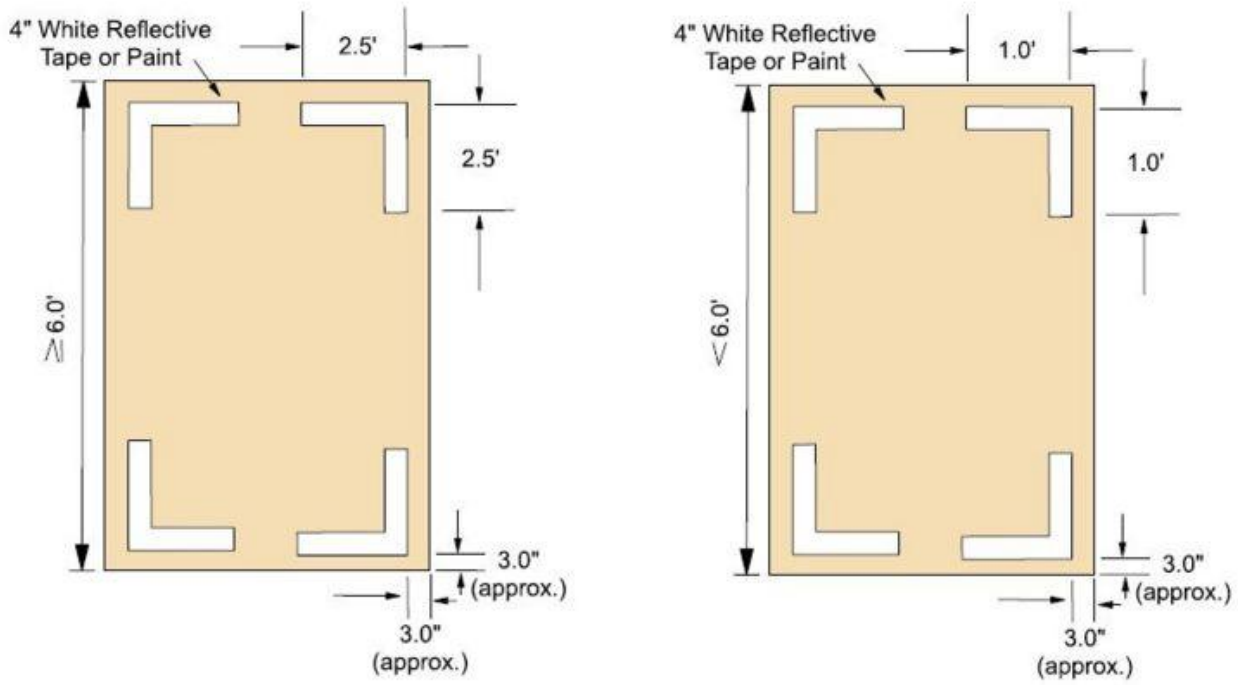
M04 In any case, the plate should be appropriately sized to adequately conduct the vehicular loading and must be delineated according to the diagram below. No more than 3/4 in. of the plate's overall thickness should protrude above the roadway surface and the height differential should be transitioned at a rate no steeper than 3H:1V around the entire perimeter. This may be accomplished by beveling the plate, wedging asphalt or mechanically fastening, as approved by the engineer. Care must be taken to ensure that a mechanical fastener is appropriate for the operating speed of the work zone. The surface of the plate should be treated for skid resistance, either by surface deformation or direct application of a friction course.

Support:

M05 See Figure 616.8.28 for markings to be used on steel plates.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 616.8.28. Steel Plate Marking



Section 6H.29 NO CENTER LINE Sign (WO8-12)

~~*Guidance:*~~

~~*01 The NO CENTER LINE (W8-12) sign (see Figure 6H-1) should be used when the work obliterates the center line pavement markings. This sign should be placed at the beginning of the TTC zone and repeated at 2-mile intervals in long TTC zones.*~~

~~Support:~~

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

Support:

M03 The NO CENTER LINE (WO8-12) sign is a black-on-orange warning sign used on two-lane and two-lane with auxiliary lane facilities where centerline marking is eliminated for 200 linear ft. or more. These signs are used in combination with temporary pavement marking. These signs are placed in advance of the missing centerline markings area at the recommended sign spacing.

Guidance:

M04 For extended areas continuously or intermittently missing centerline marking, NO CENTER LINE signs should also be installed within 150 ft. after the intersection of a state route and at two-mile spacing throughout the affected area.

Option:

M05 Upon the discretion of the engineer or supervisor, additional NO CENTER LINE signs may be installed within 150 ft. after other intersections.

M06 When a sign placed at the two-mile interval and another sign placed after an intersection fall within one-eighth mile of each other, the sign placed at the two-mile interval may be eliminated.

Support:

M07 Standard Plan 620.10 shows the configuration for these signs and pavement markers on a two-lane roadway. This layout is to also be included in the TCP.

Standard:

M08 When temporary pavement markings and/or NO CENTER LINE signs are necessitated by either a change in roadway use or the elimination of permanent pavement markings, the following provisions shall be incorporated into the operation:

A. Those performing the operation shall be responsible for coordinating the procurement, installation, maintenance and removal, as applicable, of pavement markings, temporary or permanent, and any NO CENTER LINE signs.

B. Temporary pavement markings and any NO CENTER LINE signs shall be in place prior to opening a roadway to traffic. On two-lane highways with AADTs less than 1000, when certain material and operations do not allow the practical application of these markings (e.g., seal coat, cold mix curing, fly coating, etc.), installation of temporary pavement markings may be delayed up to 5 working days, initiated by the elimination of the permanent pavement markings, provided the required NO CENTER LINE signs are in place as prescribed previously prior to opening the facility to traffic.

C. For Contract Projects – Permanent pavement marking shall be installed in accordance with Sec 620 Pavement Marking.

D. For Maintenance Operations – Permanent pavement markings should be installed no later than 14 calendar days after any operation has been completed. However, delays in installation should be minimized where possible.

E. Removal or obliteration of all pavement markings shall be complete and leave minimal pavement scarring. Concealing any pavement marking with black paint or asphalt is not acceptable.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.30 Reverse Curve Signs (WO1-4 Series)

Guidance:

01 In order to give road users advance notice of a lane shift, a Reverse Curve (WO1-4, WO1-4b, or WO1-4c) sign ~~(see Figure 6H-1)~~ should be used when a lane (or lanes) is being shifted to the left or right. If the design speed of the curves is 30 mph or less, a Reverse Turn (WO1-3) sign should be used.

Standard:

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

Option:

03 Where two or more lanes are being shifted, a WO1-4 (or WO1-3) sign with an ALL LANES (WO24-1cP) plaque ~~(see Figure 6H-1)~~ may be used instead of a sign that illustrates the number of lanes.

04 Where more than three lanes are being shifted, the Reverse Curve (or Turn) sign may be rectangular.

Support:

M05 See Section 2C.07 Horizontal Alignment Warning Signs for information regarding Turn and Curve signs.

Section 6H.30A Large Arrow Signs (WO1-6 and WO1-7)

Support:

M01 The One-Direction Large Arrow (WO1-6) sign and the Two-Direction Large Arrow (WO1-7) sign are used in conjunction with Type 3 barricades. The WO1-6 sign is also used in conjunction with the Turn sign and the Reverse Turn sign.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.31 Double Reverse Curve Signs (WO24-1 Series)

Option:

01 The Double Reverse Curve (WO24-1, WO24-1a, or WO24-1b) sign ~~(see Figure 6H-1)~~ may be used where the tangent distance between two reverse curves is less than 600 feet, thus making it difficult for a second Reverse Curve (WO1-4 series) sign to be placed between the curves. If the design speed of the curves is 30 mph or less, Double Reverse Turn signs may be used.

Standard:

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

Option:

03 Where two or more lanes are being shifted, a WO24-1 (or Double Reverse Turn sign showing one lane) sign with an ALL LANES (WO24-1cP) plaque ~~(see Figure 6H-1)~~ may be used instead of a sign that illustrates the number of lanes.

04 Where more than three lanes are being shifted, the Double Reverse Curve (or Turn) sign may be rectangular.

Section 6H.32 Advisory Speed Plaque (WO13-1P)

Option:

01 In combination with a warning sign, an Advisory Speed (WO13-1P) plaque ~~(see Figure 6H-1)~~ may be used to indicate a recommended speed ~~through the TTC zone~~ for a change in horizontal alignment or through a signed condition within a TTC zone.

Standard:

02 The Advisory Speed plaque shall not be used in conjunction with any sign other than a warning sign, nor shall it be used alone. When used with orange TTC zone signs, this plaque shall have a black legend and border on an orange background. ~~The plaque shall be at least 24 x 24 inches in size when used with a sign that is 36 x 36 inches or larger. Except in emergencies, an Advisory Speed plaque shall not be mounted until the recommended speed is determined by the highway agency.~~

MoDOT work zone sign sizes are provided in the standard plans. Revised Dec. 2025.

Support:

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

04 AASHTO and ITE design documents contain established engineering practices for the determination of the recommended advisory speeds for horizontal curves or locations with limited sight distance.

Section 6H.33 Supplementary Distance Plaque (WO7-3aP)

Option:

01 In combination with a warning sign, a Supplementary Distance (WO7-3aP) plaque ~~(see Figure 6H-1)~~ with the legend NEXT XX MILES may be used to indicate the length of highway over which a work activity is being conducted, or over which a condition exists in the TTC zone.

02 In long TTC zones, Supplementary Distance plaques with the legend NEXT XX MILES may be placed in combination with warning signs at regular intervals within the zone to indicate the remaining length of highway over which the TTC work activity or condition exists.

Standard:

03 The Supplementary Distance plaque with the legend NEXT XX MILES shall not be used in conjunction with any sign other than a warning sign, nor shall it be used alone. When used with orange

TTC zone signs, this plaque shall have a black legend and border on an orange background. ~~**The plaque shall be at least 30 x 24 inches in size when used with a sign that is 36 x 36 inches or larger.**~~

Guidance:

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

Section 6H.34 Motorcycle Plaque (WO8-15aP)

Option:

01 A Motorcycle (WO8-15aP) plaque ~~(see Figure 6H-1)~~ may be mounted below a ~~LOOSE GRAVEL (W8-7) sign, a~~ GROOVED PAVEMENT (WO8-15) sign~~, a METAL BRIDGE DECK (W8-16) sign, or a STEEL PLATE AHEAD (W8-24) sign~~ if the warning is intended to be directed primarily to motorcyclists.

Standard:

M02 When the GROOVED PAVEMENT (WO8-15) sign is in-place for greater than three days, the Motorcycle (WO8-15Pa) plaque shall be used in addition to the WO8-15 sign.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.35 ROAD WORK NEXT XX MILES Sign (GO20-1)

Guidance:

01 The ROAD WORK NEXT XX MILES (GO20-1) sign ~~(see Figure 6H-1)~~ should be installed in advance of TTC zones that are more than 2 miles in length.

Option:

M01A The ROAD WORK NEXT XX MILES (GO20-1) sign may be used to warn road users of a downstream lane addition or head-to-head lane reconstruction. Examples of projects where this sign is not to be installed include new alignment, guardrail replacement, or those with mobile operations.

MoDOT specific content from the EPG. Revised Dec. 2025

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

Standard:

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

Section 6H.36 END ROAD WORK Sign (GO20-2)

Guidance:

01 When used, the END ROAD WORK (G20-2) sign ~~(see Figure 6H-1)~~ should be placed near the downstream end of the termination area, as determined by engineering judgment when the ROAD WORK NEXT XX MILES sign is used.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

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

Section 6H.37 PILOT CAR FOLLOW ME Sign (GO20-4) and PILOT CAR IN USE WAIT & FOLLOW (GO20-4a)

Standard:

01 The PILOT CAR FOLLOW ME (GO20-4) sign ~~(see Figure 6H-1)~~ shall be mounted in a conspicuous position on the top or on the rear of a vehicle used for guiding one-way vehicular traffic through or around a TTC zone (see Section 6E.04).

Standard:

M02 The 42 x 30 inch PILOT CAR IN USE WAIT & FOLLOW (GO20-4a) shall be used on all state routes.

Option:

M03 The 42 x 30 inch PILOT CAR IN USE WAIT & FOLLOW (GO20-4a) may be used on any non-state routes, as determined by the engineer.

Guidance:

M04 The 18 x 12 inch PILOT CAR IN USE WAIT & FOLLOW (GO20-4a) should be used on all other non-state routes (city streets, county roads, etc.).

MoDOT specific content from the EPG. Revised Dec. 2025

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~~ the EPG and the FHWA's "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 a~~n~~ fluorescent orange background.

Guidance:

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

Section 6H.39 Reduced Speed Limit Ahead (WO3-5)

Standard:

M01 The Reduced Speed Limit Ahead (WO3-5) sign shall be used when the geometrics of the roadway require an approved speed reduction greater than 10 mph below the existing or posted speed limit.

Support:

M02 If the geometrics of the roadway require a 10 mph speed reduction at the beginning of the project and construction work requires an additional 5 to 10 mph reduction farther down the road, then the WO3-5 sign is not required.

Standard:

M03 The Reduced Speed Limit Ahead (WO3-5) sign shall be followed by a SPEED LIMIT (R2-1) sign. The speed limit indicated on the REDUCDED SPEED LIMIT AHEAD sign shall be identical to the SPEED LIMIT sign (see EPG 616.18 Work Zone Speed Limits**).**

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.40 GROOVED PAVEMENT (WO8-15) sign

Standard:

M01 When cold-milled areas are left opened to traffic, the GROOVED PAVEMENT (WO8-15) sign shall be used in locations described in Sec 622.

Support:

M02 Since designers cannot estimate the various times a contractor may leave a milled area opened to traffic, these signs are not shown on the traffic control plan. These signs, if used, are furnished by the contractor at the contractor's expense.

Standard:

M03 When the GROOVED PAVEMENT (WO8-15) sign is in-place for greater than three days, the Motorcycle (WO8-15aP) plaque shall be used in addition to the WO8-15 sign.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.41 NARROW LANES (Special) sign

Option:

M01 The NARROW LANES sign may be used on multilane highways where the lane width is temporarily reduced.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6H.42 Vehicle Speed Feedback System (Radar Speed Advisory System)

Option:

M01 A Vehicle Speed Feedback (WO13-20aP) plaque (see Figure 616.8.42) that displays the speed of an approaching vehicle to the vehicle operator may be used to provide warning to drivers of their speed in relation to a speed limit (R2-1) sign within a TTC zone.

Standard:

M02 When used to display the speed of an approaching vehicle in relation to the posted speed limit, the Vehicle Speed Feedback (WO13-20aP) plaque shall be mounted below a Speed Limit (R2-1) sign (see Section 2B.21).

M03 The Vehicle Speed Feedback assembly shall not be installed at a location where the posted speed limit on the route changes. Vehicle Speed Feedback assemblies shall be placed anywhere downstream of a speed limit change but shall be a minimum of 200 feet downstream of a speed limit change on conventional routes and a minimum of 400 feet downstream of a speed limit change on expressways of freeways. Vehicle Speed Feedback assemblies shall be installed in accordance with the Vehicle Speed Feedback Assembly Typical Application.

M04 The legend YOUR SPEED shall be a black legend on a fluorescent orange retroreflective background. The changeable legend displaying the speed of the approaching vehicle shall be a yellow or orange luminous legend on a black opaque background. The vehicle speed displayed on the changeable portion of the sign shall be displayed as an integer. The Vehicle Speed Feedback plaque shall not flash, strobe, change color, or use other animated elements integrated into the changeable legend display. When no vehicles are approaching, the changeable display shall not display a legend.

M05 Vehicle Speed Feedback sign equipment shall not have the capability to collect, store or transmit personally identifiable information of any type.

Guidance:

M06 The changeable portion of the Vehicle Speed Feedback legend should be approximately the same height, width, and stroke of those on the Speed Limit sign it supplements or is mounted below.

M07 When a WO13-20aP plaque is used with a Speed Limit sign it should be approximately the same width as the Speed Limit sign it is mounted below.

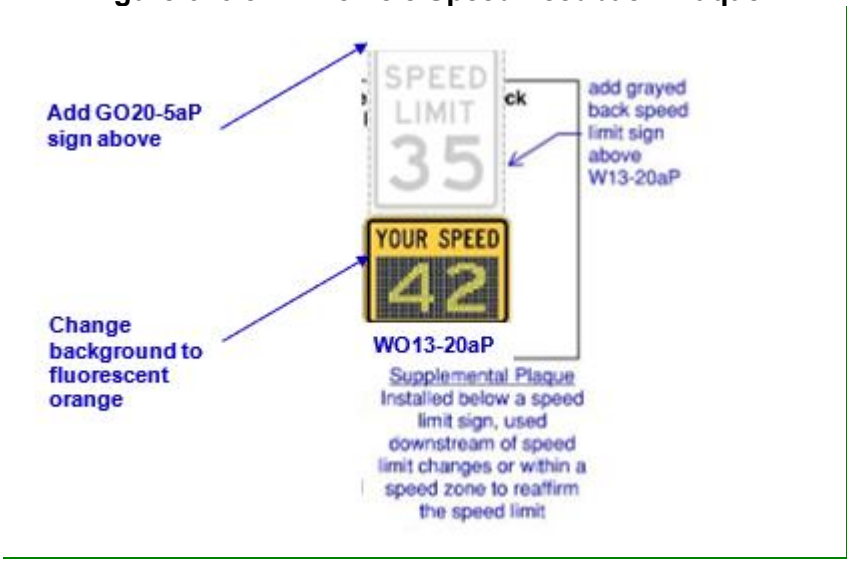
Support:

M08 A nonstandard JSP, NJSP 21-06 , has been created for the Radar Speed Advisory System (RSAS).

M09 See EPG 907.8 for additional information.

New content to replace Radar Speed Advisory System. Revised Dec. 2025

Figure 616.8.42. Vehicle Speed Feedback Plaque



Section 6H.43 Object Markers

Support:

M01 Object markers are used in work zones to mark temporary obstructions within or adjacent to the roadway (see Section 2C.70).

Standard:

M02 A Type 1 Object Marker shall be attached to the lead module of sand-filled impact attenuators.

Option:

M03 Type 3 Object Markers may be used to supplement other channelizing devices in special situations.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 6I. TTC ZONE GUIDE SIGNS [EPG 616.9]

Section 6I.01 Guide Signs – General

Support:

01 Guide signs along highways provide road users with information to help them along their way through the TTC zone. The design of guide signs is presented in Part 2.

M01A The letter "O" is added to the TTC sign designation of MO and EO to represent the color orange, which provides a separate nomenclature from the permanent guide signs.

Guidance:

02 The following guide signs should be used in TTC zones as needed:

A. Standard route markings where temporary route changes are necessary,
B. Directional signs and street name signs, and
C. Special guide signs relating to the condition or work being done.

Standard:

03 If additional temporary guide signs are used in TTC zones, they shall have a black legend and border on a~~n~~ fluorescent orange background.

Option:

04 Guide signs used in TTC incident management situations may have a black legend and border on a fluorescent pink background.

05 When temporary directional signs and temporary street name signs are used in conjunction with detour routing, these signs may have a black legend and border on a~~n~~ fluorescent orange background.

06 When permanent directional signs or permanent street name signs are used in conjunction with detour signing, they may have a white legend on a green background (see Sections 2D.35 and 2D.45).

Standard:

07 The sizes for TTC guide signs shall be as shown in ~~Table 6I-1~~Standard Plan 616.10.

Section 6I.02 Detour Signs and Plaques (MO4-8P, MO4-8a, ~~M4-8bP,~~ MO4-9, MO4-9a, MO4-9b, MO4-9c, and MO4-10)

Standard:

01 Each detour shall be adequately marked with standard temporary route signs and destination signs.

Guidance:

M01A Where city streets, county roads and other public roads are detoured due to roadwork, detour signing should be provided showing the name or number of the road being detoured. Detour signing should be provided at each junction through the detour route as well as confirmation signs where there are long detour sections over the same route.

M01B Detour Route Assemblies (see Figure 616.2.1) should only be installed on the route being detoured. Detour signing should be used along the detour route to guide road users through the detour. Detour Route Assemblies should not be used with temporary bypasses or connections unless part of or the entire route is on other existing roadways.

Support:

M01C Additional information is located in EPG 616.3.9 Detours and Diversions.

M01D Fig. 616.8.8 - MT and Fig. 616.8.9 - MT show a typical detour of a road closed beyond the junction.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

02 Detour signs in TTC incident management situations may have a black legend and border on a fluorescent pink background.

03 The Detour Arrow (MO4-10) sign ~~(see Figure 6I-1)~~ may be used where a detour route has been established.

04 The DETOUR (MO4-8P) plaque ~~(see Figure 6I-1~~) may be mounted at the top of a route sign assembly to mark a temporary route that detours from a highway, bypasses a section closed by a TTC zone, and rejoins the highway beyond the TTC zone.

Guidance:

05 The Detour Arrow (MO4-10) sign should normally be mounted just below the ROAD CLOSED (R11-2, R11-3a, or R11-4) sign. The Detour Arrow sign should include a horizontal arrow pointed to the right or left as required.

06 The DETOUR (MO4-9) sign ~~(see Figure 6I-1~~) should be used for unnumbered highways, for emergency situations, for periods of short durations, or where, over relatively short distances, road users are guided along the detour and back to the desired highway without route signs.

07 A Street Name sign should be placed above, or the street name should be incorporated into, a DETOUR (MO4-9) sign to indicate the name of the street being detoured.

Option:

08 The END DETOUR (MO4-8a) sign ~~or the END (M4-8bP) plaque (see Figure 6I-1)~~ may be used to indicate that the detour has ended.

Guidance:

09 When the END DETOUR sign is used on a numbered highway, the sign should be mounted above a route sign after the downstream end of the detour.

10 The Pedestrian/Bicyclist Detour (MO4-9a) sign ~~(see Figure 6I-1)~~ should be used where a pedestrian/bicyclist detour route has been established because of the closing of a pedestrian/bicycle facility to through traffic.

Standard:

11 If used, the Pedestrian/Bicyclist Detour sign shall have an arrow pointing in the appropriate direction.

Option:

12 The arrow on a Pedestrian/Bicyclist Detour sign may be on the sign face or on a supplemental plaque.

13 The Pedestrian Detour (MO4-9b) sign or Bicyclist Detour (MO4-9c) sign ~~(see Figure 6I-1)~~ may be used where a pedestrian or a bicyclist detour route (not both) has been established because of the closing of the pedestrian or bicycle facility to through traffic.

Section 6I.03 EXIT CLOSED Panel

Guidance:

01 When an exit ramp is closed, an EXIT CLOSED sign panel with a black legend and border on a~~n~~ fluorescent orange background should be placed diagonally across the interchange/intersection guide signs.

Section 6I.04 WORK ZONE NO PHONE ZONE Sign

Support:

M01 The WORK ZONE NO PHONE ZONE sign is designed to capture the traveling public's expectation that cellular phone and other distracting device usage is not allowed within the project limits.

Guidance:

M02 The WORK ZONE NO PHONE ZONE sign should be used on all contract projects unless the roadway is closed to traffic or the construction has no effect on existing roadways. One WORK ZONE NO PHONE ZONE sign should be placed a minimum of 500 ft. before the ROAD WORK AHEAD sign. On two-lane undivided roadways, only one NO PHONE ZONE sign should be used for each direction of traffic affected by the project.

Option:

M03 District Engineers have discretion whether to use this sign on mobile and short-term projects, such as contract leveling course.

Support:

M04 See Standard Plan 616.10 for sign layout.

MoDOT specific content from the EPG. Revised Dec. 2025

Section 6I.05 Project Information Sign

Support:

M01 The Project Information signs provides the traveling public the finished date of the project as promised by MoDOT.

Guidance:

M02 The Project Information sign should be used on projects deemed prominent by the district. One sign should be placed in each direction of traffic on state highways. This sign should not to be used on roadways that are closed to traffic or where the construction has no effect on existing roadways.

M03 The Project Information sign should be placed in a visible area within the project's limits provided its placement does not disrupt a sequence of signs (e.g., between ROAD WORK AHEAD, RIGHT LANE CLOSED AHEAD and RIGHT LANE CLOSED).

Option:

M04 If a visible location within the project is not available, this sign may be placed approximately 500 ft. before the GO20-1 ROAD WORK NEXT XX MILES sign.

Support:

M05 Because of the sign's width, flatter areas are preferable in order to avoid long post lengths in fill sections.

M06 See EPG 903.8.9 for additional information regarding Project Information signs.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 6J. TTC ZONE PAVEMENT MARKINGS [EPG 616.10]

Section 6J.01 Pavement Markings in TTC Zones

Support:

01 Pavement markings are installed or existing markings are maintained or enhanced in TTC zones to provide road users with a clearly defined path for travel through the TTC zone in day, night, and twilight periods under both wet and dry pavement conditions.

Guidance:

02 The work should be planned and staged to provide for the placement and removal of the pavement markings in a way that minimizes the disruption to traffic flow approaching and through the TTC zone during the placement and removal process.

Standard:

03 Existing pavement markings shall be maintained in all long-term stationary (see Section 6N.01) TTC zones in accordance with Chapters 3A and 3B, except as otherwise provided for temporary pavement markings in Section 6J.02. Pavement markings shall match the alignment of the markings in place at both ends of the TTC zone. Pavement markings shall be placed along the entire length of any paved detour or temporary roadway prior to the detour or roadway being opened to road users.

Guidance:

04 For long-term stationary operations, pavement markings in the temporary traveled way that are no longer applicable should be removed or obliterated as soon as practical. Pavement marking obliteration should remove the non-applicable pavement marking material, and the obliteration method should minimize pavement scarring.

Standard:

05 Painting over existing pavement markings with black paint or spraying with asphalt shall not be accepted as a substitute for removal or obliteration.

Option:

06 Removable, non-reflective, preformed tape that is approximately the same color as the pavement surface may be used where markings need to be covered temporarily.

Section 6J.02 Temporary Markings

Support:

01 Temporary markings are those pavement markings or devices that are placed within TTC zones to provide road users with a clearly defined path of travel through the TTC zone when the permanent markings are either removed or obliterated during the work activities. Temporary markings are typically needed during the reconstruction of a road while it is open to traffic, such as overlays or surface treatments or where lanes are temporarily shifted on pavement that is to remain in place.

Guidance:

02 Unless justified based on engineering judgment, temporary pavement markings should not remain in place for more than 14 days after the application of the pavement surface treatment or the construction of the final pavement surface on new roadways or over existing pavements.

*03 The temporary use of edge lines, channelizing lines, lane-reduction transitions, gore markings, and other longitudinal markings, and the various non-longitudinal markings (such as stop lines, railroad crossings, crosswalks, words, symbols, or arrows) should be in accordance with ~~the State's or highway agency's policy~~ Standard Plan 620.10 and EPG 620 Marking*s.

M03A Short-term pavement marking tape should be used in locations where the marking will be in place no more than two weeks. Short-term pavement marking paint is not typically removed. If removal is required, removable tape should be used.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

04 Warning signs, channelizing devices, and delineation shall be used to indicate required road user paths in TTC zones where it is not possible to provide a clear path by pavement markings.

05 Except as otherwise provided in this Section, all temporary pavement markings for no-passing zones shall comply with the requirements of Chapters 3A and 3B. All temporary broken (intermittent) line pavement markings shall use the same cycle length as permanent markings and shall have line segments that are at least ~~2~~4 feet long.

Guidance:

06 All pavement markings and devices used to delineate road user paths should be reviewed during daytime and nighttime periods.

~~Option:~~

~~07 Half-cycle lengths with a minimum of 2-foot stripes may be used on roadways with severe curvature (see Section 3A.04) for broken line center lines in passing zones and for lane lines.~~

~~08 For temporary situations of 14 days or less, for a two- or three-lane road, no-passing zones may be identified by using DO NOT PASS (R4-1), PASS WITH CARE (R4-2), and NO PASSING ZONE (W14-3) signs (see Sections 2B.36, 2B.37, and 2C.53) rather than pavement markings. Also, DO NOT PASS, PASS WITH CARE, and NO PASSING ZONE signs may be used instead of pavement markings on roads with low volumes for longer periods in accordance with the State's or highway agency's policy.~~

Support:

M08A MoDOT does not sign for passing zones.

Guidance:

~~09 If used, the DO NOT PASS, PASS WITH CARE, and NO PASSING ZONE signs should be placed in accordance with Sections 2B.36, 2B.37, and 2C.53.~~

10 If used, the NO CENTER LINE sign should be placed in accordance with Section 6H.29.

Section 6J.03 Temporary Raised Pavement Markers

Option:

01 Retroreflective ~~or internally illuminated~~ raised pavement markers~~, or non-retroreflective raised pavement markers supplemented by retroreflective or internally illuminated markers,~~ may be substituted for markings of other types in TTC zones.

Standard:

02 If used, the color and pattern of the raised pavement markers shall simulate the color and pattern of the markings for which they substitute.

03 If temporary raised pavement markers are used to substitute for broken (intermittent) line segments, a group of at least three retroreflective markers equally spaced at no greater than 5 feet shall be installed every 40 feet.

04 If temporary retroreflective raised pavement markers are used to substitute for solid lines, the markers shall be equally spaced ~~at no greater than 10 feet, with retroreflective or internally illuminated units~~ at ~~a spacing~~ no greater than 20 feet.

Option:

05 Temporary raised pavement markers may be used to substitute for broken (intermittent) line segments by using at least two retroreflective markers placed at each end of a segment of 2 to 5 feet in length, using the same cycle length as permanent markings.

M05A Standard Plan 620.10 may be used to substitute for the number, spacing, and layout of temporary raised pavement markers in a work zone.

MoDOT policy for temporary raised pavement markers. Revised Dec. 2025

Guidance:

06 Raised pavement markers should be considered for use along surfaced detours or temporary roadways, and other changed or new travel-lane alignments.

Option:

M06A Temporary marking tape may be used to establish experimental lanes or intersection markings to determine the markings effectiveness prior to installing the permanent markings. It may also be used to mark temporary centerlines following spot sealing and patching operations.

MoDOT specific content from the EPG. Revised Dec. 2025

~~07 Retroreflective or internally illuminated raised pavement markers, or non-retroreflective raised pavement markers supplemented by retroreflective or internally illuminated markers, may also be used in TTC zones to supplement markings as prescribed in Chapters 3A and 3B.~~

Section 6J.04 Delineators

Support:

M00A MoDOT does not use delineators in work zones.

~~Option:~~

~~01 Delineators may be used in TTC zones to indicate the alignment of the roadway and to outline the required vehicle path through the TTC zone.~~

~~**Standard:**~~

~~**02 When used, delineators shall combine with or supplement other TTC devices. They shall be mounted on crashworthy supports and shall be in accordance with Chapter 3G.**~~

~~*Guidance:*~~

~~*03 Spacing along roadway curves should be as set forth in Section 3G.04 and should be such that several delineators are visible to an approaching driver.*~~

CHAPTER 6K. TTC ZONE CHANNELIZING DEVICES [EPG 616.11]

Section 6K.01 Channelizing Devices – General

Standard:

01 Designs of various channelizing devices shall be as shown in ~~Figure 6K-1~~ Standard Plan 616.10. All channelizing devices shall be crashworthy (see definition in Section 1C.02).

Support:

02 The function of channelizing devices is to warn road users of conditions created by work activities in or near the roadway and to guide road users. Channelizing devices include cones, tubular markers, vertical panels, drums, and barricades~~, and longitudinal channelizing devices~~.

03 Channelizing devices provide for smooth and gradual vehicular traffic flow from one lane to another, onto a bypass or detour, or into a narrower traveled way. They are also used to channelize traffic away from the work space, pavement drop-offs, pedestrian or shared-use paths, bicycle facilities, or opposing directions of vehicular traffic.

Guidance:

04 The spacing between cones, tubular markers, vertical panels, drums, and barricades should not exceed a distance in feet equal to 1 times the speed limit in mph when used for taper channelization, and should not exceed a distance in feet equal to 2 times the speed limit in mph when used for tangent channelization.

05 When channelizing devices have the potential of leading vehicular traffic out of the intended vehicular traffic space as shown in Figure 6P-39, 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.

Option:

06 A gap not exceeding 2 inches between the bottom rail and the ground surface may be used to facilitate drainage.

~~07 Warning lights (see Section 6L.07) may be added to channelizing devices in areas with frequent fog, snow, or severe roadway curvature, or where visual distractions are present.~~

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

Guidance:

M08A Sequential flashing warning lights should be placed on channelizing devices that form a merging taper on interstate highways during nighttime operations.

Option:

M08B Sequential flashing warning lights may be used on other multi-lane highways as determined by the districts.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

09 The flashing rates and patterns for warning lights used on channelizing devices are specified in Section 6L.07.

Standard:

10 The retroreflective material used on channelizing devices shall display a similar color day or night.

11 Except as provided in ~~Paragraph 12 of this Section~~ the following Option paragraph, information identifying the owner or manufacturer of the channelizing device shall not be displayed on any portion of the device that can be seen by road users approaching the device.

Option:

12 The name and telephone number of the highway agency, contractor, or supplier may be displayed on the non-retroreflective surface of all types of channelizing devices.

Standard:

13 The area containing the name and telephone number shall be non-retroreflective and not over 2 inches in height.

Guidance:

14 Particular attention should be given to maintaining the channelizing devices to keep them clean, visible, and properly positioned at all times.

Standard:

15 Channelizing devices that are no longer serviceable (see definition in Section 1C.02) shall be replaced.

Section 6K.02 Pedestrian Channelizing Devices

Support:

01 Pedestrian channelizing devices indicate a suitable path of pedestrian travel around or through the work zone.

Guidance:

02 Pedestrian channelizing devices should be provided when work activities impact sidewalks or other pedestrian facilities or when the design of the temporary pedestrian facility does not otherwise include accessibility features consistent with the features in the existing pedestrian facility.

03 The pedestrian channelizing devices should be used both to close sidewalks and to delineate an alternate route.

Support:

04 An example of a pedestrian channelizing device is depicted in Figure 6K-2.

Standard:

05 Pedestrian channelizing devices shall be crashworthy (see definition in Section 1C.02) when exposed to vehicular traffic.

06 Devices used to channelize pedestrians shall be detectable to users of long canes and visible to pedestrians with vision disabilities.

07 When used as a sidewalk closure, the device shall cover the entire width of the sidewalk.

08 Pedestrian channelizing devices shall have continuous detection plates and hand-trailing edges. The bottom of the detection plate shall be no higher than 2 inches above the walkway. The top edge of the detection plate shall be at least 8 inches above the walkway. The top of the hand-trailing edge shall be no lower than 32 inches and no higher than 38 inches above the walkway. The top surface of the hand-trailing edge shall be smooth to optimize hand trailing. Both the detection plate and the hand-trailing edge shall share a common vertical plane.

Guidance:

09 When pedestrian channelizing devices are combined in a series, the gap between devices should not exceed 1 inch.

Support:

10 The hand-trailing edge is the upper rail on a pedestrian channelizing device, as shown in Figure 6K-2. It is provided to allow pedestrians with vision disabilities to follow the pedestrian channelizing device with their hand. The hand-trailing edge is not a weight-bearing railing.

Guidance:

11 There should be at least a 2-inch gap between the hand-trailing edge and its support.

Standard:

12 When visible to vehicular traffic the detection plate and the hand-trailing edge of the pedestrian channelizing device shall have retroreflective sheeting complying with ~~Paragraph 10~~ the second Standard paragraph of Section 6K.01.

Guidance:

13 When not visible to vehicular traffic, the pedestrian channelizing device should have a contrasting pattern in alternating light and dark colors to provide visual contrast on the upper surface consisting of a minimum of 6 inches of sheeting or other contrasting materials.

Option:

14 Non-retroreflective materials may be used on the pedestrian side of the pedestrian channelizing device.

15 The sheeting on the pedestrian side of the pedestrian channelizing device may have stripes that are oriented either vertically or at a 45-degree angle.

Support:

16 The contrast of the light and dark stripes on the barricade sheeting assists pedestrians with vision disabilities in following the designated detour.

17 Section 6M.04 also contains information regarding detectable edging for pedestrian channelization.

Option:

18 A continuous wall may be used as a pedestrian channelizing device.

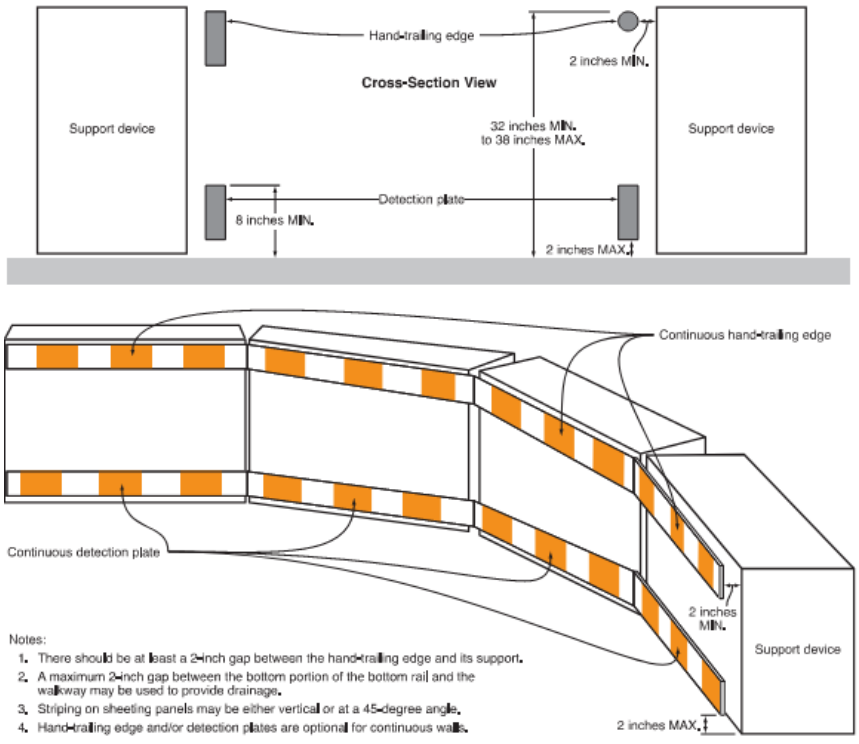
Guidance:

19 When used, a continuous wall should have a lower edge no more than 2 inches above the walkway, should extend a minimum of 32 inches above the walkway, should have a common vertical face, and should have alternating, contrasting sheeting positioned 32 inches above the walkway.

Option:

20 The continuous wall may extend to any height above the 32-inch minimum.

Figure 6K-2. Pedestrian Channelizing Device



Section 6K.03 Cones and Trim-line Channelizers

616.11.3.1 Cones

Standard:

01 Cones (see ~~Figure 6K-1~~Standard Plan 616.10) shall be predominantly orange and shall be made of a material that can be struck without causing damage to the impacting vehicle. ~~For daytime and low-speed roadways, cones shall be not less than 18 inches in height. When cones are used on freeways and other high-speed highways or at night on all highways, or when more conspicuous guidance is needed, cones shall be a minimum of 28 inches in height.~~

02 ~~For nighttime use,~~ cones shall be retroreflectorized ~~or equipped with lighting devices for maximum visibility~~ and shall not be less than 28 inches in height.

M02A Retroreflectorization of cones that are 28 to 36 inches in height shall be provided by a 6-inch wide white band located 3 to 4 inches from the top of the cone and an additional 4-inch wide white band located approximately 2 inches below the 6-inch band.

03 Retroreflectorization of cones that are more than 36 inches in height shall be provided by horizontal, circumferential, alternating orange and white retroreflective stripes that are 4 to 6 inches wide. Each cone shall have a minimum of two orange and two white stripes with the top stripe being orange. Any non-retroreflective spaces between the retroreflective stripes shall not exceed 3 inches in width.

Option:

M03B Cones may be used only for daytime operations on minor roads.

Section modified to reflect MoDOT specific policies for cones, separate from trim-lines. Revised Dec. 2025

04 Traffic cones may be used to channelize road users, divide opposing vehicular traffic lanes, divide lanes when two or more lanes are kept open in the same direction, and delineate short-duration maintenance and utility work.

616.11.3.2 Trim-line Channelizers

Support:

M04A Trim-line channelizing devices are a type of cone that is the preferred channelizing device to be used in work zones for daytime and nighttime applications.

Standard:

M04B Trim-line channelizers (see Standard Plan 616.10) shall be predominantly orange and shall be made of a material that can be struck without causing damage to the impacting vehicle. Trim-line channelizers shall not be less than 42 inches in height.

M04C Trim-line channelizers shall be retroreflectorized. Retroreflectorization of trim-line channelizers shall be provided by horizontal, circumferential, alternating Type 4 fluorescent orange and Type 4 white retroreflective stripes that are 6 in. to 8 in. wide. Each trim-line channelizer shall have a minimum of two orange and two white stripes with the top stripe being orange. Any non-retroreflective spaces between the retroreflective stripes shall not be wider than 3 inches.

Guidance:

M04D Trim-line channelizers should be the channelizing devices used in ramp areas, intersections, and areas with limited lateral clearances.

Option:

M04E Trim-line channelizers may be used to channelize road users, divide opposing vehicular traffic lanes, divide lanes when two or more lanes are kept open in the same direction, and delineate short duration maintenance and utility work.

MoDOT specific policies for trim-line channelizers. Revised Dec. 2025

Guidance:

05 Steps should be taken to minimize the possibility of ~~cones~~ trim-line channelizers being blown over or displaced by wind or moving vehicular traffic.

Option:

06 Cones may be doubled up to increase their weight.

Support:

07 Some cones are constructed with bases that can be filled with ballast. Others have specially weighted bases, or weight such as sandbag rings, that can be dropped over the cones and onto the base to provide added stability.

Guidance:

08 Ballast should be kept to the minimum amount needed.

Option:

M09 If additional ballasting is needed, trim-line channelizers and cones are allowed to have one ballast added to the original ballast.

Section 6K.04 Tubular Markers

Support:

M00A Tubular markers are typically used to divide traffic in temporary two-lane, two-way traffic situations.

Standard:

01 Tubular markers (see ~~Figure 6K-1~~ Standard Plan 616.10) shall be predominantly orange for TTC zone applications and shall be ~~not less than 18~~ a minimum of 28 inches high and 2 inches wide facing road users. They shall be made of a material that can be struck without causing damage to the impacting vehicle.

~~02 Tubular markers shall be a minimum of 28 inches in height when they are used on freeways and other high-speed highways, on all highways during nighttime, or whenever more conspicuous guidance is needed.~~

03 ~~For nighttime use, t~~Tubular markers shall be retroreflectorized. Retroreflectorization of tubular markers that have a height of less than 42 inches shall be provided by two 3-inch wide Type 4 white bands placed a maximum of 2 inches from the top with a maximum of 6 inches between the bands. Retroreflectorization of tubular markers that have a height of 42 inches or more shall be provided by four 4-inch to 6-inch wide alternating orange and white stripes with the top stripe being orange.

Guidance:

04 Tubular markers have less visible area than other devices and should be used only where space restrictions do not allow for the use of other more visible devices.

05 Tubular markers should be stabilized by affixing them to the pavement, by using weighted bases, or by using weights such as sandbag rings that can be dropped over the tubular markers and onto the base to provide added stability. Ballast should be kept to the minimum amount needed.

Option:

06 Tubular markers may be used effectively to divide opposing lanes of road users~~,~~ and divide vehicular traffic lanes when two or more lanes of moving vehicular traffic are kept open in the same direction~~, and to delineate the edge of a pavement drop off where space limitations do not allow the use of larger devices~~.

Standard:

07 A tubular marker shall be attached to the pavement to display the minimum 2-inch width to the approaching road users.

Section modified to reflect MoDOT specific policies for tubular markers. Revised Dec. 2025

Section 6K.05 Vertical Panels

Option:

M00A Vertical panels may be specified instead of trim-line channelizers for longitudinal channelization within the activity area.

Support:

M00B The diagonal marking provided by these devices subliminally directs motorists into the traffic space. This effect is beneficial in two-way two-lane operations and work zones within expressways and/or urban areas having many entrances. When specified, quantities are calculated and shown on the plans.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

01 Vertical panels (see ~~Figure 6K-1~~ Standard Plan 616.10) shall have retroreflective striped material that is 8 to 12 inches in width and at least 24 inches in height. They shall have alternating diagonal Type 4 orange and Type 4 white retroreflective stripes sloping downward at an angle of 45 degrees in the direction vehicular traffic is to pass.

02 Where the height of the retroreflective material on the vertical panel is 36 inches or more, a stripe width of 6 inches shall be used.

Option:

03 Where the height of the retroreflective material on the vertical panel is less than 36 inches, a stripe width of 4 inches may be used.

04 Where space is limited, vertical panels may be used to channelize vehicular traffic, divide opposing lanes, or replace barricades.

Section 6K.06 Drums

Standard:

01 Drums (see ~~Figure 6K-1~~ Standard Plan 616.10) used for road user warning or channelization shall be constructed of lightweight, deformable materials. They shall be a minimum of 36 inches in height and have at least an 18-inch minimum width regardless of orientation. Metal drums shall not be used. The markings on drums shall be horizontal, circumferential, alternating Type 4 fluorescent orange and Type 4 white retroreflective stripes 4 to 6 inches wide. Each drum shall have a minimum of two orange and two white stripes with the top stripe being orange. Any non-retroreflectorized spaces between the horizontal orange and white stripes shall not exceed 3 inches wide. Drums shall have closed tops that will not allow collection of construction debris or other debris.

Support:

02 Drums are highly visible, have good target value, give the appearance of being formidable obstacles and, therefore, command the respect of road users. They are portable enough to be shifted from place to place within a TTC zone in order to accommodate changing conditions, but are generally used in situations where they will remain in place for a prolonged period of time.

Option:

03 Although drums are most commonly used to channelize or delineate road user flow, they may also be used alone or in groups to mark specific locations.

M03A Drums may be specified in lieu of trim-line channelizers to provide longitudinal channelization within the activity area if their larger size and additional retroreflective area are deemed appropriate.

Guidance:

04 Drums should not be weighted with sand, water, or any material to the extent that would make them hazardous to road users or workers when struck. Drums used in regions susceptible to freezing should have drain holes in the bottom so that water will not accumulate and freeze causing a hazard if struck by a road user. Drums should not be used in ramp areas, intersections or areas with limited lateral clearance.

Section modified to reflect MoDOT specific policies for drums. Revised Dec. 2025

Standard:

05 Ballast shall not be placed on the top of a drum.

Section 6K.07 Type 1~~, 2,~~ or 3 Barricades

Support:

01 A barricade is a portable or fixed device having from one to three rails with appropriate markings and is used to control road users by closing, restricting, or delineating all or a portion of the right-of-way.

02 ~~As shown in Figure 6K-1,~~ barricades are classified as Type 1~~, Type 2,~~ or Type 3 (See Standard Plan 616.10).

MoDOT does not use Type 2 barricades. Revised Dec. 2025

Standard:

03 Stripes on barricade rails shall be alternating orange and white retroreflective stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Except as provided in ~~Paragraph 4 of this Section~~ the following Option paragraph, the stripes shall be 6 inches wide.

Option:

04 When rail lengths are less than 36 inches, 4-inch wide stripes may be used.

Standard:

05 The minimum length for Type 1 ~~and Type 2~~ Barricades shall be 24 inches, and the minimum length for Type 3 Barricades shall be 48 inches. Each barricade rail shall be 8 to 12 inches wide. Barricades used on freeways, expressways, and other high-speed roadways shall have a minimum of 270 square inches of retroreflective area facing road users.

Guidance:

06 Where barricades extend entirely across a roadway, the stripes should slope downward in the direction toward which road users must turn.

07 Where both right and left turns are provided, the barricade stripes should slope downward in both directions from the center of the barricade or barricades.

08 Where no turns are intended, the stripes should be positioned to slope downward toward the center of the barricade or barricades.

09 Barricade rails should be supported in a manner that will allow them to be seen by the road user, and in a manner that provides a stable support that is not easily blown over or displaced.

10 The width of the existing pedestrian facility should be provided for the temporary facility if practical. Traffic control devices and other construction materials and features should not intrude into the usable width of the sidewalk, temporary pathway, or other pedestrian facility. When it is not possible to maintain a minimum width of 60 inches throughout the entire length of the pedestrian pathway, a 60 x 60-inch passing space should be provided at least every 200 feet to allow individuals in wheelchairs to pass.

11 Barricade rail supports should not project into pedestrian circulation routes more than 4 inches from the support between 27 and 80 inches from the surface as described in Section 307 of the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Option:

12 For Type 1 Barricades, the support may include other unstriped horizontal rails necessary to provide stability.

Guidance:

13 On high-speed expressways or in other situations where barricades might be susceptible to overturning in the wind, ballasting should be used.

Option:

14 Sandbags may be placed on the lower parts of the frame or the stays of barricades to provide the required ballast. Additional ballasting information is located in .

~~Support:~~ *Guidance:*

15 The Type 1 (one rail)~~or Type 2~~ Barricade~~s are intended for use in situations where road user flow is maintained through the TTC zone~~ should only be used for non-motorized traffic operations on all highways.

Option:

P15A Type 1 Barricades may be used for emergency road closures on two-lane, undivided highways.

Paragraphs modified to reflect MoDOT specific policies for Type 1 Barricades. Revised Dec. 2025

16 Barricades may be used alone or in groups to mark a specific condition or they may be used in a series for channelizing road users.

~~17 Type 1 Barricades may be used on conventional roads or urban streets.~~

Guidance:

18 ~~Type 2 or~~ Type 3 Barricades should be used on freeways and expressways or other high-speed roadways. Type 3 Barricades should be used to close or partially close a road.

~~Option:~~

~~19 Type 3 Barricades used at a road closure may be placed completely across a roadway or from curb to curb.~~

M19A Two Type 3 Barricades should be used be used to close roadways that are 20 feet or less in width (including any paved shoulders). Three or more Type 3 Barricades should be used to close roadways that are more than 20 feet in width (including any paved shoulders).

Paragraphs modified to reflect MoDOT specific policies for Type 3 Barricades. Revised Dec. 2025

~~*Guidance:*~~

20 Where provision is made for access of authorized equipment and vehicles, the responsibility for Type 3 Barricades should be assigned to a person who will provide proper closure at the end of each work day.

Support:

21 When a highway is legally closed but access must still be allowed for local road users, barricades usually are not extended completely across the roadway.

Standard:

22 A sign shall be installed with the appropriate legend concerning permissible use by local road users (see Section 6G.05).

Guidance:

23 Adequate visibility of the barricades from both directions should be provided.

Option:

24 Signs may be installed on barricades (see Section 6F.02).

Section 6K.08 Direction Indicator Barricades

Standard:

01 The Direction Indicator Barricade (see ~~Figure 6K-1~~ Standard Plan 616.10) shall consist of a One-Direction Large Arrow (WO1-6) sign mounted above a diagonal striped, horizontally-aligned, retroreflective rail.

02 The One-Direction Large Arrow (WO1-6) sign shall have a black legend and border on a~~n~~ fluorescent orange background. The stripes on the bottom rail shall be alternating Type 4 orange and Type 4 white retroreflective stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. The stripes shall be 4 inches wide. The One-Direction Large Arrow (WO1-6) sign shall be 24 x 12 inches. The bottom rail shall have a length of 24 inches and a height of 8 inches.

Guidance:

M02A For long-term stationary operations, direction indicator barricades should be used instead of trim-lime channelizers in merging tapers because they provide direction and have a larger target area for the motorists.

Option:

M02B For shorter duration projects, Direction Indicator Barricades may be used in lieu of other channelizers.

~~03 The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.~~

Guidance:

04 If used, Direction Indicator Barricades should be used in a series to direct the driver through the ~~transition~~ taper and into the intended travel lane.

M04A Direction Indicator Barricades should not be used in shifting tapers.

Paragraphs modified to reflect MoDOT specific policies for Direction Indicator Barricades. Revised Dec. 2025

Section 6K.09 Temporary Traffic Barriers as Channelizing Devices

Support:

01 Temporary traffic barriers (see Section 6M.02) are not TTC devices in themselves; however, when placed in a position identical to a line of channelizing devices and marked and/or equipped with appropriate channelization features to provide guidance and warning both day and night, they serve as TTC devices (see EPG 617.1).

Standard:

02 Temporary traffic barriers serving as TTC devices shall comply with requirements for such devices as set forth throughout Part 6.

03 Temporary traffic barriers (see Section 6M.02) shall not be used solely to channelize road users, but also to protect the work space. If used to channelize vehicular traffic, the temporary traffic barrier shall be supplemented with delineation, pavement markings, or channelizing devices for improved daytime and nighttime visibility.

Guidance:

04 Temporary traffic barriers should not be used for a merging taper except in low-speed urban areas.

05 When it is necessary to use a temporary traffic barrier for a merging taper in low-speed urban areas or for a constricted/restricted TTC zone, the taper length should be designed to optimize road user operations considering the available geometric conditions.

Standard:

06 When it is necessary to use a temporary traffic barrier for a merging taper in low-speed urban areas or for a constricted/restricted TTC zone, the taper shall be delineated using channelizing devices, and/or an edge line, and~~/or~~ delineators on the barrier.

Guidance:

07 When used for channelization, temporary traffic barriers should be of a light color for increased visibility.

Section 6K.10 Longitudinal Channelizing Devices

Support:

01 Longitudinal channelizing devices are lightweight, deformable devices that are highly visible, have good target value, and can be connected together.

Standard:

02 If used singly as Type 1, 2, or 3 barricades, longitudinal channelizing devices shall comply with the general size, color, stripe pattern, retroreflectivity, and placement characteristics established for the devices described in this Chapter.

Guidance:

03 If used to channelize vehicular traffic at night, longitudinal channelizing devices should be supplemented with retroreflective material or delineation for improved nighttime visibility.

Option:

04 Longitudinal channelizing devices may be used instead of a line of cones, drums, or barricades.

05 Longitudinal channelizing devices may be hollow and filled with water as a ballast.

06 Longitudinal channelizing devices may be used for pedestrian traffic control.

Standard:

07 If used for pedestrian traffic control, longitudinal channelizing devices shall be interlocked to delineate or channelize flow. The interlocking devices shall not have gaps that allow pedestrians to stray from the channelizing path.

Guidance:

08 Longitudinal channelizing devices have not met the crashworthy requirements for temporary traffic barriers and should not be used to shield obstacles or provide positive protection for pedestrians or workers.

Section 6K.11 Temporary Lane Separators

Option:

01 Temporary lane separators may be used to channelize road users, to divide opposing vehicular traffic lanes, and to divide lanes when two or more lanes are open in the same direction.

Standard:

02 Temporary lane separators shall consist of a longitudinal base component with a maximum height of 4 inches and a maximum width of 1 foot. The longitudinal base shall have sloping sides in order to facilitate crossover by emergency vehicles. One or more types of channelizing devices, such as tubular markers, vertical panels, or a Narrow Two-Way Traffic (WO6-4) sign (see Section 6H.17) mounted on flexible supports, shall be affixed to the longitudinal base.

03 Channelizing devices affixed to the longitudinal base of a temporary lane separator shall be retroreflectorized to provide nighttime visibility.

Guidance:

04 A temporary lane separator should be stabilized by affixing it to the pavement in a manner suitable to its design, while allowing the unit to be intentionally moved from place to place within the TTC zone in order to accommodate changing conditions.

05 Temporary Lane Separators should not be used to shield obstacles or provide positive protection for pedestrians or workers because these devices have not met the crashworthy requirements for temporary traffic barriers.

Standard:

06 At pedestrian crossing locations, temporary lane separators shall have an opening or be shortened to provide a pathway that is at least 60 inches wide for crossing pedestrians.

Section 6K.12 Other Channelizing Devices

~~Option:~~ *Guidance:*

01 Channelizing devices other than those described in ~~this Chapter may be used in special situations based on an engineering study~~ *Standard Plan 616.10 should only be used with the approval of the Highway Safety and Traffic Division*.

~~*Guidance:*~~

~~*02 Other channelizing devices should comply with the general size, color, stripe pattern, retroreflection, and placement characteristics established for the devices described in this Chapter.*~~

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 6L. OTHER TTC ZONE TRAFFIC CONTROL DEVICES [EPG 616.12]

Section 6L.01 Temporary Traffic Control Signals

Standard:

01 Temporary traffic control signals (see Section 4D.11) used to control road user movements through TTC zones and in other TTC situations shall comply with the applicable provisions of Part 4.

Support:

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

Standard:

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

Guidance:

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

Support:

05 Where pedestrians are detoured to a temporary traffic control signal, an accessible pedestrian signal (see Chapter 4K) provides 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 along the alternate route.

Option:

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

Support:

M06A Wood pole span wire signals are typically used for temporary signals. Temporary lighting is typically provided on the wood poles (silhouette discernment lighting as described in EPG 901).

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

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

Support:

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

A. Safety and road user needs;
B. Work staging and operations;
C. The feasibility of using other TTC strategies (for example, flaggers, providing space for two lanes, or detouring road users, including bicyclists and pedestrians);
D. Sight distance restrictions;
E. Human factors considerations (for example, lack of driver familiarity with temporary traffic control signals);
F. Road-user volumes including roadway and intersection capacity;
G. Affected side streets and driveways;
H. Vehicle speeds;
I. The placement of other TTC devices;
J. Parking;
K. Turning restrictions;
L. Pedestrians;
M. The nature of adjacent land uses (such as residential or commercial);

N. Legal authority;
O. Signal phasing and timing requirements;
P. Full-time or part-time operation;
Q. Actuated, fixed-time, or manual operation;
R. Power failures or other emergencies;
S. Inspection and maintenance needs;
T. Need for detailed placement, timing, and operation records; and
U. Operation by contractors or by others.

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

Guidance:

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

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

12 If a temporary traffic control signal is located within ½ mile of an adjacent traffic control signal, consideration should be given to interconnected operation.

Standard:

13 Temporary traffic control signals shall not be located within 200 feet of a grade crossing unless the temporary traffic control signal is provided with preemption in accordance with Sections 4F.18, 4F.19, and 8D.09, or unless a uniformed officer or flagger is provided at the crossing to prevent vehicles from stopping within the crossing.

Section 6L.02 Automated Flagger Assistance Devices – General

Support:

01 Automated Flagger Assistance Devices (AFADs) enable a flagger(s) to be positioned out of the lane of traffic and are used to control road users through TTC zones. These devices are designed to be remotely operated either by a single flagger at one end of the TTC zone or at a central location, or by separate flaggers near each device's location.

02 There are two types of AFADs:

A. An AFAD (see Section 6L.03) that uses a remotely controlled STOP/SLOW sign on either a trailer or a movable cart system to alternately control right-of-way.
B. An AFAD (see Section 6L.04) that uses remotely controlled red and yellow lenses and a gate arm to alternately control right-of-way.

03 AFADs might be appropriate for short-term and intermediate-term activities (see Section 6N.01). Typical applications include TTC activities such as, but not limited to:

A. Bridge maintenance,
B. Haul road crossings, and
C. Pavement patching.

Standard:

04 AFADs shall only be used in situations where there is only one lane of approaching traffic in the direction to be controlled.

05 When used at night, the AFAD location shall be illuminated in accordance with Section 6D.06.

Guidance:

06 AFADs should not be used for long-term stationary work (see Section 6N.01).

Standard:

07 Because AFADs are not traffic control signals, they shall not be used as a substitute for or a replacement for a continuously operating temporary traffic control signal as described in Section 6L.01.

08 AFADs shall meet the crashworthy (see definition in Section 1C.02) performance criteria contained in Section 6A.04.

Guidance:

09 If used, AFADs should be located in advance of one-lane, two-way tapers and downstream from the point where approaching traffic is to stop in response to the device.

Standard:

10 If used, AFADs shall be placed so that all of the signs and other items controlling traffic movement are readily visible to the driver of the initial approaching vehicle with advance warning signs alerting other approaching traffic to be prepared to stop.

11 If used, an AFAD shall be operated only by a flagger (see Section 6D.01) who has been trained on the operation of the AFAD. The flagger(s) operating the AFAD(s) shall not leave the AFAD(s) unattended at any time while the AFAD(s) is being used.

12 The use of AFADs shall conform to one of the following methods:

A. An AFAD at each end of the TTC zone (Method 1), or
B. An AFAD at one end of the TTC zone and a flagger at the opposite end (Method 2).

13 Except as provided in ~~Paragraph 14 of this Section~~ the following Option paragraph, two flaggers shall be used when using either Method 1 or Method 2.

Option:

14 A single flagger may simultaneously operate two AFADs (Method 1) or may operate a single AFAD on one end of the TTC zone while being the flagger at the opposite end of the TTC zone (Method 2) if both of the following conditions are present:

A. The flagger has an unobstructed view of the AFAD(s), and
B. The flagger has an unobstructed view of approaching traffic in both directions.

Guidance:

15 When an AFAD is used, the advance warning signing should include a ROAD WORK AHEAD (WO20-1) sign, a ONE LANE ROAD (WO20-4) sign, and a BE PREPARED TO STOP (WO3-4) sign.

Standard:

16 When the AFAD is not in use, the signs associated with the AFAD, both at the AFAD location and in advance, shall be removed or covered.

Guidance:

17 A State or local agency that elects to use AFADs should adopt a policy, based on engineering judgment, governing AFAD applications. The policy should also consider more detailed and/or more restrictive requirements for AFAD use, such as the following:

A. Conditions applicable for the use of Method 1 and Method 2 AFAD operation,
B. Volume criteria,
C. Maximum distance between AFADs,
D. Conflicting lenses/indications monitoring requirements,
E. Fail-safe procedures,
F. Additional signing and pavement markings,
G. Application consistency,
H. Larger signs or lenses to increase visibility, and
I. Use of backplates.

Section 6L.03 STOP/SLOW Automated Flagger Assistance Devices

Standard:

01 A STOP/SLOW Automated Flagger Assistance Device (AFAD) shall include a STOP/SLOW sign that alternately displays the STOP (R1-1) face and the SLOW (WO20-8) face of a STOP/SLOW paddle ~~(see Figure 6L-1)~~.

02 The AFAD's STOP/SLOW sign shall have an octagonal shape, shall be fabricated of rigid material, and shall be mounted with the bottom of the sign a minimum of 6 feet above the pavement on an appropriate support. The size of the STOP/SLOW sign shall be at least 24 x 24 inches with letters at least 8 inches high. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be diamond-shaped and orange with black letters and border. Both faces of the STOP/SLOW sign shall be retroreflectorized.

03 The AFAD's STOP/SLOW sign shall have a means to positively lock, engage, or otherwise maintain the sign assembly in a stable condition when set in the STOP or SLOW position.

04 The AFAD's STOP/SLOW sign shall be supplemented with active conspicuity devices by incorporating either:

A. White or red flashing lights within the STOP face and white or yellow flashing lights within the SLOW face meeting the provisions contained in Section 6D.02; or

B. A Stop Beacon (see Section 4S.05) mounted a maximum of 24 inches above the STOP face and a Warning Beacon (see Section 4S.03) mounted a maximum of 24 inches above, below, or to the side of the SLOW face. The Stop Beacon shall not be flashed or illuminated when the SLOW face is displayed, and the Warning Beacon shall not be flashed or illuminated when the STOP face is displayed. Except for the mounting locations, the beacons shall comply with the provisions of Chapter 4S.

Option:

05 Type B warning light(s) (see Section 6L.07) ~~or strobe lights~~ may be used in lieu of the Warning Beacon during the display of the SLOW face of the AFAD's STOP/SLOW sign.

Standard:

06 If Type B warning lights ~~or strobe lights~~ are used in lieu of a Warning Beacon, they shall flash continuously when the SLOW face is displayed and shall not be flashed or illuminated when the STOP face is displayed.

Option:

07 The faces of the AFAD's STOP/SLOW sign may include louvers to improve the stability of the device in windy or other adverse environmental conditions.

Standard:

08 If louvers are used, the louvers shall be designed such that the full sign face is visible to approaching traffic at a distance of 50 feet or greater.

Guidance:

09 The STOP/SLOW AFAD should include a gate arm that descends to a down position across the approach lane of traffic when the STOP face is displayed and then ascends to an upright position when the SLOW face is displayed.

Option:

10 In lieu of a stationary STOP/SLOW sign with a separate gate arm, the STOP/SLOW sign may be attached to a mast arm that physically blocks the approach lane of traffic when the STOP face is displayed and then moves to a position that does not block the approach lane when the SLOW face is displayed.

Standard:

11 Gate arms, if used, shall be fully retroreflectorized on both sides, and shall have vertical alternating red and white stripes at 16-inch intervals measured horizontally as shown in Figure 8D-1. When the arm is in the down position blocking the approach lane:

A. The minimum vertical aspect of the arm and sheeting shall be 2 inches, and

B. The end of the arm shall reach at least to the center of the lane being controlled.

12 A WAIT ON STOP (R1-7) sign (see Figure 6L-1) shall be displayed to road users approaching the AFAD.

Option:

13 A GO ON SLOW (R1-8) sign (see Figure 6L-1) may also be displayed to road users approaching the AFAD.

14 The WAIT ON STOP/ GO ON SLOW (R1-7a) sign (see Figure 6L-1) may also be used to display both messages to approaching road users.

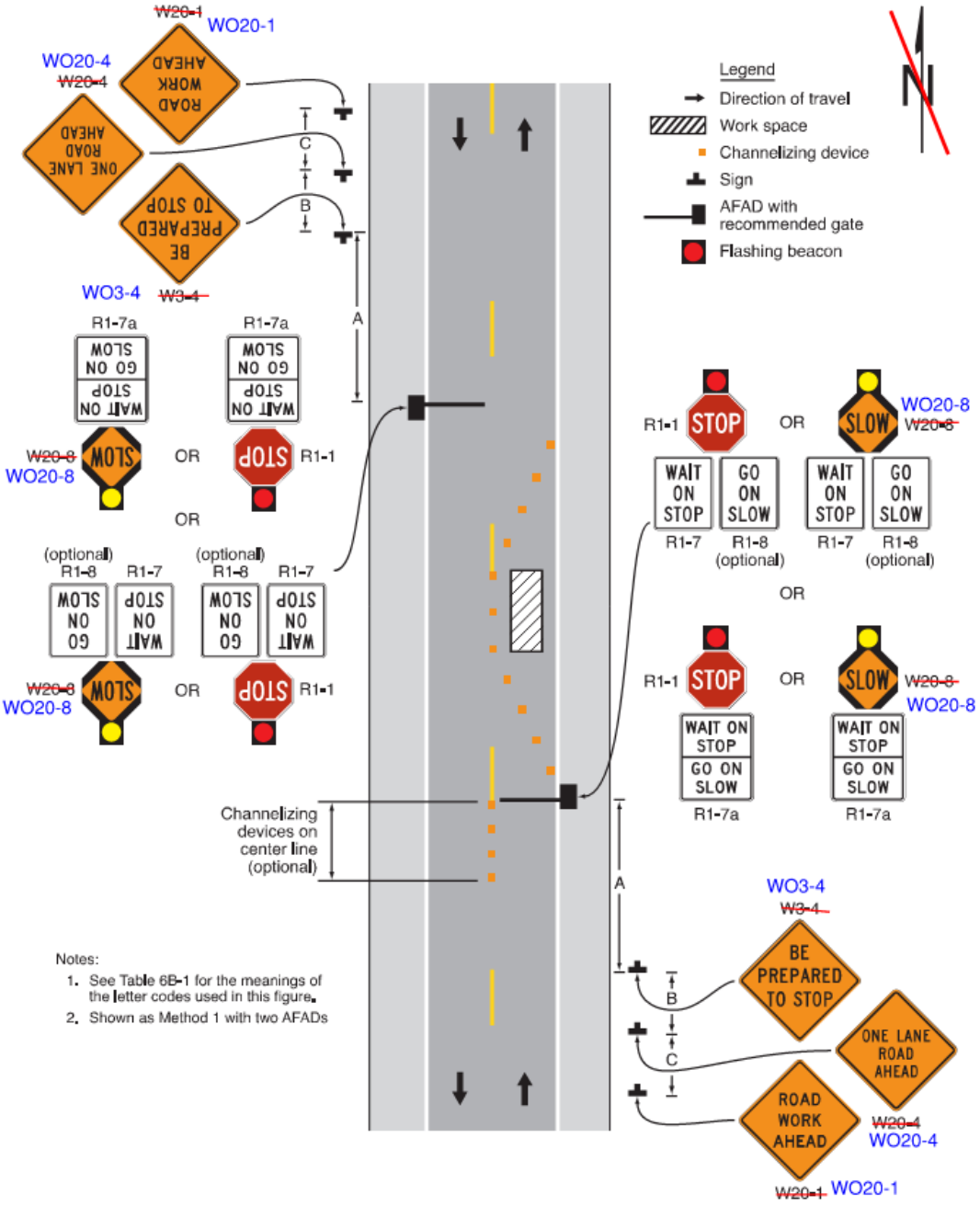
Standard:

15 The GO ON SLOW sign, if used, and the WAIT ON STOP sign shall be positioned on the same support structure as the AFAD or immediately adjacent to the AFAD such that they are in the same direct line of view of approaching traffic as the sign faces of the AFAD.

16 To inform road users to stop, the AFAD shall display the STOP face and the red or white lights, if used, within the STOP face shall flash or the Stop Beacon shall flash. To inform road users to proceed, the AFAD shall display the SLOW face and the yellow or white lights, if used, within the SLOW face shall flash or the Warning Beacon or the Type B warning lights shall flash.

17 If STOP/SLOW AFADs are used to control traffic in a one-lane, two-way TTC zone, safeguards shall be incorporated to prevent the flagger(s) from simultaneously displaying the SLOW face at each end of the TTC zone. Additionally, the flagger(s) shall not display the AFAD's SLOW face until all oncoming vehicles have cleared the one-lane portion of the TTC zone.

Figure 6L-1. Example of the Use of a STOP/SLOW Automated Flagger Assistance Device (AFAD)



Section 6L.04 Red/Yellow Lens Automated Flagger Assistance Devices

Standard:

01 A Red/Yellow Lens Automated Flagger Assistance Device (AFAD) shall alternately display a steadily illuminated CIRCULAR RED lens and a flashing CIRCULAR YELLOW lens to control traffic without the need for a flagger in the immediate vicinity of the AFAD or on the roadway (see Figure 6L-2).

02 Red/Yellow Lens AFADs shall have at least one set of CIRCULAR RED and CIRCULAR YELLOW lenses that are 12 inches in diameter. Unless otherwise provided in this Section, the lenses and their arrangement, CIRCULAR RED on top and CIRCULAR YELLOW below, shall comply with

the applicable provisions for traffic signal indications in Part 4. If the set of lenses is post-mounted, the bottom of the housing (including brackets) shall be at least 7 feet above the pavement. If the set of lenses is located over any portion of the highway that can be used by motor vehicles, the bottom of the housing (including brackets) shall be at least 15 feet above the pavement.

Option:

03 Additional sets of CIRCULAR RED and CIRCULAR YELLOW lenses, located over the roadway or on the left-hand side of the approach and operated in unison with the primary set, may be used to improve visibility and/or conspicuity of the AFAD.

Standard:

04 A Red/Yellow Lens AFAD shall include a gate arm that descends to a down position across the approach lane of traffic when the steady CIRCULAR RED lens is illuminated and then ascends to an upright position when the flashing CIRCULAR YELLOW lens is illuminated. The gate arm shall be fully retroreflectorized on both sides, and shall have vertical alternating red and white stripes at 16-inch intervals measured horizontally as shown in Figure 8D-1. When the arm is in the down position blocking the approach lane:

A. The minimum vertical aspect of the arm and sheeting shall be 2 inches, and

B. The end of the arm shall reach at least to the center of the lane being controlled.

05 A Stop Here On Red (R10-6 or R10-6a) sign (see Section 2B.59) shall be installed on the right-hand side of the approach at the point at which drivers are expected to stop when the steady CIRCULAR RED lens is illuminated (see Figure 6L-2).

06 To inform road users to stop, the AFAD shall display a steadily illuminated CIRCULAR RED lens and the gate arm shall be in the down position. To inform road users to proceed, the AFAD shall display a flashing CIRCULAR YELLOW lens and the gate arm shall be in the upright position.

07 If Red/Yellow Lens AFADs are used to control traffic in a one-lane, two-way TTC zone, safeguards shall be incorporated to prevent the flagger(s) from actuating a simultaneous display of a flashing CIRCULAR YELLOW lens at each end of the TTC zone. Additionally, the flagger shall not actuate the AFAD's display of the flashing CIRCULAR YELLOW lens until all oncoming vehicles have cleared the one-lane portion of the TTC zone.

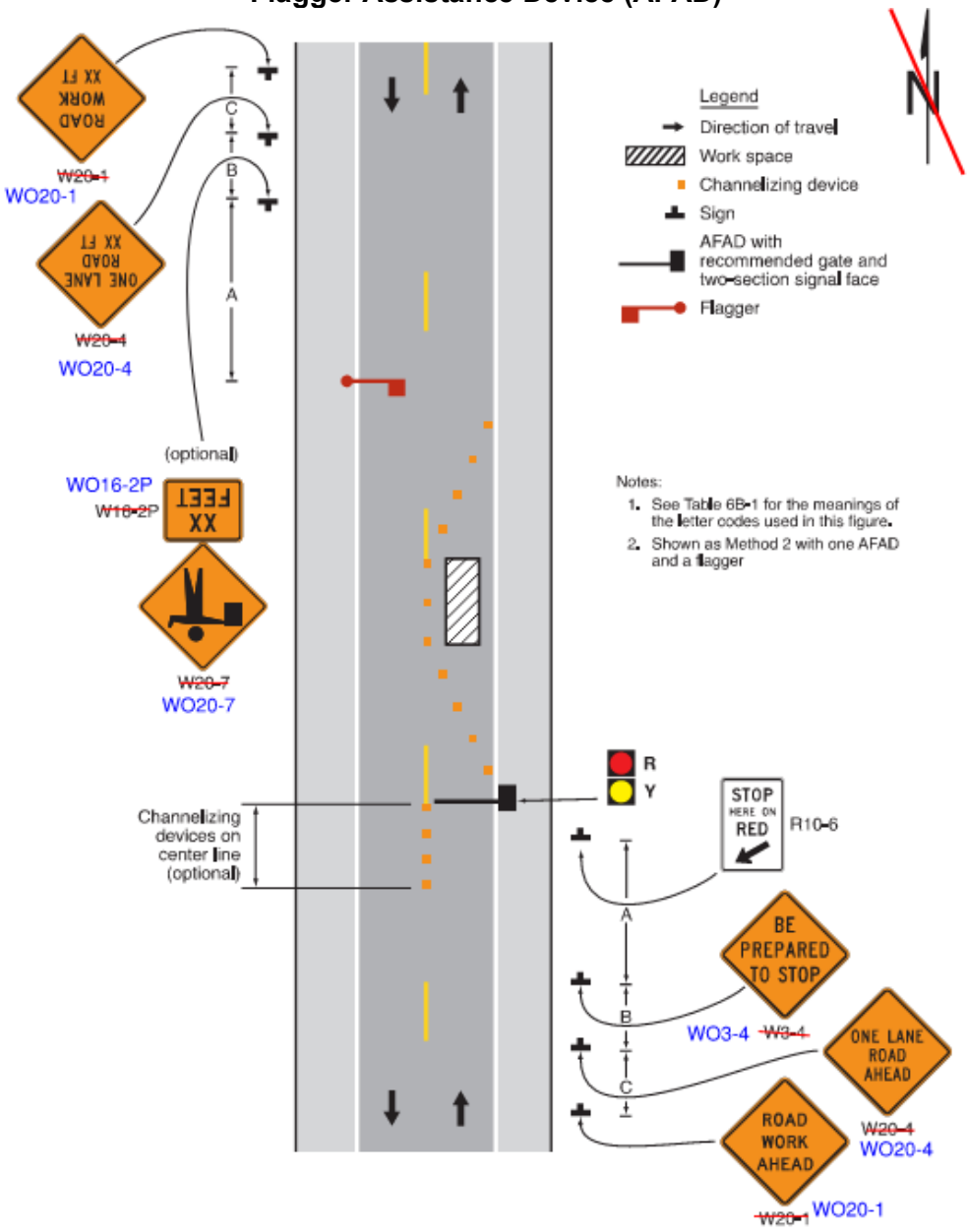
08 A change interval shall be provided as the transition between the display of the flashing CIRCULAR YELLOW indication and the display of the steady CIRCULAR RED indication. During the change interval, the CIRCULAR YELLOW lens shall be steadily illuminated. The gate arm shall remain in the upright position during the display of the steadily illuminated CIRCULAR YELLOW change interval.

09 A change interval shall not be provided between the display of the steady CIRCULAR RED indication and the display of the flashing CIRCULAR YELLOW indication.

Guidance:

10 *The steadily illuminated CIRCULAR YELLOW change interval should have a duration of at least 5 seconds, unless a different duration, within the range of durations recommended by Section 4F.17, is justified by engineering judgment.*

Figure 6L-2. Example of the Use of a Red Yellow Lens Automated Flagger Assistance Device (AFAD)



Section 6L.05 Portable Changeable Message Signs

Support:

01 Portable changeable message signs (PCMS) are TTC devices installed for temporary use with the flexibility to display a variety of messages. In most cases, portable changeable message signs follow the same provisions for design and application as those given for changeable message signs in Chapter 2L. The information in this ~~Section~~ article describes situations where the provisions for portable changeable message signs differ from those given in Chapter 2L.

02 Portable changeable message signs are used most frequently on high-density urban freeways, but have applications on all types of highways where highway alignment, road user routing problems, or other pertinent conditions require advance warning and information.

03 Portable changeable message signs have a wide variety of applications in TTC zones including: roadway, lane, or ramp closures; incident management; width restriction information; speed control or reductions; advisories on work scheduling; road user management and diversion; warning of adverse conditions or special events; and other operational control.

04 The primary purpose of portable changeable message signs in TTC zones is to advise the road user of unexpected situations. Portable changeable message signs are particularly useful as they are capable of:

A. Conveying complex messages,
B. Displaying real time information about conditions ahead, and
C. Providing information to assist road users in making decisions prior to the point where actions must be taken.

05 Some typical applications include the following:

A. Where the speed of vehicular traffic is expected to drop substantially;
B. Where significant queuing and delays are expected;
C. Where adverse environmental conditions are present;
D. Where there are changes in alignment or surface conditions;
E. Where advance notice of ramp, lane, or roadway closures is needed;
F. Where crash or incident management is needed; and/or
G. Where changes in the road user pattern occur.

Guidance:

06 The components of a portable changeable message sign should include: a message sign, control systems, a power source, and mounting and transporting equipment. The front face of the sign should be covered with a protective material.

Standard:

07 Portable changeable message signs shall comply with the applicable design and application principles established in Chapter 2A. Portable changeable message signs shall display only traffic operational, regulatory, warning, and guidance information, and shall not be used for advertising messages.

M07A CMSs shall not be used to replace static sign messages.

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

08 Section 2L.02 contains information regarding overly simplistic or vague messages that is also applicable to portable changeable message signs.

Standard:

09 The colors used for legends on portable changeable message signs shall comply with those shown in Table 2A-~~5~~2.

Support:

10 Section 2L.04 contains information regarding the luminance, luminance contrast, and contrast orientation that is also applicable to portable changeable message signs.

Guidance:

11 Portable changeable message signs should be visible from ½ mile under both day and night conditions.

Support:

12 Section 2B.21 contains information regarding the design of portable changeable message signs that are used to display speed limits that change based on operational conditions, or are used to display the speed at which approaching drivers are traveling.

Guidance:

13 A portable changeable message sign should be limited to three lines of eight characters per line or should consist of a full matrix display.

14 Except as provided in ~~Paragraph 15 of this Section~~ the following paragraph, the letter height used for portable changeable message sign messages should be a minimum of 18 inches.

Option:

15 For portable changeable message signs mounted on service patrol trucks or other incident response vehicles, a letter height as short as 10 inches may be used. Shorter letter sizes may also be used on a portable changeable message sign used on low speed facilities provided that the message is legible from at least 650 feet.

16 The portable changeable message sign may vary in size.

Guidance:

17 Messages on a portable changeable message sign should consist of no more than two phases, and a phase should consist of no more than three lines of text. Each phase should be capable of being understood by itself, regardless of the order in which it is read. Messages should be centered within each line of legend. If more than one portable changeable message sign is simultaneously legible to road users, then only one of the signs should display a sequential message at any given time.

Support:

18 Road users have difficulties in reading messages displayed in more than two phases on a typical three-line portable changeable message sign.

Standard:

19 Except when being used to simulate an Arrow Board display (see Section 6L.06), techniques of message display such as animation, rapid flashing, dissolving, exploding, scrolling, traveling horizontally or vertically across the face of the sign, or other dynamic elements shall not be used.

Guidance:

20 When a message is divided into two phases, the display time for each phase should be at least 2 seconds, and the sum of the display times for both of the phases should be a maximum of 8 seconds.

21 All messages should be designed with consideration given to the principles provided in this ~~Section~~ article and also taking into account the following:

A. The message should be as brief as possible and should contain three thoughts (with each thought preferably shown on its own line) that convey:
   1. The problem or situation that the road user will encounter ahead,
   2. The location of or distance to the problem or situation, and
   3. The recommended driver action.

B. If more than two phases are needed to display a message, additional portable changeable message signs should be used. When multiple portable changeable message signs are needed, they should be placed on the same side of the roadway and they should be separated from each other by a distance of at least 1,000 feet ~~on freeways and expressways, and by a distance of at least 500 feet on other types of highways~~.

MoDOT spacing requirements. Revised Dec. 2025

Standard:

22 When the word messages shown in Tables 1D-1 or 1D-2 need to be abbreviated on a portable changeable message sign, the provisions described in Section 1D.08 shall be followed.

23 In order to maintain legibility, portable changeable message signs shall automatically adjust their brightness under varying light conditions.

24 The control system shall include a display screen upon which messages can be reviewed before being displayed on the message sign. The control system shall be capable of maintaining memory when power is unavailable.

25 Portable changeable message signs shall be equipped with a power source and a battery back-up to provide continuous operation when failure of the primary power source occurs.

26 The mounting of portable changeable message signs on a trailer, a large truck, or a service patrol truck shall be such that the bottom of the message sign shall be a minimum of 7 feet above the roadway in urban areas and 5 feet above the roadway in rural areas when it is in the operating mode.

Guidance:

27 Portable changeable message signs should be used as a supplement to and not as a substitute for conventional signs and pavement markings.

28 When portable changeable message signs are used for route diversion, they should be placed far enough in advance of the diversion to allow road users ample opportunity to perform necessary lane changes, to adjust their speed, or to exit the affected highway.

29 Portable changeable message signs should be sited and aligned to provide maximum legibility and to allow time for road users to respond appropriately to the portable changeable message sign message.

30 Portable changeable message signs should be placed off the shoulder of the roadway and behind a traffic barrier, if practicable. Where a traffic barrier is not available to shield the portable changeable message sign, it should be placed off the shoulder and outside of the clear zone. If a portable changeable message sign has to be placed on the shoulder of the roadway or within the clear zone, it should be delineated with retroreflective TTC devices (see Standard Plan 616.10).

31 When portable changeable message signs are used in TTC zones, they should display only TTC messages.

32 When portable changeable message signs are not being used to display TTC messages, they should be relocated such that they are outside of the clear zone or shielded behind a traffic barrier and turned away from traffic. If relocation or shielding is impracticable, they should be delineated with retroreflective TTC devices.

33 Portable changeable message sign trailers should be delineated on a permanent basis by affixing retroreflective material, known as conspicuity material, in a continuous line on the face of the trailer as seen by oncoming road users.

Section 6L.06 Arrow Boards

Standard:

01 An arrow board shall be a sign with a matrix of elements capable of either flashing or sequential displays. This sign shall provide additional warning and directional information to assist in merging and controlling road users through or around a TTC zone.

Guidance:

02 An arrow board in the arrow or chevron mode should be used to advise approaching traffic of a lane closure along major multi-lane roadways in situations involving heavy traffic volumes, high speeds, and/or limited sight distances, or at other locations and under other conditions where road users are less likely to expect such lane closures.

03 If used, an arrow board should be used in combination with appropriate signs, channelizing devices, or other TTC devices.

04 An arrow board should be placed on the shoulder of the roadway or, if practicable, farther from the traveled lane. It should be delineated with retroreflective TTC devices. When an arrow board is not being used, it should be removed; if not removed, it should be shielded; or if the previous two options are not feasible, it should be delineated with retroreflective TTC devices.

Standard:

05 Arrow boards shall meet the minimum size, legibility distance, number of elements, and other specifications shown in Figure 6L-3.

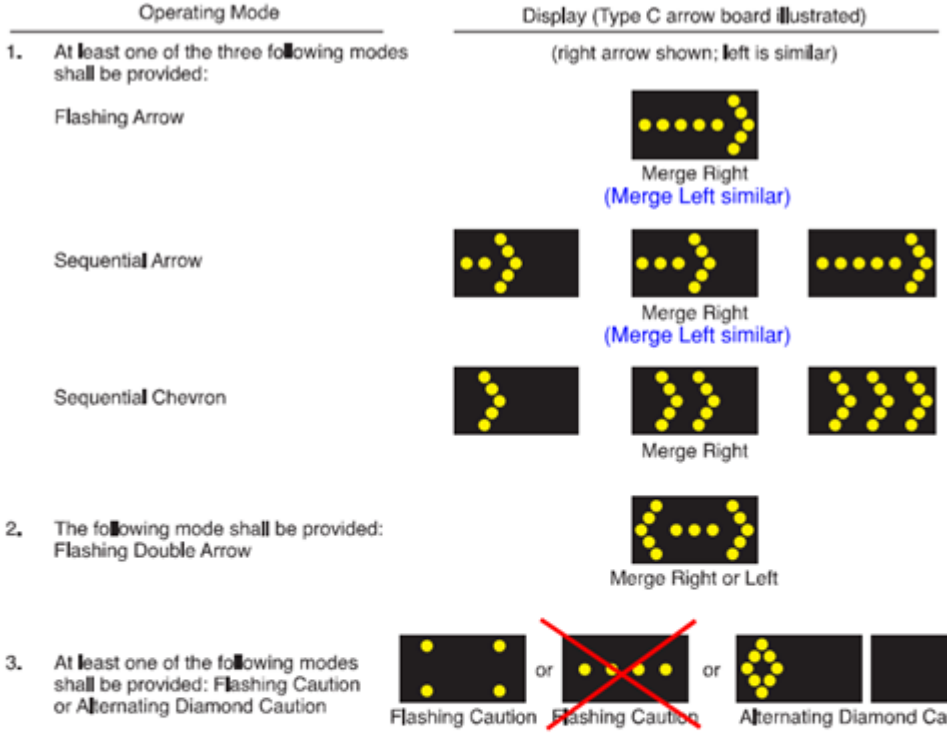
Support:

06 ~~Type A arrow boards are appropriate for use on low-speed urban streets.~~ Type B arrow boards are truck-mounted units, appropriate ~~for intermediate-speed facilities and~~ for maintenance or mobile operations ~~on high-speed roadways~~. Type C arrow boards are trailer-mounted units, intended to be used on high-speed,

high-volume motor vehicle traffic control projects. Type D arrow boards are intended for use on vehicles authorized by the State or local agency.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 6L-3. Advance Warning Arrow Board Specifications



Arrow Board Type	Minimum Size	Minimum Legibility Distance	Minimum Number of Elements	Mounting
~~A~~	~~48 x 24 inches~~	~~1/2 mile~~	~~12~~	
B	60 x 30 inches	3/4 mile	13	Truck-mounted
C	96 x 48 inches	1 mile	15	Trailer-mounted
D	None*	1/2 mile	12	Emergency Vehicle

*Length of arrow equals 48 inches, width of arrowhead equals 24 inches

Standard:

07 Type ~~A,~~ B~~,~~ and C arrow boards shall have solid rectangular appearances. A Type D arrow board shall conform to the shape of the arrow.

MoDOT does not use Type A boards. Revised Dec. 2025

08 All arrow boards shall be finished in non-reflective black. The arrow board shall be mounted on a vehicle, a trailer, or other suitable support.

Guidance:

09 The minimum mounting height, measured vertically from the bottom of the board to the roadway below it or to the elevation of the near edge of the roadway, of an arrow board should be 7 feet, except on vehicle-mounted arrow boards, which should be as high as practicable.

10 A vehicle-mounted arrow board should be provided with remote controls.

Standard:

11 Arrow board elements shall be capable of at least a 50 percent dimming from full brilliance. The dimmed mode shall be used for nighttime operation of arrow boards.

Guidance:

12 Full brilliance should be used for daytime operation of arrow boards.

Standard:

13 The arrow board shall have suitable elements capable of the various operating modes. The color presented by the elements shall be yellow.

Guidance:

14 If an arrow board consisting of a bulb matrix is used, the elements should be recess-mounted or equipped with an upper hood of not less than 180 degrees.

Standard:

15 The minimum element on-time shall be 50 percent for the flashing mode, with equal intervals of 25 percent for each sequential phase. The flashing rate shall be not less than 25 or more than 40 flashes per minute.

16 An arrow board shall have the following three mode selections:

A. A Flashing Arrow, Sequential Arrow, or Sequential Chevron mode;

B. A flashing Double Arrow mode; and

C. A flashing Caution or Alternating Diamond Caution mode.

17 An arrow board in the arrow or chevron mode shall be used only for stationary or moving lane closures on multi-lane roadways.

18 For shoulder work, for blocking the shoulder, for roadside work near the shoulder, or for temporarily closing one lane on a two-lane, two-way roadway, an arrow board shall be used only in the caution mode.

Guidance:

19 For a stationary lane closure, the arrow board should be located on the shoulder at the beginning of the merging taper.

20 Where the shoulder is narrow, the arrow board should be located in the closed lane.

Standard:

21 When arrow boards are used to close multiple lanes, a separate arrow board shall be used for each closed lane.

Guidance:

22 When arrow boards are used to close multiple lanes, if the first arrow board is placed on the shoulder, the second arrow board should be placed in the first closed lane at the upstream end of the second merging taper (see ~~Figure 6P-37~~ Fig. 616.8.37 - MT). When the first arrow board is placed in the first closed lane, the second arrow board should be placed in the second closed lane at the downstream end of the second merging taper.

23 For mobile operations where a lane is closed, the arrow board should be located to provide adequate separation from the work operation to allow for appropriate reaction by approaching drivers.

Standard:

24 A vehicle displaying an arrow board shall be equipped with high-intensity rotating, flashing, oscillating, or strobe lights.

25 Arrow boards shall only be used to indicate a lane closure. Arrow boards shall not be used to indicate a lane shift.

Option:

26 A portable changeable message sign may be used to simulate an arrow board display.

Section 6L.07 Flashing Beacons and Warning Lights

~~*Guidance:*~~

~~*01 Lighting devices should be provided in TTC zones based on engineering judgment.*~~

MoDOT has specific criteria for the use of warning lights. Revised Dec. 2025

Option:

02 Flashing beacons (see Chapter 4S) and/or warning lights may be used to supplement certain retroreflectorized signs~~, barriers,~~ and channelizing devices as described in this article.

Support:

03 Type A~~,~~ and Type B~~, Type C, and Type D 360-degree~~ warning lights are portable, powered, yellow, lens-directed, enclosed lights.

MoDOT only uses warning lights for sequential flashing warning lights or AFADs. Revised Dec. 2025

Standard:

04 Warning lights shall comply with the provisions in Chapter 13 of the publication entitled, "Equipment and Materials Standards of the Institute of Transportation Engineers," 1998, Institute of Transportation Engineers.

05 When warning lights are used, they shall be mounted on signs or channelizing devices in a manner that, if hit by an errant vehicle, they will not be likely to penetrate the windshield.

Guidance:

06 The maximum spacing for warning lights should be identical to the channelizing device spacing requirements.

~~Support:~~

~~07 The light weight and portability of warning lights are advantages that make these devices useful as supplements to the retroreflectorization on signs and channelizing devices. The flashing lights are effective in attracting road users' attention.~~

~~Option:~~

~~08 Warning lights may be used in either a steady-burn or flashing mode.~~

~~**Standard:**~~

~~**09 Warning lights shall flash when placed on channelizing devices used alone or in a cluster to warn of a condition.**~~

~~**10 Except for the sequential flashing warning lights discussed in Paragraph 12 of this Section, warning lights placed on channelizing devices used in a series to channelize road users shall be steady-burn.**~~

MoDOT only uses warning lights for sequential flashing warning lights or AFADs. Revised Dec. 2025

Standard:

11 Except for the sequential flashing warning lights that are described in ~~Paragraph 12 of this Section~~ the following paragraph, flashing warning lights shall not be used for delineation, as a series of flashers fails to identify the desired vehicle path.

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

Guidance:

M12A Sequential flashing warning lights should be used for merging tapers on interstate highways during nighttime operations.

Option:

M12B Sequential flashing warning lights may be used for merging tapers on other multi-lane highways as determined by the district.

MoDOT policy for sequential flashing warning lights. Revised Dec. 2025

Standard:

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

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

~~Support:~~

~~15 Type A Low-Intensity Flashing warning lights are used to warn road users during nighttime hours that they are approaching or proceeding in a potentially hazardous area.~~

~~Option:~~

~~16 Type A warning lights may be mounted on channelizing devices.~~

~~Support:~~

~~17 Type B High-Intensity Flashing warning lights are used to warn road users during both daylight and nighttime hours that they are approaching a potentially hazardous area.~~

~~Option:~~

~~18 Type B warning lights are designed to operate 24 hours per day and may be mounted on advance warning signs or on independent supports.~~

~~19 Type C Steady-Burn warning lights and Type D 360-degree Steady-Burn warning lights may be used during nighttime hours to delineate the edge of the traveled way.~~

~~*Guidance:*~~

~~*20 When used to delineate a curve, Type C and Type D 360-degree warning lights should only be used on devices on the outside of the curve, and not on the inside of the curve.*~~

MoDOT only uses warning lights for sequential flashing warning lights or AFADs. Revised Dec. 2025

Section 6L.08 High-Level Warning Devices (Flag Trees)

Support:

M00A MoDOT does not use the High-Level Warning Devices.

~~Option:~~

~~01 A high-level warning device (flag tree) may supplement other TTC devices in TTC zones.~~

Support:

02 A high-level warning device is designed to be seen over the top of typical passenger cars. A typical high-level warning device is shown in Figure 6F-1.

Standard:

03 A high-level warning device shall consist of a minimum of two flags with or without a Type B high-intensity flashing warning light. The distance from the roadway to the bottom of the lens of the light and to the lowest point of the flag material shall be not less than 8 feet. The flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color.

Option:

04 An appropriate warning sign may be mounted below the flags.

Support:

05 High-level warning devices are most commonly used in high-density road user situations to warn road users of short-term operations.

CHAPTER 6M. OTHER TTC ZONE DESIGN FEATURES AND SAFETY DEVICES

[EPG 616.13]

Section 6M.01 General

Support:

01 Although certain devices and design features, such as lighting, barriers, dividers, crash cushions, and screens, are sometimes used in TTC zones to supplement traffic control devices or enhance traffic operations or safety for road users, they are not considered to be traffic control devices. The following Sections describe the most commonly used devices and design features. Section 1D.04 contains additional information about these devices and design features.

Section 6M.02 Positive Protection and Temporary Traffic Barriers

Support:

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

M01A Positive protection devices means devices that contain or redirect vehicles and meet applicable industry crashworthiness evaluation criteria.

M01B Additional information for temporary traffic barriers is located in EPG 617.1, Specifications Section 617, Standard Plan 617.20, and Standard Plan 619.10.

~~*Guidance:*~~

~~*02 Except as otherwise required, at a minimum, longitudinal traffic barriers and/or other positive protection devices should be considered in work zone situations that place workers at increased risk from motorized traffic, and where positive protection devices offer the highest potential for improved safety for workers and road users.*~~

Guidance paragraph 2 is replaced with Standard Paragraph 2A and 2B. Revised Dec. 2025

~~Support:~~ **Standard:**

M02A At a minimum, agencies shall use positive protection devices in work zones with high anticipated operating speeds that provide workers no means of escape from motorized traffic intruding into the workspace unless an engineering study determines otherwise. An engineering study shall include at a minimum the information as approved by the Highway Safety and Traffic Division.

M02B Positive protection devices shall be considered in other situations that place workers at increased risk from motorized traffic, and where positive protection devices offer the highest potential for increased safety for workers and road users.

03 Considerations for positive protection shall include, but are not limited to, the following circumstances:

- **A. Work zones that provide workers no means of escape from motorized traffic such as tunnels or bridges;**
- **B. Long-term stationary work zones of two weeks or more resulting in substantial worker exposure to motorized traffic;**
- **C. Projects with anticipated operating speeds of 45 mph or greater, especially when combined with high traffic volumes;**
- **D. Work operations that place workers, pedestrians, or bicyclists close to travel lanes open to traffic; and**
- **E. Roadside hazards, such as drop-offs or unfinished bridge decks, that will remain in place overnight or longer.**

MoDOT policy for positive protection. MoDOT changes paragraph 3 to a standard statement. Revised Dec. 2025

M03A Temporary traffic barrier shall be required on the following:

A. Roadway excavation edge drop-offs (refer to Standard Plan 619.10), and

B. Bridge rehabilitation jobs with bridge rail replacement and/or full depth repair.

Guidance:

M03B Temporary traffic barrier should be considered for long-term bridge repair work.

Support:

M03C When specified, quantities are calculated and shown on the plans. Delineators for temporary concrete traffic barriers are provided at no direct pay as shown on Standard Plan 617.20 and stated in Specifications Section 617. Delineators pay items are used only to retrofit existing permanent concrete traffic barrier.

MoDOT policy for temporary traffic barrier. Revised Dec. 2025

04 Work zone setups vary depending on the nature of the positive protection used.

05 23 CFR Part 630.1108(a) contains additional requirements for certain projects.

Option:

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

Standard:

07 Temporary traffic barriers shall be supplemented with standard delineation, pavement markings, or channelizing devices for improved daytime and nighttime visibility if they are used to channelize vehicular traffic. The delineation color shall match the applicable pavement marking color.

08 Temporary traffic barriers, including their end treatments, shall be crashworthy (see definition in Section 1C.02).

09 Short intermittent segments of temporary traffic barrier shall not be used because they nullify the containment and redirective capabilities of the temporary traffic barrier, increase the potential for serious injury both to vehicle occupants and pedestrians, and encourage the presence of blunt leading ends. Adjacent temporary traffic barrier segments shall be properly connected in order to provide the overall strength required for the temporary traffic barrier to perform properly.

Guidance:

M09A Appropriate channelizing devices and pavement marking should always be used in front of barrier tapers for lane closures, shoulder closures or transition areas for temporary bypasses or connections. Wherever practical, a lateral shy distance should be provided between the edge of the driving lane and the barrier. A longitudinal buffer area should be provided between the channelizer taper and the barrier taper.

MoDOT policy for channelizers and buffers adjacent to temporary traffic barriers. Revised Dec. 2025

~~Option:~~

~~10 Steady-burn warning lights (see Section 6L.07) may be mounted on temporary traffic barrier installations.~~

MoDOT does not use steady burn warning lights. Revised Dec. 2025

Support:

11 Temporary traffic barrier includes portable concrete, portable steel, or movable barrier which can all be moved laterally and/or longitudinally when needed and/or from site to site. More specific information on the use of temporary traffic barriers is contained in Chapters 8 and 9 of "Roadside Design Guide," 4th Edition, 2011, AASHTO and EPG 617.1.

Section 6M.03 Temporary Raised Islands

Standard:

01 Temporary raised islands shall be used only in combination with pavement striping and other suitable channelizing devices.

Option:

02 A temporary raised island may be used to separate vehicular traffic flows in two-lane, two-way operations on roadways having a vehicular traffic volume range of 4,000 to 15,000 average daily traffic (ADT) and on freeways having a vehicular traffic volume range of 22,000 ADT to 60,000 ADT.

03 Temporary raised islands also may be used in other than two-lane, two-way operations where physical separation of vehicular traffic from the TTC zone is not required.

Guidance:

04 Temporary raised islands should have the basic dimensions of 4 inches high by at least 12 inches wide and have rounded or chamfered corners.

05 The temporary raised islands should not be designed in such a manner that they would cause a motorist to lose control of the vehicle if the vehicle inadvertently strikes the temporary raised island. If struck, pieces of the island should not be dislodged to the extent that they could penetrate the occupant compartment or involve other vehicles.

Standard:

06 At pedestrian crossing locations, temporary raised islands shall have an opening or be shortened to provide at least a 60-inch wide passageway for the crossing pedestrian.

Section 6M.04 Detectable Edging for Pedestrians

Support:

01 Individual channelizing devices, tape or rope used to connect individual devices, other discontinuous barriers and devices, and pavement markings are not detectable by persons with vision disabilities and are incapable of providing detectable path guidance on temporary or realigned sidewalks or other pedestrian facilities.

Guidance:

02 A continuously-detectable edging should be provided throughout the length of a temporary pedestrian facility such that it can be followed by pedestrians using long canes for guidance. This edging should extend at least 8 inches above the surface of the sidewalk or pathway, with the bottom of the edging a maximum of 2 inches above the surface. This edging should be continuous throughout the length of the facility except for gaps at locations where pedestrians or vehicles will be turning or crossing. This edging should consist of a prefabricated or formed-in-place curbing or other continuous device that is placed along the edge of the sidewalk or walkway. This edging should be firmly attached to the ground or to other devices. Adjacent sections of this edging should be interconnected such that the edging is not displaced by pedestrian or vehicular traffic or work operations, and such that it does not constitute a hazard to pedestrians, workers, or other road users.

Support:

03 Examples of detectable edging for pedestrians include:

A. Prefabricated lightweight sections of plastic, metal, or other suitable materials that are interconnected and fixed in place to form a continuous edge.
B. Prefabricated lightweight sections of plastic, metal, or other suitable materials that are interconnected, fixed in place, and placed at ground level to provide a continuous connection between channelizing devices located at intervals along the edge of the sidewalk or walkway.
C. Sections of lumber interconnected and fixed in place to form a continuous edge.
D. Formed-in-place asphalt or concrete curb.
E. Prefabricated concrete curb sections that are interconnected and fixed in place to form a continuous edge.
F. Continuous temporary traffic barrier or longitudinal channelizing barricades placed along the edge of the sidewalk or walkway that provides a pedestrian edging at ground level.
G. Chain link or other fencing equipped with a continuous bottom rail.

Guidance:

04 Detectable pedestrian edging should be orange, white, or yellow and should match the color of the adjacent channelizing devices or traffic control devices, if any are present.

Section 6M.05 Crash Cushions

Support:

01 Crash cushions are systems that mitigate the effects of errant vehicles that strike obstacles, either by smoothly decelerating the vehicle to a stop when hit head-on, or by redirecting the errant vehicle. The two types of crash cushions that are used in TTC zones are stationary crash cushions and truck-mounted attenuators. Crash cushions in TTC zones help protect the drivers from the exposed ends of barriers, fixed objects, shadow vehicles, and other obstacles. Specific information on the use of crash cushions can be found in "Roadside Design Guide," 4th Edition, 2011, AASHTO.

M01A See EPG 617.1 and EPG 612.1.

Standard:

02 Crash cushions shall be crashworthy (see definition in Section 1C.02). They shall also be designed for each application to stop or redirect errant vehicles under prescribed conditions. Crash cushions shall be periodically inspected to verify that they have not been hit or damaged. Damaged crash cushions shall be promptly repaired or replaced to maintain their crashworthiness.

Support:

03 Stationary crash cushions are used in the same manner as permanent highway installations to protect drivers from the exposed ends of barriers, fixed objects, and other obstacles.

Standard:

04 Stationary crash cushions shall be designed for the specific application intended.

M04A An approved crash cushion shall be installed on the exposed end of the barrier where the posted speed prior to construction on an existing facility or the anticipated posted speed of a temporary facility is greater than 35 mph. A crash cushion shall be installed on the upstream end for divided facilities, and on both ends for all two-way facilities.

MoDOT Specific content from the EPG. Revised Dec. 2025

05 Truck- or trailer-mounted attenuators shall be energy-absorbing devices attached to the rear of shadow ~~trailers or~~ trucks and shall be used in accordance with the manufacturer's specifications. If used, the shadow vehicle with the attenuator shall be located in advance of the work area, workers, or equipment to reduce the severity of rear-end crashes from errant vehicles.

Support:

M05A See EPG 612 for the use of protective vehicle and truck/trailer-mounted attenuators.

06 Trucks or trailers are often used as shadow vehicles to protect workers or work equipment from errant vehicles. These shadow vehicles are normally equipped with flashing arrows, changeable message signs, and/or high-intensity rotating, flashing, oscillating, or strobe lights and are located properly in advance of the workers and/or equipment that they are protecting. However, these shadow vehicles might themselves cause injuries to occupants of the errant vehicles if they are not equipped with truck-mounted attenuators.

Guidance:

07 The shadow truck should be positioned a sufficient distance in advance of the workers or equipment being protected so that there will be sufficient distance, but not so much so that errant vehicles will travel around the shadow truck and strike the protected workers and/or equipment.

Support:

08 Chapter 9 of "Roadside Design Guide," 4th Edition, 2011, AASHTO contains additional information regarding the use of shadow vehicles.

Section 6M.06 Temporary Transverse Rumble Strips

Support:

M00A Temporary rumble strips are a strategy for reducing distracted driving and achieving MoDOT's work zone safety goals. Temporary rumble strips are used in construction or maintenance work zones (planned and unplanned) and consist of temporary long-term rumble strips.

M00B Temporary rumble strips (see JSP-13-04C) are comprised of a series of elongated strips installed laterally within the travel lane of the roadway to provide an audible and vibratory alert to drivers of the upcoming work zone.

M00C Temporary long-term rumble strips are installed using adhesive backing on each strip to prevent movement of the strips in the travel lane.

Standard:

M00D If the color of a transverse rumble strip used within a travel lane is not the color of the pavement, the color of the rumble strip shall be orange.

M00E When temporary long-term rumble strips are used, installation shall consist of a minimum of 1 set (5 strips per set) per open lane, spaced in accordance with Figure 616.13.6.1 on center with the RUMBLE STRIPS AHEAD sign .

M00F If temporary rumble strips are used in work zones, any damage done to pavement shall be restored to the existing condition.

616.14.6.1 Temporary Rumble Strips for Work Zones

Standard:

M00G Temporary long-term rumble strips shall be used in long-term stationary daytime or night-time work zones with a duration of 3 days or more when a lane(s) is impacted.

Guidance:

M00H If the project is a long-term stationary project with intermediate construction activities impacting traffic, such as lane restrictions, additional temporary rumble strips should be evaluated for use.

Support:

M00I When temporary long-term rumble strips are included in projects performed by contractors, Job Special Provisions (JSPs) for temporary rumble strip used is required. Additional information, including maintenance, repair, and monitoring of temporary rumble strips, can be found in JSP-13-04C.

616.14.6.2 Placement of Temporary Rumble Strips for Work Zones

Support:

M00J Generally, temporary rumble strips are placed before the feature requiring attention (e.g., merge, lane shift, reduced speed) giving the motorist enough time to act safely. The recommended distance before the feature should be referenced or shown on the plans or figures. The location should be adjusted when needed to comply with the guidance below or based on performance observations.

Standard:

M00K Temporary rumble strips shall be placed perpendicular to traffic.

Guidance. The following information is applicable to temporary long-term rumble strips, except where noted.

A. Temporary rumble strip placement should be reviewed, and consideration given to geometric conditions prior to placement.
B. Temporary rumble strips should be place on tangent roadway segments. Placement at or just beyond a vertical curve crest should be avoided.
C. Temporary rumble strips work best when in complete contact with the roadway surface and therefore should not be used on heavily rutted roadways or on roadways with loose material.

D. Temporary rumble strips should not be placed through marked pedestrian crossings, marked pedestrian paths, or on marked bicycle routes. Engineering judgment should be used to avoid placement in these areas.

E. Temporary rumble strips should not be placed where routine braking is expected on the rumble strip. Routine braking on the strips may cause the strips to come loose and require additional maintenance than otherwise would be needed to keep them in place. Relocating the rumble strips should be considered if constant maintenance is required.

F. Additional sets of temporary long-term rumble strips should be used to get the attention of drivers.

Standard:

M00L Temporary rumble strips shall be checked, as necessary, for proper adhesion and corrected when needed. If temporary rumble strips are omitted as directed by this standard or field conditions, the decision with explanation of why, shall be documented accordingly.

MoDOT specific content from the EPG replaces MUTCD content for this section. Revised Dec. 2025

~~Support:~~

~~01 Transverse rumble strips consist of intermittent, narrow, transverse areas of rough-textured or slightly-raised or depressed road surface that extend across the travel lanes to alert drivers to unusual vehicular traffic conditions. Through noise and vibration they attract the driver's attention to such features as unexpected changes in alignment and to conditions requiring a stop.~~

~~02 Longitudinal rumble strips consist of a series of rough-textured or slightly-raised or depressed road surfaces located along the shoulder to alert road users that they are leaving the travel lanes.~~

~~**Standard:**~~

~~**03 If it is desirable to use a color other than the color of the pavement for a longitudinal rumble strip, the color of the rumble strip shall be the same color as the longitudinal line the rumble strip supplements.**~~

~~**04 If the color of a transverse rumble strip used within a travel lane is not the color of the pavement, the color of the rumble strip shall be white, black, or orange.**~~

Paragraph 4 content is included in Paragraph M00I above. Revised Dec. 2025

~~Option:~~

~~05 Intervals between transverse rumble strips may be reduced as the distance to the approached conditions is diminished in order to convey an impression that a closure speed is too fast and/or that an action is imminent. A sign warning drivers of the onset of rumble strips may be placed in advance of any transverse rumble strip installation.~~

~~*Guidance:*~~

~~*06 Transverse rumble strips should be placed transverse to vehicular traffic movement. They should not adversely affect overall pavement skid resistance under wet or dry conditions.*~~

~~*07 In urban areas, even though a closer spacing might be warranted, transverse rumble strips should be designed in a manner that does not promote unnecessary braking or erratic steering maneuvers by road users.*~~

~~*08 Transverse rumble strips should not be placed on sharp horizontal or vertical curves.*~~

~~*09 Rumble strips should not be placed through pedestrian crossings or on bicycle routes.*~~

~~*10 Transverse rumble strips should not be placed on roadways used by bicyclists unless a minimum clear path of 4 feet is provided at each edge of the roadway or on each paved shoulder.*~~

~~*11 Longitudinal rumble strips should not be placed on the shoulder of a roadway that is used by bicyclists unless a minimum clear path of 4 feet is also provided on the shoulder.*~~

Section 6M.07 Screens

Support:

01 Screens are used to block the road users' view of activities that can be distracting. Screens might improve safety and motor vehicle traffic flow where volumes approach the roadway capacity because they discourage gawking and reduce headlight glare from oncoming motor vehicle traffic.

M01A See EPG 617.1 for additional information.

Guidance:

02 Screens should not be mounted where they could adversely restrict road user visibility and sight distance and adversely affect the operation of vehicles.

Option:

03 Screens may be mounted on the top of temporary traffic barriers that separate two-way motor vehicle traffic.

Guidance:

04 Design of screens should be in accordance with Chapter 9 of "Roadside Design Guide," 4th Edition, 2011, AASHTO.

Section 6M.08 Lighting for Night Work

Support:

01 Utility, maintenance, or construction activities on highways are frequently conducted during nighttime periods when vehicular traffic volumes are lower. Large construction projects are sometimes operated on a double-shift basis requiring night work (see Section 6N.18).

Guidance:

02 When nighttime work is being performed, floodlights should be used to illuminate the work area, equipment crossings, and other areas.

03 When used, floodlighting should be installed in a manner that minimizes glare to approaching road users, flaggers, or workers.

04 The adequacy of the floodlight placement and elimination of potential glare should be determined by driving through and observing the floodlighted area from each direction on all approaching roadways after the initial floodlight setup, at night, and periodically. Lighting should be sufficient so as to give road users the capability to identify a worker as a person. Care should be taken to minimize the potential for shadows to conceal workers within the work area.

Support:

05 Desired work area illumination levels vary depending upon the nature of the task involved. An average horizontal luminance of 5 foot candles can be adequate for general activities. Tasks requiring high levels of precision and extreme care can require an average horizontal luminance of 20 foot candles.

Option:

M05A Typical work area lighting installations may include dirigible lighting, portable light towers, balloon lighting, lights attached to equipment or post-mounted lights. In some cases, existing lighting or ambient lighting may meet lighting level requirements and negate the need for including work zone lighting.

Support:

M05B Temporary fixed lighting illuminates specific areas of significance to guide road users within the TTC zone during nighttime hours.

Option:

M05C Temporary fixed lighting may be considered at gore areas, transitions, ingress and egress areas, equipment crossings, intersections, temporary signals, islands temporary bypasses, and crossovers. Temporary fixed lighting may also be considered for areas of potential conflict, such as temporary ramps, intersections, and one-lane, two-way traffic operations that are in place for more than 15 consecutive days. These conditions

may require lighting even though the work may not be conducted at night. This type of lighting, while more difficult to design and install, provides more uniform light distribution thereby enabling the motorist to better navigate the work zone at night.

Guidance:

M05D When stationary operations exceed 15 consecutive days, such as a bridge replacement, interchange or intersection work that occurs at night, temporary fixed lighting should be considered in lieu of work zone lighting.

Standard:

M05E If temporary fixed lighting is used, it shall be designed and shown in the plans.

Support:

M05F Refer to Sec 901 for roadway lighting requirements and EPG 901 for lighting design.

MoDOT specific content from the EPG. Revised Dec. 2025

Standard:

06 Except in emergency situations, flagger stations shall be illuminated at night.

616.14.8.1 Fleet Lighting

Support:

M07 Fleet lighting increases the visibility of work or incident response vehicles and equipment while in the temporary traffic control zone.

Standard:

M08 Except as provided in the following paragraph, all work vehicles and equipment shall be equipped with an acceptable warning light system, per example USDOT-approved warning lights. These lights shall be activated whenever a vehicle or piece of equipment is engaged in a work zone or incident response operation within the temporary traffic control zone.

Option:

M09 Vehicles and pieces of equipment may operate without warning lights activated if the vehicles and equipment are located within a workspace delineated by channelizers or protected by a temporary traffic barrier. For this situation, activation of the lights is not required.

Support:

M10 For maintenance lighting requirements, see EPG 616.27. For construction projects see EPG 616.18.

MoDOT specific content from the EPG. Revised Dec. 2025

CHAPTER 6N. TYPES OF TEMPORARY TRAFFIC CONTROL ZONE ACTIVITIES [EPG 616.14]

Section 6N.01 Work Duration

Support:

01 Work duration is a major factor in determining the number and types of devices used in TTC zones. The duration of a TTC zone is defined relative to the length of time a work operation occupies a spot location.

Standard:

02 The ~~five~~ categories of work duration and their time at a location shall be defined as follows:

- **A. Long-term stationary is work that occupies a location more than 3 days.**
- **B. Intermediate-term stationary is work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour.**
- **C. Short-term stationary is daytime work that occupies a location for more than 1 hour within a single daylight period.**
- **D. Short duration is work that occupies a location up to 1 hour.**
- **E. Mobile is work that moves intermittently or continuously.**
- **F. Emergency operations include unplanned work. Within MoDOT, these operations consist of the initial response to and repair/removal of safety concerns including Response Priority 1 items (refer to MoDOT's Incident Response Plan).**

MoDOT specific content from the EPG. Revised Dec. 2025

616.14.1.1 Long-term Stationary

Support:

03 At long-term stationary TTC zones, there is ample time to install and realize benefits from the full range of TTC procedures and devices that are available for use. Larger channelizing devices, temporary roadways, and temporary traffic barriers are frequently used.

Standard:

04 Since long-term operations extend into nighttime, retroreflective and/or illuminated devices shall be used in long-term stationary TTC zones.

616.14.1.2 Intermediate-term Stationary

Support:

05 In intermediate-term stationary TTC zones, it might not be feasible or practical to use procedures or devices that would be desirable for long-term stationary TTC zones, such as altered pavement markings, temporary traffic barriers, and temporary roadways. The increased time to place and remove these devices in some cases could significantly lengthen the project, thus increasing exposure time.

Standard:

06 Since intermediate-term operations extend into nighttime, retroreflective and/or illuminated devices shall be used in intermediate-term stationary TTC zones.

616.14.1.3 Short-term Stationary

Support:

07 Most maintenance and utility operations are short-term stationary work.

M07A In these operations, procedures and devices are usually simplified when compared to intermediate and long-term stationary operations because workers are present to maintain and monitor the temporary traffic control zone, the zone is only set up during daylight hours and it is only in place for a relatively short period of time. Portable signs, arrow boards, channelizers, fleet lighting, protective vehicles, and truck-mounted attenuators are devices generally incorporated into the temporary traffic control plan for these operations.

M07B Several operations where workers and equipment move along the road without stopping, usually at slow speeds, are set up with short-term stationary guidance with the ability to reduce or eliminate channelizers. With the constant movement, advance warning area must be maintained within the work area.

MoDOT specific content from the EPG. Revised Dec. 2025

616.14.1.4 Short duration

08 As compared to stationary operations, ~~mobile and~~ short-duration operations are activities that might involve different treatments. Devices having greater mobility might be necessary such as signs mounted on trucks. Devices that are larger, more imposing, or more visible can be used effectively and economically. ~~The mobility of the TTC zone is important.~~ Short duration operations involve workers who are outside of vehicles making individual short stops for work activities such as litter cleanup, isolated pothole patching isolated crack sealing, utility operations or signal repair.

Guidance:

09 Safety in short-duration ~~or mobile~~ operations should not be compromised by using fewer devices simply because ~~the operation will frequently change its location~~ the operation will have a short duration.

Guidance:

M09A When short-duration operations are being performed, a shadow vehicle equipped with an arrow board or a sign should follow the work vehicle, especially when vehicular traffic speeds or volumes are high. Where feasible, warning signs should be placed along the roadway and moved periodically as work progresses.

M09B To avoid high-volume conditions, consideration should be given to scheduling short-duration operations work during off-peak hours.

M09C If there are short-duration operations on a high-speed travel lane of a multi-lane divided highway, arrow boards should be used.

Standard:

M09D Short-duration operations shall have appropriate devices on the equipment (that is, high-intensity rotating, flashing, oscillating, or strobe lights, signs, or special lighting), or shall use a separate vehicle with appropriate warning devices. Although vehicle hazard warning lights are permitted to be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights, they shall not be used instead of these devices.

Option:

M09E For short-duration operations that move at speeds of less than 3 mph, mobile signs or stationary signing that is periodically retrieved and repositioned in the advance warning area may be used.

MUTCD Paragraphs 16, 17, 18, 19, and 20 content repeated for short-duration. Revised Dec. 2025

Support:

10 During short-duration work, it often takes longer to set up and remove the TTC zone than to perform the work. Workers face hazards in setting up and taking down the TTC zone. Also, since the work time is short, delays affecting road users are significantly increased when additional devices are installed and removed.

M10A Knowledge of historical traffic conditions are considered when selecting the amount of temporary traffic control to be used on short-duration projects. Traffic conditions need to be monitored throughout the work operation to determine if adjustments are needed to address traffic impacts.

Option:

11 Considering these factors, simplified control procedures may be warranted for short-duration work. A reduction in the number of devices may be offset by the use of other more dominant devices such as high-intensity rotating, flashing, oscillating, or strobe lights on work vehicles.

M11A Flaggers may be used for short-duration operations that often involve frequent short stops on two-lane two-way roads.

M11B Flags and/or channelizing devices may be used and moved periodically to keep them near the work area.

MUTCD Paragraphs 13 and 14 content repeated for short-duration. Revised Dec. 2025

M11B Appropriately colored or marked vehicles augmented with signs, arrow boards, and with high-intensity rotating, flashing, oscillating, or strobe lights may be used in place of signs and channelizing devices for short-duration operations.

MoDOT specific content from the EPG for short duration operations. Revised Dec. 2025

Support:

15 Short-duration operations also include work activities where workers and equipment move along the road without stopping, usually at slow speeds. The advance warning area moves with the work area.

MUTCD Paragraph 15 content repeated for short-duration. Revised Dec. 2025

616.14.1.5 Mobile Operations

Support:

12 As compared to stationary and short duration operations, mobile operations are activities which workers rarely exit their vehicles during the operation, such as retrieving large debris during sweeping, quick adjustment while striping, and mowing. ~~Mobile operations often involve frequent short stops for activities such as litter cleanup, pothole patching, or utility operations, and are similar to short-duration operations.~~ Devices having greater mobility might be necessary such as signs mounted on trucks. Devices that are larger, more imposing, or more visible can be used effectively and economically. The mobility of the TTC zone is important.

Guidance:

M12A Safety in mobile operations should not be compromised by using fewer devices simply because the operation will frequently change its location.

MoDOT specific content from the EPG and content repeated from paragraphs 8 and 9 above. Revised Dec. 2025

~~Option:~~

~~13 Flags and/or channelizing devices may additionally be used and moved periodically to keep them near the mobile work area.~~

~~14 Flaggers may be used for mobile operations that often involve frequent short stops.~~

~~Support:~~

~~15 Mobile operations also include work activities where workers and equipment move along the road without stopping, usually at slow speeds. The advance warning area moves with the work area.~~

Content moved to short-duration operations subsection. Revised Dec. 2025

~~*Guidance:*~~

16 When mobile operations are being performed, a shadow vehicle equipped with an arrow board or a sign should follow the work vehicle, especially when vehicular traffic speeds or volumes are high. Where feasible, warning signs should be placed along the roadway and moved periodically as work progresses.

17 To avoid high-volume conditions, consideration should be given to scheduling mobile operations work during off-peak hours.

18 If there are mobile operations on a high-speed travel lane of a multi-lane divided highway, arrow boards should be used.

Standard:

19 Mobile operations shall have appropriate devices on the equipment (that is, high-intensity rotating, flashing, oscillating, or strobe lights, signs, or special lighting), or shall use a separate vehicle with appropriate warning devices. Although vehicle hazard warning lights are permitted to be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights, they shall not be used instead of these devices.

Option:

20 For mobile operations that move at speeds of less than 3 mph, mobile signs or stationary signing that is periodically retrieved and repositioned in the advance warning area may be used.

Support:

21 A rolling roadblock is a method of TTC used to slow or stop traffic as a means of temporarily removing traffic from a roadway segment downstream of the road block. The rolling roadblock closes all lanes of traffic by using pacing vehicles to create a gap so that construction activities can be performed. Rolling roadblocks are used where long-term road closures using TTC devices are not needed. A rolling roadblock consists of one blocking/pacing vehicle per lane of traffic, a clearing vehicle, and an advance warning vehicle. The rolling roadblock is normally performed by law enforcement officers during off-peak hours.

M22 See EPG 616.13.7 for information regarding Traffic Pacing.

616.14.1.6 Emergency Operations

Support:

M22 Emergency operations include unplanned work. Within MoDOT, these operations consist of the initial response to and repair/removal of safety concerns including Response Priority 1 items (see MoDOT's Incident Response Plan).

M23 Short-duration operation guidelines and appropriate typical applications should be followed when performing Emergency Operations.

MoDOT specific content from the EPG for Emergency operations. Revised Dec. 2025

Section 6N.02 Location of Work

Support:

01 Chapter 6C and Sections 6M.04 and 6N.04 contain additional information regarding the steps to follow when pedestrian or bicycle facilities are affected by the worksite.

02 The choice of TTC needed for a TTC zone depends upon where the work is located. As a general rule, the closer the work is to road users (including bicyclists and pedestrians), the greater the number of TTC devices that are needed. Procedures are described later in ~~this Chapter~~ EPG 616 .14 for establishing TTC zones in the following locations:

A. Outside the shoulder,
B. On the shoulder with no encroachment,
C. On the shoulder with minor encroachment,
D. Within the median, and
E. Within the traveled way.

Standard:

03 When the work space is within the traveled way, except for short-duration and mobile operations, advance warning shall provide a general message that work is taking place and shall supply information about highway conditions. TTC devices shall clearly delineate the path roadway users are to follow through the TTC zone.

Section 6N.03 Modifications To Fulfill Special Needs

Support:

01 The typical applications in Chapter 6P illustrate commonly encountered situations in which TTC devices are employed.

Option:

02 Other devices may be added to supplement the devices provided in the typical applications, and device spacing may be adjusted to provide additional reaction time. When conditions are less complex than those depicted in the typical applications, fewer devices may be needed.

Guidance:

03 When conditions are more complex, typical applications should be modified by giving particular attention to the provisions set forth in Chapter 6A and by incorporating appropriate devices and practices from the following list:

- *A. Additional devices:*
  - *1. Signs*
  - *2. Arrow boards*
  - *3. More channelizing devices at closer spacing (see Section 6M.04 for information regarding detectable edging for pedestrians)*
  - *4. Temporary raised pavement markers*
  - ~~*5. High-level warning devices*~~
  - *6. Portable changeable message signs*
  - *7. Temporary traffic control signals (including accessible pedestrian signals where not otherwise required)*
  - *8. Temporary traffic barriers*
  - *9. Crash cushions*
  - *10. Screens*
  - *11. Rumble strips*
  - *12. More delineation*
- *B. Upgrading of devices:*
  - *1. A full complement of standard pavement markings*
  - *2. Brighter and/or wider pavement markings*
  - *3. Larger and/or brighter signs*
  - *4. Channelizing devices with greater conspicuity*
  - *5. Temporary traffic barriers in place of channelizing devices*
- *C. Improved geometrics at detours or crossovers*
- *D. Increased distances:*
  - *1. Longer advance warning area*
  - *2. Longer tapers*
- *E. Lighting:*
  - *1. Temporary roadway lighting*
  - ~~*2. Steady-burn lights used with channelizing devices*~~
  - ~~*3. Flashing lights for isolated hazards*~~
  - ~~*4. Illuminated signs*~~
  - *5. Floodlights*
- *F. Pedestrian routes and temporary facilities*
- *G. Bicycle diversions and temporary facilities*

Items not used by MoDOT are removed. Revised Dec. 2025

Section 6N.04 Work Affecting Pedestrian and Bicycle Facilities

Support:

01 It is not uncommon, particularly in urban areas, that road work and the associated TTC will affect existing pedestrian or bicycle facilities. It is essential that the needs of all road users, including pedestrians with disabilities, are considered in TTC zones.

02 In addition to specific provisions identified in Sections 6N.05 through 6N.13, there are a number of provisions that might be applicable for all of the types of activities identified in ~~this Chapter~~ EPG 616 Temporary Traffic Control.

Guidance:

03 Where pedestrian or bicyclist usage is high, the typical applications should be modified by giving particular attention to the provisions set forth in Chapter 6C, ~~this Chapter~~ EPG 616.15 Work Duration,

Sections 6K.02 and 6M.04, and in other ~~Sections of Part 6~~ articles of EPG 616 Temporary Traffic Control related to accessibility and detectability provisions in TTC zones.

04 Pedestrians should be separated from the worksite by appropriate devices that maintain the accessibility and detectability for pedestrians with disabilities.

05 Bicyclists and pedestrians should not be exposed to unprotected excavations, open utility access, overhanging equipment, or other such conditions.

06 Except for short-duration and mobile operations, when a highway shoulder is occupied, a SHOULDER WORK (WO21-5) sign should be placed in advance of the activity area. When work is performed on a paved shoulder 8 feet or more in width, channelizing devices should be placed on a taper having a length that conforms to the requirements of a shoulder taper. Signs should be placed such that they do not narrow any existing pedestrian passages to less than 48 inches.

07 Pedestrian detours should be avoided since pedestrians rarely observe them and the cost of providing accessibility and detectability might outweigh the cost of maintaining a continuous route. Whenever possible, work should be done in a manner that does not create a need to detour pedestrians from existing routes or crossings.

Standard:

08 Where pedestrian routes are closed, alternate pedestrian routes shall be provided.

09 When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

Guidance:

10 The continuity of a bikeway should be maintained through the TTC zone if practical.

Support:

11 The continuity of a bikeway through the TTC zone is particularly important where bicyclists have been traveling on a shoulder, bicycle lane, or shared-use path adjacent to a general-purpose lane (having a speed limit greater than or equal to 35 miles per hour) and there would be a significant safety concern if bicyclists were to share that general-purpose lane through the TTC zone.

12 On roadways which are not bikeways but where bicyclists (when present) typically share lanes with motor vehicle traffic, the TTC plan and Typical Applications for general traffic will usually be adequate for bicyclists as well.

13 In order to maintain room for bicycle lanes through the TTC zone on a multi-lane roadway, one or more travel lanes could be closed.

Guidance:

14 If a bikeway detour is unavoidable, it should be as short and direct as practical.

15 On-road bicyclists should not be directed onto a path or sidewalk intended for pedestrian use except where such a path or sidewalk is a shared-use path, or where no practical alternative is available (such as might be the case on a bridge in the course of a rehabilitation project).

16 If a portion of a bikeway is to be closed due to construction activities and the detoured bikeway follows a complex path not in the original bikeway corridor, then a full detour plan should be developed and implemented. The TTC for the detour of the bikeway should include all necessary advance warning (WO21 series) signs, detour (WO4-9 series) signs, and any other TTC devices necessary to guide bicyclists along the detour route.

Support:

17 Figures 6P-47 through 6P-51 provide examples and contain additional information for accommodating bicycles through or around typical TTC zones.

Option:

18 If an on-street bikeway had a wide travel lane or lanes in which bicyclists traveled side by side with motor vehicles prior to construction, and construction activities reduce the lane width(s) to less than 14 feet through the TTC zone, then the BICYCLISTS ALLOWED USE OF FULL LANE (R9-20) sign may be used.

Standard:

19 The minimum TTC sign and plaque sizes for shared-use paths shall conform to those shown in Table 9A-1. The minimum TTC sign and plaque sizes for on-street bikeways shall conform to Chapters 6G, 6H, and 6I.

Section 6N.05 Work Outside of the Shoulder

Support:

01 When work is being performed beyond the shoulders, but within the right-of-way, little or no TTC might be needed. TTC generally is not needed where work is confined to an area 15 feet or more from the edge of the traveled way. However, TTC is appropriate where distracting situations exist, such as vehicles parked on the shoulder, vehicles accessing the worksite via the highway, and equipment traveling on or crossing the roadway to perform the work operations (for example, mowing). A typical application for work beyond the shoulder is shown in Figure 6P-1.

Guidance:

02 Where the situations described in ~~Paragraph 1 of this Section~~ the preceding paragraph exist, a single warning sign, such as ROAD WORK AHEAD (WO20-1), should be used. If the equipment travels on the roadway, the equipment should be equipped with appropriate flags, high-intensity rotating, flashing, oscillating, or strobe lights, and/or a SLOW MOVING VEHICLE (WO21-4) sign.

03 If work vehicles are on the shoulder, a SHOULDER WORK (WO21-5) sign should be used.

~~*04 A general warning sign like ROAD MACHINERY AHEAD (W21-3) should be used if workers and equipment must occasionally move onto the shoulder.*~~

MoDOT does not use the W21-3 sign. Revised Dec. 2025

Option:

05 For mowing operations, the sign MOWING AHEAD (WO21-8) may be used.

06 Where the activity is spread out over a distance of more than 2 miles, the SHOULDER WORK (WO21-5) sign may be repeated every 1 mile.

07 A supplementary plaque with the message NEXT XX MILES (WO7-3aP) may be used.

Section 6N.06 Work on the Shoulder with No Encroachment

Support:

01 The provisions of this ~~Section~~ article apply to short-term through long-term stationary operations.

Standard:

02 When paved shoulders having a width of 8 feet or more are closed, at least one advance warning sign shall be used. In addition, channelizing devices shall be used to close the shoulder in advance to delineate the beginning of the work space and direct motor vehicle traffic to remain within the traveled way.

Guidance:

03 When paved shoulders having a width of 8 feet or more are closed on freeways and expressways, road users should be warned about potential disabled vehicles that cannot get off the traveled way. An initial general warning sign, such as ROAD WORK AHEAD (WO20-1), should be used, followed by a RIGHT or LEFT SHOULDER CLOSED (WO21-5a) sign. Where the downstream end of the shoulder closure extends beyond the distance that can be perceived by road users, a supplementary plaque bearing the message NEXT XX FEET (WO16-4P) or MILES (WO7-3aP) should be placed below the SHOULDER CLOSED (WO21-5a) sign. On multi-lane, divided highways, signs advising of shoulder work or the condition of the shoulder should be placed only on the side of the affected shoulder.

04 When an improved shoulder is closed on a high-speed roadway, it should be treated as a closure of a portion of the road system because road users expect to be able to use it in emergencies. Road users should be given ample advance warning that shoulders are closed for use as refuge areas throughout a specified length of the approaching TTC zone. The sign(s) should read SHOULDER CLOSED (WO21-5a) with distances indicated. The work space on the shoulder should be closed off by a taper or channelizing devices with a length of ⅓ L using the formulas in Tables 6B-3 and 6B-4.

05 When the shoulder is not occupied but work has adversely affected its condition, the ~~LOW SHOULDER (W8-9) or~~ SOFT SHOULDER (WO8-4) sign should be used, as appropriate.

06 Where the condition extends over a distance in excess of 1 mile, the sign should be repeated at 1-mile intervals.

Option:

07 In addition, a supplementary plaque bearing the message NEXT XX MILES (WO7-3aP) may be used.

Support:

08 Temporary traffic barriers might be needed to inhibit encroachment of errant vehicles into the work space and to protect workers.

Standard:

09 When used for shoulder work, arrow boards shall operate only in the caution mode.

Support:

10 A typical application for stationary work operations on shoulders is shown in Figure 6P-3. A typical application for short-duration or mobile work on shoulders is shown in Figure 6P-4. A typical application for work on freeway shoulders is shown in Figure 6P-5.

Section 6N.07 Work on the Shoulder with Minor Encroachment

Support:

01 Chapter 6C and Sections 6M.04 and 6N.04 contain additional information regarding the steps to follow when pedestrian or bicycle facilities are affected by the worksite.

Guidance:

02 When work takes up part of a lane, vehicular traffic volumes, vehicle mix (buses, trucks, cars, and bicycles), speed, and capacity should be analyzed to determine whether the affected lane should be closed. Unless the lane encroachment permits a remaining lane width of 10 feet, the lane should be closed.

03 Truck off-tracking should be considered when determining whether the minimum lane width of 10 feet is adequate.

~~Option:~~

~~04 A lane width of 9 feet may be used for short-term stationary work on low-volume, low-speed roadways when vehicular traffic does not include longer and wider heavy commercial vehicles.~~

MoDOT minimum lane width is 10 feet. Revised Dec. 2025

Support:

05 Figure 6P-6 illustrates a method for handling vehicular traffic where the stationary or short-duration work space encroaches slightly into the traveled way.

Section 6N.08 Work Within the Median

Support:

01 Chapter 6C and Sections 6M.04 and 6N.04 contain additional information regarding the steps to follow when pedestrian or bicycle facilities are affected by the worksite.

Guidance:

02 If work in the median of a divided highway is within 15 feet from the edge of the traveled way for either direction of travel, TTC should be used through the use of advance warning signs and channelizing devices.

Section 6N.09 Work Within the Traveled Way of a Two-Lane Highway

Support:

01 Chapter 6C and Sections 6M.04 and 6N.04 contain additional information regarding the steps to follow when pedestrian or bicycle facilities are affected by the worksite.

02 Detour signs are used to direct road users onto another roadway. At diversions, road users are directed onto a temporary roadway or alignment placed within or adjacent to the right-of-way. Typical applications for detouring or diverting road users on two-lane highways are shown in Figures 6P-7, 6P-8, and 6P-9. Figure 6P-7 illustrates the controls around an area where a section of roadway has been closed and a diversion has been constructed. Channelizing devices and pavement markings are used to indicate the transition to the temporary roadway.

Guidance:

03 When a detour is long, Detour (MO4-8, MO4-9) signs should be installed to remind and reassure road users periodically that they are still successfully following the detour.

04 When an entire roadway is closed, as illustrated in Figure 6P-8, a detour should be provided and road users should be warned in advance of the closure, which in this example is a closure 10 miles from the intersection. If local road users are allowed to use the roadway up to the closure, the ROAD CLOSED AHEAD, LOCAL TRAFFIC ONLY (R11-3a) sign should be used. The portion of the road open to local road users should have adequate signing, marking, and delineation.

05 Detours should be signed so that road users will be able to traverse the entire detour route and back to the original roadway as shown in Figure 6P-9.

Support:

06 Techniques for controlling vehicular traffic under one-lane, two-way conditions are described in Section 6E.01.

Option:

07 Flaggers may be used as shown in Figure 6P-10.

~~08 STOP/YIELD sign control may be used on roads with low traffic volumes as shown in Figure 6P-11.~~

MoDOT does not use STOP/YIELD sign control for this application. Revised Dec. 2025

09 A temporary traffic control signal may be used as shown in Figure 6P-12.

Section 6N.10 Work Within the Traveled Way of an Urban Street

Support:

01 Chapter 6C and Sections 6M.04 and 6N.04 contain additional information regarding the steps to follow when pedestrian or bicycle facilities are affected by the worksite.

02 In urban TTC zones, decisions are needed on how to control vehicular traffic, such as how many lanes are required, whether any turns need to be prohibited at intersections, and how to maintain access to business, industrial, and residential areas.

03 Pedestrian traffic needs separate attention. Chapter 6C contains information regarding pedestrian movements near TTC zones.

Standard:

04 If the TTC zone affects the movement of bicyclists, adequate access to the roadway or shared-use paths shall be provided (see Part 9).

05 Where transit stops are affected or relocated because of work activity, both pedestrian and vehicular access to the affected or relocated transit stops shall be provided.

Guidance:

06 If a designated bicycle route is closed because of the work being done, a signed alternate route should be provided. Bicyclists should not be directed onto the path used by pedestrians.

07 Worksites within the intersection should be protected against inadvertent pedestrian incursion by providing detectable channelizing devices.

Support:

08 Utility work takes place both within and outside the roadway to construct and maintain services such as power, gas, light, water, or telecommunications. Operations often involve intersections, since that is where many of the network junctions occur. The work force is usually small, only a few vehicles are involved, and the number and types of TTC devices placed in the TTC zone is usually minimal.

Guidance:

09 As discussed under short-duration projects, however, the reduced number of devices in utility TTC zones should be offset by the use of high-visibility devices, such as high-intensity rotating, flashing, oscillating, or strobe lights on work vehicles or high-level warning devices.

Support:

10 Figures 6P-6, 6P-10, ~~6P-15,~~ 6P-18, 6P-21, 6P-22, 6P-23, 6P-26, and 6P-33 are examples of typical applications for utility operations. Other typical applications might apply as well.

Section 6N.11 Work Within the Traveled Way of a Multi-Lane, Non-Access Controlled Highway

Support:

01 Chapter 6C and Sections 6M.04 and 6N.04 contain additional information regarding the steps to follow when pedestrian or bicycle facilities are affected by the worksite.

02 Work on multi-lane (two or more lanes of moving motor vehicle traffic in one direction) highways is divided into right-lane closures, left-lane closures, interior-lane closures, multiple-lane closures, and closures on five-lane roadways.

Standard:

03 When a lane is closed on a multi-lane road for other than a mobile operation, a transition area containing a merging taper shall be used.

Guidance:

04 When justified by an engineering study, temporary traffic barriers (see Section 6K.09) should be used to prevent incursions of errant vehicles into hazardous areas or work space.

Support:

05 Figure 6P-34 illustrates a lane closure in which temporary traffic barriers are used.

Option:

06 When the right-hand lane is closed, TTC similar to that shown in Figure 6P-33 may be used for undivided or divided four-lane roads.

Guidance:

07 If morning and evening peak hour vehicular traffic volumes in the two directions are uneven and the greater volume is on the side where the work is being done in the right-hand lane, consideration should be given to closing the inside lane for opposing vehicular traffic and making the lane available to the side with heavier vehicular traffic, as shown in Figure 6P-31.

08 If the larger vehicular traffic volume changes to the opposite direction at a different time of the day, the TTC should be changed to allow two lanes for opposing vehicular traffic by moving the devices from the opposing lane to the center line. When it is necessary to create a temporary center line that is not consistent with the pavement markings, channelizing devices should be used and closely spaced.

Option:

09 When closing a left-hand lane on a multi-lane undivided road, as vehicular traffic flow permits, the two interior lanes may be closed, as shown in Figure 6P-30, to provide drivers and workers additional lateral clearance and to provide access to the work space.

Standard:

10 When only the left-hand lane is closed on undivided roads, channelizing devices shall be placed along the center line as well as along the adjacent lane.

Guidance:

11 When an interior lane is closed, an adjacent lane should also be considered for closure to provide additional space for vehicles and materials and to facilitate the movement of equipment within the work space.

12 When multiple lanes in one direction are closed, a capacity analysis should be made to determine the number of lanes needed to accommodate motor vehicle traffic needs. Vehicular traffic should be moved over one lane at a time. As shown in Figure 6P-37, the tapers should be separated by a distance of 2L, with L being determined by the formulas in Tables 6B-3 and 6B-4.

Option:

13 If operating speeds are 40 mph or less and the space approaching the work area does not permit moving traffic over one lane at a time, a single continuous taper may be used.

Standard:

14 When a directional roadway is closed, inapplicable WRONG WAY signs and markings, and other existing traffic control devices at intersections within the temporary two-lane, two-way operations section shall be covered, removed, or obliterated.

Option:

15 When half the road is closed on an undivided highway, both directions of vehicular traffic may be accommodated as shown in Figure 6P-32. When both interior lanes are closed, temporary traffic controls may be used as provided in Figure 6P-30. When a roadway must be closed on a divided highway, a median crossover may be used (see Section 6N.15).

Support:

16 TTC for lane closures on five-lane roads is similar to other multi-lane undivided roads. Figure 6P-32 can be adapted for use on five-lane roads. Figure 6P-35 can be used on a five-lane road for short duration and mobile operations.

Section 6N.12 Work Within the Traveled Way at an Intersection

Support:

01 Chapter 6C and Sections 6M.04 and 6N.04 contain additional information regarding the steps to follow when pedestrian or bicycle facilities are affected by the worksite.

02 The typical applications for intersections are classified according to the location of the work space with respect to the intersection area (as defined by the extension of the curb or edge lines). The three classifications are near side, far side, and in-the-intersection. Work spaces often extend into more than one portion of the intersection. For example, work in one quadrant often creates a near-side work space on one street and a far-side work space on the cross street. In such instances, an appropriate TTC plan is obtained by combining features shown in two or more of the intersection and pedestrian typical applications.

03 TTC zones in the vicinity of intersections might block movements and interfere with normal road user flows. Such conflicts frequently occur at more complex signalized intersections having such features as traffic signal heads over particular lanes, lanes allocated to specific movements, multiple signal phases, signal detectors for actuated control, and accessible pedestrian signals and detectors.

Guidance:

04 The effect of the work upon signal operation should be considered, and temporary corrective actions should be taken, if necessary, such as revising signal phasing and/or timing to provide adequate capacity, maintaining or adjusting signal detectors, and relocating signal heads to provide adequate visibility as described in Part 4.

Standard:

05 When work will occur near an intersection where operational, capacity, or pedestrian accessibility problems are anticipated, the highway agency having jurisdiction shall be contacted.

Guidance:

06 For work at an intersection, advance warning signs, devices, and markings should be used on all cross streets, as appropriate. The typical applications depict urban intersections on arterial streets. Where the posted speed limit, the off-peak 85th-percentile speed prior to the work starting, or the anticipated speed exceeds 40 mph, additional warning signs should be used in the advance warning area.

07 Pedestrian crossings near TTC sites should be separated from the worksite by appropriate barriers that maintain the accessibility and detectability for pedestrians with disabilities.

Support:

08 Near-side work spaces, as depicted in Figure 6P-21, are simply handled as a midblock lane closure. A problem that might occur with near-side lane closure is a reduction in capacity, which during certain hours of operation could result in congestion and back-ups.

Option:

09 When near-side work spaces are used, a mandatory turn lane may be used for through vehicular traffic.

10 Where space is restricted in advance of near-side work spaces, as with short block spacings, two warning signs may be used in the advance warning area, and a third action-type warning or a regulatory sign (such as Keep Left) may be placed within the transition area.

Support:

11 Far-side work spaces, as depicted in Figures 6P-22 through 6P-25, involve additional treatment because road users typically enter the activity area by straight-through and left-turn or right-turn movements.

Guidance:

12 When a lane through an intersection must be closed on the far side, it should also be closed on the near-side approach to preclude merging movements within the intersection.

Option:

13 If there are a significant number of vehicles turning from a near-side lane that is closed on the far side, the near-side lane may be converted to a mandatory turn lane.

Support:

14 Figures 6P-26 and 6P-27 provide guidance on applicable procedures for work performed within the intersection.

Option:

15 If the work is within the intersection, any of the following strategies may be used:

A. A small work space so that road users can move around it, as shown in Figure 6P-26;
B. Flaggers or uniformed law enforcement officers to direct road users, as shown in Figure 6P-27;
C. Work in stages so the work space is kept to a minimum; and
D. Road closures or upstream diversions to reduce road user volumes.

Guidance:

16 Depending on road user conditions, a flagger(s) and/or a uniformed law enforcement officer(s) should be used to control road users.

Support:

17 Figures 6P-52 through 6P-54 provide guidance on applicable procedures for work performed within a circular intersection.

Section 6N.13 Work Within the Traveled Way of a Freeway or Expressway

Support:

01 Special conditions encountered where vehicular traffic must be moved through or around TTC zones on high-speed, high-volume roadways can pose challenges to the TTC. Although the general principles outlined in other ~~Sections of this Manual~~ articles of the EPG are applicable to all types of highways, high-speed, access-controlled highways need special planning and attention in order to accommodate vehicular

traffic while also protecting road users and workers. The traffic volumes, vehicle mix (buses, trucks, cars, and bicycles, if permitted), and speed of vehicles on these facilities require that careful TTC procedures be implemented, for example, to induce critical merging maneuvers well in advance of work spaces and in a manner that creates minimum turbulence and delay in the vehicular traffic stream.

02 When the roadway capacity is reduced as a result of lane closures, the demand might exceed the available capacity and result in either a lengthy stopped or slow moving queue of vehicles that might extend past the normal signs used in the typical advance warning area.

Guidance:

03 An assessment of the expected queue length should be a part of the TTC plan design process and adjustments to the sign spacing and number of signs as well as the possibility of using more conspicuous devices should be considered to increase the distance and conspicuity of the advance warning area.

Support:

04 One strategy often employed to mitigate the extended queue issue is to work during off peak hours or at night. When the work is limited to night hours, increased use of warning lights, illumination of work spaces, and intelligent advance warning systems might be necessary.

05 TTC for a typical lane closure where a queue is not anticipated to accumulate on a divided highway is shown in Figures 6P-33 and 6P-34. Temporary traffic controls for short duration and mobile operations on freeways are shown in Figure 6P-35. A typical application for shifting vehicular traffic lanes around a work space is shown in Figure 6P-36. TTC for multiple and interior lane closures on a freeway is shown in Figures 6P-37 and 6P-38.

Guidance:

06 The method for closing an interior lane when the open lanes have the capacity to carry vehicular traffic should be as shown in Figure 6P-37. When the capacity of the other lanes is needed, the method shown in Figure 6P-38 should be used.

Section 6N.14 Two-Lane, Two-Way Traffic on One Roadway of a Normally Divided Highway

Support:

01 Two-lane, two-way operation on one roadway of a normally divided highway (head-to-head traffic) is a typical procedure that requires special consideration in the planning, design, and work phases, because unique operational problems (for example, increasing the risk of head-on crashes) can arise with the two-lane, two-way operation. Head-to-head traffic is generally limited to rural locations.

Guidance:

M01A When head-to-head traffic is being considered, MoDOT Design staff should be contacted for concurrence.

M00B Two-lane, two-way operation on one roadway of a normally divided highway should be used only after the following criteria are addressed and documented:

A. The benefit/cost of the two-lane, two-way operation compares favorably to the benefit/cost of other potential traffic control options (e.g., alternate routes, temporary lanes, construction staging, use of shoulders, etc.). The analysis is to include both construction and road user costs associated with each option.
B. A capacity analysis of the two-lane, two-way operation confirms this type of traffic management can reasonably accommodate the traffic volumes without detrimental delay to travelers.
C. The median shoulder width must be adequate for emergency stopping.

Standard:

02 When two-lane, two-way traffic control must be maintained on one roadway of a normally divided highway, opposing vehicular traffic shall be separated with either temporary traffic barriers (see EPG 617.1) (concrete safety-shape or approved alternate), or channelizing devices and temporary pavement markings, ~~Narrow Two-Way Traffic (W6-4) signs on flexible supports (see Section 6H.17), or a temporary raised island~~ throughout the length of the two-way operation, as shown on Standard Plans

617.20, 616.10 and 620.10, respectively. The use of markings and complementary signing, by themselves, shall not be used.

M02A When two-lane, two-way traffic control must be maintained on one roadway of a normally divided highway, all obstructions or fixed objects shall have protection provided for both directions of travel.

Option:

M02B This may require providing temporary installations of impact attenuators or crash cushions for guardrail, bridge ends, barrier walls, etc. on what would normally be the downstream side of the obstruction.

MoDOT policy for Two-Lane, Two-Way Traffic on One Roadway of a Normally Divided Highway. Revised Dec. 2025

Support:

03 Figure 6P-39 shows the procedure for two-lane, two-way operation. Treatments for entrance and exit ramps within the two-way roadway segment of this type of work are shown in Figures 6P-40 and 6P-41.

Section 6N.15 Crossovers

Support:

M00 Crossovers constructed to facilitate two-lane, two-way. Crossovers are located where horizontal and vertical alignments provide sufficient sight distance.

Guidance:

01 The following are considered good guiding principles for the design of crossovers:

- *A. Tapers for lane drops should be separated from the crossovers, as shown in MUTCD Figure 6P-39.*
- *B. Crossovers should be designed for the work zone speed limit according to EPG 616.18. ~~speeds no lower than 10 mph below the posted speed, the off-peak 85th-percentile speed prior to the work starting, or the anticipated operating speed of the roadway, unless unusual site conditions require that a lower design speed be used~~.*
- *C. A good array of channelizing devices, delineators, and full-length, properly placed pavement markings should be used to provide drivers with a clearly defined travel path.*
- *D. The design of the crossover should accommodate all vehicular traffic, including trucks and buses.*

MoDOT specific content from the EPG. Revised Dec. 2025

Support:

02 Temporary traffic barriers and the excessive use of TTC devices cannot compensate for poor geometric and roadway cross-section design of crossovers.

Section 6N.16 Interchanges

Guidance:

01 Access to interchange ramps on limited-access highways should be maintained even if the work space is in the lane adjacent to the ramps. Access to exit ramps should be clearly marked and delineated with channelizing devices. For long-term projects, conflicting pavement markings should be removed and new ones placed. Early coordination with officials having jurisdiction over the affected cross streets and providing emergency services should occur before ramp closings.

Option:

02 If access is not possible, ramps may be closed by using signs and Type 3 Barricades. As the work space changes, the access area may be changed, as shown in Figure 6P-42. A TTC zone in the exit ramp may be handled as shown in Figure 6P-43.

03 When a work space interferes with an entrance ramp, a lane may need to be closed on the freeway (see Figure 6P-44). A TTC zone in the entrance ramp may require shifting ramp vehicular traffic (see Figure 6P-44).

Section 6N.17 Work in the Vicinity of a Grade Crossing

Standard:

01 When grade crossings exist either within or in the vicinity of a TTC zone, lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.

Support:

02 Figure 6P-46 shows work in the vicinity of a grade crossing.

03 Section 8A.13 contains additional information regarding TTC zones in the vicinity of grade crossings.

Guidance:

04 Early coordination with the railroad company or transit agency should occur before work starts.

Section 6N.18 Work During Nighttime Hours

Support:

01 Section 6A.05 contains additional information regarding considerations for conducting work operations during nighttime hours.

Guidance:

02 Considering the safety issues inherent to night work, consideration should be given to enhancing traffic controls (see Section 6N.03) to provide added visibility and driver guidance, and increased protection for workers.

03 In addition to the enhancements listed in Section 6N.03, consideration should be given to providing additional lights and retroreflective markings to workers, work vehicles, and equipment.

Option:

04 Where reduced traffic volumes at night make it feasible, the entire roadway may be closed by detouring traffic to alternate facilities, thus removing the traffic risk from the activity area.

Guidance:

05 Consideration should be given to stationing uniformed law enforcement officers and lighted patrol cars at night work locations where there is a concern that high speeds or impaired drivers might result in undue risks for workers or other drivers.

Standard:

06 Except in emergencies, temporary lighting shall be provided at all flagger stations used during nighttime work.

Support:

07 Desired illumination levels vary depending upon the nature of the task involved. An average horizontal luminance of 5 foot candles can be adequate for general activities. An average horizontal luminance of 10 foot candles can be adequate for activities around equipment. Tasks requiring high levels of precision and extreme care can require an average horizontal luminance of 20 foot candles.

Section 6N.19 Late Merge

Support:

01 The Late Merge is designed to use all available lanes until the merge point is reached at the lane closure taper rather than merging as soon as possible into the open lane. The Late Merge addresses many of the challenges that are associated with traffic operations in advance of lane closures at TTC zones such as queue length, capacity, and driver satisfaction.

Option:

02 Late Merge systems may consist of static or portable changeable message signs.

Guidance:

03 Static Late Merge signing should consist of the STAY IN LANE TO MERGE POINT (~~R9-4a~~R4-9a) sign and the MERGE HERE TAKE TURNS (WQ9-2a) sign (see Figure 6N-1).

Option:

04 The following messages may be used on changeable message signs at an upstream location during the Late Merge application:

A. "STAY IN YOUR LANE/MERGE AHEAD"
B. "STAY IN YOUR LANE/MERGE AHEAD XX MILES"
C. "USE BOTH LANES/TO MERGE POINT"
D. "USE BOTH LANES/STOPPED TRAFFIC AHEAD
E. "SLOW TRAFFIC AHEAD/USE BOTH LANES"

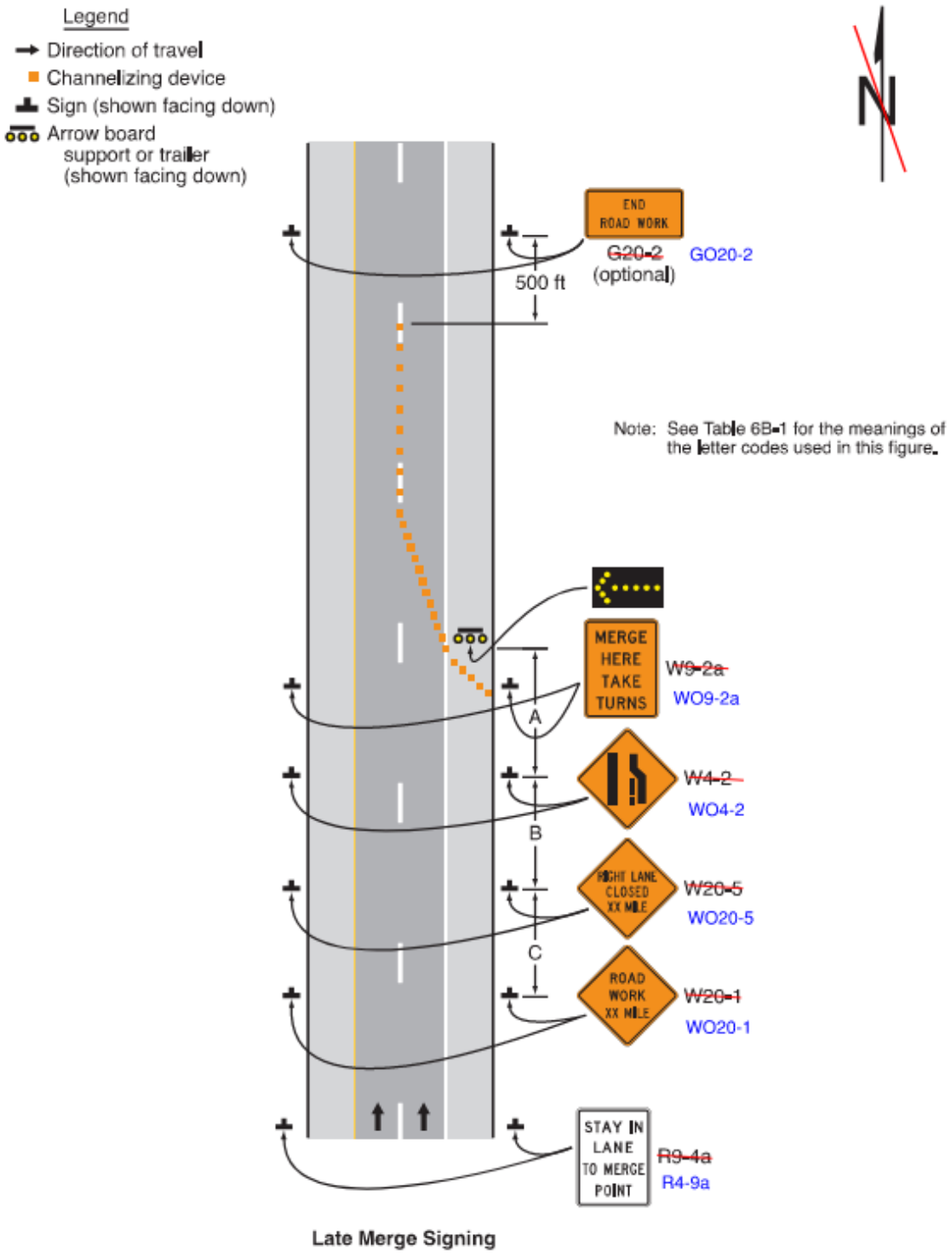
05 The following messages are typically used on changeable message signs at the merge point during the Late Merge application:

A. "TAKE YOUR TURN/MERGE HERE"
B. "MERGE HERE/TAKE TURNS"

Support:

M06 EPG 616.13.6.3 includes additional provisions for Smart Work Zone (SWZ) Strategy Selection.

Figure 6N-1. Late Merge



Late Merge Signing

CHAPTER 6O. CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS [EPG 616.15]

Section 6O.01 General

Support:

01 The National Incident Management System (NIMS) requires the use of the Incident Command System (ICS) at traffic incident management scenes.

02 A traffic incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic.

03 A traffic incident management area is an area of a highway where temporary traffic controls are installed, as authorized by a public authority or the official having jurisdiction of the roadway, in response to a road user incident, natural disaster, hazardous material spill, or other unplanned incident. It is a type of TTC zone and extends from the first warning device (such as a sign, light, or cone) to the last TTC device or to a point where vehicles return to the original lane alignment and are clear of the incident.

04 Traffic incidents can be divided into three general classes of duration, each of which has unique traffic control characteristics and needs. These classes are:

A. Major—expected duration of more than 2 hours,
B. Intermediate—expected duration of 30 minutes to 2 hours, and
C. Minor—expected duration under 30 minutes.

05 The primary functions of TTC at a traffic incident management area are to inform road users of the incident and to provide guidance information on the path to follow through the incident area. Alerting road users and establishing a well-defined path to guide road users through the incident area will serve to protect the incident responders and those involved in working at the incident scene and will aid in moving road users expeditiously past or around the traffic incident, will reduce the likelihood of secondary traffic crashes, and will preclude unnecessary use of the surrounding local road system. Examples include a stalled vehicle blocking a lane, a traffic crash blocking the traveled way, a hazardous material spill along a highway, and natural disasters such as floods and severe storm damage.

M05A For additional information see EPG 616.7.2.6.

Guidance:

06 In order to reduce response time for traffic incidents, highway agencies, appropriate public safety agencies (law enforcement, fire and rescue, emergency communications, emergency medical, and other emergency management), and private sector responders (towing and recovery and hazardous materials contractors) should mutually plan for occurrences of traffic incidents along the major and heavily traveled highway and street system.

07 On-scene responder organizations should train their personnel in TTC practices for accomplishing their tasks in and near traffic and in the requirements for traffic incident management contained in ~~this Manual~~ the EPG. On-scene responders should take measures to move the incident off the traveled roadway or to provide for appropriate warning. All on-scene responders and news media personnel should constantly be aware of their visibility to oncoming traffic and wear high-visibility apparel. Planning and training should include incorporation of estimated time durations to clear the event as part of their initial incident estimate. When events are deemed as probable Major Traffic Incidents that could generate prolonged lane or road closures, notification of all affected agencies should be initiated as part of the initial incident report that is provided to the emergency communications center who would then be responsible for making notifications to appropriate state, regional, and local agencies and resources for the purpose of ramping up and responding as quickly as possible thus facilitating a more rapid transition from emergency TTC to an MUTCD-compliant TTC zone when warranted.

08 Emergency vehicles arriving at an incident should be positioned in a manner that attempts to protect both the responders performing their duties and road users traveling through the incident scene, while minimizing, to the extent practical, disruption of the adjacent traffic flow. Emergency vehicle positions should

optimize traffic flow through the incident scene. All emergency vehicles that subsequently arrive should be positioned in a manner that does not interfere with the established temporary traffic flow.

09 Responders arriving at a traffic incident should estimate the magnitude of the traffic incident, the expected time duration of the traffic incident, and the expected vehicle queue length, and then should set up the appropriate temporary traffic controls for these estimates.

Option:

10 Warning and guide signs used for TTC traffic incident management situations may have a black legend and border on a fluorescent pink background (see ~~Figure 6O-1~~ EPG 616.8 and EPG 616.9 for proper wording and symbols).

Support:

M10A For MoDOT forces, incident management signing examples are located in MGS-04-01 Roll-up Signs and may be purchase through a statewide bid.

11 While some traffic incidents might be anticipated and planned for, emergencies and disasters might pose more severe and unpredictable problems. The ability to quickly install proper temporary traffic controls might greatly reduce the effects of an incident, such as secondary crashes or excessive traffic delays. An essential part of fire, rescue, spill clean-up, highway agency, and enforcement activities is the proper control of road users through the traffic incident management area in order to protect responders, victims, and other personnel at the site. These operations might need corroborating legislative authority for the implementation and enforcement of appropriate road user regulations, parking controls, and speed zoning. It is desirable for these statutes to provide sufficient flexibility in the authority for, and implementation of, TTC to respond to the needs of changing conditions found in traffic incident management areas.

Option:

12 For traffic incidents, particularly those of an emergency nature, TTC devices on hand may be used for the initial response as long as they do not themselves create unnecessary additional hazards.

Support:

13 The establishment, maintenance, and prompt removal of lane diversions can be effectively managed by interagency planning that includes representatives of highway and public safety agencies.

Guidance:

14 All traffic control devices needed to set up the TTC at a traffic incident should be available so that they can be readily deployed for all major traffic incidents. The TTC should include the proper traffic diversions, tapered lane closures, and upstream warning devices to alert traffic approaching the queue and to encourage early diversion to an appropriate alternative route.

15 Attention should be paid to the upstream end of the traffic queue such that warning is given to road users approaching the back of the queue.

16 If manual traffic control is needed, it should be provided by qualified flaggers or uniformed law enforcement officers.

Option:

17 If flaggers are used to provide traffic control for an incident management situation, the flaggers may use appropriate traffic control devices that are readily available or that can be brought to the traffic incident scene on short notice.

Guidance:

18 When light sticks or flares are used to establish the initial traffic control at incident scenes, channelizing devices (see Section 6K.01) should be installed as soon thereafter as practical.

Option:

19 The light sticks or flares may remain in place if they are being used to supplement the channelizing devices.

Guidance:

20 The light sticks, flares, and channelizing devices should be removed after the incident is terminated.

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.

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.

Section 6O.03 Intermediate Traffic Incidents

Support:

01 Intermediate traffic incidents typically affect travel lanes for a time period of 30 minutes to 2 hours, and usually require traffic control on the scene to divert road users past the blockage. Full roadway closures might be needed for short periods during traffic incident clearance to allow traffic incident responders to accomplish their tasks.

Section 6O.04 Minor Traffic Incidents

Support:

01 Minor traffic incidents are typically disabled vehicles and minor crashes that result in lane closures of less than 30 minutes. On-scene responders are typically law enforcement and towing companies, and occasionally highway agency service patrol vehicles.

02 Diversion of traffic into other lanes is often not needed or is needed only briefly. It is not generally possible or practical to set up a lane closure with traffic control devices for a minor traffic incident. Traffic control is the responsibility of on-scene responders.

Guidance:

03 When a minor traffic incident blocks a travel lane, the vehicles involved in the incident should be moved from the blocked lane to the shoulder as quickly as possible.

Section 6O.05 Use of Emergency-Vehicle Lighting

Support:

01 The use of emergency-vehicle lighting (such as high-intensity rotating, flashing, oscillating, or strobe lights) is essential, especially in the initial stages of a traffic incident, for the safety of emergency responders and persons involved in the traffic incident, as well as road users approaching the traffic incident. Emergency-vehicle lighting, however, provides warning only and provides no effective traffic control. The use of too many lights at an incident scene can be distracting and can create confusion for approaching road users,

especially at night. Road users approaching the traffic incident from the opposite direction on a divided facility are often distracted by emergency-vehicle lighting and slow their vehicles to look at the traffic incident posing a hazard to themselves and others traveling in their direction.

02 The use of emergency-vehicle lighting can be reduced if good traffic control has been established at a traffic incident scene. This is especially true for major traffic incidents that might involve a number of emergency vehicles. If good traffic control is established through placement of advance warning signs and traffic control devices to divert or detour traffic, then public safety agencies can perform their tasks on scene with minimal emergency-vehicle lighting.

Guidance:

03 Public safety agencies should examine their policies on the use of emergency-vehicle lighting, especially after a traffic incident scene is secured, with the intent of reducing the use of this lighting as much as possible while not endangering those at the scene. Special consideration should be given to reducing or extinguishing forward facing emergency-vehicle lighting, especially on divided roadways, to reduce distractions to oncoming road users.

04 Because the glare from floodlights or vehicle headlights can impair the nighttime vision of approaching road users, any floodlights or vehicle headlights that are not needed for illumination, or to provide notice to other road users of an incident response vehicle being in an unexpected location, should be turned off at night.

CHAPTER 6P. TYPICAL APPLICATIONS EPG 616.16

Section 6P.01 Typical Applications

Support:

01 ~~Chapter 6N~~ EPG 616.14 contains discussions of typical TTC activities. ~~Section 6A.02~~ EPG 616.1.2 contains discussions on development of TTC plans for the various activities. This ~~Chapter~~ article presents typical applications for a variety of situations commonly encountered. While not every situation is addressed, the information illustrated can generally be adapted to a broad range of conditions. In many instances, an appropriate TTC plan is achieved by combining features from various typical applications. For example, work at an intersection might present a near-side TTC zone for one street and a far-side TTC zone for the other street. These treatments are found in two different typical applications, while a third typical application shows how to handle pedestrian crosswalk closures.

02 In general, the procedures illustrated represent minimum solutions for the situations depicted. Except for the notes (which are clearly classified using headings as being Standard, Guidance, Option, or Support), the information presented in the typical applications can generally be regarded as Guidance.

Option:

03 TTC plans may deviate from the typical applications described in this ~~Chapter~~ article to allow for conditions and requirements of a particular site or jurisdiction.

04 Other devices may be added to supplement the devices and device spacing may be adjusted to provide additional reaction time or delineation. Fewer devices may be used based on field conditions.

Support:

05 Figures and tables found throughout ~~Part 6~~ EPG 616 provide information for the development of TTC plans.

616.16.2 Typical Applications for Contract Projects

Guidance:

M05A For contract projects, the typical applications in Chapter 6P of the MUTCD should be the basis for preparing TTC plans. The MUTCD typical applications themselves are not provided in the EPG, but are included in the EPG by reference.

Support:

06 Table 6P-1 of the MUTCD is an index of the 54 typical applications. In the printed version of the MUTCD, the typical applications are shown on the right-hand page with notes on the facing page to the left. In the electronic version, the notes are shown on the page preceding the figure. The legend for the symbols used in the typical applications is provided in Table 6P-2 of the MUTCD. In many of the typical applications, sign spacings and other dimensions are indicated by letters using the criteria provided in Table 6B-1. The formulas for determining taper lengths are provided in Table 6B-4.

07 Most of the typical applications show TTC devices for only one direction.

616.16.3 Typical Applications for MoDOT Internal Use

Support:

M08 MoDOT has developed the following typical applications are intended for internal use by MoDOT employees. Before each work shift, all employees are required to participate in a pre-shift safety briefing. During the briefing, the applicable typical applications should be printed out and then discussed to know the procedures to follow for the day's work. This should include the risk-based assessment (RBA). The typical applications shown in the EPG are considered current.

PART 7 [EPG 908]
TRAFFIC CONTROL FOR SCHOOL AREAS
CHAPTER 7A. GENERAL [EPG 908.1]

Section 7A.01 Introduction

Support:

01 ~~Part 7~~EPG 908 sets forth basic principles and prescribes standards for the design, application, installation, and maintenance of all traffic control devices (including signs, signals, and markings) and other controls (including adult crossing guards) for the special pedestrian conditions in school areas.

Section 7A.02 School Route Plans and School Crossings

Guidance:

01 A school route plan for each school serving elementary to high school students should be prepared in order to develop uniformity in the use of school area traffic controls and to serve as the basis for a school traffic control plan for each school.

02 The school route plan, developed in a systematic manner by the school, law enforcement, and traffic officials responsible for school pedestrian safety, should consist of a map (see Figure 7A-1) showing streets, the school, existing traffic controls, established school walk routes, and established school crossings.

M02A MoDOT is not responsible for preparing school route plans. MoDOT district staff should be consulted when developing school route plans that include installation of traffic control devices on state-maintained roadways.

Clarification of MoDOT responsibilities. Revised Dec. 2025

03 Bicycle use as a mode of transportation, as applicable, should also be considered if students biking to and from school are not allowed to use the sidewalks along the pedestrian route.

04 The type(s) of school area traffic control devices used, either warning or regulatory, should be related to the volume and speed of vehicular traffic, street width, and the number and age of the students using the crossing.

05 School area traffic control devices should be included in a school traffic control plan.

Standard:

M05A No school area traffic control devices shall be installed on state-maintained roadways without the necessary agreements and approvals from MoDOT district staff.

Clarification of MoDOT policies. Revised Dec. 2025

Support:

06 To establish a safer route to and from school for schoolchildren, the application of planning criterion for school walk routes might make it necessary for children to walk an indirect route to an established school crossing located where there is existing traffic control and to avoid the use of a direct crossing where there is no existing traffic control.

07 The frequency of gaps in the traffic stream that are sufficient for student crossing is different at each crossing location. When the delay between the occurrences of adequate gaps becomes excessive, students might become impatient and endanger themselves by attempting to cross the street during an inadequate gap. In these instances, the creation of sufficient gaps needs to be considered to accommodate the crossing demand.

Guidance:

08 School walk routes should be planned to take advantage of existing traffic controls.

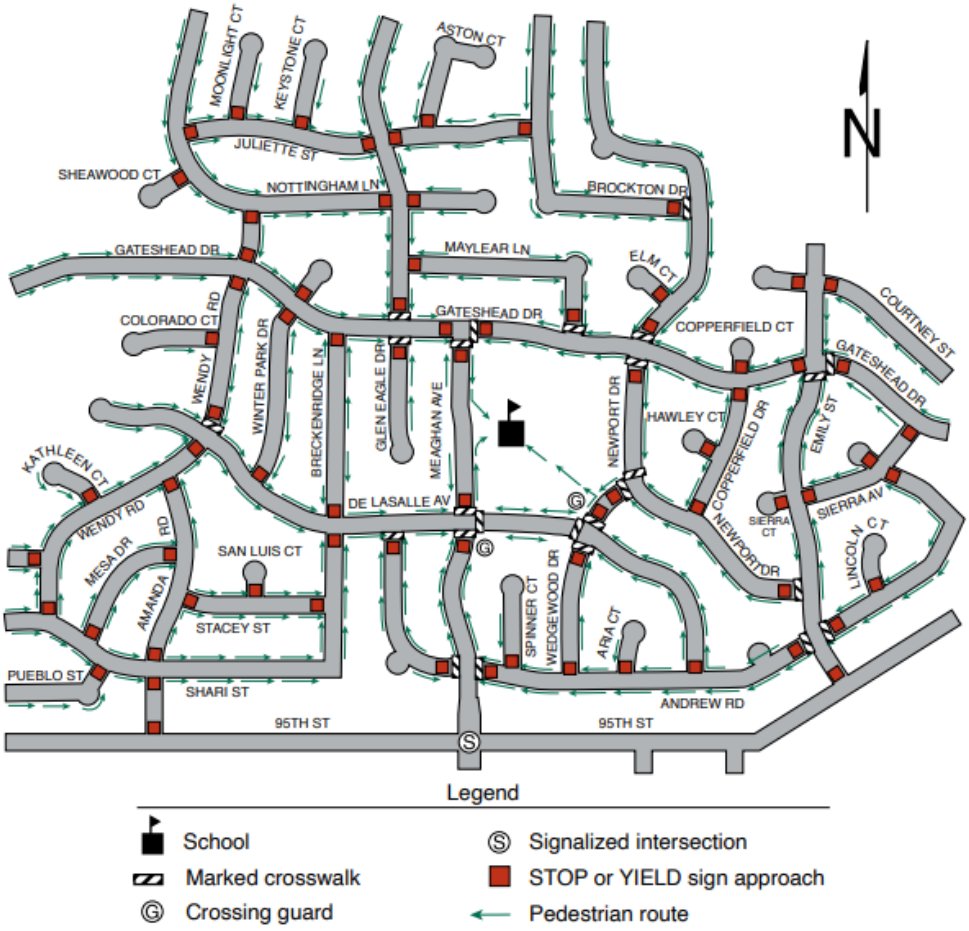
09 The following factors should be considered when determining the feasibility of requiring children to walk a longer distance to a crossing with existing traffic control:

A. The availability of adequate sidewalks or other pedestrian walkways to and from the location with existing control,
B. The number of students using the crossing,
C. The age levels of the students using the crossing, and
D. The total extra walking distance.

Support:

10 A School Crossing signal warrant is provided in Section 4C.06.

Figure 7A-1. Example of School Route Plan Map



CHAPTER 7B. SIGNS [EPG 908.2]

Section 7B.01 Design of School Signs

Standard:

01 Except as provided in Section 2A.07, the sizes of signs and plaques to be used ~~on conventional roadways~~ in school areas shall be as shown in Table 7B-1.

MoDOT only includes one sign size for all roadways in Table 7B-1. Revised Dec. 2025

~~**02 The sizes in the Oversized column in Table 7B-1 shall be used on expressways in school areas.**~~

~~*Guidance:*~~

~~*03 The sizes in the Oversized column should be used on roadways that have four or more lanes with posted speed limits of 40 mph or higher.*~~

MoDOT uses only one size of school area signs as indicated in Table 7B-1. Revised Dec. 2025

~~Option:~~ **Standard:**

04 Signs and plaques larger than those shown in Table 7B-1 ~~may~~ shall only be used if approved by the MoDOT Highway Safety and Traffic Division (see Section 2A.07).

Language is modified to match edits made in Section 2A.07. Revised Dec. 2025

Standard:

05 School warning signs, including the "SCHOOL" portion of the School Speed Limit (S5-1) sign and including any supplemental plaques used in association with these warning signs, shall have a fluorescent yellow-green background with a black legend and border unless otherwise provided in ~~this Manual~~ the EPG for a specific sign.

06 The signs used for school area traffic control shall be retroreflective ~~or illuminated~~.

MoDOT does not use illuminated school signs. Revised Dec. 2025

Support:

07 Sections 2A.13 and 2A.14 contain provisions regarding the installation, placement, and location of signs.

08 Section 2A.15 contains provisions regarding the mounting heights of signs.

09 Section 2A.16 contains provisions regarding the lateral offsets of signs.

10 The FHWA "Standard Highway Signs" publication (see Section 1A.05) contains information regarding sign lettering.

Option:

11 In-roadway signs for school traffic control areas may be used consistent with the requirements of Sections 2B.20 and 7B.03.

Table 7B-1. School Area Sign and Plaque Sizes

Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
School	S1-1	7B.02	36 x 36	~~30 x 30~~	~~48 x 48~~
School Bus Stop Ahead	S3-1	7B.04	36 x 36	~~30 x 30~~	~~48 x 48~~
~~School Bus Turn Ahead~~	~~S3-2~~	~~7B.04~~	~~36 x 36~~	~~30 x 30~~	~~48 x 48~~
Reduced School Speed Limit Ahead	~~S4-5, S4-5a~~	~~7B.05~~	~~36 x 36~~	30 x 30	~~48 x 48~~
School Speed Limit XX When Flashing	S5-1	7B.05	~~24 x 48~~	—	36 x 72
End School Zone	S5-2	7B.02	24 x 30	—	~~36 x 48~~
End School Speed Limit	S5-3	7B.05	24 x 30	—	~~36 x 48~~
Yield ~~(Stop)~~ Here for School Crossing	R1-5a, ~~R1-5aP~~	7B.03	36 x 36	—	—
In-Street ~~Ped or~~ School Crossing	~~R1-6,~~ R1-6a, R1-6b, ~~R1-6c~~	7B.03	12 x 36	—	—
~~Overhead School Crossing~~	~~R1-9b, R1-9c~~	~~7B.03~~	~~90 x 24~~	—	—
~~Speed Limit (School Use)~~	~~R2-1~~	~~7B.05~~	~~24 x 30~~	—	~~30 x 48~~
~~Begin Higher Fines Zone~~	~~R2-10~~	~~7B.06~~	~~24 x 30~~	—	~~36 x 48~~
~~End Higher Fines Zone~~	~~R2-11~~	~~7B.06~~	~~24 x 30~~	—	~~36 x 48~~

Plaque	Sign Designation	Section	Conventional Road	Minimum	Oversized
Time of Day ~~X:XX to X:XX AM~~ X:XX to X:XX PM	~~S4-1P~~	~~7B.06~~	~~24 x 12~~	—	~~30 x 15~~
~~When Children Are Present~~	~~S4-2P~~	~~7B.06~~	~~24 x 12~~	—	~~30 x 15~~
School	S4-3P	7B.02, 7B.05	~~24 x 9~~	—	36 x 12
~~When Flashing~~	~~S4-4P~~	~~7B.05, 7B.06~~	~~24 x 12~~	—	~~30 x 15~~
Days of Week Mon-Fri	~~S4-6P~~	~~7B.06~~	~~24 x 12~~	—	~~30 x 15~~
~~All Year~~	~~S4-7P~~	~~7B.02~~	~~24 x 12~~	—	~~30 x 15~~
~~Fines Higher~~	~~R2-6P~~	~~7B.06~~	~~24 x 18~~	—	~~36 x 24~~
~~Fines Double~~	~~R2-6aP~~	~~7B.06~~	~~24 x 18~~	—	~~36 x 24~~
~~XXX Fine~~	~~R2-6bP~~	~~7B.06~~	~~24 x 18~~	—	~~36 x 24~~
~~XX Feet (2 line)~~	~~W16-2P~~	~~7B.02, 7B.03~~	~~24 x 18~~	—	~~36 x 24~~
~~XX Ft (1 line)~~	~~W16-2aP~~	~~7B.02, 7B.03~~	~~24 x 12~~	—	~~30 x 15~~
Directional Arrow	W16-5P	7B.02, 7B.03	21 x 15	—	~~30 x 21~~
Advance Turn Arrow	W16-6P	7B.02, 7B.03	21 x 15	—	~~30 x 21~~
Downward Diagonal Arrow	W16-7P	7B.02, 7B.03	21 x 15	—	~~30 x 21~~
Ahead	W16-9P	7B.02, 7B.03	24 x 12	—	~~30 x 15~~

Notes: 1. ~~Larger sizes may be used when appropriate.~~

~~2.~~ Dimensions are shown in inches and are shown as width x height

~~3. Minimum sign sizes for multi-lane conventional roads shall be as shown in the Conventional Road column.~~

Section 7B.02 School Area Signs and Plaques

Support:

01 Many state and local jurisdictions find it beneficial to advise road users that they are approaching a school that is adjacent to a highway, where additional care is needed, even though no school crossing is involved and the speed limit remains unchanged. Additionally, some jurisdictions designate school zones that have a unique legal standing in that fines for speeding or other traffic violations within designated school zones are increased or special enforcement techniques such as photo radar systems are used (see EPG 950 Automated Traffic Enforcement). It is important and sometimes legally necessary to mark the beginning and end points of these designated school zones so that the road user is given proper notice.

02 The School (S1-1) sign (see Figure 7B-1) has the following four applications:

A. School Area – the S1-1 sign can be used to warn road users that they are approaching ~~a school area that might include~~ school buildings or grounds~~, a school crossing, or school related activity~~ immediately adjacent to the highway.
B. School Zone – the S1-1 sign can be used to identify the location of the beginning of a designated school zone.
C. School Advance Crossing – if combined with an AHEAD (W16-9P) plaque ~~or an XX FEET (W16-2P or W16-2aP) plaque~~ to comprise the School Advance Crossing assembly (see Figure 7B-1), the S1-1 sign can be used to warn road users that they are approaching a crossing where schoolchildren cross the roadway (see Section 7B.03). MoDOT does not use the XX FEET plaque for School Advance Crossing assemblies.
D. School Crossing – if combined with a diagonal downward-pointing arrow (W16-7P) plaque to comprise the School Crossing assembly (see Figure 7B-1), the S1-1 sign can be used to warn approaching road users of the location of a crossing where schoolchildren cross the roadway (see Section 7B.03).

MoDOT does not use the XX FEET plaque. Revised Dec. 2025

Option:

03 If a school area or school zone is located on a cross street in close proximity to the intersection, a School (S1-1) sign with a supplemental arrow (W16-5P or W16-6P) plaque (see Figure 7B-1) 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 area soon after making the turn.

Standard:

04 If a school zone has been designated under State or local statute, a School (S1-1) sign (see Figure 7B-1) shall be installed to identify the beginning point(s) of the designated school zone (see Figure 7B-2A).

Option:

M04A If a school zone is not established by a State or local statute, school zone signing may be installed adjacent to the school's property lines or as determined by engineering judgement.

Clarification of the location for school zone signage. Revised Dec. 2025

05 A School Zone (S1-1) sign may be supplemented with a SCHOOL (S4-3P) plaque (see Figure 7B-1).

~~06 A School Zone (S1-1) sign may be supplemented with an ALL YEAR (S4-7P) plaque (see Figure 7B-1) if the school operates on a 12-month schedule.~~

MoDOT does not use the ALL-YEAR plaque. Revised Dec. 2025

Standard:

07 The downstream end of a designated school zone ~~may~~ shall be identified with an END SCHOOL ZONE (S5-2) sign (see Figures 7B-1 and 7B-2A).

Option:

M08 A Warning Beacon (See Section 4S.03) may be installed above a School (S1-1) sign for supplemental emphasis at a school zone.

Standard:

M09 Prior to the installation of a Warning Beacon, a TR08 Roadside Flashers for School Operations contract shall be executed.

MoDOT specific content from the EPG. Revised Dec. 2025

Figure 7B-1. Signs in School Areas and at School Crossings (Sheet 1 of 2)

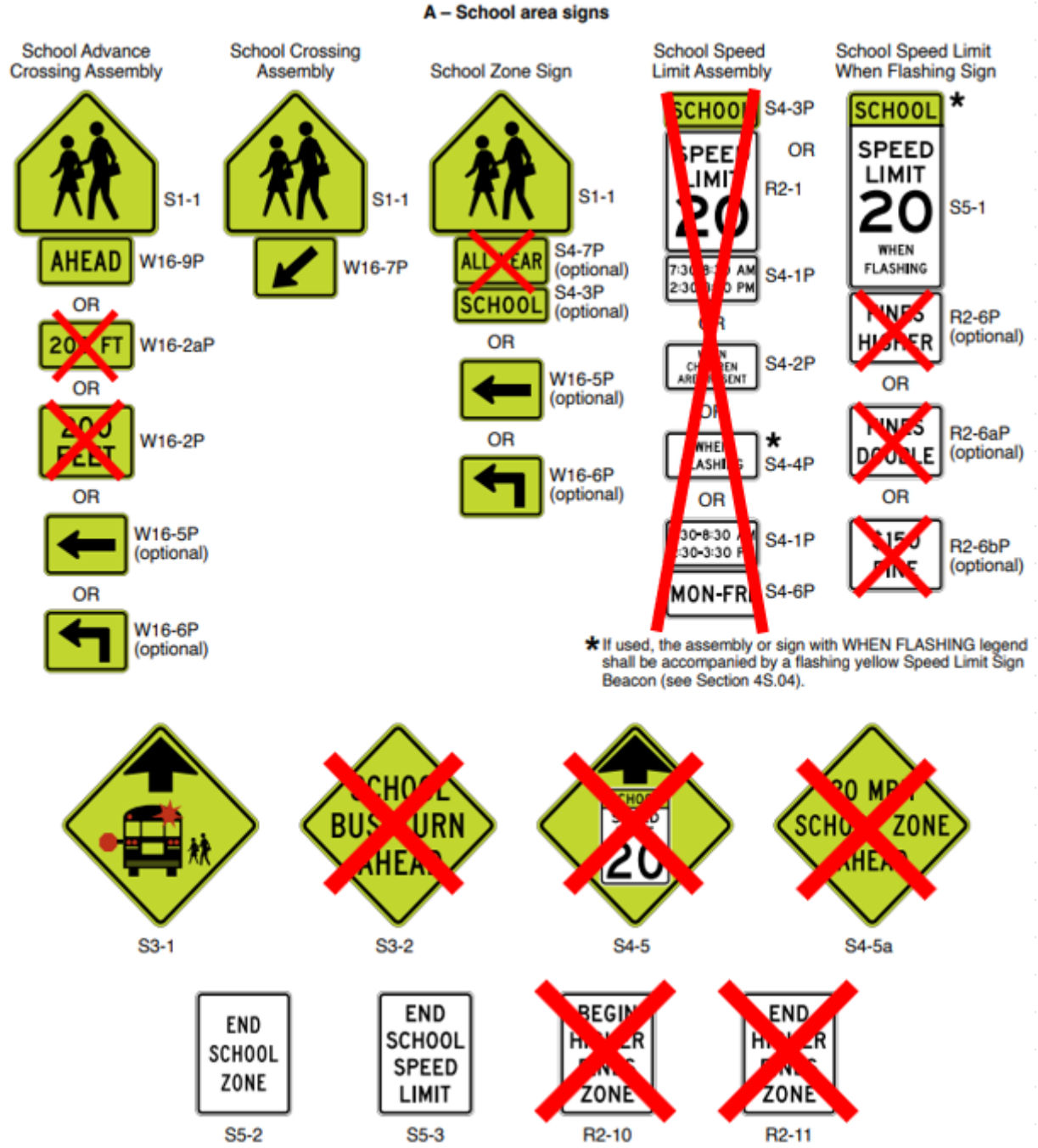
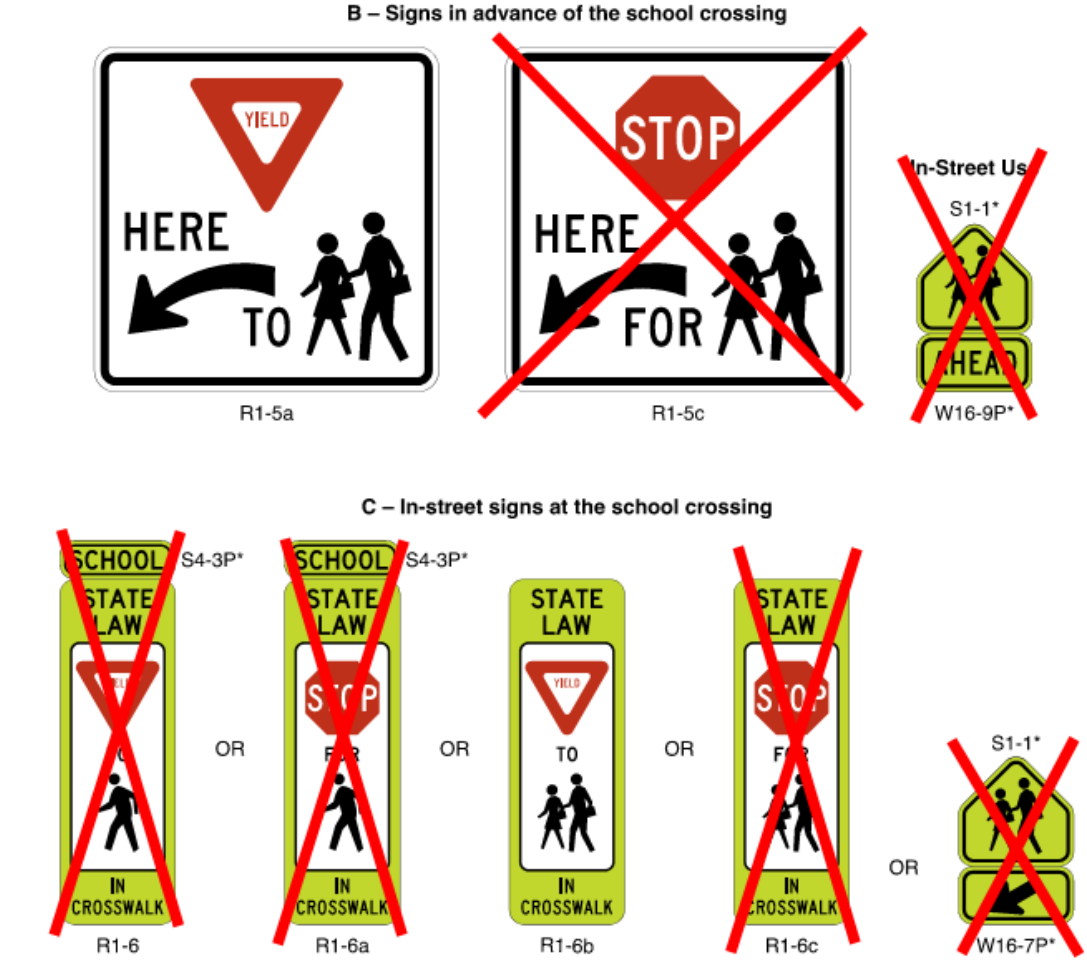


Figure 7B-1. Signs in School Areas and at School Crossings (Sheet 2 of 2)



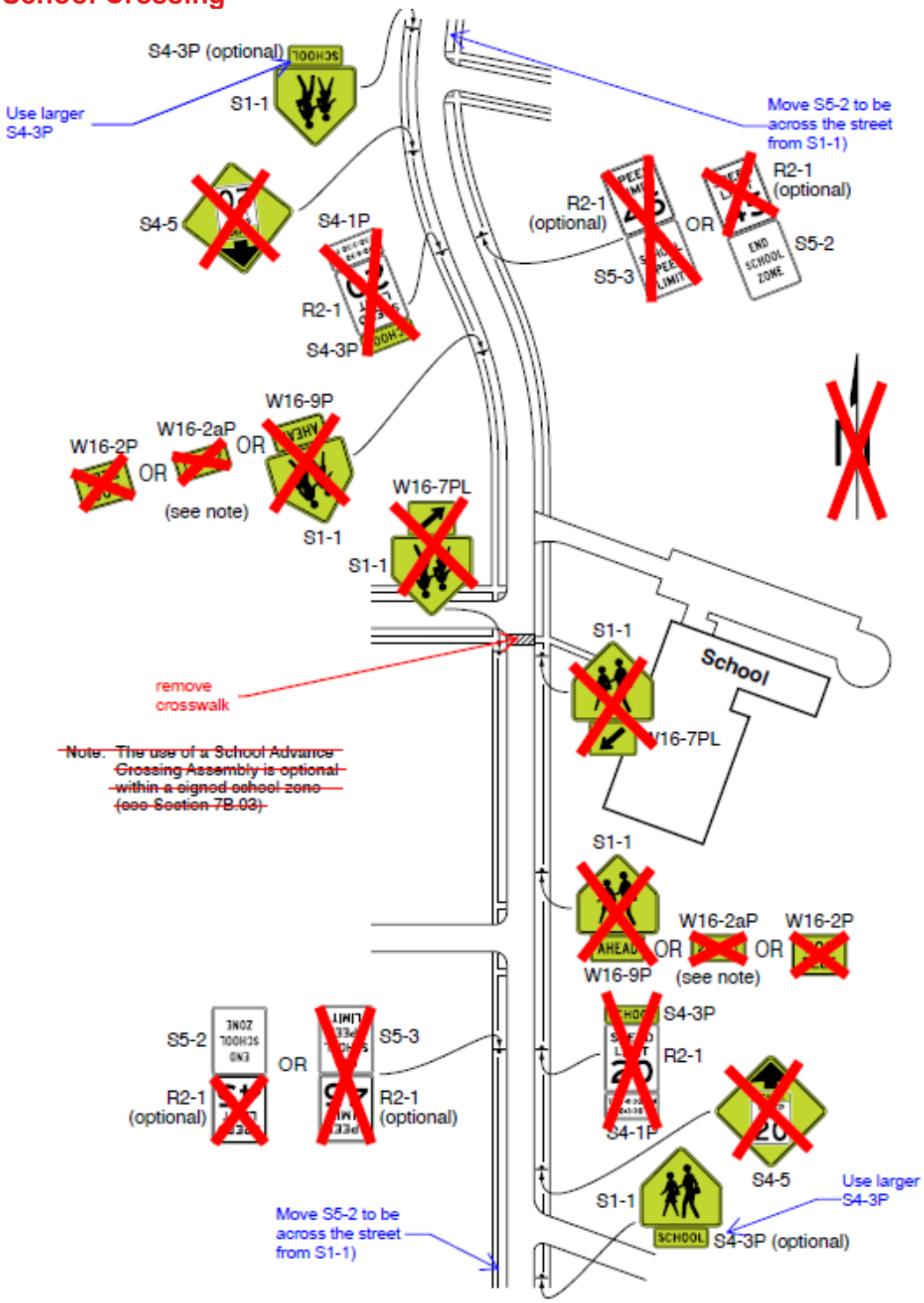
Notes:

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

Figure 7B-2A. Example of Signing for a School Zone ~~with a School Speed Limit and a School Crossing~~



MoDOT figure from the EPG that is not included in the MUTCD. Revised Dec. 2025

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~~.

MoDOT does not use the XX FEET plaque. Revised Dec. 2025

02 Except as provided in ~~Paragraph 3 of this Section~~ the first Option paragraph below, 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)~~.

M02A Prior to the installation of an Advanced School Crossing sign(s), a TR10 or TR11 School Crossing contract shall be executed.

MoDOT specific content from the EPG. Revised Dec. 2025

Option:

03 The School Advance Crossing assembly may be omitted (see Figure 7B-2B) 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 if determined to be unnecessary by engineering judgement.

MoDOT specific content from the EPG. Revised Dec. 2025

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~~2B).

~~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.~~

MoDOT does not use the 12-inch S1-1 sign. Revised Dec. 2025

Standard:

06 If used, the School Crossing assembly (see Figure 7B-1) shall be installed at the school crossing (see Figures 7B-2B ~~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~~ the first two Option paragraphs below.

M08A Prior to the installation of a School Crossing sign(s), a TR10 or TR11 School Crossing contract shall be executed. All requests for School Crossing sign(s) shall be reviewed in the district.

MoDOT specific content from the EPG. Revised Dec. 2025

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-41) 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.

MoDOT does not use R1-5c signs. Revised Dec. 2025

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 only be used at midblock 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.~~

MoDOT does not use In-Street Pedestrian Crossing signs at school crossings because the background color of the outer border of the pedestrian sign is yellow. The outer border of In-Street School Crossing signs is fluorescent yellow-green, consistent with school signs. Revised Dec. 2025

~~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.~~

MoDOT does not use R1-9b or R1-9c signs. Revised Dec. 2025

Standard:

15 When used at an uncontrolled crossing, the In-Street School Crossing ~~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.

MoDOT does not use R1-9b or R1-9c signs. Revised Dec. 2025

M15A An In-Street School 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.

Option:

M15B In-Street School Crossing signs may be mounted back-to-back on the center line of an undivided roadway.

Relevant content from MUTCD Section 2B.20. Revised Dec. 2025

Standard:

M15C In-Street School Crossing signs shall only be installed:

- **A. Permanently on a raised island, or**
- **B. Temporarily on a portable base.**

~~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.~~

MoDOT does not use 12-inch S1-1 signs. Revised Dec. 2025

~~**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~~ is installed permanently 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).

M17A If an In-Street School Crossing sign is temporarily placed in the roadway, the sign shall be retroreflective and shall be deployed on a portable temporary sign support. The sign support shall be a crashworthy portable base meeting a minimum of NCHRP 350 standards. The top of an In-Street School Crossing sign shall be a maximum of 4 feet above the pavement surface.

M17B In-Street School Crossing signs shall be removed from the roadway when the school crossing guard is not present.

MoDOT requirements for In-Street School sign installations. Revised Dec. 2025

Support:

M17C MoDOT does not provide or install temporary In-Street School Crossing signs. If used, temporary portable In-Street School Crossing signs are supplied and installed by school districts.

Standard:

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.

MoDOT does not use R1-6, R1-6a, R1-9b R1-9c,or 12-inch S1-1 sign. Revised Dec. 2025

Section 7B.04 School Bus Stop Signs

~~*Guidance:*~~

~~*01 The School Bus Stop Ahead (S3-1) sign (see Figure 7B-1) should be installed in advance of locations where a school bus, when stopped to pick up or discharge passengers , is not visible to road users for an adequate distance and where there is no opportunity to relocate the school bus stop to provide adequate sight distance.*~~

MoDOT policy for the School Bus Stop Ahead sign follows the intent of the guidance statement in MUTCD paragraph 1. The following paragraphs provide MoDOT specific policy information in more detail with the requirements from Missouri statutes. Revised Dec. 2025

Support:

M01A Section 304.050, RSMo, paragraph 5, defines, by state statute the locations where school buses can stop to load and unload passengers based on the number of lanes on the roadway, presence of shoulders, visibility, and speed limits.

M01B It is not intended that School Bus Stop Ahead (S3-1) signs be used everywhere a school bus stops to load or unload passengers, but for use where terrain and roadway features limit the approach sight distance and where there is no opportunity to relocate the school bus stop to another location with adequate sight distance. For this article, a school bus stop is defined as the location where schoolchildren wait to be picked up by a school bus and/or where schoolchildren are discharged from a school bus.

Standard:

M01C Requests for School Bus Stop Ahead signs shall be submitted to MoDOT district staff by the school district. When a request for a S3-1 sign is received, sight distance shall be evaluated at the school bus stop location. Sight distance shall be measured using a 3.5-foot driver's eye height and

an 8-foot object height. Each approach for the school bus stop shall be measured independently for each direction of travel along the roadway.

M01D If the minimum sight distance in Table 908.2.4 is not met, a school bus stop shall not be allowed by state statute. If the maximum sight distance in Table 908.2.4 is not met, the school district shall attempt to relocate the school bus stop to a location that does meet or exceed the maximum sight distance.

Table 908.2.4. Sight Distance Requirements for use of the S3-2 Sign

Posted Speed (mph)	Minimum Sight Distance (ft.)	Maximum Sight Distance (ft.)
30	300	500
35	300	500
40	300	500
45	300	500
50	300	510
55	300	560
60	300	625
65	500	700
70	500	740

Option:

M01E If the school district has reviewed a school bus stop location and there are no viable alternative locations to relocate the school bus stop, the school district may submit a letter to MoDOT district staff verifying that there are no alternate locations.

M01F The School Bus Stop Ahead sign may be installed on an approach to a school bus stop based on engineering judgement if all the following conditions are met:

A. Sight distance exceeds the minimum value in Table 908.2.4 when measured as described in the first Standard paragraph above,
B. Sight distance is less than the maximum value in Table 908.2.4 when measured as described in the first Standard paragraph above, and
C. A letter has been provided to MoDOT as described in the previous paragraph.

Guidance:

M01G Each approach to a school bus stop should be evaluated independently as it may not be necessary to install S3-1 signs for both approaches to a school bus stop.

M01H If a School Bus Stop Ahead sign is installed, it should be located for a stop condition per Table 2C-3.

Standard:

M01I To ensure proper placement of signs and encourage driver compliance, all requests for School Bus Stop Ahead signs shall be submitted by school district staff, and the school district must verify the status of all school bus stops with signing as active or inactive on a yearly basis.

Guidance:

M01J MoDOT district staff should send a standard letter requesting verification of school bus stop status prior to the fall session.

Option:

M01K If the school district fails to verify the status of school bus stops, the MoDOT district may remove the School Bus Stop Ahead signs at those stops.

Guidance:

M01L If the signs are removed due to lack of compliance with these requirements, the signs should not be reinstalled for one year. Whenever the school district moves a school bus stop location with S3-1 sign(s), they should advise the district office as soon as possible rather than waiting for the annual review.

~~Option:~~

~~02 The SCHOOL BUS TURN AHEAD (S3-2) sign (see Figure 7B-1) may be installed in advance of locations where a school bus turns around on a roadway at a location not visible to approaching road users for a distance as determined by the "0" column under Condition B of Table 2C-3, and where there is no opportunity to relocate the school bus turn around to provide the distance provided in Table 2C-3.~~

MoDOT does not use the S3-2 sign. Revised Dec. 2025

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-2B and 7B-~~4~~2C).

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~~ School Speed Limit When Flashing (S5-1) sign that is encountered in each direction as traffic approaches the reduced school speed limit zone (see Figures 7B-2B and 7B-~~4~~2C).

MoDOT does not use School Speed Limit assemblies. Instead, the S5-1 sign is used. Revised Dec. 2025

03 ~~Except as provided in Paragraph 4 of this Section, t~~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-2B and 7B-~~4~~2C).

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.

The first sentence of paragraph 4 is not adopted because it can lead to confusion regarding which sign to use, S5-2 or S5-3. Figures have been modified accordingly. Revised Dec. 2025

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 feet in advance of the school grounds or a school crossing.

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.

MoDOT does not use School Speed Limit assemblies. Instead, the S5-1 sign is used. Revised Dec. 2025

M08A Prior to the installation of a School Speed Limit When Flashing sign with a Speed Limit Sign Beacon, a TR08 Roadside Flashers for School Operations contract shall be executed.

MoDOT specific content from the EPG. Revised Dec. 2025

Guidance:

M08B If a Speed Limit Sign Beacon is installed, no other Warning Beacons should be permitted on school zone signs inside the same school zone.

MoDOT specific content from the EPG. Revised Dec. 2025

~~09 Fluorescent yellow-green pixels shall be used when the "SCHOOL" message is displayed on a changeable message sign for a school speed limit.~~

MoDOT does not use changeable message signs for school speed zone signing. Revised Dec. 2025

~~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.~~

Changeable message signs and blank out message signs are not used for school speed zone signing. Revised Dec. 2025

~~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.~~

MoDOT does not include Vehicle Speed Feedback signs as part of school speed limit assembly. Revised Dec. 2025

~~*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.*~~

MoDOT does not include Vehicle Speed Feedback signs as part of school speed limit assembly. Revised Dec. 2025

~~*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.**~~

MoDOT does not use S4-5 or S4-5a signs. Revised Dec. 2025

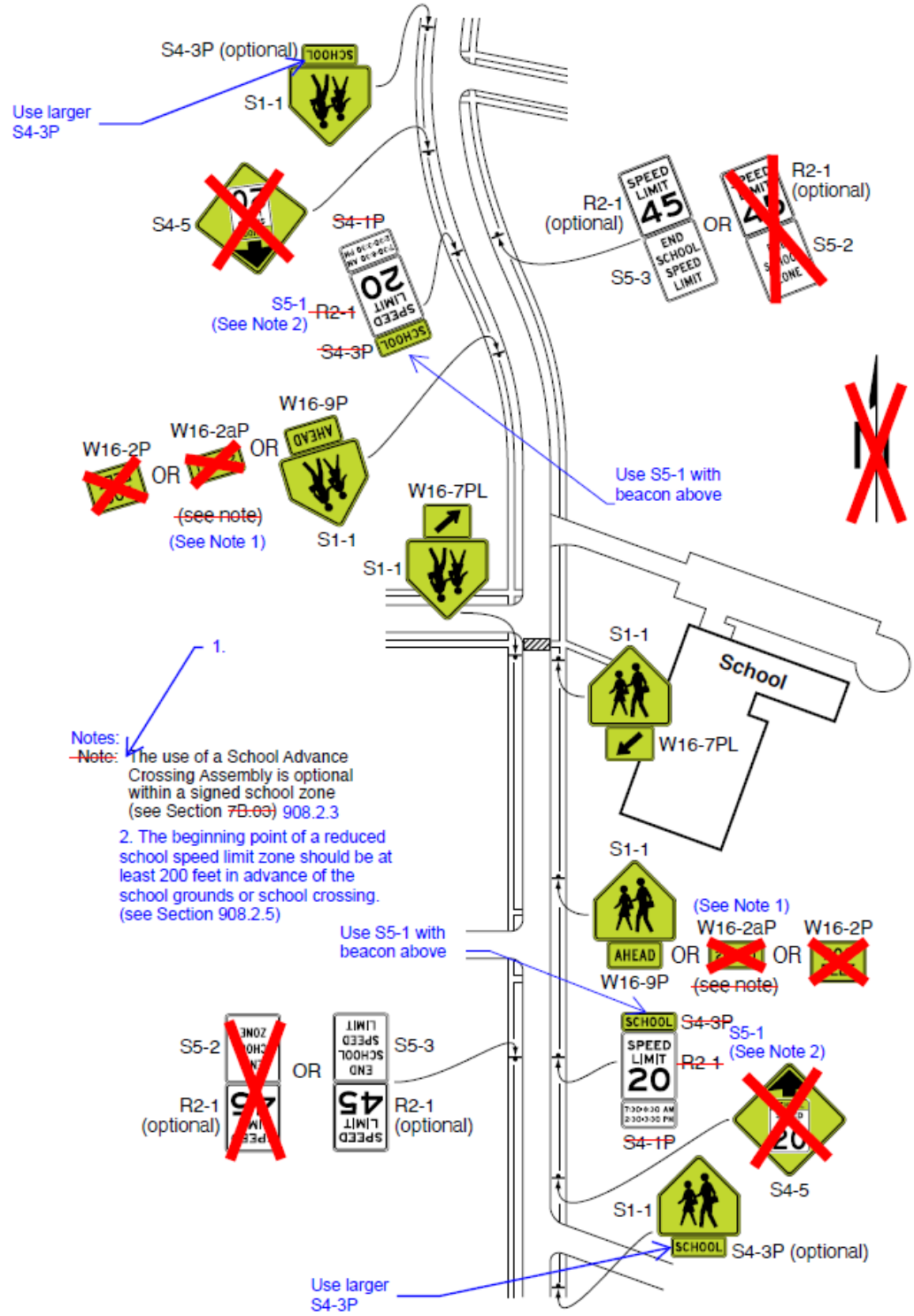
Standard:

M16 Upon receipt of a school speed limit request, the district shall perform a site investigation. A speed study and a crash study may be performed based on engineering judgement. The school speed limit shall be 10 mph below the posted speed limit. In no case shall a school speed limit of less than 25 mph be allowed.

M17 If in the course of the speed study it is determined that the posted speed for the corridor is not proper, the posted speed shall be reevaluated and changed as necessary following EPG 905.2.14 Speed Limit Guidelines.

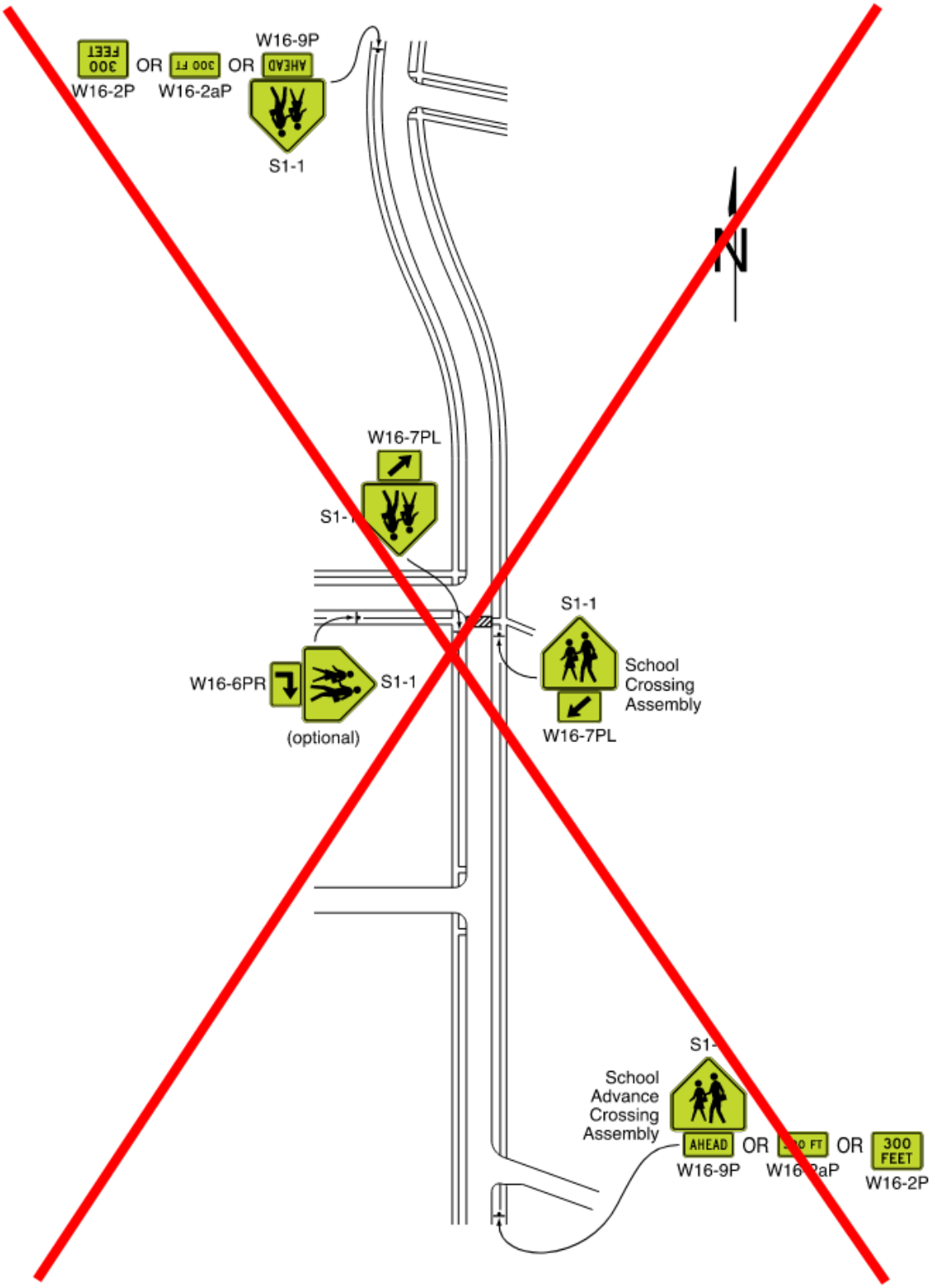
MoDOT specific content from the EPG. Revised Dec. 2025

Figure 7B-2B. Example of Signing for a School Zone with a School Speed Limit and a School Crossing



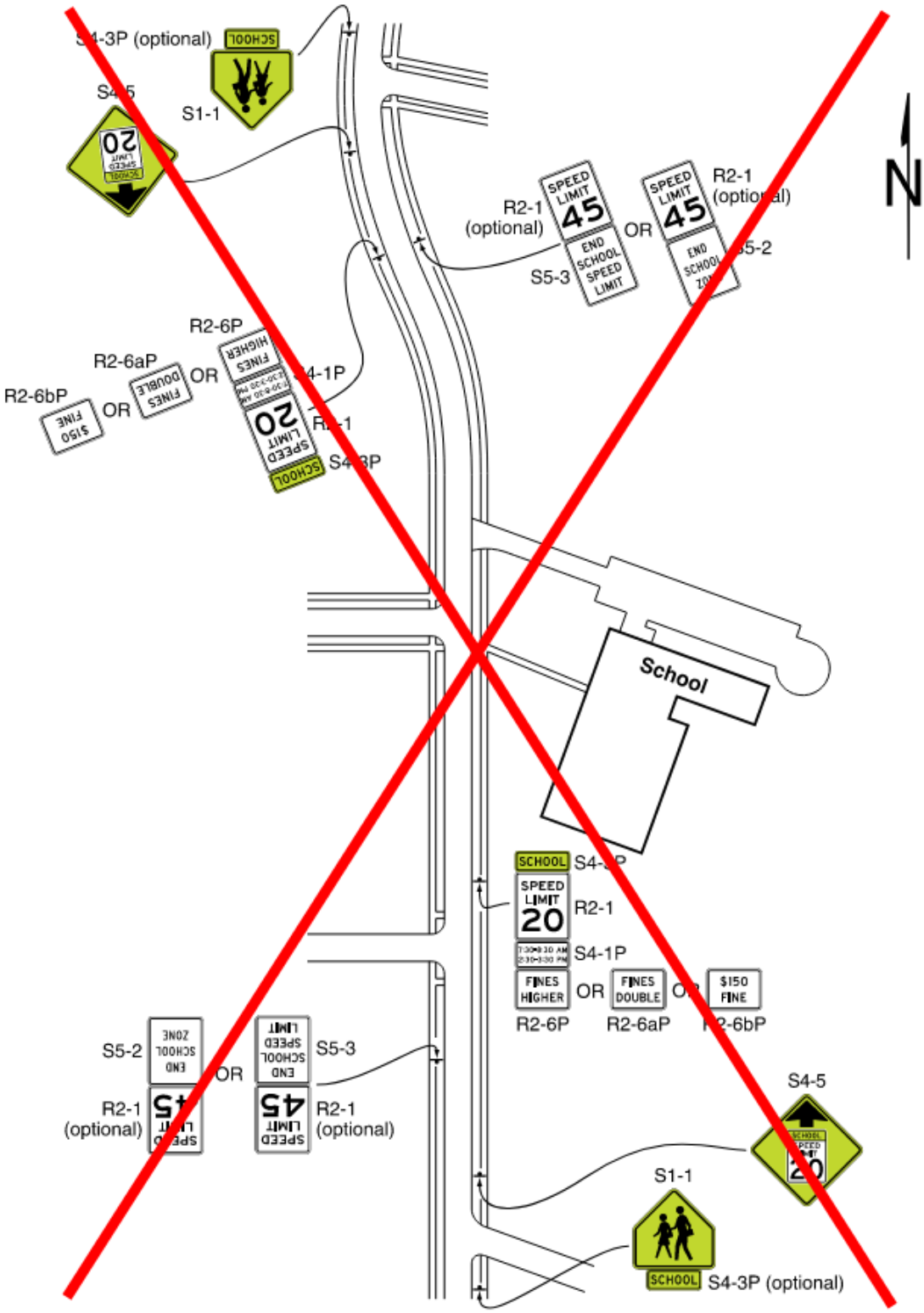
MUTCD Figure Modified to reflect MoDOT specific criteria. Revised Dec. 2025

Figure 7B-3. Example of Signing for a School Crossing Outside of a School Zone



MoDOT does not sign for school crossings outside school zones. Revised Dec. 2025

Figure 7B-4. Example of Signing for a School Zone with a School Speed Limit and Higher Fines Only for Speeding



This figure is not adopted because MoDOT does not use signs for higher fines zones. Revised Dec. 2025

Section 7B.06 Higher Fines Zone Signs and Plaques in School Areas

Support:

M00A Higher Fines Zone Signs and Plaques are not used by MoDOT. There is no authority under state law to charge higher fines for moving or speeding violations in school zones.

MoDOT specific content from the EPG. Revised Dec. 2025

~~Support:~~

~~01 The signs and plaques used to inform road users of higher fines zones and their locations depend on whether the fines apply to all traffic violations or only to speeding violations. Their locations also depend on whether the higher fines zone begins and/or ends at the same point as the school zone or school speed limit zone. Figures 7B-4 and 7B-5 show examples of higher fines zones signing.~~

~~Standard:~~

~~02 Where increased fines are imposed for traffic violations within a designated school zone:~~

~~A. A BEGIN HIGHER FINES ZONE (R2-10) sign (see Figure 7B-1) or a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or $XX FINE (R2-6bP) plaque (see Figure 7B-1) shall be installed as a supplement to the School Zone (S1-1) sign to identify the beginning point of the higher fines zone (see Figures 7B-4 and 7B-5); and~~

~~B. An END HIGHER FINES ZONE (R2-11) sign (see Figure 7B-1) or an END SCHOOL ZONE (S5-2) sign (see Figure 7B-1) shall be installed at the downstream end of the zone to notify road users of the termination of the increased fines zone (see Figure 7B-5).~~

~~03 If exceeding the speed limit is the only traffic violation that is subject to higher fines, a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or $XX FINE (R2-6bP) plaque shall be posted with the School Speed Limit (S5-1) sign and shall not be posted beneath the School Zone (S1-1) sign (see Section 7B.05).~~

~~04 If the portion of the roadway that is subject to higher fines does not begin at the location of the School Zone (S1-1) sign, a BEGIN HIGHER FINES ZONE (R2-10) sign shall be placed at the point where the higher fines begin (see Sheet 2 of Figure 7B-5).~~

~~Option:~~

~~05 If a BEGIN HIGHER FINES ZONE (R2-10) sign is used downstream of the School Zone (S1-1) sign, a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or $XX FINE (R2-6bP) plaque may also be placed beneath the School Zone (S1-1) sign.~~

~~06 Where appropriate, one of the following plaques may be mounted below the sign that identifies the beginning point of the higher fines zone:~~

~~A. A S4-1P plaque (see Figure 7B-1) specifying the times that the higher fines are in effect,~~
~~B. A WHEN CHILDREN ARE PRESENT (S4-2P) plaque (see Figure 7B-1), or~~
~~C. A WHEN FLASHING (S4-4P) plaque (see Figure 7B-1) if used in conjunction with a yellow flashing beacon.~~

~~*Guidance:*~~

~~*07 If other traffic violations in addition to exceeding the speed limit are subject to higher fines, then the duplicate FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or $XX FINE (R2-6bP) plaque should be omitted from the School Speed Limit When Flashing (S5-1) sign (see Section 7B.05).*~~

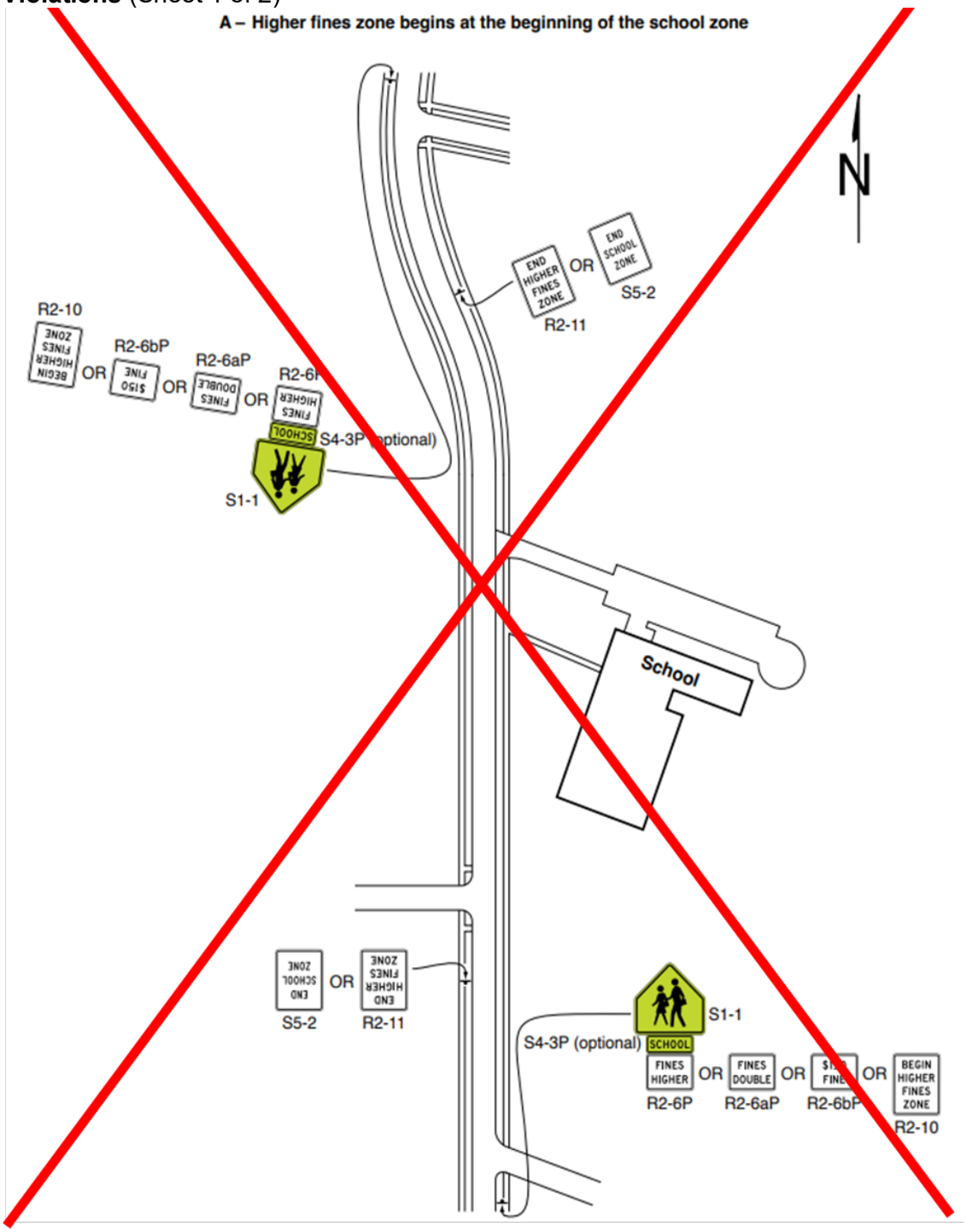
~~Option:~~

~~08 If a higher fines zone ends at the same point as a reduced school speed limit zone, an END SCHOOL ZONE (S5-2) sign may be used instead of a combination of an END HIGHER FINES ZONE (R2-11) sign and an END SCHOOL SPEED LIMIT (S5-3) sign (see Figure 7B-5).~~

~~09 Where the higher fines zone is established by statute, the BEGIN HIGHER FINES ZONE (R2-10) sign, FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), and $XX FINE (R2-6bP) plaques may be omitted.~~

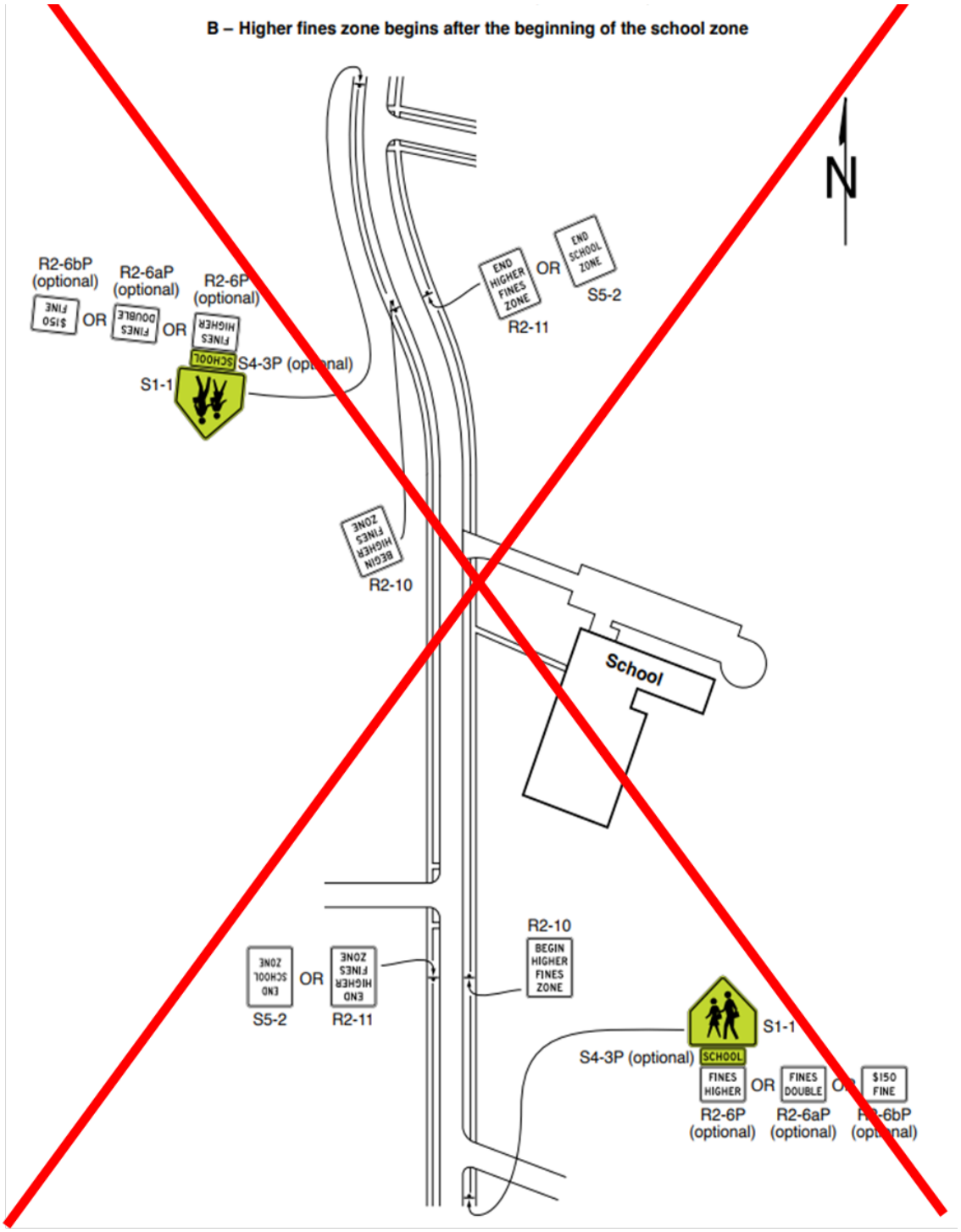
MoDOT does not use Higher Fines Zone signs or plaques. Revised Dec. 2025

Figure 7B-5. Example of Signing for a School Zone with Higher Fines for All Traffic Violations (Sheet 1 of 2)



This figure is not adopted because MoDOT does not use signs for higher fines zones. Revised Dec. 2025

Figure 7B-5. Example of Signing for a School Zone with Higher Fines for All Traffic Violations (Sheet 2 of 2)



This figure is not adopted because MoDOT does not use signs for higher fines zones. Revised Dec. 2025

Section 7B.07 Parking and Stopping (R7 and R8 Series) Signs

Option:

01 Parking and stopping regulatory signs may be used to prevent parked or waiting vehicles from blocking pedestrians' views, and drivers' views of pedestrians, and to control vehicles as a part of the school traffic plan.

Support:

02 Parking signs and other signs governing the stopping and standing of vehicles in school areas cover a wide variety of regulations. ~~Typical examples of regulations are as follows:~~

~~A. NO PARKING X:XX AM to X:XX PM SCHOOL DAYS ONLY~~
~~B. NO STOPPING X:XX AM to X:XX PM SCHOOL DAYS ONLY,~~
~~C. XX MIN LOADING X:XX AM to X:XX PM SCHOOL DAYS ONLY, and~~
~~D. NO STANDING X:XX AM to X:XX PM SCHOOL DAYS ONLY.~~

MoDOT does not include the list of example regulations in the EPG. Revised Dec. 2025

03 Sections 2B.53 through 2B.55 contain information regarding the signing of parking regulations in school zone areas.

CHAPTER 7C. MARKINGS

Section 7C.01 Crosswalk Markings

Guidance:

01 Crosswalks should be marked at all intersections on established routes to a school where there is substantial conflict between motorists, bicyclists, and student movements; where students are encouraged to cross between intersections; where students would not otherwise recognize the proper place to cross; or where motorists or bicyclists might not expect students to cross (see Figure 7A-1).

02 An engineering study considering the factors described in Section 3C.02 should be performed before a marked crosswalk is installed at a location away from a traffic control signal or an approach controlled by a STOP or YIELD sign.

Standard:

03 Because non-intersection school crossings are generally unexpected by the road user, warning signs (see Section 7B.03) ~~*should*~~ shall be installed for all marked school crosswalks at non-intersection locations.

Sentence modified to a standard because MoDOT requires warning signs for all marked school crosswalks. Revised Dec. 2025

Guidance:

M03A Adequate visibility of students by approaching motorists and of approaching motorists by students should be provided by parking prohibitions or other appropriate measures.

Support:

04 Section 3C.03 contains provisions regarding the placement and design of crosswalks, and Section 3B.19 contains provisions regarding the placement and design of the stop lines and yield lines that are associated with them. Provisions regarding the curb markings that can be used to establish parking regulations on the approaches to crosswalks are contained in Section 3B.18.

~~Section 7C.02 Pavement Word, Symbol, and Arrow Markings~~

~~Option:~~

~~01 If used, the SCHOOL word marking may extend to the width of two approach lanes (see Figure 7C-1).~~

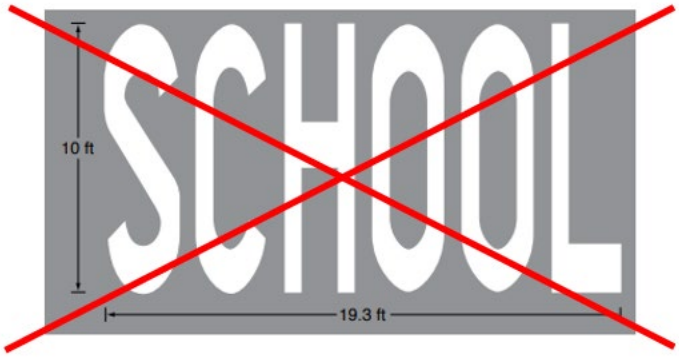
~~*Guidance:*~~

~~*02 If the two-lane SCHOOL word marking is used, the letters should be 10 feet or more in height.*~~

~~Support:~~

~~03 Section 3B.20 contains provisions regarding other word, symbol, and arrow pavement markings that can be used to guide, warn, or regulate traffic.~~

Figure 7C-1. Two-Lane Pavement Marking of "SCHOOL"



CHAPTER 7D. CROSSING SUPERVISION

Section 7D.01 Adult Crossing Guards

~~Option:~~ **Standard:**

01 Adult crossing guards ~~may~~ acting for the school district shall be used to provide gaps in traffic at school crossings ~~where an engineering study has shown that adequate gaps need to be created, and where authorized by law~~ on the state highway system during times when school children are present before and after school is in session. A school-crossing contract providing for an adult crossing guard shall be required before a marked and signed school crossing is established.

Paragraph upgraded to Standard and modified to meet MoDOT policy. Revised Dec. 2025

Support:

M01A The school crossing contracts can be found in EPG 153.21 Traffic Agreements and Contracts. The District Engineer is authorized to sign all school crossing contracts.

MoDOT specific content from the EPG. Revised Dec. 2025

02 Adult crossing guards ~~can also~~ add conspicuity at the crossing where children, who are typically smaller in stature, might not be as visible.

03 High standards for selection of adult crossing guards are essential because they are responsible for the safety of and the efficient crossing of the street by schoolchildren within and in the immediate vicinity of school crosswalks.

Guidance:

04 ~~Jurisdictions~~ School districts should have policies and procedures for the qualifications, selection, and training of adult crossing guards.

MoDOT requires adult crossing guards at all school crossings along the state system. Revised Dec. 2025

Section 7D.02 Operating Procedures for Adult Crossing Guards

Standard:

01 Law enforcement officers performing school crossing supervision and adult crossing guards shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-2020 standard performance for Class 2, Type R, as described in Section 6C.05.

02 Adult crossing guards shall not direct traffic in the usual law enforcement regulatory sense. In the control of traffic, they shall pick opportune times to create a sufficient gap in the traffic flow. At these times, they shall stand in the roadway to indicate that pedestrians are about to use or are using the crosswalk, and that all vehicular traffic must stop.

03 Adult crossing guards shall use a STOP paddle. The STOP paddle shall be the primary hand-signaling device.

04 The STOP paddle shall comply with the provisions for a STOP/SLOW paddle (see Section 6D.02) except both sides shall be a STOP face.

05 The paddle shall be retroreflective or illuminated when used during hours of darkness.

PART 8
TRAFFIC CONTROL FOR RAILROAD AND LIGHT RAIL TRANSIT GRADE CROSSINGS [EPG 913]
CHAPTER 8A. GENERAL [EPG 913.1]

Section 8A.01 Introduction

Support:

01 Where the acronym "LRT" is used in Part 8, it refers to "light rail transit."

M01A To promote an understanding of common terminology between highway and railroad and LRT signaling issues, definitions and acronyms pertaining to Part 8 are provided in EPG 911.3.2 and EPG 911.3.3.

MoDOT has decided to keep all definitions (that were listed in the EPG for this section) in Part 1 of the MUTCD (EPG 911) to be consistent with the rest of the MUTCD. Support statement from the 2009 Edition is added as a reference to Part 1. Revised Dec. 2025.

02 Chapters 8A, 8B, 8C, and 8D describe the traffic control devices that are used at highway-rail and highway-LRT grade crossings. Unless otherwise provided in the text or on a figure or table, the provisions of Part 8 are applicable to both highway-rail and highway-LRT grade crossings. Where the phrase "grade crossing" is used by itself without the prefix "highway-rail" or "highway-LRT," it refers to both highway-rail and highway-LRT grade crossings.

03 Chapter 8E describes the traffic control devices that are used at pathway and sidewalk grade crossings.

04 Traffic control for grade crossings includes all signs, signals, markings, other warning devices, and their supports along highways approaching and at grade crossings. The function of this traffic control is to promote safety and provide effective operation of rail and/or LRT and highway traffic at grade crossings.

05 For purposes of design, installation, operation, and maintenance of traffic control devices at grade crossings, it is recognized that the crossing of the highway and rail tracks is situated on a right-of-way available for the joint use of both highway traffic and railroad or LRT traffic.

06 Grade crossings and the traffic control devices that are associated with them are unique in that in many cases, the highway agency or authority with jurisdiction (e.g., MoDOT, City, County, or Special Road District), the ~~regulatory agency with statutory authority (if applicable)~~ MoDOT Multimodal Division (Rail Section), the railroad company, and/or transit agency are jointly involved in the development of engineering judgment or the performance of an engineering study. This joint process is accomplished through the efforts of a Diagnostic Team made up of the highway agency with jurisdiction, the ~~regulatory agency with statutory authority (if applicable)~~ MoDOT Multimodal Division (Rail Section), and the railroad company and/or transit agency (if applicable).

Missouri statutes designate MoDOT as the regulatory agency with statutory authority. Revised Dec. 2025.

07 In Part 8, the combination of traffic control devices selected or installed at a specific grade crossing is referred to as a "traffic control system."

08 The combination of railroad or LRT active traffic control devices used to inform road users at a grade crossing of the approach or presence of rail traffic and the necessary control equipment for the devices are referred to as a "grade crossing warning system." The "2023 AREMA Communications and Signals Manual" published by the American Railway Engineering and Maintenance-of-Way Association (AREMA) contains further information about grade crossing warning systems.

Standard:

09 ~~Except at grade crossings of privately-owned roadways, pathways, and sidewalks,~~ the traffic control devices, systems, and practices described in ~~this Manual~~ The EPG shall be used at all grade crossings ~~open to public travel~~on the state highway system, consistent with Federal, State, and local laws and regulations.

Support:

10 23 CFR 655.603 contains information on the applicability of ~~this Manual~~ the EPG at private grade crossings.

Section 8A.02 Highway-LRT Grade Crossings

Support:

01 Part 8 also describes the traffic control devices that are used in locations where light rail transit (LRT) vehicles are operating along streets and highways in mixed traffic with road users.

02 LRT is a mode of public transportation that employs LRT vehicles (commonly known as light rail vehicles, streetcars, or trolleys) that operate on rails in streets in mixed traffic, and LRT traffic that operates in semi-exclusive rights-of-way, or in exclusive rights-of-way. Where the phrase "LRT" is used in Part 8, it refers to light rail vehicles, streetcars, and trolleys. Grade crossings with LRT can occur at intersections or at midblock locations, including public and private driveways.

03 An initial educational campaign along with an ongoing program to continue to educate new drivers is beneficial when introducing LRT operations to an area and, hence, new traffic control devices.

04 LRT alignments can be grouped into one of the following three types (see definitions in Section 1C.02):

A. Exclusive: An LRT right-of-way that is grade-separated or protected by a fence or traffic barrier. Motor vehicles, pedestrians, and bicycles are prohibited within the right-of-way. This type of alignment does not have grade crossings and is not further addressed in Part 8.
B. Semi-exclusive: An LRT alignment that is in a separate right-of-way or along a street or railroad right-of-way where motor vehicles, pedestrians, and bicyclists have limited access and cross at designated locations only, such as at grade crossings where road users must yield the right-of-way to the light rail transit traffic.
C. Mixed-use: An alignment where LRT operates in mixed traffic with all types of road users. In a mixed-use alignment, the light rail transit traffic does not have the right-of-way over other road users at grade crossings and intersections. If the LRT traffic is 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.

Guidance:

05 If a highway-LRT grade crossing is equipped with flashing-light signals and is located 200 feet or less from an intersection or midblock location controlled by a traffic control signal, a pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon, the intersection should be provided with rail preemption in accordance with Sections 4F.19 and 8D.09 unless otherwise determined by the Diagnostic Team.

Option:

06 Where LRT vehicles are operating in a mixed-use alignment, traffic signal priority or preemption may be used as determined by a Diagnostic Team.

Standard:

07 Where LRT and railroads use the same tracks or adjacent tracks, the traffic control devices, systems, and practices for highway-rail grade crossings shall be used.

Section 8A.03 Traffic Control Systems and Practices at Grade Crossings

Support:

01 Because of the large number of significant variables to be considered, no single standard system of traffic control devices is universally applicable for all grade crossings.

Standard:

02 Before any new grade crossing traffic control system is installed or before modifications are made to an existing system, approval shall be obtained from the highway agency with jurisdiction, the ~~regulatory agency with statutory authority (if applicable),~~ MoDOT Multimodal Division (Rail Section) and the railroad company and/or transit agency.

03 The Diagnostic Team members shall make a recommendation, documented in an engineering study (see Section 8A.05), on new grade crossing traffic control systems and on proposed changes to an existing grade crossing traffic control system. The Diagnostic Team recommendation shall be made based on the Diagnostic Team's site visits, meetings, conference calls, or a combination of some or all of these methods.

04 Except as provided in ~~Paragraph 7 of this Section~~ the second Option paragraph below, operational changes made to a grade crossing traffic control system shall be evaluated by a Diagnostic Team.

05 Among the types of changes at a grade crossing for which a Diagnostic Team shall conduct an engineering study are: additions, removals, or modifications of the lanes approaching or traversing the grade crossing; addition or removal of tracks; significant changes in the number or speed of trains; significant changes in the number or speed of vehicles; addition of vehicle access near the grade crossing; additions or modifications to sidewalks; additions or modifications to bicycle lanes, especially if a counter-flow bicycle lane is added on a one-way street; changes to roadway use, including conversion to or from one-way operation or reversible lanes; and the installation of or significant operational changes to traffic control signals that might affect the grade crossing.

Option:

06 A Diagnostic Team may conduct an engineering study and make recommendations as part of the Quiet Zone establishment process (see Section 8A.11).

07 Where determined by the responsible public agency, the railroad company, and/or the transit agency, general maintenance activities or minor operational changes to the grade crossing traffic control system that do not have a negative impact on the overall operation of the traffic control system may be made without a review and determination by a Diagnostic Team.

Support:

08 Many other details of grade crossing traffic control systems that are not set forth in Part 8 are contained in publications such as the "2023 AREMA Communications and Signals Manual" published by the American Railway Engineering and Maintenance-of-Way Association (AREMA), the Third Edition of "Highway-Rail Crossing Handbook" published by the FHWA and the FRA, and the 2nd Edition of "Preemption of Traffic Signals Near Railroad Crossings" published by the Institute of Transportation Engineers (ITE).

Section 8A.04 Traffic Control Systems at Highway-LRT Grade Crossings

Support:

01 The combination of devices selected or installed at a specific highway-LRT grade crossing is referred to as a "Light Rail Transit Traffic Control System."

02 The normal rules of the road and traffic control priority identified in the "Uniform Vehicle Code" (see Section 1A.06) govern the order assigned to the movement of vehicles at an intersection unless the local agency determines that it is appropriate to assign a higher priority to LRT vehicles. Examples of

different types of LRT priority control include separate traffic control signal phases for LRT movements, restriction of movement of roadway vehicles in favor of LRT operations, and preemption of highway traffic signal control to accommodate LRT movements.

Standard:

03 Highway-LRT grade crossings in semi-exclusive alignments outside of a roadway shall be equipped with flashing-light signals, with or without automatic gates, unless a Diagnostic Team determines that the use of Crossbuck Assemblies, STOP signs, or YIELD signs alone would be adequate.

Section 8A.05 Engineering Studies at Grade Crossings

Standard:

01 The appropriate traffic control system to be used at a grade crossing shall be determined based on an engineering study conducted by a Diagnostic Team involving the highway agency with jurisdiction, the ~~regulatory agency with statutory authority (if applicable)~~ MoDOT Multimodal Division (Rail Section), and the railroad company and/or transit agency (as applicable).

Option:

02 The ~~regulatory agency with statutory authority (if applicable)~~ MoDOT Multimodal Division (Rail Section) may approve the grade crossing traffic control system.

Guidance:

03 Among the factors that should be considered in the determination by a Diagnostic Team of which traffic control devices would be appropriate to install at a grade crossing are road geometrics, stopping sight distance, clearing sight distance, the proximity of nearby roadway intersections (including the traffic control devices at the intersections), adjacent driveways, traffic volume across the grade crossing, extent of queuing upstream or downstream from the grade crossing, train volume, pedestrian and bicycle volumes, operation of passenger trains, presence of nearby passenger station stops, maximum allowable train speeds, variable train speeds, accelerating and decelerating trains, multiple tracks, high-speed train operation, number of school buses or hazardous material haul vehicles, and the crash history at or near the location.

Option:

04 The engineering study may include the Highway-Rail Intersection (HRI) components of the National Intelligent Transportation Systems (ITS) architecture, which is a USDOT accepted method for linking the highway, vehicles, and traffic management systems with rail operations and wayside equipment.

Support:

05 More detail on Highway-Rail Intersection components is available from the USDOT's Federal Railroad Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590, or www.fra.dot.gov.

Section 8A.06 Uniform Provisions

Standard:

01 All signs used in grade crossing traffic control systems shall be retroreflective or illuminated as described in Section 2A.21 to show the same shape and similar color to an approaching road user during both day and night.

02 No sign or signal shall be located in the center of an undivided highway, unless it is crashworthy (breakaway, yielding, or shielded with a longitudinal barrier or crash cushion) or unless it is placed on a raised island.

Guidance:

03 Any signs or signals placed on a raised island in the center of an undivided highway should be installed with a clearance of at least 2 feet from the outer edge of the raised island to the nearest edge of the sign or signal, except as permitted in Section 2A.16.

04 Where a raised median island is installed supplemental to an automatic gate to discourage road users from driving around a lowered gate, the Diagnostic Team should consider the length of the vehicle queues that typically form on the approach to the grade crossing when determining how far in advance of the grade crossing to extend the island.

05 If the roadway at a grade crossing includes a two-way left-turn lane (see Section 3B.05), the two-way left-turn lane should be discontinued in the immediate vicinity of the grade crossing by installing median islands, by designating the lane for left turns in one direction only, or by installing yellow diagonal markings in the lane (see Figure 3B-5). If yellow diagonal markings are used, the use of channelizing devices (see Section 3I.01), such as supplemental tubular markers, should also be considered.

Option:

06 If yellow diagonal markings are used, extending the automatic gate across the lane may be considered.

Section 8A.07 Minimum Track Clearance Distance and Clear Storage Distance

Support:

01 The upstream point of the minimum track clearance distance is determined in the following manner:

A. If an automatic gate is present on the approach, the upstream point is the portion of the automatic gate arm that is farthest from the nearest rail.

B. If an automatic gate is not present on the approach, the upstream point is the portion of the stop line that is farthest from the nearest rail.

C. If the roadway is not paved, the upstream point is the point that is farthest from the nearest rail that is 10 feet measured perpendicular from the nearest rail.

02 The downstream point of the minimum track clearance distance is 6 feet beyond the track(s) or the edge of the downstream highway-highway intersection, whichever is closer, and is measured perpendicular to the farthest rail, along the center line or edge line of the highway, as appropriate, to obtain the longer distance. Where an Exit Gate system (see Section 8D.05) is present, the downstream point is the point where the rear of the vehicle would be clear of the exit gate arm. In cases where the exit gate arm 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 longer distance.

03 Where two adjacent grade crossings (see Section 8A.08) are located within 200 feet of each other as measured along the highway, the minimum track clearance distance is measured from a point that is upstream of the first grade crossing to a point that is downstream from the second grade crossing.

04 Where a highway-highway intersection is located beyond a grade crossing, the clear storage distance defines on a lane-by-lane basis the area of the roadway between the downstream point of the minimum track clearance distance and the intersection stop line, yield line, or normal stopping point on the highway.

05 The Highway-Rail Crossing Handbook contains an illustration of the minimum track clearance distance and the clear storage distance.

06 The minimum track clearance distance and the clear storage distance are used by the Diagnostic Team to determine the appropriate traffic control devices and/or roadway treatments to be used at the grade crossing, and to determine the queue start-up and queue clearance time necessary where a traffic signal or hybrid beacon is interconnected with a grade crossing active warning system.

Section 8A.08 Adjacent Grade Crossings

Support:

01 Adjacent grade crossings sometimes exist within 200 feet of each other as measured along the highway between the inside rails. These closely-spaced grade crossings sometimes result from separate railroads or from a railroad and an LRT alignment operating in parallel corridors.

Guidance:

02 Where adjacent grade crossings are located within 200 feet of each other along the highway as measured along the highway between the inside rails, the Diagnostic Team should consider the possibility that rail traffic might arrive at a grade crossing when rail traffic is already occupying the adjacent grade crossing.

03 Where the shortest distance between the tracks at adjacent grade crossings, measured along the highway between the inside rails, is 100 feet or less, the grade crossings should be treated as one individual grade crossing.

04 Where the shortest distance between the tracks at adjacent grade crossings, measured along the highway between the inside rails, is more than 100 feet and less than 200 feet, additional signs or other appropriate traffic control devices should be used to inform approaching road users of the long distance to cross the tracks.

05 Where active traffic control devices are installed between adjacent grade crossings that are more than 100 feet apart and less than 200 feet apart as measured along the highway between the inside rails, the operation of the devices should provide additional time for vehicles to clear the extended minimum track clearance distance (see Section 8A.07) that results from the closely-spaced grade crossings.

06 Where the shortest distance between the tracks at adjacent grade crossings, measured along the highway between the inside rails, is more than 200 feet, the grade crossings should be treated as individual grade crossings and traffic control devices should be installed between the grade crossings.

Support:

07 The "2023 AREMA Communications and Signals Manual" published by the American Railway Engineering and Maintenance-of-Way Association (AREMA) contains further information and recommendations about the location and operation of active traffic control devices at adjacent grade crossings that are located within 200 feet of each other.

Section 8A.09 Grade Crossing Elimination

Option:

01 If a particular grade crossing appears to be redundant or unnecessary for motor vehicle, pedestrian, and bicycle traffic, an engineering study may be conducted to determine the costs and benefits of eliminating the crossing.

Guidance:

02 If an engineering study is conducted, any necessary improvements to adjacent grade crossings and the surrounding roadway network to accommodate diverted traffic should also be included in the analysis.

03 If the conclusion of the engineering study is that the grade crossing should be eliminated, a Diagnostic Team should use the engineering study to determine the appropriate steps that need to be taken to accomplish the grade crossing elimination.

Standard:

04 Where a grade crossing is eliminated, the traffic control devices for the crossing shall be removed, and shall be covered or turned from view in the interim period prior to removal.

Guidance:

05 If the existing traffic control devices at a multiple-track grade crossing become improperly placed or are no longer applicable because of the removal of some of the tracks, the existing devices should be relocated and/or modified.

06 Where a roadway is removed from a grade crossing, the roadway approaches in the railroad or LRT right-of-way should also be removed and appropriate signs and object markers should be placed at the roadway end in accordance with Section 2C.73.

07 Where a railroad or LRT is eliminated at a grade crossing, the tracks should be removed or paved over.

~~Option:~~

~~08 Based on engineering judgment, the TRACKS OUT OF SERVICE (R8-9) sign (see Figure 8B-1) may be temporarily installed until the tracks are removed or covered. The length of time before the tracks will be removed or covered may be considered in making the decision as to whether to install the sign.~~

MoDOT does not use the R8-9 sign. Revised Dec. 2025

Section 8A.10 Illumination at Grade Crossings

Support:

01 Illumination is sometimes installed at or adjacent to a grade crossing in order to provide better nighttime visibility of trains or LRT equipment and the grade crossing (for example, where a substantial amount of railroad or LRT operations are conducted at night, where grade crossings are blocked for extended periods of time, or where crash history indicates that road users experience difficulty in seeing trains or LRT equipment or traffic control devices during hours of darkness).

02 Recommended types and locations of luminaires for illuminating grade crossings are contained in the American National Standards Institute's "ANSI/IES RP-8-22, Recommended Practice: Lighting Roadway and Parking Facilities," which is available from the Illuminating Engineering Society.

Section 8A.11 Quiet Zone Treatments at Highway-Rail Grade Crossings

Support:

01 49 CFR Part 222 (Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule) prescribes Quiet Zone requirements and treatments.

Standard:

02 Any traffic control device and its application, where used as part of a Quiet Zone, shall comply with all applicable provisions of the MUTCD.

Section 8A.12 Grade Crossings Within or In Close Proximity to Circular Intersections

Support:

01 At circular intersections, such as roundabouts and traffic circles, that include or are within close proximity to a grade crossing, a queue of vehicular traffic could cause motor vehicles to stop on the grade crossing.

Standard:

02 Where circular intersections include or are within 200 feet of a grade crossing, an engineering study shall be made to determine if queuing could impact the grade crossing.

Guidance:

03 The Diagnostic Team should review the findings of the engineering study and determine the appropriate measures to clear highway traffic from the grade crossing prior to the arrival of rail traffic.

Support:

04 Among the actions that can be taken to keep the grade crossing clear of traffic or to clear traffic from the grade crossing prior to the arrival of rail traffic are the following:

A. Grade crossing regulatory and warning devices;
B. Highway traffic signals;
C. Traffic metering devices;
D. Activated signs;
E. Geometric design revisions, including reconstruction or elimination of the circular intersection; or
F. A combination of these or other actions.

Section 8A.13 Temporary Traffic Control Zones

Support:

01 Temporary traffic control planning provides for continuity of operations (such as movement of motor vehicle traffic, pedestrians, and bicyclists, transit operations, and access to property/utilities) when the normal function of a roadway at a grade crossing is suspended because of temporary traffic control operations. Temporary traffic control planning is also needed when traffic is detoured over an existing grade crossing.

Standard:

02 Traffic controls for temporary traffic control zones that include grade crossings shall be as provided in Part 6.

Guidance:

03 Where a temporary traffic control zone extends over an active grade crossing (see Section 6N.17), and where the direction of traffic in any lane is reversed over the grade crossing, the railroad company or transit agency should be part of the temporary traffic control planning process. Where a grade crossing warning system is not modified to support the temporary traffic control operation, at least one uniformed law enforcement officer should be in place at all times that rail traffic might approach or occupy the grade crossing.

04 Where traffic is detoured over an existing passive grade crossing, a temporary traffic control plan (see Section 6B.01) should be prepared.

05 Public and private agencies, emergency services, businesses, and railroad companies or transit agencies should meet to plan appropriate traffic detours and the necessary signing, marking, signalization, and flagging requirements for operations during temporary traffic control zone activities or during the period when traffic is being detoured over an existing passive grade crossing. Consideration should be given to the length of time that the grade crossing is to be closed, the length of time that a detour is to be in place, the type of rail or LRT and highway traffic affected, the time of day, and the materials and techniques of repair.

06 The agencies responsible for the operation of the LRT and highway should be contacted when the initial planning begins for any temporary traffic control zone that might directly or indirectly influence the flow of traffic on facilities where LRT vehicles operate on a mixed-use alignment.

07 Temporary traffic control operations should minimize the inconvenience, delay, and crash potential to affected traffic. Prior notice should be given to affected public or private agencies, emergency services, businesses, railroad companies or transit agencies, and road users before the free movement of road users or rail traffic is infringed upon or blocked.

Support:

08 Section 6N.17 contains additional information regarding temporary traffic control zones in the vicinity of grade crossings, and Figure 6P-46 of the MUTCD shows an example of a typical situation that might be encountered.

CHAPTER 8B. SIGNS [EPG 913.2]

Section 8B.01 Purpose and Application

Support:

01 Passive traffic control systems, consisting of signs and pavement markings only, identify and direct attention to the location of a grade crossing and advise road users to reduce their speed or stop at the grade crossing as necessary in order to yield to any rail traffic occupying, or approaching and in proximity to, the grade crossing.

02 Signs and markings regulate, warn, and guide the road users so that they, as well as LRT vehicle operators on mixed-use alignments, can take appropriate action when approaching a grade crossing.

03 Unless otherwise provided in this ~~Chapter~~ article, the provisions of Part 2 are applicable to the design and location of signs at grade crossings.

Section 8B.02 Sizes of Grade Crossing Signs

Standard:

01 The ~~minimum~~ sizes of grade crossing signs shall be as shown in Table 8B-1.

~~Option:~~

~~02 Signs larger than those shown in Table 8B-1 may be used (see Section 2A.07).~~

MoDOT has standardized sign sizes for various conditions which meet or exceed MUTCD minimum sizes. Revised Dec. 2025.

Table 8B-1. Grade Crossing Sign and Plaque Minimum Sizes

Sign or Plaque	Sign Designation	EPG Article	Conventional Road (in.)			Freeway/ Expressway (in.)
			Standard	Oversized	Special	Mainline and Ramps
STOP	R1-1	913.2.4 913.2.5	36 X 36	48 X 48	-	48 X 48
YIELD	R1-2	913.2.4 913.2.5	48 X 48	60 X 60	-	60 X 60
No Right Turn - Train (symbol)	R3-1a	913.4.10	24 X 30	30 X 36	-	-
No Left Turn - Train (symbol)	R3-2a	913.4.10	24 X 30	30 X 36	-	-
DO NOT STOP ON TRACKS	R8-8	913.2.7	24 X 30	24 X 30	-	36 X 48
STOP HERE ON RED	R10-6	913.2.8	24 X 36	24 X 36	-	-
LEFT (RIGHT) LANE SIGNAL	R10-10b	913.4.11 913.4.12	24 X 30	30 X 36		30 X 36
LEFT (RIGHT) TURN LANE SIGNAL	R10-10c	913.4.11 913.4.12	24 X 30	30 X 36	-	30 X 36
Grade Crossing (Crossbuck) Rail Road Responsibility	R15-1	913.2.3	48 x 9	-	-	48 x 9
Number of Tracks (plaque) Rail Road Responsibility	R15-2P	913.2.3	27 X 18	-	-	27 X 18
EXEMPT	R15-3P	903.19.7	24 X 12	-	-	-
Railroad Crossing	W10-1	913.2.6	42 dia.	-	-	48 dia.
EXEMPT	W10-1aP	913.2.9	24 X 12	-	-	-
Crossroad Railroad Crossing	W10-2	903.19.6	36 X 36	48 X 48	-	48 X 48
Side Road Railroad Crossing	W10-3	903.19.6	36 X 36	48 X 48	-	48 X 48
T-Intersection Railroad Crossing	W10-4	903.19.6	36 X 36	48 X 48	-	48 X 48
Low Ground Clearance (symbol)	W10-5	913.2.14	36 X 36	48 X 48	-	48 X 48
Low Ground Clearance (plaque)	W10-5P	913.2.14	30 X 24	-	-	30 X 24
No Train Horn (plaque)	W10-9P	913.2.15	30 X 24	-	-	30 X 24
Emergency Notification	I13-1	913.2.16	12 X 9	-	-	12 X 9

Note:

1. Dimensions are shown in inches and are shown as width x height.
2. Table 9A-1 shows the minimum sizes that may be used for grade crossing signs and plaques that face shared-use paths and pedestrian facilities.

Section 8B.03 Grade Crossing (Crossbuck) Sign (R15-1) and Number of Tracks Plaque (R15-2P) at Active and Passive Grade Crossings

Standard:

01 The Grade Crossing (R15-1) sign (see Figure 8B-1), commonly identified as the Crossbuck sign, shall be retroreflective white with the words RAILROAD CROSSING in black lettering, mounted as shown in Figure 8B-2.

Support:

M01A The Grade Crossing (R15-1) sign and Number of Tracks (R15-2P) plaque are provided by the appropriate railroad company. Railroad companies and/or transit agencies are responsible for the installation and maintenance of these signs.

MoDOT specific language from the EPG. Revised Dec. 2025.

~~02 In most States, the Crossbuck sign requires road users to yield the right-of-way to rail traffic at a grade crossing.~~

RSMo 304.035 requires drivers to yield the right-of-way to rail traffic at grade crossings, but there is no mention of the Crossbuck sign in the state statutes. Revised Dec. 2025.

Standard:

03 As a minimum, one Crossbuck sign shall be used on each highway approach to every highway-rail grade crossing, alone or in combination with other traffic control devices.

04 As a minimum, one Crossbuck sign shall be used on each highway approach to every highway-LRT grade crossing where flashing-light signals or automatic gates are used, alone or in combination with other traffic control devices.

Option:

05 A Crossbuck sign may be used on a highway approach to a highway-LRT grade crossing where flashing-light signals or automatic gates are not used, alone or in combination with other traffic control devices.

Standard:

06 If there are two or more tracks at a grade crossing, the number of tracks shall be indicated on a supplemental Number of Tracks (R15-2P) plaque (see Figure 8B-1) of inverted T shape mounted below the Crossbuck sign in the manner shown in Figure 8B-2.

07 On each approach to a highway-rail grade crossing and, if used, on each approach to a highway-LRT grade crossing, the Crossbuck sign shall be installed on the right-hand side of the highway on each approach to the grade crossing. Where restricted sight distance or unfavorable highway geometry exists on an approach to a grade crossing, or where there is a one-way multi-lane approach, an additional Crossbuck sign shall be installed on the left-hand side of the highway, possibly placed back-to-back with the Crossbuck sign for the opposite approach, or otherwise located so that two Crossbuck signs are displayed for that approach.

08 A strip of retroreflective white material not less than 2 inches in width shall be used on the back of each blade of each Crossbuck sign for the length of each blade at all passive grade crossings, except those where Crossbuck signs have been installed back-to-back or where double-faced Crossbuck signs have been installed.

Option:

09 A strip of retroreflective white material not less than 2 inches in width may be used on the back of each blade of each Crossbuck sign for the length of each blade at active grade crossings.

Guidance:

10 Minimum clearance dimensions for crossbuck signs relative to the proximity to the nearest rail should conform to the requirements of the railroad company and/or transit agency, and ~~the regulatory agency with statutory authority (if applicable)~~ MoDOT Multimodal Division (Rail Section).

11 Except as provided in ~~Paragraph 12 of this Section~~ the Option paragraph below, the mounting height of Crossbuck signs, measured vertically from the center of the sign to the elevation of the near edge of the pavement, should be approximately 9 feet (see Figure 8B-2).

Option:

12 The 9-foot mounting height for the Crossbuck sign may be varied as required by local conditions and may be increased to accommodate signs mounted below the Crossbuck sign.

Section 8B.04 Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings

Support:

M00 The MoDOT Multimodal Division developed a Stop Sign Fact Sheet to help determine if a Stop sign should be displayed below the Crossbuck sign instead of a Yield sign at passive railroad crossings.

MoDOT specific language from the EPG. Revised Dec. 2025.

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~~ the Option paragraph below. 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~~ MoDOT Multimodal Division (Rail Section) or highway authority having jurisdiction over the roadway approach determines that a STOP sign is appropriate.

Guidance:

06 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.

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.

Figure 8B-1. Regulatory Signs and Plaques for Grade Crossings

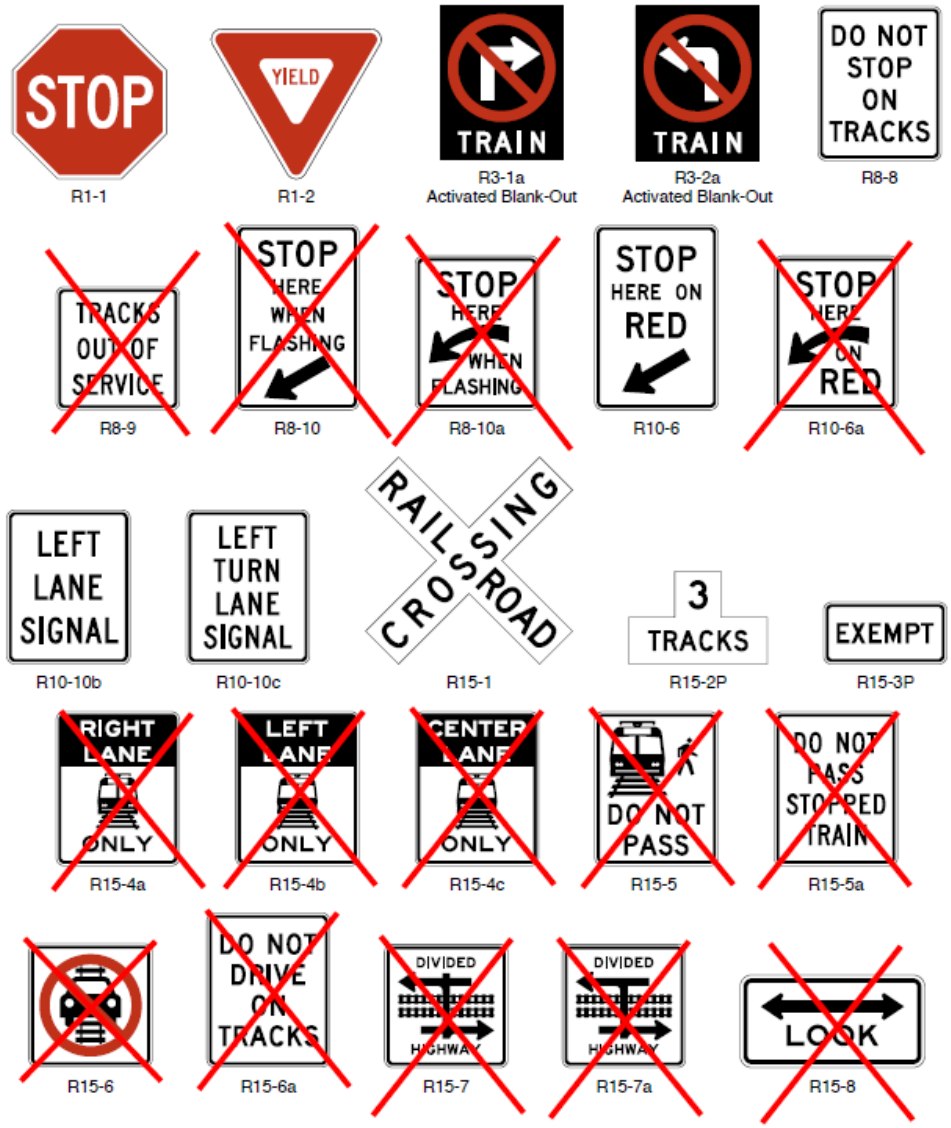
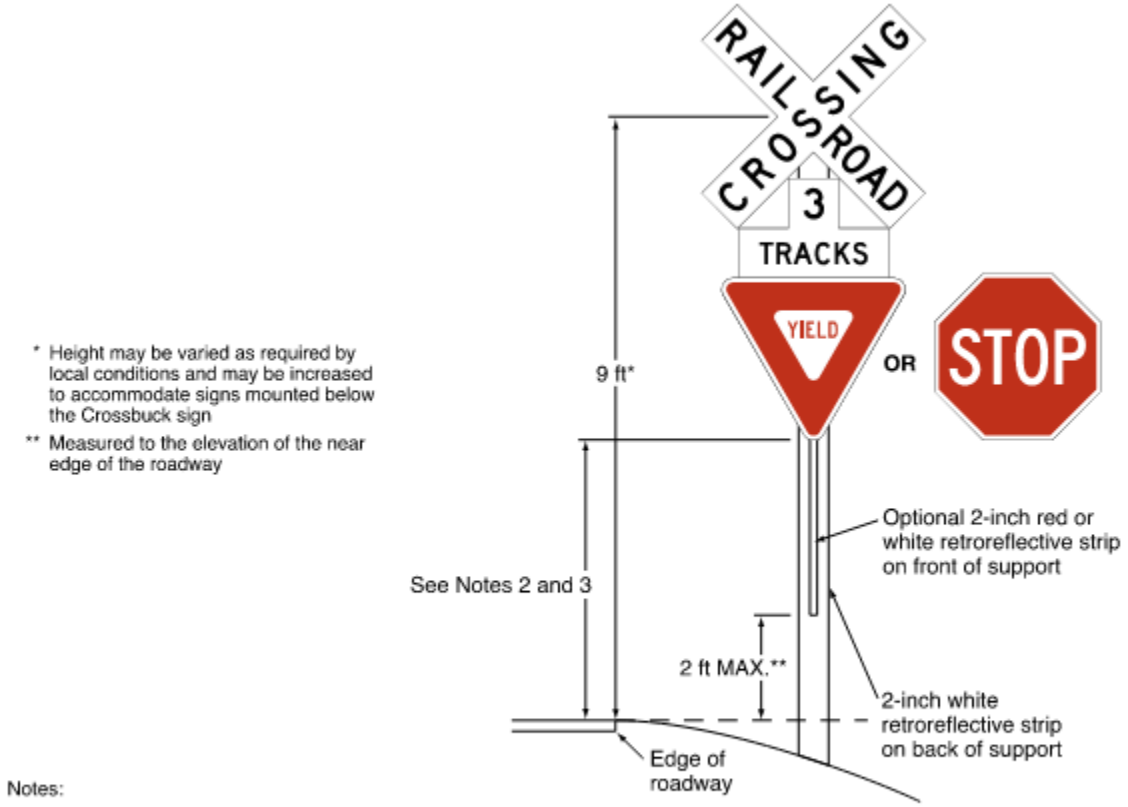


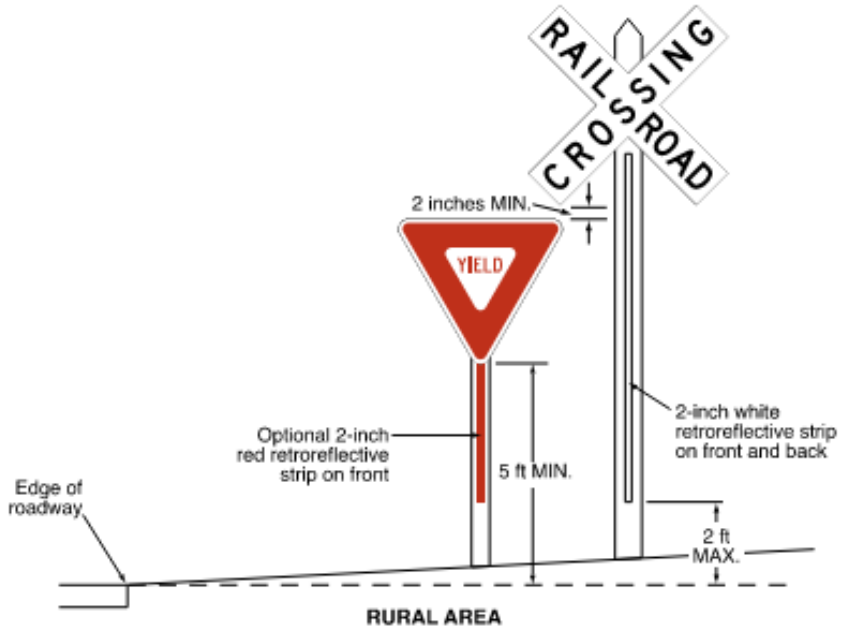
Figure 8B-2. Crossbuck Assembly with a YIELD or STOP Sign on the Crossbuck Sign Support



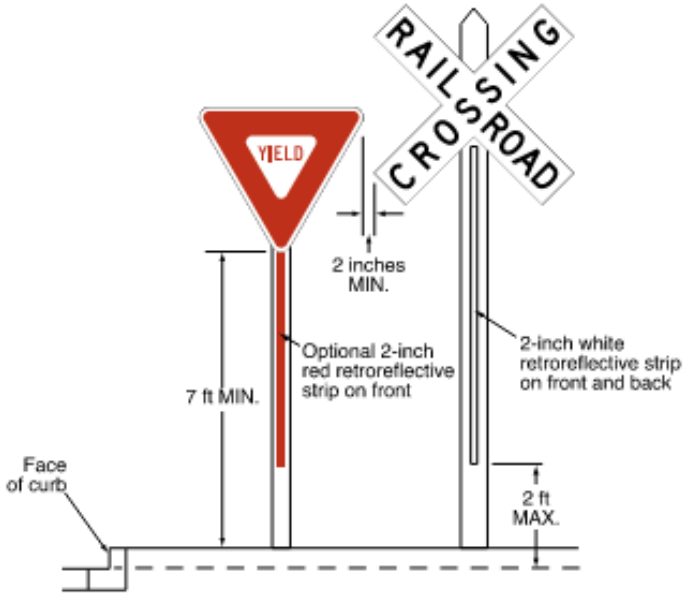
Notes:

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.
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

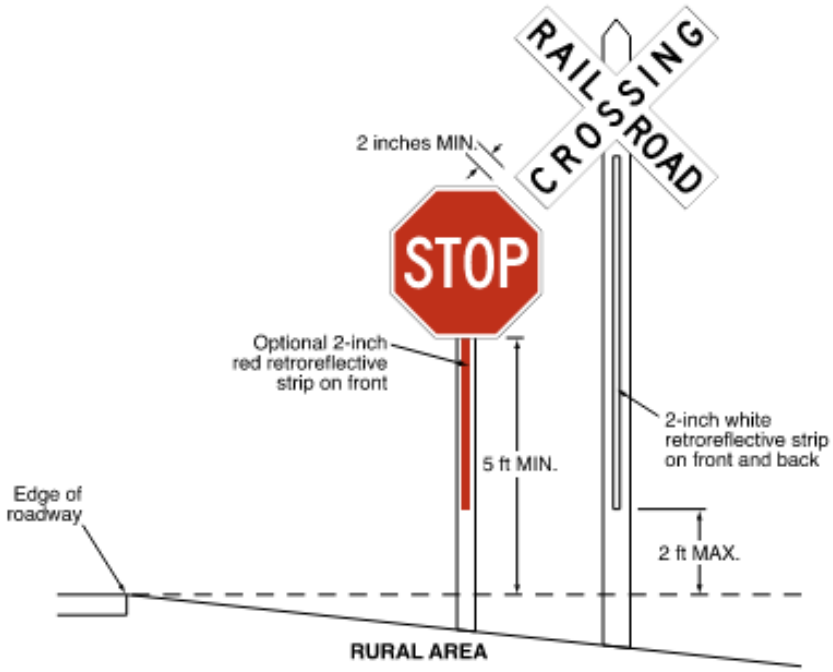


AREA WITH PEDESTRIAN MOVEMENTS OR PARKING

Notes:

1. YIELD signs are used only at passive crossings.
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.
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.

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)~~ MoDOT Multimodal Division (Rail Section), 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~~ the first Option paragraph below. 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.

Section 8B.05 Use of STOP (R1-1) or YIELD (R1-2) Signs without Crossbuck Signs at Highway-LRT Grade Crossings

Guidance:

01 The use of only STOP or YIELD signs for road users at highway-LRT grade crossings should be limited to those crossings where the need and feasibility is determined by the Diagnostic Team. Such crossings should have all of the following characteristics:

A. The crossing roadways are secondary in character (such as a minor street with one lane in each direction, an alley, or a driveway) with low traffic volumes and low speed limits. The specific thresholds of traffic volumes and speed limits should be determined by the local agencies.

B. The line of sight for an approaching LRT operator is adequate from a sufficient distance such that the operator can sound an audible signal and bring the LRT equipment to a stop before arriving at the crossing.

C. The road user has sufficient sight distance at the stop line to permit the vehicle to cross the tracks before the arrival of the LRT equipment.

D. If at an intersection of two roadways, the intersection does not meet the warrants for a traffic control signal as provided in Chapter 4C.

E. The LRT tracks are located such that motor vehicles are not likely to stop on the tracks while waiting to enter a crossroad or highway.

Standard:

02 For all highway-LRT grade crossings where only STOP (R1-1) or YIELD (R1-2) signs are installed, the placement shall comply with the requirements of Section 2B.18. Stop Ahead (W3-1) or Yield Ahead (W3-2) Advance Warning signs shall also be installed if the criteria for their installation given in Section 2C.35 is met.

Section 8B.06 Grade Crossing Advance Warning Signs (W10-1 through W10-4)

Standard:

01 A Grade Crossing Advance Warning (W10-1) sign (see Figure 8B-4) shall be used on each highway in advance of every grade crossing, except in the following circumstances:

A. On an approach to a grade crossing from an intersection with a parallel highway if the distance from the nearest rail of the tracks to the edge of the parallel roadway is less than 100 feet and W10-2, W10-3, or W10-4 signs are used on the approaches of the parallel highway (see ~~Paragraph 5 of this Section~~ the third Standard paragraph below);

~~B. On low-volume, low-speed highways crossing minor spurs or other tracks that are infrequently used and road users are directed by an authorized person on the ground to not enter the crossing at all times that approaching rail traffic is about to occupy the crossing;~~

C. In business or commercial areas where active grade crossing traffic control systems are in use;

D. Where physical conditions do not permit even a partially effective display of the sign; or

E. At highway-LRT grade crossings where Crossbuck signs are not used (see Section 8B.03).

MoDOT does not classify any of its routes to be "low volume" rural roads by definition even though many routes do have AADTs below 400, these routes are treated like any other minor route with higher AADT with respect to sign applications. Revised Dec. 2025

02 The placement of the Grade Crossing Advance Warning sign shall be in accordance with Section 2C.04 and Table 2C-3.

03 If a YIELD or STOP sign is present at a passive grade crossing, a Yield Ahead (W3-2) or Stop Ahead (W3-1) Advance Warning sign shall also be installed if the criteria for their installation given in Section 2C.35 is met. If a Yield Ahead or Stop Ahead sign is installed on the approach to the crossing, the W10-1 sign shall be installed upstream from the Yield Ahead or Stop Ahead sign. The Yield Ahead or Stop Ahead sign shall be located in accordance with Table 2C-3. The minimum distance between the signs shall be in accordance with Section 2C.04 and Table 2C-3.

Option:

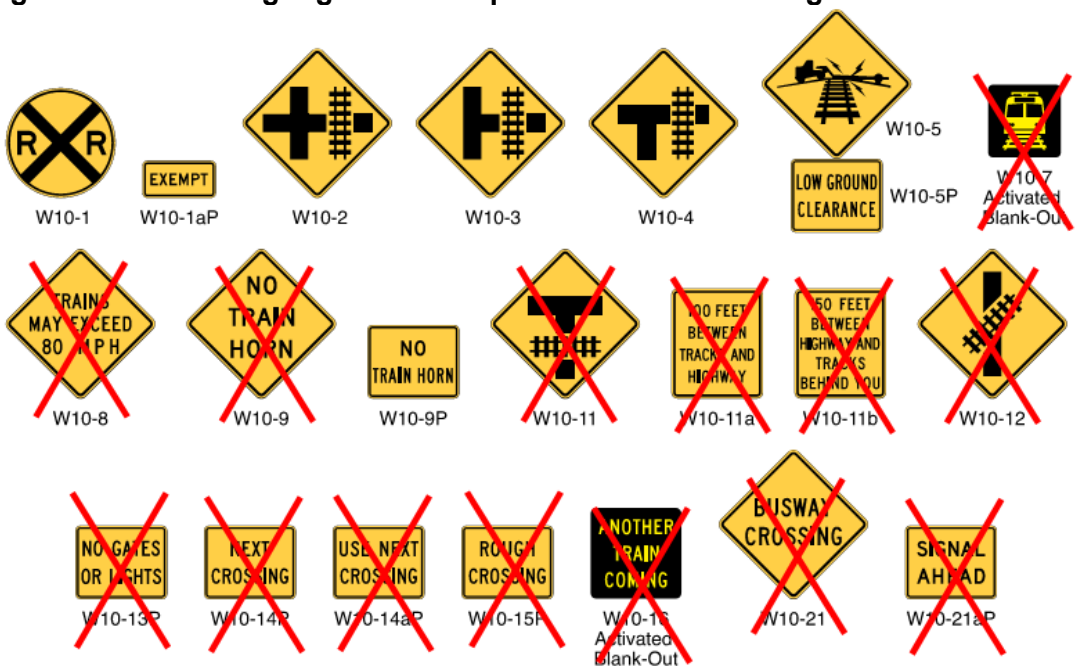
04 On divided highways and one-way streets, an additional W10-1 sign may be installed on the left-hand side of the roadway.

Standard:

05 If the distance between the tracks and a parallel highway, from the nearest rail of the tracks to the edge of the parallel roadway, is less than 100 feet, a W10-2, W10-3, or W10-4 sign (see Figure 8B-4) shall be installed on each approach of the parallel highway to warn road users making a turn that they will encounter a grade crossing soon after making a turn, and a W10-1 sign for the approach to the tracks shall not be required to be between the tracks and the parallel highway.

06 If the W10-2, W10-3, or W10-4 sign is used, sign placement in accordance with the guidelines for Intersection Warning signs in Table 2C-3 using the speed of through traffic shall be measured from the highway intersection.

Figure 8B-4. Warning Signs and Plaques for Grade Crossings



Note: The W10-11 sign is a W10-3 sign modified for geometrics. Other signs can be oriented or revised as needed to better portray the geometrics of the roadways and the tracks.

Guidance:

07 If the distance between the tracks and the parallel highway, from the nearest rail of the tracks to the edge of the parallel roadway, is 100 feet or more, a W10-1 sign should be installed in advance of the grade crossing, and the W10-2, W10-3, or W10-4 sign should not be used on the parallel highway.

Section 8B.07 DO NOT STOP ON TRACKS Sign (R8-8)

Guidance:

01 If motor vehicle queues are likely to extend onto the tracks, a DO NOT STOP ON TRACKS (R8-8) sign (see Figure 8B-1) should be used.

Support:

02 Locations where motor vehicles could queue onto the grade crossing include intersections where a STOP or YIELD sign is installed downstream of the grade crossing, where there is a downstream circular intersection, or where there is a pre-signal installed at the grade crossing.

Guidance:

03 The R8-8 sign, if used, should be located on the right-hand side of the highway on either the near or far side of the grade crossing, depending upon which position provides better visibility to approaching drivers.

Option:

04 DO NOT STOP ON TRACKS signs may be placed on both sides of the track.

05 On divided highways and one-way streets, a second DO NOT STOP ON TRACKS sign may be placed on the near or far left-hand side of the highway at the grade crossing to further improve the visibility of the sign.

~~Section 8B.08 TRACKS OUT OF SERVICE Sign (R8-9)~~

~~Option:~~

~~01 The TRACKS OUT OF SERVICE (R8-9) sign (see Figure 8B-1) may be used at a grade crossing instead of a Crossbuck (R15-1) sign and a Number of Tracks (R15-2P) plaque or instead of a Crossbuck Assembly where railroad or LRT tracks have been temporarily or permanently abandoned, but only until such time that the tracks are removed or covered.~~

~~Standard:~~

~~02 Where tracks are out of service, except as provided in Paragraphs 3 and 4 of this Section, traffic control devices and gate arms shall be removed and the signal heads shall be removed or hooded or turned from view to clearly indicate that they are not in operation.~~

~~03 Where tracks are out of service, even if a TRACKS OUT OF SERVICE (R8-9) sign has been installed, an Emergency Notification System (I13-1) sign (see Section 8B.27) shall be retained at the grade crossing and shall be visible to road users.~~

~~Guidance:~~

~~04 Warning signs, such as the Low Ground Clearance Grade Crossing (W10-5) sign and the Skewed Crossing (W10-12) sign, that warn road users about physical roadway conditions at the grade crossing should be left in place after the tracks are taken out of service, until the physical condition is no longer present.~~

~~Standard:~~

~~05 The R8-9 sign shall be removed when the tracks have been removed or paved over or when the grade crossing is returned to service. The Emergency Notification System (I13-1) sign shall be removed when the tracks have been removed or paved over.~~

MoDOT does not use the R8-9 sign. Revised Dec. 2025

~~Section 8B.09 STOP HERE WHEN FLASHING Signs (R8-10 and R8-10a)~~

~~Option:~~

~~01 The STOP HERE WHEN FLASHING (R8-10 and R8-10a) signs (see Figure 8B-1) may be used at a grade crossing to inform drivers of the location of the stop line or the point at which to stop when the flashing light signals (see Section 8D.02) are activated.~~

MoDOT does not use the R8-10 or R8-10a sign. Revised Dec. 2025

Section 8B.10 STOP HERE ON RED Signs (R10-6 ~~and R10-6a~~)

Support:

01 The STOP HERE ON RED (R10-6 ~~or R10-6a~~) sign (see Figure 8B-1) defines and facilitates observance of stop lines at traffic control signals.

Option:

02 STOP HERE ON RED signs may be used at locations where motor vehicles frequently violate the stop line or where it is not obvious to road users where to stop.

Guidance:

03 If possible, stop lines should be placed at a point where the motor vehicle driver has adequate sight distance along the track.

MoDOT does not use the R10-6a sign. Revised Dec. 2025

Section 8B.11 EXEMPT Grade Crossing Plaques (R15-3P and W10-1aP)

Option:

01 Where authorized by ~~law or regulation~~ MoDOT Multimodal Division (Rail Section), an EXEMPT (R15-3P) plaque (see Figure 8B-1) with a white background may be used below the Crossbuck sign or Number of Tracks plaque, if present, at the grade crossing, and an EXEMPT (W10-1aP) plaque (see Figure 8B-4) with a fluorescent yellow background may be used below the Grade Crossing Advance Warning (W10-1 through W10-4) sign.

02 Where neither the Crossbuck sign nor the advance warning signs exist for a particular highway-LRT grade crossing, an EXEMPT (R15-3P) plaque with a white background may be placed on its own post on the near right-hand side of the approach to the crossing.

Support:

03 These plaques inform drivers of motor vehicles carrying passengers for hire, school buses carrying students, or motor vehicles carrying hazardous materials that a stop is not required at certain designated grade crossings, except when rail traffic is approaching or occupying the grade crossing, or the driver's view is blocked.

Section 8B.12 Light Rail Transit Only Lane Signs (R15-4 Series)

Support:

M00 Reserved for future use. R15-4 Series signs are not currently used on MoDOT facilities.

~~01 The Light Rail Transit Only Lane (R15-4 series) signs (see Figure 8B-1) are used for multi-lane operations, where road users might need additional guidance on lane use and/or restrictions.~~

~~Option:~~

~~02 Light Rail Transit Only Lane signs may be used on a roadway lane limited to only LRT use to indicate the restricted use of a lane in semi-exclusive and mixed alignments.~~

~~*Guidance:*~~

~~*03 If used, the R15-4a, R15-4b, and R15-4c signs should be installed on posts adjacent to the roadway containing the LRT tracks or overhead above the LRT only lane.*~~

~~Option:~~

~~04 If the trackway is paved, preferential lane markings (see Chapter 3E) may be installed, but only in combination with Light Rail Transit Only Lane signs.~~

~~Support:~~

~~05 The trackway is the continuous way designated for LRT, including the entire dynamic envelope. Section 8C.06 contains more information regarding the dynamic envelope.~~

MoDOT does not currently use the R15-4 sign. Revised Dec. 2025

Section 8B.13 Do Not Pass Light Rail Transit Signs (R15-5 and R15-5a)

Support:

M00 Reserved for future use. R15-5 and R15-5a signs are not currently used on MoDOT facilities.

~~01 A Do Not Pass Light Rail Transit (R15-5) sign (see Figure 8B-1) is used to indicate that motor vehicles are not allowed to pass LRT vehicles that are loading or unloading passengers where there is no raised platform or physical separation from the lanes upon which other motor vehicles are operating.~~

~~Option:~~

~~02 The R15-5 sign may be used in mixed-use alignments and may be mounted overhead where there are multiple lanes.~~

~~03 Instead of the R15-5 symbol sign, a regulatory sign with the word message DO NOT PASS STOPPED TRAIN (R15-5a) may be used (see Figure 8B-1).~~

~~*Guidance:*~~

~~*04 If used, the R15-5 or R15-5a sign should be located immediately before the LRT boarding area.*~~

MoDOT does not currently use the R15-5 or R15-5a sign. Revised Dec. 2025

Section 8B.14 No Motor Vehicles On Tracks Signs (R15-6 and R15-6a)

Support:

M00 Reserved for future use. R15-6 and R15-6a signs are not currently used on MoDOT facilities.

~~01 The No Motor Vehicles On Tracks (R15-6) sign (see Figure 8B-1) is used where there are adjacent traffic lanes separated from the LRT lane by a curb or pavement markings.~~

~~*Guidance:*~~

~~*02 The DO NOT ENTER (R5-1) sign should be used where a road user could wrongly enter an LRT only street.*~~

~~Option:~~

~~03 A No Motor Vehicles On Tracks sign may be used to deter motor vehicles from driving on the trackway. It may be installed on a 3-foot flexible post between double tracks, on a post alongside the tracks, or overhead.~~

~~04 Instead of the R15-6 symbol sign, a regulatory sign with the word message DO NOT DRIVE ON TRACKS (R15-6a) may be used (see Figure 8B-1).~~

~~05 A reduced size of 12 x 12 inches may be used if the R15-6 sign is installed between double tracks.~~

~~**Standard:**~~

~~**06 The smallest size for the R15-6 sign shall be 12 x 12 inches.**~~

MoDOT does not currently use the R15-6 or R15-6a sign. Revised Dec. 2025

Section 8B.15 Divided Highway with Light Rail Transit Crossing Signs (R15-7 Series)

Support:

M00 Reserved for future use. R15-7 Series signs are not currently used on MoDOT facilities.

~~Option:~~

~~01 The Divided Highway with Light Rail Transit Crossing (R15-7 or R15-7a) sign (see Figure 8B-1) may be used as a supplemental sign on the approach legs of a roadway that intersects with a divided highway where LRT equipment operates in the median. The sign may be placed beneath a STOP sign or mounted separately.~~

~~*Guidance:*~~

~~*02 The number of tracks displayed on the R15-7 or R15-7a sign should be the same as the actual number of tracks.*~~

~~**Standard:**~~

~~**03 When the Divided Highway with Light Rail Transit Crossing sign is used at a four-leg intersection, the R15-7 sign shall be used. When used at a T-intersection, the R15-7a sign shall be used.**~~

MoDOT does not currently use the R15-7 series signs. Revised Dec. 2025

Section 8B.16 Low Ground Clearance Grade Crossing Sign (W10-5)

Guidance:

01 If the highway profile conditions are sufficiently abrupt to create a hang-up situation for long wheelbase vehicles or for trailers with low ground clearance, the Low Ground Clearance Grade Crossing (W10-5) sign (see Figure 8B-4) should be installed in advance of the grade crossing.

Standard:

02 Because this symbol might not be readily recognizable by the public, the Low Ground Clearance Grade Crossing (W10-5) warning sign shall be accompanied by a LOW GROUND CLEARANCE (W10-5P) educational plaque. The LOW GROUND CLEARANCE educational plaque shall remain in place for at least 3 years after the initial installation of the W10-5 sign (see Section 2A.09).

Guidance:

03 Because other vehicle types and combinations also face the potential risk of hanging up at a grade crossing, word message warning signs and selective exclusion regulatory signs (see Section 2B.45) for specific vehicle types and combinations should be used in addition to, or in place of, the Low Ground Clearance Grade Crossing (W10-5) sign.

Support:

04 While not all inclusive, some potential low ground clearance vehicles and combinations include single-unit trucks, buses, motor coaches, low-boy trailers, car carriers, and recreational vehicles.

Guidance:

05 Auxiliary plaques such as AHEAD, NEXT CROSSING, or USE NEXT CROSSING (with appropriate arrows), or a supplemental distance plaque should be placed below the W10-5 sign at the nearest intersecting highway where a vehicle can detour or at a point on the highway wide enough to permit a U-turn.

06 If engineering judgment of roadway geometric and operating conditions confirms that motor vehicle speeds across the tracks should be below the posted speed limit, a W13-1P advisory speed plaque should be posted.

07 A signed detour should be installed to guide potential hang-up vehicles to alternate nearby crossings to avoid the potential hang-up condition.

Support:

08 Information on ground clearance requirements at grade crossings is available in the 2019 edition of the "American Railway Engineering and Maintenance-of-Way Association's Engineering Manual," or in "A Policy on Geometric Design of Highways and Streets," 2018 Edition, AASHTO.

09 An inventory of crossings with low ground clearance concerns, including a list of potential vehicle types that could hang up on the crossing, can be useful in tracking locations of low ground clearance crossings. Specific geometric conditions, known incidents, or anecdotal evidence of vehicle hang-ups can also be used to identify crossings with low ground clearance concerns.

~~Section 8B.17 Light Rail Transit Approaching-Activated Blank-Out Warning Sign (W10-7)~~

~~Support:~~

~~01 The Light Rail Transit Approaching-Activated Blank-Out (W10-7) warning sign (see Figure 8B-4) supplements the traffic control devices to warn road users crossing the tracks of approaching LRT equipment.~~

~~Option:~~

~~02 A Light Rail Transit Approaching-Activated Blank-Out warning sign may be used at signalized intersections near highway-LRT grade crossings or at crossings controlled by STOP signs or automatic gates.~~

~~Support:~~

~~03 The provisions contained in Chapter 2L for blank-out signs are applicable to the W10-7 sign.~~

MoDOT does not use the W10-7 sign. Revised Dec. 2025

~~Section 8B.18 Another Train Coming Sign (W10-16)~~

~~Support:~~

~~01 Conflicts between vehicles or vulnerable road users and multiple trains can occur at multi-track crossings on sidewalks, pathways, and at crossings in station areas where grade crossing users might not consider the arrival of another train on a different track.~~

~~*Guidance:*~~

~~*02 The decision to provide notification of another train should be made by a Diagnostic Team. In making this determination, the Diagnostic Team should consider the pedestrian usage, pedestrian collision history, train speeds and volumes, operating plans and/or schedules, and the presence of a nearby station or transit center.*~~

~~Option:~~

~~**03 An ANOTHER TRAIN COMING (W10-16) train-activated blank-out sign (see Figure 8B-4) may be used to provide notification of another train coming. For added sign conspicuity, a Warning Beacon may be used in accordance with the requirements of Section 4S.03.**~~

MoDOT does not use the W10-16 sign. Revised Dec. 2025

~~Section 8B.19 TRAINS MAY EXCEED 80 MPH Sign (W10-8)~~

~~*Guidance:*~~

~~*01 Where trains are permitted to travel at speeds exceeding 80 mph, a TRAINS MAY EXCEED 80 MPH (W10-8) sign (see Figure 8B-4) should be installed facing road users approaching the highway-rail grade crossing.*~~

~~*02 If used, the TRAINS MAY EXCEED 80 MPH signs should be installed between the Grade Crossing Advance Warning (W10-1 through W10-4) sign (see Figure 8B-4) and the highway-rail grade crossing on all approaches to the highway-rail grade crossing. The locations should be determined based on specific site conditions.*~~

MoDOT does not use the W10-8 sign. Revised Dec. 2025

Section 8B.20 NO TRAIN HORN Sign or Plaque (~~W10-9 and~~ W10-9P)

Standard:

01 ~~Either a NO TRAIN HORN (W10-9) sign (see Figure 8B-4) or a~~ A NO TRAIN HORN (W10-9P) plaque (see Figure 8B-4) shall be installed in each direction at each highway-rail grade crossing where a Quiet Zone has been established in compliance with 49 CFR Part 222. ~~If a~~ Where it is used, a W10-9P plaque ~~is used, it~~ shall supplement and be mounted directly below the Grade Crossing Advance Warning (W10-1 through W10-4) sign (see Figure 8B-4).

MoDOT does not use the W10-9 sign. Revised Dec. 2025

~~Section 8B.21 Storage Space Signs (W10-11, W10-11a, and W10-11b)~~

~~*Guidance:*~~

~~*01 A Storage Space (W10-11) sign supplemented by a word message Storage Space Ahead (W10-11a) sign (see Figure 8B-4) should be used where there is a highway intersection in close proximity to the grade crossing and the Diagnostic Team determines that adequate space is not available to store a design vehicle(s) between the highway intersection and the train or LRT equipment dynamic envelope.*~~

02 The Storage Space (W10-11 and W10-11a) signs should be mounted in advance of the grade crossing at an appropriate location to advise drivers of the space available for motor vehicle storage between the highway intersection and the grade crossing.

Option:

03 A word message Storage Space Behind (W10-11b) sign (see Figure 8B-4) may be mounted beyond the grade crossing at the highway intersection under the STOP or YIELD sign or just prior to the signalized intersection to remind drivers of the storage space between the tracks and the highway intersection.

Standard:

04 A Storage Space (W10-11) sign shall not be used as a replacement for the required Advance Warning (W10-1) sign. If used, the Storage Space sign shall be used in addition to the W10-1 sign and shall be mounted on a separate post.

MoDOT does not use the W10-11, W10-11a, or W10-11b signs. Revised Dec. 2025

Section 8B.22 Skewed Crossing Sign (W10-12)

Option:

01 The Skewed Crossing (W10-12) sign (see Figure 8B-4) may be used at a skewed grade crossing to warn road users that the tracks are not perpendicular to the highway.

Guidance:

02 If the Skewed Crossing sign is used, the symbol should show the direction of the crossing (near left to far right as shown on the sign image in Figure 8B-4, or the mirror image if the track goes from far left to near right).

Standard:

03 The Skewed Crossing sign shall not be used as a replacement for the required Advance Warning (W10-1) sign. If used, the Skewed Crossing sign shall be used in addition to the W10-1 sign and shall be mounted on a separate post.

MoDOT does not use the W10-12 sign. Revised Dec. 2025

Section 8B.23 NO GATES OR LIGHTS Plaque (W10-13P)

Option:

01 The NO GATES OR LIGHTS (W10-13P) plaque (see Figure 8B-4) may be mounted below the Grade Crossing Advance Warning (W10-1 through W10-4) sign at grade crossings that are not equipped with automatic gates or automated signals.

MoDOT does not use the W10-13P plaque. Revised Dec. 2025

Section 8B.24 Next Crossing Plaques (W10-14P and W10-14aP)

Option:

01 The NEXT CROSSING (W10-14P) plaque (see Figure 8B-4) may be mounted below the Low Ground Clearance (W10-5) sign (see Section 8B.16) or Skewed Crossing (W10-12) sign to indicate to a road user that the warning is associated with the next grade crossing. This plaque may be used where multiple grade crossings exist in close proximity to one another.

02 Where recommended by a Diagnostic Team, the USE NEXT CROSSING (W10-14aP) plaque (see Figure 8B-4) may be mounted below the Low Ground Clearance (W10-5) sign (see Section 8B.16) to advise a road user with a low clearance load to use the crossing after the upcoming crossing to avoid encountering a low ground clearance situation.

MoDOT does not use the W10-14P or W110-14aP plaques. Revised Dec. 2025

~~**Section 8B.25 ROUGH CROSSING Plaque (W10-15P)**~~

~~Option:~~

~~01 The ROUGH CROSSING (W10-15P) plaque (see Figure 8B-4) may be mounted below the Grade Crossing Advance Warning (W10-1 through W10-4) sign on the approach to a grade crossing to provide supplemental information that the surface or condition of the grade crossing might require a reduced speed or some other appropriate action by the road user.~~

~~02 If the grade crossing is rough, word message signs such as BUMP, DIP, or ROUGH CROSSING may be installed. A W13-1P advisory speed plaque may be installed below the word message sign in advance of rough crossings.~~

MoDOT does not use the W10-15P plaque. Revised Dec. 2025

~~**Section 8B.26 Light Rail Transit Station Sign (I3-8)**~~

~~Option:~~

~~01 The Light Rail Transit Station (I3-8) sign (see Section 2H.01) may be used to direct road users to an LRT station or boarding location. It may be supplemented by the name of the transit system and by arrows as provided in Section 2D.08.~~

MoDOT does not use the I3-8 sign. Revised Dec. 2025

Section 8B.27 Emergency Notification System Sign (I13-1)

Support:

M00 Emergency Notification Signs (I-13) are installed by the Railroad that operates through the crossing.

Standard:

01 The Emergency Notification System (I13-1) sign (see Figure 8B-5) shall be installed on each approach at all highway-rail grade crossings, and at all highway-LRT grade crossings with automatic gates or flashing light-signals, to provide information to road users so that they can notify the railroad company or transit agency about emergencies or malfunctioning traffic control devices.

02 At a highway-rail grade crossing, the Emergency Notification System sign shall, at a minimum, include the USDOT grade crossing inventory number and the emergency contact telephone number.

03 Where Emergency Notification System signs are used at a highway-LRT grade crossing, they shall, at a minimum, include a unique crossing identifier and the emergency contact telephone number.

04 The minimum width of the Emergency Notification System sign shall be 12 inches and the minimum height shall be 9 inches. The lettering on Emergency Notification System signs for the telephone number, the grade crossing inventory number, and the explanation of the purpose of the sign shall be composed of numerals and upper-case letters that are at least 1 inch in height.

05 Emergency Notification System signs shall be retroreflective.

06 Except as provided in ~~Paragraph 7 of this Section~~ the Option paragraph below, Emergency Notification System signs shall have a white legend and border on a blue background.

Figure 8B-5. Example of an Emergency Notification System Sign



I13-1

Option:

07 The seven-character grade crossing inventory number may be shown on the sign as a black legend on a white rectangular background.

Guidance:

08 Except as provided in ~~Paragraph 12 of this Section~~ the first Option paragraph below, Emergency Notification System signs should be attached to the Crossbuck Assemblies or grade crossing signal masts on the right-hand side of each roadway approach to the grade crossing rather than on the railroad or LRT signal control equipment housings. Emergency Notification System signs should be oriented so the face of the sign is approximately parallel or approximately perpendicular to the edge of the roadway or pathway and is visible to road users or pathway users. The visibility of the Emergency Notification System sign should not be obstructed by automatic gates in either the vertical or horizontal position.

09 The Emergency Notification System signs should be positioned so as to not obstruct any traffic control devices or limit the view of rail traffic approaching the grade crossing.

10 Emergency Notification System signs mounted on Crossbuck Assemblies or signal masts should only be large enough to provide the necessary contact information. Use of larger signs on Crossbuck Assemblies or signal masts that might obstruct the view of rail traffic or other motor vehicles should be avoided.

11 At station crossings, Emergency Notification System signs or information should be posted in a conspicuous location.

Option:

12 Emergency Notification System signs may be located on a separate post. Where located on a separate post, the size of the Emergency Notification System sign may be increased for improved visibility.

13 Where the improvement of the conspicuity of an Emergency Notification System sign is desired, a solid yellow rectangular header panel with a legend of "NOTICE" in black letters may be used (see Section 2A.11).

14 Additional Emergency Notification System signs may be installed at a grade crossing.

CHAPTER 8C. MARKINGS [EPG 913.3]

Section 8C.01 Purpose and Application

Support:

01 Passive traffic control systems, consisting of signs and pavement markings only, identify and direct attention to the location of a grade crossing and advise road users to reduce their speed or stop at the grade crossing as necessary in order to yield to any rail traffic occupying, or approaching and in proximity to, the grade crossing.

02 Signs and pavement markings regulate, warn, and guide the road users so that they, as well as LRT vehicle operators on mixed-use alignments, can take appropriate action when approaching a grade crossing.

03 Unless otherwise provided in this ~~Chapter~~ article, the provisions of Part 3 are applicable to the design and location of pavement markings at grade crossings.

Section 8C.02 Grade Crossing Pavement Markings

Standard:

01 On paved roadways, grade crossing pavement markings shall consist of an X, the letters RR, a no-passing zone marking (on two-lane, two-way highways with center line markings in compliance with Section 3B.01), and certain transverse lines as shown with detailed dimensions in Figures 8C-1 and 8C-2.

02 Except as provided in ~~Paragraphs 3 and 4 of this Section~~ the following two paragraphs, grade crossing pavement markings shall be placed in each approach lane on all paved approaches to highway-rail grade crossings where signals or automatic gates are located, and at all other grade crossings where the posted or statutory highway speed is 40 mph or higher.

03 Grade crossing pavement markings shall not be required at highway-rail grade crossings where the posted or statutory highway speed is less than 40 mph if the Diagnostic Team determines that other installed devices provide suitable warning and control.

04 Grade crossing pavement markings shall not be required at highway-rail grade crossings in urban areas if the Diagnostic Team determines that other installed devices provide suitable warning and control.

05 Grade crossing pavement markings shall be placed in each approach lane on all paved approaches to highway-LRT grade crossings where a Crossbuck sign is placed at the grade crossing.

06 If grade crossing pavement markings are used on a multi-lane approach to a grade crossing, identical markings shall be placed in each approach lane that crosses the tracks.

07 All grade crossing pavement markings shall be retroreflective white. All other markings shall be in accordance with Part 3.

Guidance:

08 Where grade crossing pavement markings are used, a portion of the X symbol should be directly opposite the Grade Crossing Advance Warning sign.

Option:

09 Where determined by the Diagnostic Team, supplemental pavement marking symbol(s) may be placed between the Grade Crossing Advance Warning sign and the grade crossing.

Guidance:

10 If supplemental pavement marking symbol(s) are placed between the Grade Crossing Advance Warning sign and the grade crossing, the downstream transverse line should be at least 50 feet upstream from the stop or yield line at the grade crossing.

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.

Figure 8C-1. Example of Placement of Warning Signs and Pavement Markings at Grade Crossings

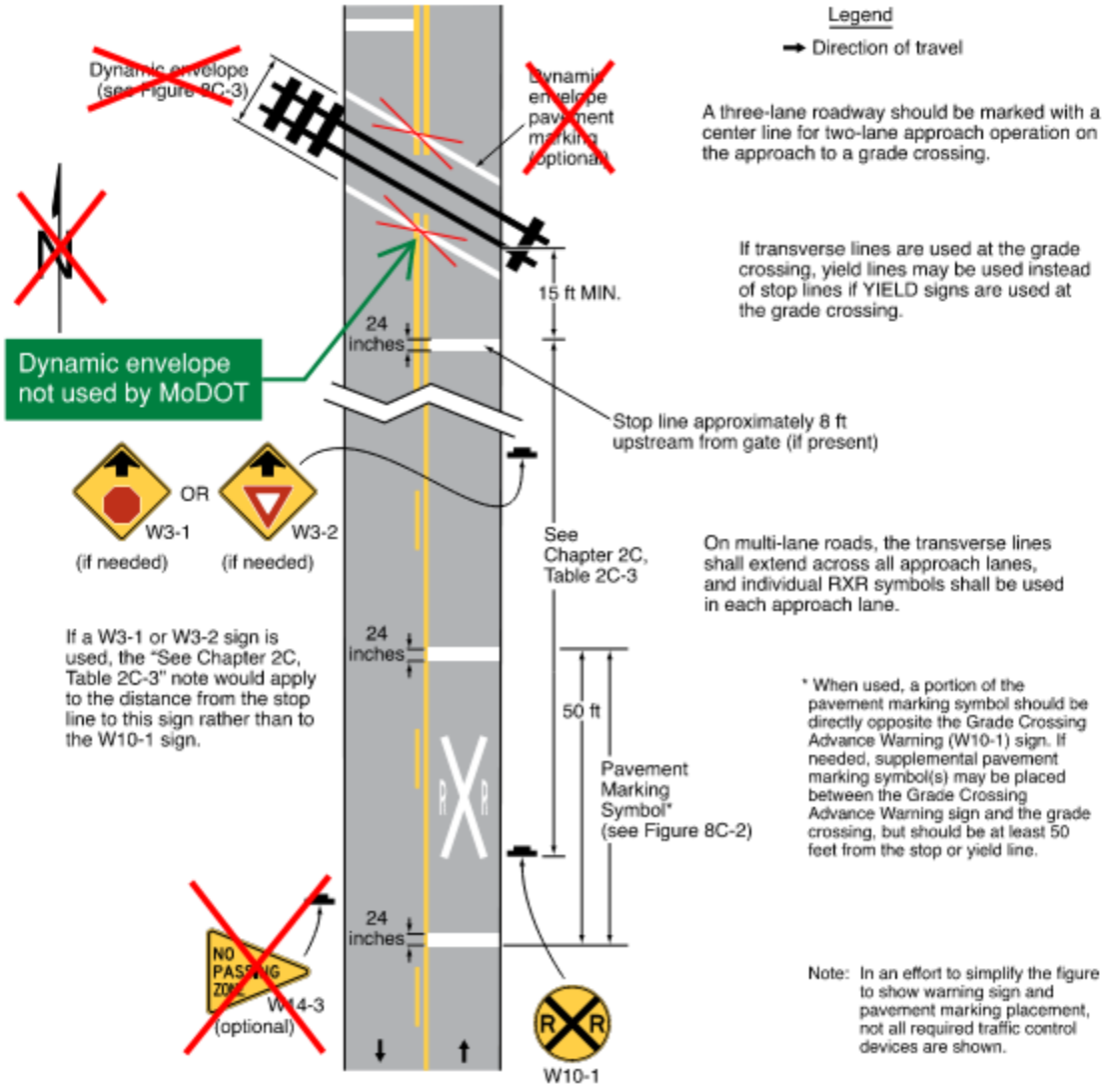
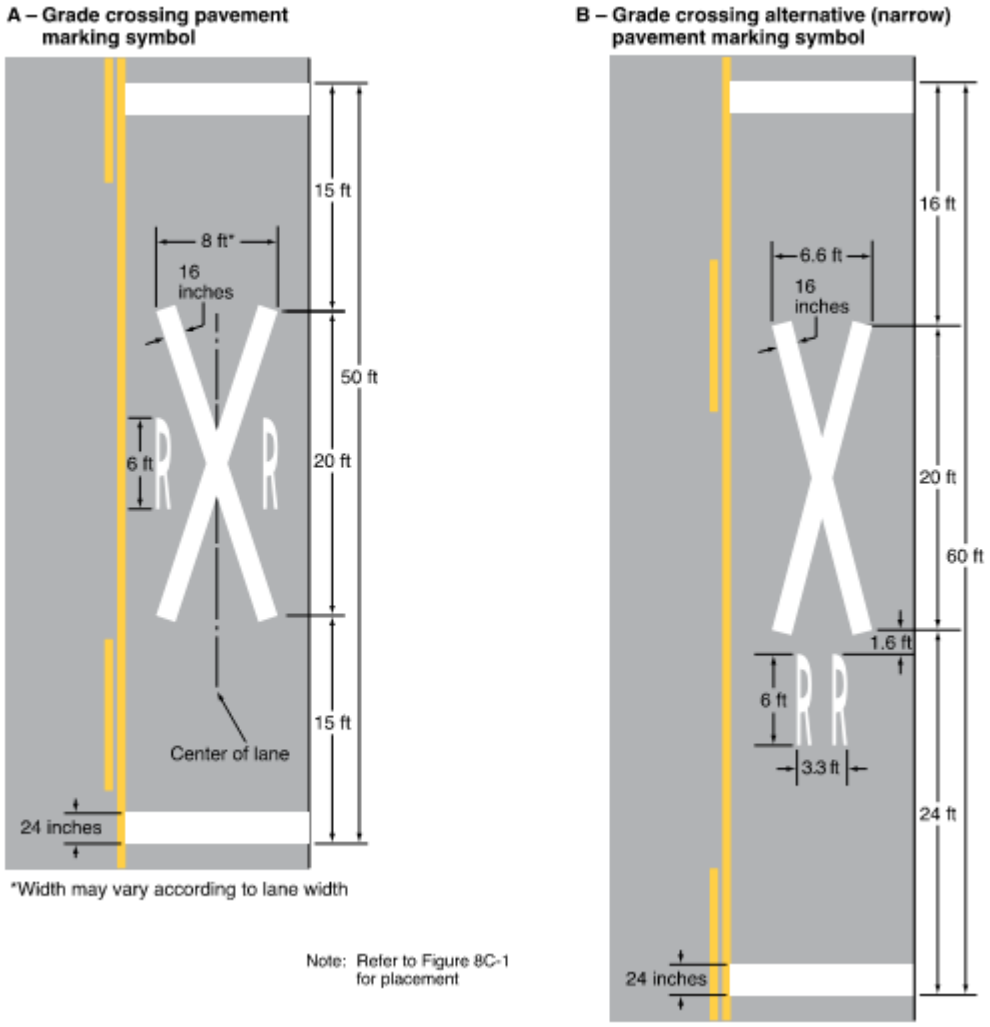


Figure 8C-2. Grade Crossing Pavement Markings



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 in advance of the nearest rail.

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 in advance of the nearest rail (see Figure 8C-1).

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 in advance of the nearest rail.

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.

Section 8C.04 Lane-Use Arrow Markings

Standard:

01 Lane-use arrow markings (see Section 3B.23) that indicate that a turning movement must be made or is permitted to be made from a lane that crosses a grade crossing shall not be placed between the stop line for the grade crossing and the track(s).

Guidance:

02 Lane-use arrow markings that indicate that a turning movement must be made or is permitted to be made from a lane that crosses a grade crossing should not be placed less than 100 feet upstream from the stop line for the grade crossing or less than 20 feet beyond the farthest rail.

Section 8C.05 Edge Lines, Lane Lines, Center Lines, Raised Pavement Markers, and Tubular Markers

Guidance:

01 Except as provided in ~~Paragraphs 3 through 5 of this Section~~ the first three Option paragraphs below, if edge lines (see Section 3B.09), lane lines (see Section 3B.06), or center lines (see Section 3B.01) are used on an approach to a grade crossing, the edge lines, lane lines, and center lines should extend up to and across the grade crossing to reduce the likelihood that road users might inadvertently turn into the track area.

02 If crossing surface maintenance or highway approach maintenance is performed that alters the markings, the removal or replacement of the markings, raised pavement markers, and/or tubular markers should be coordinated with the road authority and the railroad company or transit agency.

Option:

03 Edge lines, lane lines, and center lines may be omitted on or between the rails to conform to the requirements of the railroad company and/or transit agency.

04 Edge lines, lane lines, and center lines may be omitted on or between the rails where the highway profile is sufficiently abrupt to create a hang-up situation for pavement marking equipment with low ground clearance.

05 The edge lines, lane lines, and center lines may be omitted from the highway surface at a grade crossing if the surface cannot retain the application of the edge line, lane line, or center line marking.

~~06 If recommended by a Diagnostic Team, raised pavement markers (see Section 3B.16) may be used to supplement the edge lines, lane lines, or center lines that extend up to and across the grade crossing.~~

~~07~~06 If recommended by a Diagnostic Team, tubular markers (see Section 3I.02) may be used to supplement the edge lines that extend up to and across the grade crossing.

Guidance:

~~08~~07 *Tubular markers should be installed in accordance with the clearance requirements of the railroad company and/or transit agency.*

Standard:

~~09~~08 The color under both daytime and nighttime conditions of raised pavement markers or tubular markers that are used at a grade crossing shall be the same color as the edge line, lane line, or center line that they supplement.

~~**Section 8C.06 Dynamic Envelope and Do Not Block Pavement Markings**~~

~~Option:~~

~~01 Dynamic envelope markings may be installed at a grade crossing to mark the edges of the train dynamic envelope.~~

~~**Standard:**~~

~~**02 If used, pavement markings for indicating the dynamic envelope shall comply with the provisions of Part 3 and shall be a solid white line not less than 4 inches nor greater than 24 inches in width.**~~

~~Option:~~

~~03 Contrasting pavement color (see Section 3A.03 and Chapter 3H) and/or contrasting pavement texture may be used alone or in combination with pavement markings to indicate the dynamic envelope.~~

~~*Guidance:*~~

~~*04 If a solid white line is used to convey the dynamic envelope, the line should be placed completely outside of the dynamic envelope. If used, dynamic envelope pavement markings should be placed parallel to the nearest rail in accordance with the railroad company or transit agency requirements. If used, dynamic envelope pavement markings should extend across the roadway as shown in Figure 8C-3. Dynamic envelope pavement markings should not be placed perpendicular to the roadway at skewed grade crossings.*~~

~~Option:~~

~~05 If solid white lines are used to indicate the dynamic envelope, white cross-hatching lines (see Figure 8C-3) may also be placed on the highway pavement within the dynamic envelope as a supplement to, but not as a substitute for, the solid white lines. White cross-hatching lines (see Section 3B.26) may also be placed on the pavement to mark areas adjacent to the dynamic envelope where vehicles are not intended to stop or stand as shown in Figure 8C-4.~~

~~06 In semi-exclusive LRT alignments, the dynamic envelope markings may be along the LRT trackway between intersections where the trackway is immediately adjacent to travel lanes and no physical barrier is present.~~

~~07 In mixed-use LRT alignments, the dynamic envelope markings may be continuous between intersections (see Figure 8C-5).~~

~~08 In mixed-use LRT alignments, pavement markings for adjacent travel or parking lanes may be used instead of dynamic envelope markings if the lines are outside the dynamic envelope.~~

EPG does not include this section as these pavement markings are not used on MoDOT facilities. Revised Dec. 2025

Figure 8C-3. Example of Dynamic Envelope Pavement Markings at Grade Crossings

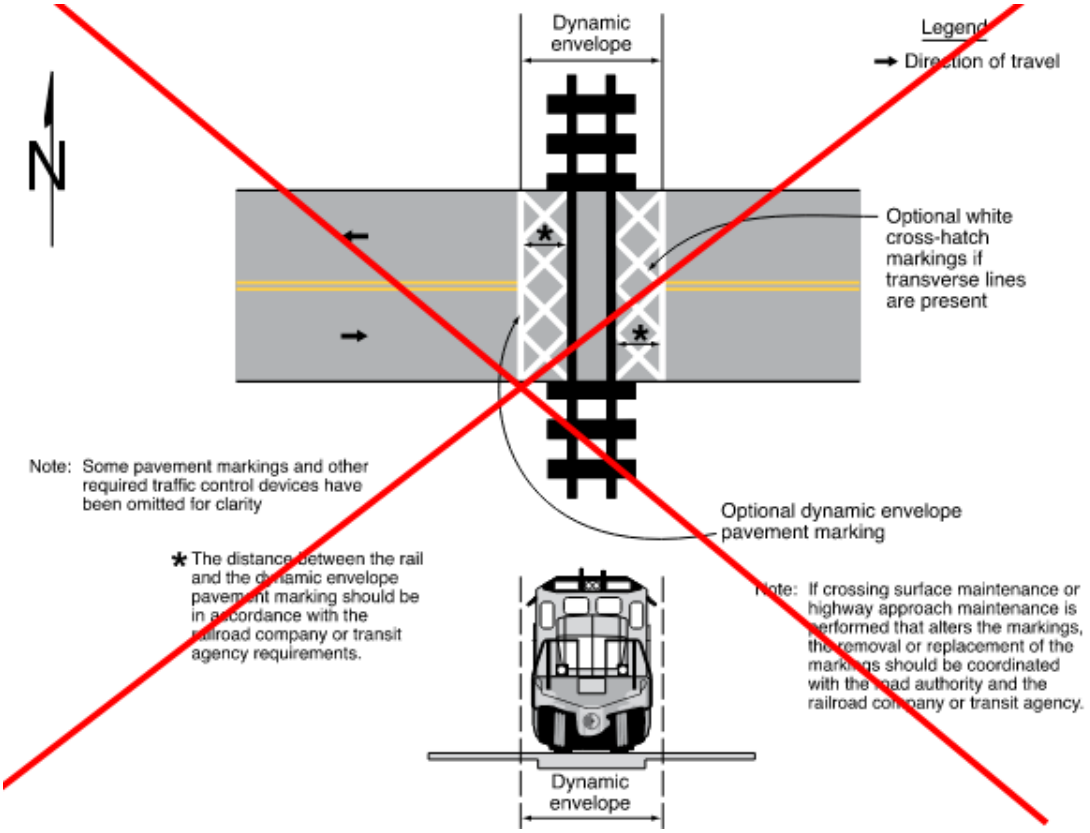
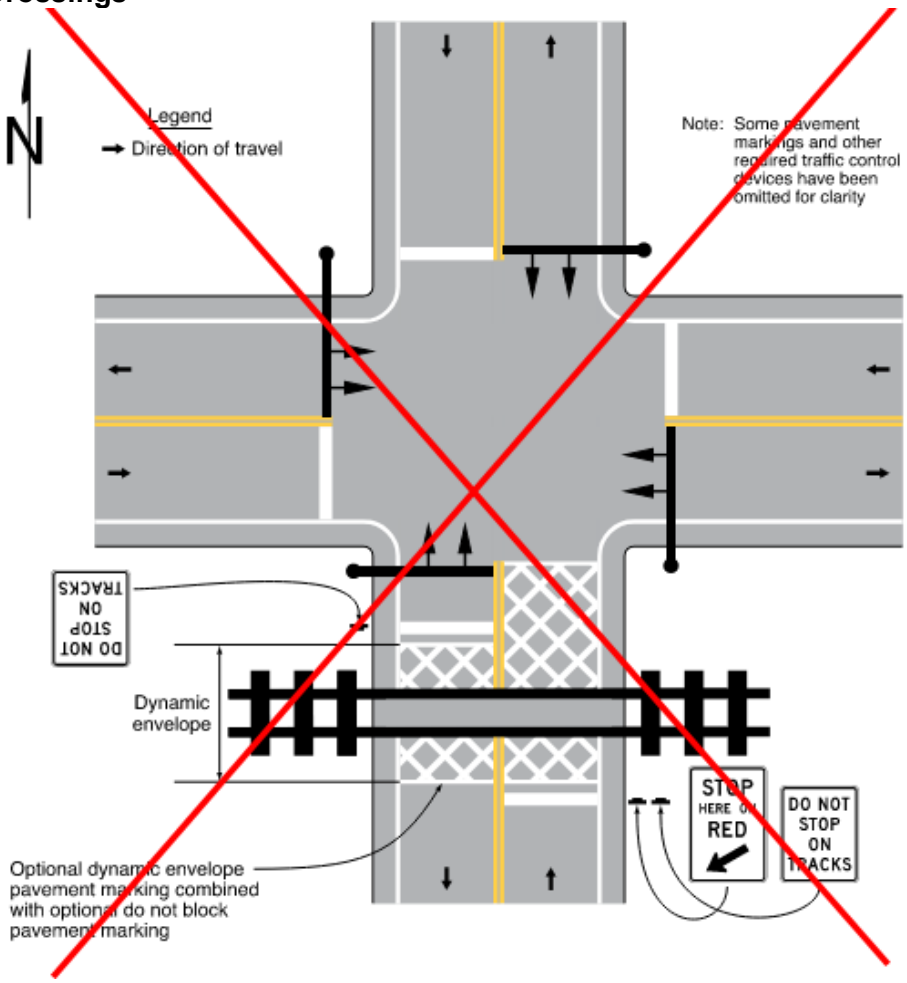
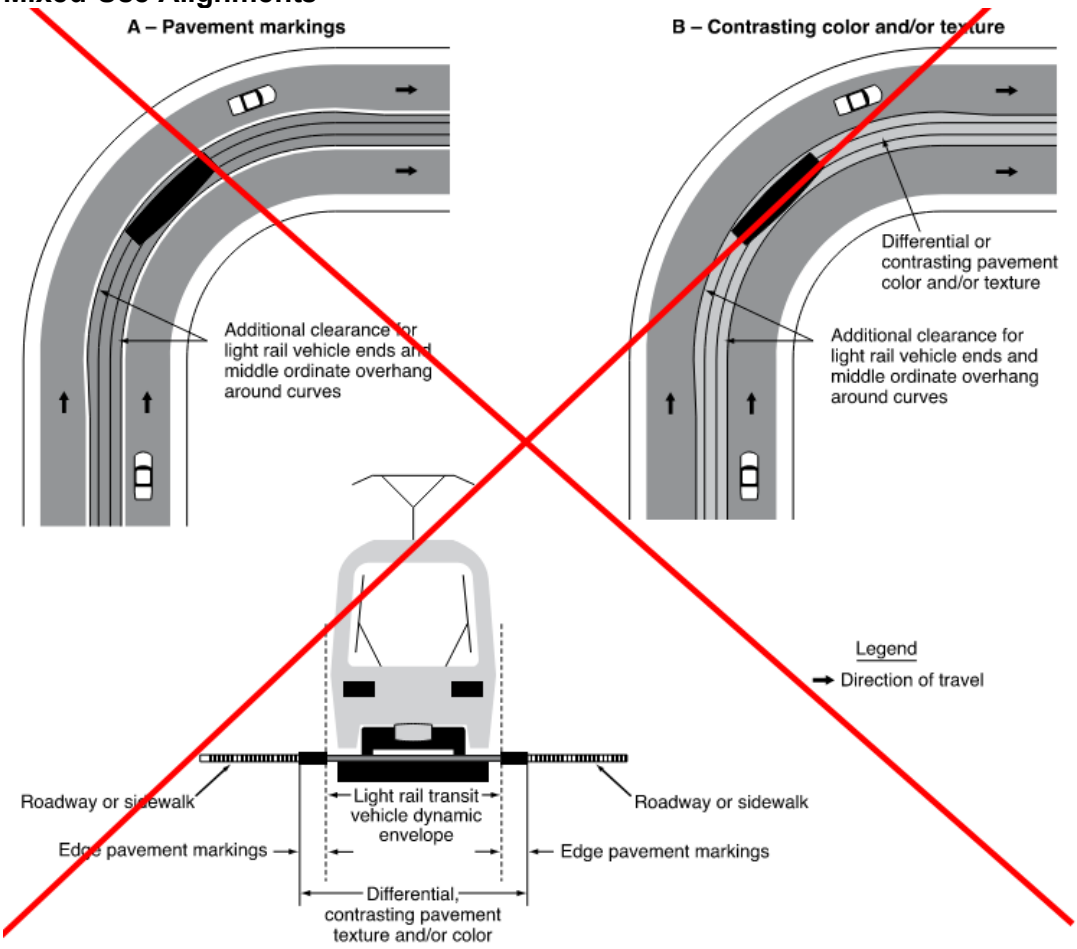


Figure 8C-4. Example of Dynamic Envelope and Do Not Block Pavement Markings at Grade Crossings



Dynamic envelope markings are not used by MoDOT. Revised Dec. 2025

Figure 8C-5. Examples of Light Rail Transit Vehicle Dynamic Envelope Markings for Mixed-Use Alignments



Dynamic envelope markings are not used by MoDOT. Revised Dec. 2025

CHAPTER 8D. FLASHING-LIGHT SIGNALS, AUTOMATIC GATES, AND TRAFFIC CONTROL SIGNALS [EPG 913.4]

Section 8D.01 Introduction

Support:

01 Active traffic control systems inform road users of the approach or presence of rail traffic at grade crossings. These systems include Exit Gate systems, automatic gates, flashing-light signals, traffic control signals, actuated blank-out and variable message signs, and other active traffic control devices that are used in conjunction with the signs and pavement markings that are described in Chapters 8B and 8C, respectively.

M01A The design, installation and maintenance of these devices are normally the responsibility of the railroad company with the approval of the MoDOT Multimodal Division (Rail Section).

MoDOT specific language from the EPG. Revised Dec. 2025

02 Figure 8D-1 shows a post-mounted flashing-light signal (two light units mounted in a horizontal line), a flashing-light signal mounted on an overhead structure, and an automatic gate assembly.

03 Where LRT speed is cited in this Part, it refers to the maximum speed at which LRT equipment is permitted to traverse a particular grade crossing.

Option

04 Post-mounted and overhead flashing-light signals may be used separately or in combination with each other as determined by the Diagnostic Team. Also, flashing-light signals may be used without automatic gate assemblies, as determined by the Diagnostic Team.

Standard:

05 The meaning of flashing-light signals and automatic gates shall be as stated in Sections 11-701 and 11-703 of the Uniform Vehicle Code (see Section 1A.06).

06 Location for flashing-light signals and automatic gates shall be as shown in Figure 8D-1.

07 Where there is a curb, a horizontal offset of at least 2 feet shall be provided from the face of the vertical curb to the nearest part of the signal or automatic gate arm in its upright position. Where a cantilevered-arm flashing-light signal is used, the vertical clearance shall be at least 17 feet above the crown of the highway to the lowest point of the signal unit.

08 Where there is a shoulder, but no curb, a horizontal offset of at least 2 feet from the edge of a paved shoulder shall be provided, with an offset of at least 6 feet from the edge of the traveled way.

09 Where there is no curb or shoulder, the minimum horizontal offset shall be 6 feet from the edge of the traveled way.

10 Minimum clearance dimensions for flashing-light signals and automatic gates relative to the closest track shall conform to standards provided by the railroad company and/or transit agency, and the ~~regulatory agency with statutory authority (if applicable)~~ MoDOT Multimodal Division (Rail Section).

Guidance:

11 Equipment housings (controller cabinets) should have a lateral offset of at least 30 feet from the edge of the highway, and where railroad or LRT property and conditions allow, at least 25 feet from the nearest rail.

12 If a pedestrian route is provided, sufficient clearance from supports, posts, and automatic gate mechanisms should be maintained for pedestrian travel.

13 Where determined by the Diagnostic Team, a lateral escape route to the right-hand side of the highway in advance of the grade crossing traffic control devices should be kept free of guardrail or other

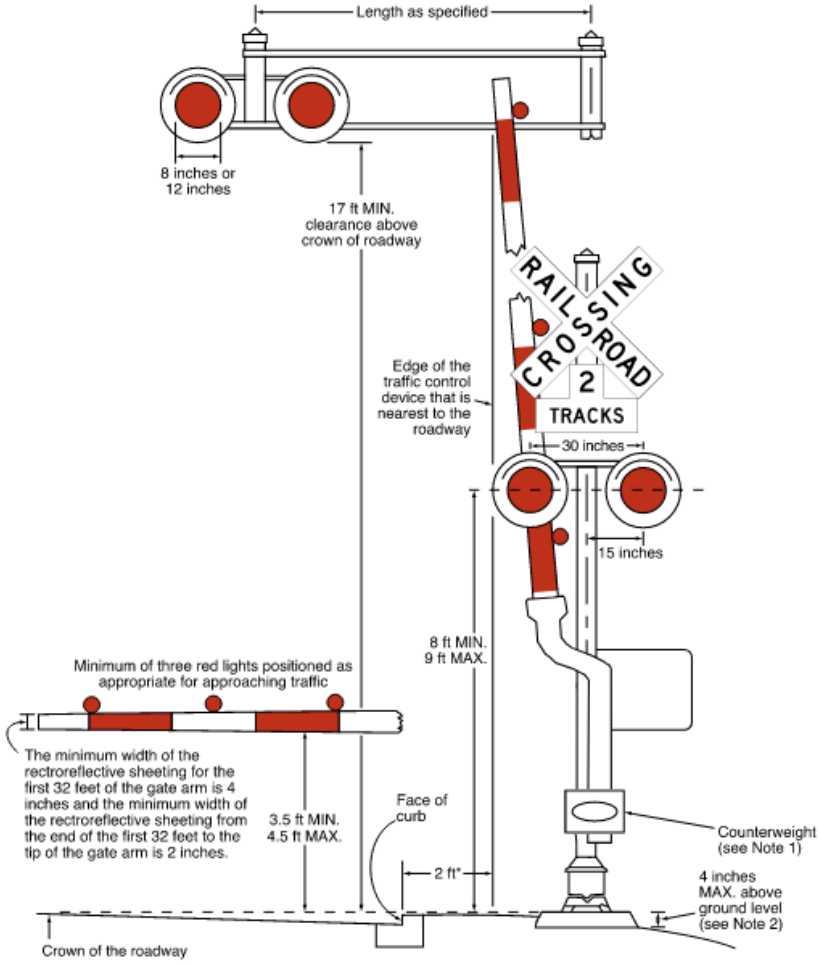
ground obstructions. Where guardrail is not deemed necessary or appropriate, barriers should not be used for protecting signal supports.

14 The same lateral offset and roadside safety features should apply to flashing-light signal and automatic gate locations on both the right-hand and left-hand sides of the roadway.

Option:

15 In industrial or other areas involving only low-speed highway traffic or where signals are vulnerable to damage by turning truck traffic, guardrail may be installed to provide protection for the signal assembly.

Figure 8D-1. Composite Drawing of Active Traffic Control Devices for Grade Crossings Showing Clearances



*For locating this reference line on an approach that does not have a curb, see Section 8D.01.

Notes:

1. Where gates are located in the median, additional median width may be required to provide the minimum clearance for the counterweight supports.
2. The top of the signal foundation should be no more than 4 inches above the surface of the ground and should be at the same elevation as the crown of the roadway. Where site conditions would not allow this to be achieved, the shoulder side slope should be re-graded or the height of the signal post should be adjusted to meet the 17-foot vertical clearance requirement.

Guidance:

16 Where both traffic control signals and flashing-light signals (with or without automatic gates) are in operation at the same highway-LRT grade crossing, the operation of the devices should be coordinated to avoid any display of conflicting signal indications.

Option:

17 If highway traffic signals must be located within close proximity to the flashing-light signals, the highway traffic signals may be mounted on the same overhead structure as the flashing-light signals with the approval of the MoDOT Multimodal Division (Rail Section).

Section 8D.02 Flashing-Light Signals

Support:

01 Section 8D.04 contains additional information regarding flashing-light signals at highway-LRT grade crossings in semi-exclusive and mixed-use alignments.

Standard:

02 If used, the flashing-light signal assembly (shown in Figure 8D-1) on the side of the highway shall include a standard Crossbuck (R15-1) sign, and where there is more than one track, a supplemental Number of Tracks (R15-2P) plaque, all of which indicate to motorists, bicyclists, and pedestrians the location of a grade crossing.

Guidance:

03 The bottom of the Number of Tracks (R15-2P) plaque (when used) should be located as low as practicable above the flashing-light backgrounds. The Crossbuck (R15-1) sign should be located just above the Number of Tracks (R15-2P) plaque or, if no plaque is present, the bottom of the Crossbuck sign should be located as low as practicable above the flashing-light backgrounds.

Support:

04 Additional information regarding sizes and clearances of components used on flashing-light signals can be found in Part 3 of the "2023 AREMA Communications and Signals Manual" published by the American Railway Engineering and Maintenance-of-Way Association (AREMA).

Option:

05 At highway-rail grade crossings, bells or other audible warning devices may be included in the assembly and may be operated in conjunction with the flashing-light signals to provide additional warning for pedestrians, bicyclists, and/or other non-motorized road users.

Standard:

06 When indicating the approach or presence of rail traffic, the flashing-light signal shall display toward approaching highway traffic two red lights mounted in a horizontal line flashing alternately.

07 If used, flashing-light signals shall be placed to the right-hand side of approaching highway traffic on all highway approaches to a grade crossing. They shall be located laterally with respect to the highway in compliance with Figure 8D-1 except where such location would adversely affect signal visibility.

08 If used at a grade crossing with highway traffic in both directions, back-to-back flashing-light signals shall be placed on each side of the tracks. On multi-lane one-way streets and divided highways, flashing-light signals shall be placed on the approach side of the grade crossing on both sides of the roadway or shall be placed above the highway.

09 Each red signal unit in the flashing-light signal shall flash alternately. The number of flashes per minute for each lamp shall be 35 minimum and 65 maximum. Each lamp shall be illuminated for approximately the same length of time. The total time of illumination of each pair of lamps shall be the entire operating time.

10 Flashing-light units shall use either 8-inch or 12-inch nominal diameter lenses.

Guidance:

11 In choosing between the 8-inch or 12-inch nominal diameter lenses for use in grade crossing flashing-light signals, consideration should be given to the principles stated in Section 4E.02.

12 If flashing-light signals are used, at least one pair of flashing lights should be provided for each approach lane of the roadway.

13 The center-to-center distance between the two red lights in a flashing-light unit should be approximately 30 inches.

14 The mounting height of the flashing-light units, measured from the center of the flashing-light unit housing to the elevation of the crown of the roadway, should be between 8 feet and 9 feet .

15 The top of the support pole foundation should be no more than 4 inches above the surface of the ground and should be at the same elevation as the crown of the roadway.

Standard:

16 Grade crossing flashing-light signals shall operate at a low voltage using storage batteries either as a primary or stand-by source of electrical energy. Provision shall be made to provide a source of energy for charging batteries.

Option:

17 Additional flashing-light signals may be mounted on the same supporting post and directed toward vehicular traffic approaching the grade crossing from other than the principal highway route, such as where there are approaching routes on highways closely adjacent to and parallel to the track(s).

Guidance:

18 Where the storage distance for vehicles approaching a grade crossing is less than a design vehicle length, the Diagnostic Team should consider providing additional flashing-light signals aligned toward the movement turning toward the grade crossing.

19 The Diagnostic Team should consider the use of additional flashing-light signals to provide supplemental warning to pedestrians, especially on one-way streets and divided highways.

Standard:

20 References to lenses in this ~~Section~~ article shall not be used to limit flashing-light signal optical units to incandescent lamps within optical assemblies that include lenses.

Support:

21 Research has resulted in flashing-light signal optical units that are not lenses, such as, but not limited to, light-emitting diode (LED) flashing-light signal modules.

Option:

22 If a Diagnostic Team determines that it is appropriate, the flashing-light signals may be installed on overhead structures or cantilevered supports as shown in Figure 8D-1 where needed for additional emphasis, or for better visibility to approaching traffic, particularly on multi-lane approaches or highways with profile restrictions.

23 If it is determined by a Diagnostic Team that one flashing-light signal on the cantilever arm is not sufficiently visible to road users, one or more additional flashing-light signals may be mounted on the supporting post and/or on the cantilever arm.

Standard:

24 Breakaway or frangible bases shall not be used on the supporting posts for overhead structures or cantilevered arms that support overhead flashing-light signals.

Section 8D.03 Automatic Gates

Support:

01 An automatic gate is a traffic control device used in conjunction with flashing-light signals.

Standard:

02 The automatic gate (see Figure 8D-1) shall consist of a drive mechanism and a fully retroreflective red-and-white-striped gate arm with lights. When in the down position, the gate arm shall extend across the approaching lanes of highway traffic.

03 In the normal sequence of operation, unless constant warning time detection or other advanced system requires otherwise, the flashing-light signals and the lights on the gate arm (in its normal upright position) shall be activated immediately upon detection of approaching rail traffic. The gate arm shall start its downward motion not less than 3 seconds after the flashing-light signals start to operate, shall reach its horizontal position at least 5 seconds before the arrival of the rail traffic, and shall remain in the down position until the rail traffic completely clears the grade crossing.

04 When the rail traffic clears the grade crossing, and if no other rail traffic is detected, the gate arm shall ascend to its upright position, following which the flashing-light signals and the lights on the gate arm shall cease operation.

05 Gate arms shall be fully retroreflective on both sides and shall have vertical stripes alternately red and white at 16-inch intervals measured horizontally. The width (which becomes the height of the retroreflective sheeting when the automatic gate is in the down position) of the retroreflective sheeting on the front of the gate arm shall be at least 4 inches for the first 32 feet of gate arm length measured from the center of the gate mast. The front of the gate arm beyond 32 feet to the tip of the gate arm shall have retroreflective sheeting at least 2 inches in width.

Support:

06 It is acceptable to replace a damaged gate arm with a gate arm having vertical stripes even if the other existing gate arms at the same grade crossing have diagonal stripes; however, it is also acceptable to replace a damaged gate arm with a gate arm having diagonal stripes if the other existing gate arms at the same grade crossing have diagonal stripes in order to maintain consistency per the provisions of Paragraph 13 of Section 1B.03.

Standard:

07 Gate arms shall have at least three red lights as shown in Figure 8D-1.

08 When activated, the gate arm light nearest the tip shall be illuminated continuously and the other lights shall flash alternately in unison with the flashing-light signals such that the left-most flashing gate arm light(s) flashes simultaneously with the left-hand light of the flashing-light signals and the right-most flashing gate arm light(s) flashes simultaneously with the right-hand light of the flashing-light signals.

Support:

09 Typical gate arm lights are approximately 4 inches in diameter if they are circular. Rectangular gate arm lights with approximately the same illuminated surface area are sometimes used on gate arms instead of circular lights.

Standard:

10 The entrance gate arm mechanism shall be designed to fail safe in the down position.

Guidance:

11 The gate arm should ascend to its upright position in 12 seconds or less.

12 In its normal upright position, when no rail traffic is approaching or occupying the grade crossing, the gate arm should be approximately vertical (see Figure 8D-1).

13 In the design of individual installations, consideration should be given to timing the operation of the gate arm to accommodate large and/or slow-moving motor vehicles.

14 The gate arms should cover the approaching highway to block all motor vehicles from being driven around the gate arms without crossing the center line.

15 The height of the gate arm when it is in the down position should be between 3.5 feet and 4.5 feet above the crown of the roadway. When the gate arm is in the down position, no portion of the counterweight should extend into the traveled way, sidewalk, or pathway.

Option:

16 Channelizing devices and/or raised median islands may be used to discourage driving around lowered automatic gates.

Guidance:

17 Where sufficient space is available, median islands should be at least 60 feet in length.

Option:

18 Where automatic gates are located in the median, additional median width may be required to provide the minimum clearance for the counterweight supports.

19 Automatic gates may be supplemented by cantilevered flashing-light signals (see Figure 8D-1) where there is a need for additional emphasis or better visibility.

Section 8D.04 Use of Active Traffic Control Systems at LRT Grade Crossings

Standard:

01 At highway-LRT grade crossings where LRT speeds exceed 25 mph, active traffic control systems (see Section 8D.01) shall be used.

02 At highway-LRT grade crossings where LRT speeds exceed 40 mph, the active traffic control system shall include automatic gates.

Option:

03 The Diagnostic Team may recommend an active traffic control system with automatic gates at highway-LRT grade crossings where LRT speeds do not exceed 40 mph.

Guidance:

04 At highway-LRT grade crossings where LRT speeds are 25 mph or less, active traffic control systems should be used unless the Diagnostic Team determines that the use of Crossbuck Assemblies, STOP signs alone, or YIELD signs alone would be adequate.

05 Where the highway-LRT grade crossing is at a location other than an intersection and LRT speeds exceed 20 mph, traffic control signals should not be used in lieu of flashing-light signals.

Support:

06 Sections 8D.02 and 8D.03 contain additional provisions regarding the design and operation of flashing-light signals and automatic gates, respectively.

Standard:

07 If flashing-light signals are in operation at a highway-LRT crossing that is used by pedestrians, bicyclists, and/or other non-motorized road users, an audible device such as a bell shall also be provided and shall be operated in conjunction with the flashing-light signals.

Section 8D.05 Exit Gate and Four-Quadrant Gate Systems

Option:

01 Exit Gate systems may be installed to improve safety at grade crossings where a Diagnostic Team determines that less restrictive measures, such as automatic gates and median islands, are not effective.

Support:

02 A grade crossing that includes exit gates on some, but not all, of the exiting lanes is an Exit Gate system, but is not considered to be a Four-Quadrant Gate system.

03 The term Four-Quadrant Gate system is used in a generic sense in that it refers to the fact that all entrances and exits from a grade crossing are controlled by automatic gates in order to provide a full closure to all entering and exiting lanes. The term Four-Quadrant Gate system does not refer to the number of gates installed, but rather the fact that a full closure is provided.

Standard:

04 The Exit Gate system shall use a series of automatic gates with fully retroreflective red-and-white-striped gate arms with lights, and when in the down position the gate arms extend individually across the entrance and exit lanes of the roadway as shown in Figure 8D-2. The provisions contained in Section 8D.02 for flashing-light signals shall be followed for signal specifications, location, and clearance distances.

05 Gate arm design, colors, and lighting requirements shall be in accordance with the provisions contained in Section 8D.03.

Support:

06 The provisions contained in Section 8D.03 for automatic gates are applicable to exit gates.

Standard:

07 In the normal sequence of operation, unless constant warning time detection or other advanced system requires otherwise, the flashing-light signals and the lights on the gate arms (in their normal upright positions) shall be activated immediately upon the detection of approaching rail traffic. The entrance gate arms shall start their downward motion not less than 3 seconds after the flashing-light signals start to operate and shall reach their horizontal position at least 5 seconds before the arrival of the rail traffic. Exit gate arm activation and downward motion shall be based on detection or timing requirements established by a Diagnostic Team. If an Exit Gate system is present, the ~~queue~~ exit gate clearance time (see AREMA Manual) shall be long enough to permit the exit gate arm to lower after a design vehicle of maximum length is clear of the minimum track clearance distance (see Section 8A.07). The gate arms shall remain in the down position as long as the rail traffic occupies the grade crossing.

08 When the rail traffic clears the grade crossing, and if no other rail traffic is detected, the gate arms shall ascend to their upright positions, following which the flashing-light signals and the lights on the gate arms shall cease operation.

09 Except as provided in ~~Paragraph 21 of this Section~~ the first Option paragraph below, the exit gate arm mechanism shall be designed to fail-safe in the up position.

10 At locations where gate arms are offset a sufficient distance for motor vehicles to drive between the entrance and exit gate arms, median islands (see Figure 8D-2) shall be installed in accordance with the needs determined by the Diagnostic Team.

Guidance:

11 The gate arm should ascend to its upright position in 12 seconds or less.

12 Constant warning time detection circuits should be used with Exit Gate systems where practical.

13 The operating mode of the exit gates should be determined by a Diagnostic Team.

14 If the Timed Exit Gate Operating Mode is used, the Diagnostic Team should also determine the Exit Gate Clearance Time (see definition in Section 1C.02).

15 If the Dynamic Exit Gate Operating Mode is used, highway vehicle intrusion detection devices that are part of a system that incorporates processing logic to detect the presence of motor vehicles within

the minimum track clearance distance (see Section 8A.07) should be installed to control exit gate operation. Exit gates should be independently controlled for each direction of roadway traffic.

16 Regardless of which exit gate operating mode is used, the Exit Gate Clearance Time should be considered when determining additional time requirements for the Minimum Warning Time.

Support:

17 The minimum warning time is the least amount of time that active warning devices operate prior to the arrival of rail traffic at a grade crossing.

Guidance:

18 If an Exit Gate system is used at a location that is adjacent to an intersection that could cause motor vehicles to queue within the minimum track clearance distance (see Section 8A.07), the Dynamic Exit Gate Operating Mode should be used unless the Diagnostic Team determines otherwise.

19 If an Exit Gate system is interconnected with a highway traffic signal (see Section 8D.09), back-up or standby power should be considered for the highway traffic signal. Also, circuitry should be installed to prevent the highway traffic signal from leaving the track clearance green interval until all of the gates are lowered.

20 Exit Gate systems should include remote health (status) monitoring capable of automatically notifying railroad or LRT signal maintenance personnel when anomalies have occurred within the system.

Option:

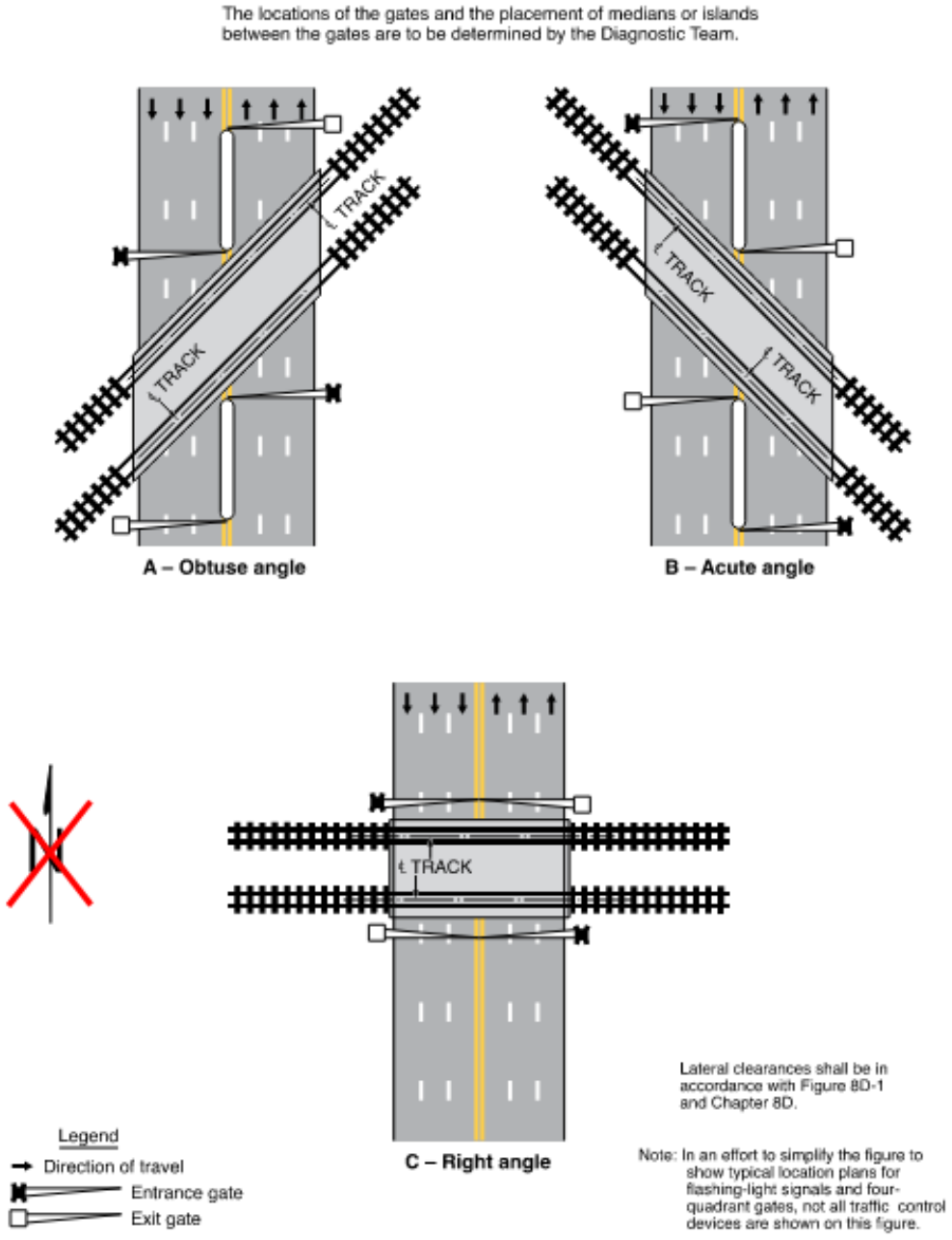
21 Exit gate arms may fail in the down position if the grade crossing is equipped with remote health (status) monitoring.

22 Exit Gate system installations may include median islands between opposing lanes on an approach to a grade crossing.

Guidance:

23 Where sufficient space is available, median islands should be at least 60 feet in length.

Figure 8D-2. Examples of Location Plan for Flashing-Light Signals and Four-Quadrant Gates



Section 8D.06 Wayside Horn Systems

Option:

01 A wayside horn system (see definition in Section 1C.02) may be installed in compliance with 49 CFR Part 222 to provide audible warning directed toward the road users at a highway-rail grade crossing or at a pathway grade crossing.

Standard:

02 Wayside horn systems used at grade crossings where the locomotive horn is not sounded shall be equipped and shall operate in compliance with the requirements of Appendix E to 49 CFR Part 222.

Guidance:

03 The same lateral clearance and roadside safety features should apply to wayside horn systems as described in the provisions contained in Section 8D.01. Wayside horn systems, when mounted on a separate pole assembly, should be installed no closer than 15 feet from the center of the nearest track and should be positioned to not obstruct the motorists' line of sight of the flashing-light signals.

Section 8D.07 Rail Traffic Detection

Standard:

01 The devices employed in active traffic control systems shall be actuated by some form of rail traffic detection.

02 Rail traffic detection circuits, insofar as practical, shall be designed on the fail-safe principle.

03 Flashing-light signals shall operate for at least 20 seconds before the arrival of any rail traffic, except as provided in ~~Paragraph 4 of this Section~~ the first Option paragraph below.

Option:

04 On tracks where all rail traffic operates at less than 20 mph and where road users are directed by an authorized person on the ground to not enter the crossing at all times that approaching rail traffic is about to occupy the crossing, a shorter signal operating time for the flashing-light signals may be used.

05 Additional warning time may be provided when determined by an engineering study.

Guidance:

06 Where the speeds of different rail traffic on a given track vary considerably under normal operation, special devices or circuits should be installed to provide reasonably uniform notice in advance of all rail traffic movements over the grade crossing. Special control features should be used to eliminate the effects of station stops and switching operations within approach control circuits to prevent excessive activation of the traffic control devices while rail traffic is stopped on or switching upon the approach track control circuits.

Section 8D.08 Use of Traffic Control Signals at Grade Crossings

Standard:

01 Except as provided in ~~Paragraph 2 of this Section~~ the Option paragraph below, traffic control signals shall not be used instead of flashing-light signals to control road users at a highway-rail grade crossing.

Option:

02 Traffic control signals may be used instead of flashing-light signals to control road users at industrial highway-rail grade crossings and other places where the maximum speed of trains is 10 mph or less with approval of the MoDOT Multimodal Division (Rail Section).

Support:

03 Sections 8D.04 and 8D.14 contain information regarding the use of traffic control signals at highway-LRT grade crossings.

Standard:

04 The appropriate provisions of Part 4 relating to traffic control signal design, installation, and operation shall be applicable where traffic control signals are used instead of flashing-light signals to control road users at grade crossings.

Section 8D.09 Preemption of Highway Traffic Signals at or Near Grade Crossings

Support:

01 Traffic signal preemption for grade crossings is a complex topic that requires a specific understanding of grade crossing warning systems and highway traffic signal operations. While most traffic signal operations are governed only by the traffic signal controller unit and the associated traffic signal equipment, preemption for grade crossings is also governed by the grade crossing warning system. Active grade crossing warning systems include flashing-light signals and possibly automatic gates, as well as various types of train detection equipment. Where the traffic signal controller unit is interconnected with the grade crossing warning system for the purpose of preemption, a combined system is created. It is the combined system that requires a thorough understanding of the design and operating parameters in order to provide proper operation of the preemption system.

02 The Federal Railroad Administration (FRA) has issued two documents that provide additional information relating to preemption of highway traffic signals at or near grade crossings. The first document is "Technical Bulletin S-12-01, Guidance Regarding the Appropriate Process for the Inspection of Highway-Rail Grade Crossing Warning System Pre-emption Interconnections with Highway Traffic Signals" and the second document is "Safety Advisory 2010-02, Signal Recording Devices for Highway-Rail Grade Crossing Active Warning Systems that are Interconnected with Highway Traffic Signal Systems."

Guidance:

03 If a grade crossing is equipped with flashing-light signals and is located 200 feet or less from an intersection or midblock location controlled by a traffic control signal, a pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon, the intersection should be provided with rail preemption in accordance with Section 4F.19 unless otherwise determined by the Diagnostic Team.

04 Coordination with the flashing-light signals, such as using queue detection and queue cutter signals, blank-out signs, or other alternatives, should be considered where a traffic control signal, a pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon is located more than 200 feet from the grade crossing. Factors to be considered should include traffic volumes, highway vehicle mix, highway vehicle and train approach speeds, frequency of trains, presence of midblock driveways or unsignalized intersections, and the potential for vehicular queues resulting from an adjacent downstream grade crossing or highway traffic signal to extend into the minimum track clearance distance (see Section 8A.07).

05 The highway agency or authority with jurisdiction and the ~~regulatory agency with statutory authority~~ MoDOT Multimodal Division (Rail Section), if applicable, should jointly determine the preemption operation and the timing of highway traffic signals interconnected with grade crossings adjacent to signalized locations.

06 If a highway traffic signal is installed 200 feet or less from a passive grade crossing, unless otherwise determined by the Diagnostic Team, an active grade crossing warning system should be installed at the grade crossing to provide a means to preempt the highway traffic signal in order to clear vehicles from the minimum track clearance distance (see Section 8A.07) upon approach of rail traffic.

07 If a highway traffic signal is interconnected with flashing-light signals, the flashing-light signals should be provided with automatic gates to prevent additional vehicles from being drawn into the minimum track clearance distance (see Section 8A.07) during the track clearance interval prior to the arrival of rail traffic unless a Diagnostic Team determines otherwise.

Support:

08 Regular joint inspections by the highway agency or authority with jurisdiction, the ~~regulatory agency with statutory authority~~ MoDOT Multimodal Division (Rail Section), if applicable, and the railroad company or transit agency are a best practice and typically include verification of the preemption operation, the amount of warning time and/or preemption time being provided by the grade crossing warning system, and the timing of highway traffic signals interconnected and/or coordinated with the flashing-light signals.

09 Section 4F.19 includes a recommendation that traffic control signals that are adjacent to highway-rail grade crossings and that are coordinated with the flashing-light signals at the grade crossing or that include railroad preemption features be provided with a back-up power supply.

Standard:

10 Information regarding the type of preemption and any related timing parameters shall be provided to the railroad company or transit agency so that the railroad company or transit agency can design the appropriate train detection circuitry.

11 If preemption is provided, unless otherwise determined by a Diagnostic Team, the normal sequence of highway traffic signal indications shall be preempted upon the approach of a train to provide a track clearance interval to provide an opportunity for motor vehicles at the grade crossing to clear the minimum track clearance distance (see Section 8A.07) prior to the arrival of rail traffic.

Option:

12 Where train switching or train restarts occur close to a grade crossing, the Diagnostic Team may determine that the preemption time can be reduced in accordance with the operating requirements of the railroad company and/or transit agency.

Standard:

13 Where flashing-light signals are in place at a grade crossing, any highway traffic signal faces installed within 50 feet of any rail shall be preempted upon the approach of rail traffic. The Diagnostic Team shall determine the signal indications displayed by the highway traffic signal faces that control movements across the grade crossing in accordance with Section 4F.19 in order to avoid the display of signal indications that conflict with the flashing-light signals.

Guidance:

14 Where the flashing-light signals are in place at a grade crossing, the operation of any flashing yellow beacon installed within 50 feet of any rail should be considered by a Diagnostic Team to determine whether the operation of the beacon should be terminated during the approach and passage of rail traffic.

Standard:

15 The preemption special control mode shall be activated by a supervised preemption interconnection using fail-safe design principles between the control circuits of the grade crossing warning system and the traffic signal controller unit. The approach of rail traffic to a grade crossing shall de-energize the interconnection or send a message via a fail-safe data communication protocol (such as the "IEEE Standard for the Interface Between the Rail Subsystem and the Highway Subsystem at a Highway Rail Intersection," 1570-2002 (R2008), Institute of Electrical and Electronics Engineers), which in turn shall activate the traffic signal controller preemption sequence. This shall establish and maintain the preemption condition during the time the grade crossing warning system is activated, except that when automatic gates exist, the preemption condition shall not be terminated until the automatic gates are energized to start their upward movement.

Support:

16 Advance preemption is 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 grade crossing warning system.

17 The maximum preemption time is 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.

18 The separation time is the component of maximum preemption time during which the minimum track clearance distance is clear of vehicular traffic prior to the arrival of rail traffic.

19 Simultaneous preemption is the notification of approaching rail traffic that is forwarded to the highway traffic signal controller unit or assembly and grade crossing warning system at the same time.

20 The right-of-way transfer time is the amount of time needed prior to display of the track clearance interval. This includes any time needed by the railroad, light rail transit, or highway traffic signal control equipment to react to a preemption call, and any traffic control signal green, pedestrian walk and clearance if used (see Section 4F.19), yellow change, and red clearance intervals for conflicting traffic.

21 A supervised preemption interconnection is one that incorporates both a normally-open and a normally-closed circuit from the grade crossing warning system to verify the proper operation of the interconnection.

Option:

22 Instead of supervision, a double-break preemption interconnection circuit that uses two normally-closed circuits that open both the source and return energy circuits may be used.

23 A preemption interconnection may incorporate both supervision and double-break circuits.

Guidance:

24 Where train detection circuits are present at a passive grade crossing, the operation of the preemption interconnection should be treated as if active traffic control devices exist at the crossing and the preemption operation should be determined by a Diagnostic Team.

25 Where left turns are permitted at a downstream highway-highway traffic control signal from the roadway approach that crosses the track and a delayed or impeded left-turn movement could prevent vehicles from clearing the track, a protected left-turn movement should be provided during the track clearance interval if green signal indications are displayed to the approach for track clearance.

26 The decision to implement simultaneous or advance preemption should include consideration of the right-of-way transfer time, the queue clearance time, and the separation time in order to determine the maximum preemption time. These time periods should be compared to and verified with the operation of the grade crossing traffic control devices in order to evaluate the operation of the highway traffic signal and the preemption operation. These factors should be considered regardless of whether simultaneous or advance preemption operation is implemented as they are based on traffic signal minimum timing, vehicle acceleration characteristics, and physical distances along the roadway.

Support:

27 Preemption time variability occurs when the traffic signal controller enters the preemption clearance interval with less than the maximum design right-of-way transfer time or when the speed of a train approaching the grade crossing varies.

28 The time interval between the initiation of advance preemption and the operation of the grade crossing warning system for rail traffic will decrease in situations when rail traffic is accelerating or increase in situations when rail traffic is decelerating.

Guidance:

29 Where preemption is used and automatic gates are present, the possibility that an automatic gate might descend upon a vehicle should be analyzed.

30 If simultaneous preemption is used, an analysis of extended grade crossing warning time requirements should be conducted.

31 If advance preemption is used, an analysis of preemption operation, traffic signal sequencing, and traffic signal phasing should be conducted to identify preemption time variability. The analysis should include both the condition requiring the longest amount of time to enter the track clearance interval and the condition requiring the shortest amount of time to enter the track clearance interval.

Standard:

32 Where automatic gates are present and green signal indications are displayed at the downstream traffic control signal during the track clearance interval, the preemption sequence shall be designed such that the green signal indications are not terminated until the automatic gate(s) that controls access over the grade crossing toward the downstream intersection is fully lowered.

Support:

33 The following are two examples of mutually-exclusive methods to resolve preemption time variability:

A. Gate-down circuitry provides a means to hold the traffic signal controller sequence in the track clearance interval until the automatic gate(s) that controls access over the grade crossing toward the downstream intersection is fully lowered.

B. Timing correction resolves preemption time variability by adding the right-of-way transfer time to the track clearance interval in the traffic signal controller unit and setting a fixed maximum period of time between the start of advance preemption and the operation of the flashing-light signals.

34 The Third Edition of the "Railroad-Highway Grade Crossing Handbook" and the "2023 AREMA Communications and Signals Manual" published by the American Railway Engineering and Maintenance-of-Way Association (AREMA) provide additional information about preemption time variability.

Standard:

35 Where gate-down circuitry is used to resolve preemption time variability and an automatic gate is broken or is not fully lowered, the crossing control circuits shall not terminate the track clearance interval before the rail traffic has entered the grade crossing.

36 Where timing correction is used to resolve preemption time variability, a timing circuit shall be used to maintain a maximum time interval between the initiation of advance preemption and the operation of the grade crossing warning system when the approaching rail traffic is decelerating.

Guidance:

37 Where a highway-highway intersection controlled by traffic control signals is interconnected with a grade crossing equipped with exit gates, advance preemption should be used because of the additional operating time that is required for the exit gates.

38 Where rail traffic routinely stops and re-starts within or just outside of the approaches to a grade crossing that is interconnected with highway traffic signals, the effects of rail traffic operations on the preemption operation should be analyzed.

39 Highway traffic signal control equipment should be capable of providing immediate re-service of successive requests for preemption from the railroad warning devices, even if the initial preemption sequence has not been completed. As appropriate, the highway traffic signal control equipment should be

able to promptly return to the start of the track clearance interval at any time that the demand for preemption is cancelled and then reactivated. The highway traffic signal control equipment should have the ability to provide this immediate re-service at any point in the preemption sequence.

Standard:

40 Where traffic control signals are programmed to operate in a flashing mode during the preemption dwell interval (the period following the track clearance interval that lasts for the duration of the preemption interconnection activation), the beginning of the preemption dwell flashing mode shall not occur until the grade crossing equipment indicates that the rail traffic has entered the grade crossing.

41 At locations where conflicting preemption calls might be received to serve boats and trains, the Diagnostic Team shall determine the relative priority when conflicting preemption calls occur (see Section 4F.19). Where the boat and the train do not conflict with each other, the Diagnostic Team shall determine the preemption sequence when both preemption calls are occurring simultaneously. The United States Coast Guard or other appropriate authority that regulates the operation of the waterway shall be invited to participate on the Diagnostic Team and/or to provide input to the Diagnostic Team.

Support:

42 Section 4C.10 describes the Intersection Near a Grade Crossing signal warrant that is intended for use at a location where the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

43 Section 4F.19 describes additional considerations regarding preemption of traffic control signals at or near grade crossings.

Section 8D.10 Movements Prohibited During Preemption

Support:

M00 The use of blank-out turn prohibition signs requires the authorization of the Highway Safety and Traffic Division.

MoDOT specific language from the EPG. Revised Dec. 2025

Guidance:

01 At a signalized intersection that is located within 100 feet of a grade crossing and the intersection traffic control signals are preempted by the approach of rail traffic, all existing permissive-only turning movements toward the grade crossing should be prohibited, steady red arrow signal indications should be shown to all existing protected/permissive and protected-only turning movements toward the grade crossing, and red signal indications should be shown to the straight-through movement toward the grade crossing during the signal preemption sequences. The prohibition of a permissive-only turning movement toward the grade crossing during preemption should be accomplished through the installation of a blank-out turn prohibition (R3-1a or R3-2a) sign (see Figure 8B-1).

Option:

02 All movements toward the track may be prohibited at a signalized intersection that is preempted by the approach of rail traffic, even if the clear storage distance is more than 100 feet.

Support:

03 Including the word “TRAIN” as part of the blank-out turn prohibition sign informs road users that the turn prohibition being displayed by the sign is in effect because rail traffic is approaching or occupying a nearby rail grade crossing, and that the turn prohibition will be terminated after the rail traffic has cleared the grade crossing.

04 Rail operations can include the use of activated blank-out turn prohibition (R3-1a or R3-2a) signs at unsignalized highway-highway intersections in the vicinity of grade crossings, such as where a semi-

exclusive or mixed-use alignment is within or parallel to the roadway where road users are normally permitted to turn across the tracks.

Guidance:

05 An LRT-activated blank-out turn prohibition (R3-1a or R3-2a) sign should be used during preemption where all three of the following conditions are present:

A. There is no active warning system for the LRT grade crossing,

B. Vehicles traveling along a parallel roadway would normally be permitted to turn left or right to travel across tracks that are located within 100 feet of the highway-highway intersection or within the median of the intersection, and

C. The drivers turning at the highway-highway intersection are not controlled by a traffic control signal.

Standard:

06 Blank-out turn prohibition signs that are associated with preemption shall display their message only when a preemption signal is being received from the railroad or LRT equipment or while the automatic gate is activated.

Support:

07 The provisions contained in Chapter 2L for blank-out signs are applicable to R3-1a and R3-2a signs.

Section 8D.11 Pre-Signals at or Near Grade Crossings

Guidance:

01 If a grade crossing is located in close proximity to an intersection controlled by a traffic control signal and the clear storage distance is less than the design vehicle length, the use of pre-signals to control traffic approaching the grade crossing in the direction toward the intersection should be considered.

02 If a grade crossing equipped with flashing-light signals, but without automatic gates, is located within 200 feet of an intersection controlled by a traffic control signal, a pre-signal should be provided.

Support:

03 A pre-signal is generally used where the grade crossing is located less than 200 feet from a downstream signalized intersection. Section 8D.12 contains information for grade crossings located 200 feet or more from a downstream signalized intersection.

04 Other measures that could be considered instead of or in addition to a pre-signal to minimize the possibility of vehicles queuing across the grade crossing include providing additional lanes, reducing the cycle length, using split phasing, using protected turn phasing, and/or providing an extended green interval for the approach.

Standard:

05 Pre-signal faces shall display a steady red signal indication during the track clearance interval of the signal preemption sequence to prohibit additional motor vehicles from entering the minimum track clearance distance (see Section 8A.07).

06 Pre-signal faces shall not display green signal indications when the grade crossing flashing-light signals are displaying flashing red indications.

Guidance:

07 Consideration should be given to using visibility-limited signal faces (see definition in Section 1C.02) at the intersection for the downstream signal faces that control the approach that is equipped with pre-signals.

Option:

08 The duration of the extended green interval may be adjusted by vehicle detection located between the pre-signal and the downstream signalized intersection.

09 The pre-signal phase sequencing may be timed with an offset from the downstream signalized intersection such that the pre-signal's green signal indication terminates prior to the downstream intersection's green signal indication to minimize the possibility of stopping motor vehicles within the minimum track clearance distance (see Section 8A.07) and the clear storage distance.

Guidance:

10 If pre-signals are used, the queue clearance time (see Section 8D.09) should be long enough to allow a design vehicle of maximum length stopped just inside the minimum track clearance distance (see Section 8A.07) to start up and move through the downstream intersection, or to clear the minimum track clearance distance if there is sufficient clear storage distance.

Support:

11 The storage area for mandatory left-turn and right-turn lanes at signalized intersections that are downstream from grade crossings sometimes extends from the signalized intersection back to and across the grade crossing. In such cases, drivers that are in the turn lane are required to make a straight-through movement when they cross the track(s) and then are required to make a turning movement when they reach the downstream signalized intersection.

Guidance:

12 A separate pre-signal face for the mandatory left-turn lane and/or right-turn lane should be provided in addition to the pre-signal signal faces provided for the through movement where both of the following conditions are met:

A. The storage area for the turn lane extends from the downstream signalized intersection back to and across the grade crossing, and

B. The green interval for the turning movement at the downstream intersection does not always begin and end simultaneously with the green interval for the adjacent through movement at the downstream intersection.

Standard:

13 Where adjacent lanes at a pre-signal are controlled separately, all of the signal faces shall be capable of displaying the following signal indications: CIRCULAR RED, CIRCULAR YELLOW, and straight-through GREEN ARROW. Left-turn GREEN ARROW and right-turn GREEN ARROW signal indications shall not be used in pre-signal faces. CIRCULAR GREEN signal indications shall not be used in pre-signal faces where adjacent lanes are controlled separately.

Option:

14 Where all adjacent lanes at a pre-signal are controlled together, CIRCULAR GREEN signal indications may be used in pre-signal faces.

Standard:

15 If a separate signal face is provided at a pre-signal for separate control of a mandatory left-turn and/or right-turn lane that extends from the downstream signalized intersection back to and across the grade crossing, the separate signal face shall be devoted exclusively to controlling traffic in the turn lane separately from adjacent lanes, and:

A. Shall be visibility-limited from the adjacent through movement, or

B. A LEFT (RIGHT) LANE SIGNAL (R10-10b) sign (see Figure 8B-1) shall be mounted adjacent to the separate signal face controlling traffic in a single turn lane or in the turn lane that is farthest from the adjacent through lane(s) if multiple turn lanes are present for

a particular turning movement, and a LEFT (RIGHT) TURN LANE SIGNAL (R10-10c) sign (see Figure 8B-1) shall be mounted adjacent to the separate signal face controlling traffic in the other turn lanes if multiple turn lanes are present for a particular turning movement.

Support:

16 Because the signal faces at a pre-signal do not always display the same signal indications as the downstream signalized intersection, the approach to the pre-signal is considered to be a separate approach from the approach to the downstream signalized intersection. This means that the provisions in Sections 4D.05 through 4D.08 regarding the number of signal faces, the visibility and aiming of the signal faces, and the lateral and longitudinal positioning of the signal faces apply separately to the approach to the pre-signal.

17 The provisions in Section 4D.07 regarding the lateral positioning of separate turn signal faces are applicable to the separate signal faces that are provided at pre-signals for a mandatory turn lane that extends from the downstream signalized intersection back to and across the grade crossing.

Guidance:

18 A STOP HERE ON RED (R10-6~~ or R10-6a~~) sign should be installed at the pre-signal's stop line.

MoDOT does not use the R10-6a sign. Revised Dec. 2025

Standard:

19 If a pre-signal is installed upstream from a signalized intersection, a No Turn on Red (R10-11~~, R10-11a, or R10-11b~~) sign (see Section 2B.60) shall be installed at the pre-signal for the approach that crosses the track if turns on red would otherwise be permitted at the downstream intersection.

MoDOT does not use the R10-11a or R10-11b signs. Revised Dec. 2025

Option:

20 DO NOT STOP ON TRACKS (R8-8) signs may be installed in conjunction with a pre-signal.

21 Pre-signal faces may be located either upstream or downstream from the grade crossing in order to provide the most effective display to road users approaching the grade crossing.

22 If pre-signal faces must be located within close proximity to the flashing-light signals, the pre-signal faces may be mounted on the same overhead structure as the flashing-light signals.

Section 8D.12 Queue Cutter Signals at or Near Grade Crossings

Support:

01 A queue cutter signal is a traffic control signal that controls one direction of traffic at a grade crossing to minimize the possibility of vehicles stopping within the minimum track clearance distance (see Section 8A.07). Although a queue cutter signal has a similar purpose as a pre-signal (see Section 8D.11), the difference is that a queue cutter signal is independent from the downstream signalized intersection, whereas a pre-signal is part of the downstream signal.

Option:

02 At grade crossing locations where the queue from a bottleneck (usually a signalized intersection) that is downstream from the grade crossing frequently extends back to and across the grade crossing, a queue cutter signal may be installed.

03 A queue cutter signal may be operated in one of the following modes:

A. Actuated mode – the queue cutter signal operation is dependent on downstream detection of a growing queue.
B. Non-actuated mode – the queue cutter signal operates on a time-of-day plan based on anticipated downstream queues. This mode could be similar to the functional operation of a pre-signal.

C. Variable mode – the queue cutter signal operation varies between the actuated mode and the non-actuated mode based on the time of day, on queue detection, or both.

Support:

04 A non-actuated queue cutter signal is generally used where the grade crossing is located between 200 feet and 400 feet from a downstream bottleneck. An actuated queue cutter signal is generally used where the grade crossing is located more than 400 feet from a downstream bottleneck. Section 8D.11 contains information for grade crossings located less than 200 feet from a downstream signalized intersection.

Standard:

05 Where adjacent lanes at a queue cutter signal are controlled separately, all of the signal faces shall be capable of displaying the following signal indications: CIRCULAR RED, CIRCULAR YELLOW, and straight-through GREEN ARROW. Left-turn GREEN ARROW and right-turn GREEN ARROW signal indications shall not be used in queue cutter signal faces. CIRCULAR GREEN signal indications shall not be used in queue cutter signal faces where adjacent lanes are controlled separately.

Option:

06 Where all adjacent lanes at a ~~pre-~~queue cutter signal are controlled together, CIRCULAR GREEN signal indications may be used in queue cutter signal faces.

07 Queue cutter signal faces may be located either upstream or downstream from the grade crossing in order to provide the most effective display to road users approaching the grade crossing.

08 If queue cutter signal faces must be located within close proximity to the flashing-light signals, the queue cutter signal faces may be mounted on the same overhead structure as the flashing-light signals.

Guidance:

09 A STOP HERE ON RED (R10-6 ~~or R10-6a~~) sign should be installed at the queue cutter signal's stop line.

MoDOT does not use the R10-6a sign. Revised Dec. 2025

Option:

10 DO NOT STOP ON TRACKS (R8-8) signs may be installed in conjunction with a queue cutter signal.

Guidance:

11 Where a queue cutter signal operates in an actuated mode based on vehicle presence detection, the queue detector should be located to provide adequate distance to detect a growing queue, permit the queue cutter signal to complete any programmed minimum green or yellow change interval time, and then allow a design vehicle that lawfully crosses the queue cutter signal's stop line during the yellow change interval to clear the minimum track clearance distance (see Section 8A.07) before the growing queue extends to the grade crossing.

12 A queue cutter signal that is operating in an actuated mode and that is displaying CIRCULAR RED signal indications should continue to display CIRCULAR RED signal indications as long as the downstream detection system continues to detect the presence of a vehicular queue at the detection point on the departure side of the grade crossing.

13 Where a queue cutter signal operates in actuated mode based on vehicle presence detection, consideration should be given to the potential for turning movements between the grade crossing and the downstream bottleneck that could create an intermediate queue of vehicles. Supplemental queue detectors should be considered to detect the formation of these intermediate queues to activate the queue cutter signal.

14 Where a queue cutter signal is operated in a non-actuated mode, the queue cutter signal should be coordinated with adjacent signals to provide for the progressive movement of traffic.

Option:

15 Where a queue cutter signal is always operated in a non-actuated mode based on anticipated queues, the queue cutter signal may be operated in a flashing mode at times when the downstream queues are not expected to extend back to and across the grade crossing.

16 When a variable-mode queue cutter signal is operating in the non-actuated mode, the queue detector may be used to extend the display of the CIRCULAR RED signal indication as long as the downstream detection system continues to detect the presence of a vehicular queue at the detection point on the departure side of the grade crossing.

Standard:

17 A queue cutter signal shall be interconnected with the flashing-light signals at the grade crossing.

18 Queue cutter signal faces shall not display green signal indications when the grade crossing flashing-light signals are displaying flashing red indications.

19 When a queue cutter signal that is displaying straight-through GREEN ARROW signal indications (when operating in a steady, stop-and-go mode) or flashing CIRCULAR YELLOW signal indications (when operating in a programmed flashing mode) is preempted by the approach of rail traffic, it shall immediately display steady CIRCULAR YELLOW signal indications during the yellow change interval (see Section 4F.17) followed by steady CIRCULAR RED signal indications. The queue cutter signal shall continue to display the steady CIRCULAR RED signal indications until the rail traffic clears the grade crossing and no other rail traffic is detected.

20 A queue cutter signal operating in an actuated mode shall display straight-through GREEN ARROW signal indications except when it receives an actuation from the downstream vehicle presence detection system or is preempted by the approach of rail traffic. When it receives an actuation from the vehicle presence detection system, the queue cutter signal shall finish timing any active minimum green interval, if used, and then display steady CIRCULAR YELLOW signal indications during the yellow change interval (see Section 4F.17) followed by steady CIRCULAR RED signal indications. When no preemption call is present and the queue length is such that no vehicles are detected in the detection zone of the downstream vehicle presence detection system, the queue cutter signal shall finish timing any active minimum red interval, if used, and then return to the display of straight-through GREEN ARROW signal indications.

21 The failure modes of the queue cutter signal control system and vehicle presence detection circuitry shall be evaluated and accounted for in the design of any such system. Fail-safe design techniques shall be used in the system design. If a queue detector fails, the queue cutter signal shall display flashing CIRCULAR RED signal indications until the normal functioning of the detection system is restored.

Support:

22 The storage area for mandatory left-turn and right-turn lanes at signalized intersections that are downstream from grade crossings sometimes extends from the signalized intersection back to and across the grade crossing. In such cases, drivers that are in the turn lane are required to make a straight-through movement when they cross the track(s) and then are required to make a turning movement when they reach the downstream signalized intersection.

Guidance:

23 A separate queue cutter signal face for the mandatory left-turn lane and/or right-turn lane should be provided in addition to the queue cutter signal faces provided for the through movement where both of the following conditions are met:

A. The storage area for the turn lane extends from the downstream signalized intersection back to and across the grade crossing, and

B. The green interval for the turning movement at the downstream intersection does not always begin and end simultaneously with the green interval for the adjacent through movement at the downstream intersection.

Standard*:*

24 If a separate signal face is provided at a queue cutter signal for separate control of a mandatory left-turn and/or right-turn lane that extends from the downstream signalized intersection back to and across the grade crossing, the separate signal face shall be devoted exclusively to controlling traffic in the turn lane separately from adjacent lanes, and:

A. Shall be visibility-limited from the adjacent through movement, or

B. A LEFT (RIGHT) LANE SIGNAL (R10-10b) sign (see Figure 8B-1) shall be mounted adjacent to the separate signal face controlling traffic in a single turn lane or in the turn lane that is farthest from the adjacent through lane(s) if multiple turn lanes are present for a particular turning movement, and a LEFT (RIGHT) TURN LANE SIGNAL (R10-10c) sign (see Figure 8B-1) shall be mounted adjacent to the separate signal face controlling traffic in the other turn lanes if multiple turn lanes are present for a particular turning movement.

Support:

25 Because the signal faces at a queue cutter signal do not always display the same signal indications as the downstream signalized intersection, the approach to the queue cutter signal is considered to be a separate approach from the approach to the downstream signalized intersection. This means that the provisions in Sections 4D.05 through 4D.08 regarding the number of signal faces, the visibility and aiming of the signal faces, and the lateral and longitudinal positioning of the signal faces apply separately to the approach to the queue cutter signal.

26 The provisions in Section 4D.07 regarding the lateral positioning of separate turn signal faces are applicable to the separate signal faces that are provided at queue cutter signals for a turn lane that extends from the downstream signalized intersection back to and across the grade crossing.

27 While queue cutter signals and queue jumping signals have similar names, their purpose, design, and operation are quite different. Care must be taken to avoid confusion between queue cutter signals used in conjunction with a grade crossing and queue jumping signals used with transit operations.

Section 8D.13 Warning Beacons or LED-Enhanced Warning Signs at Grade Crossings

Option:

01 Warning Beacons (see Section 4S.03) or LEDs within the legend, symbol, or border of the sign (see Section 2A.12) may be used to supplement warning signs installed at or on an approach to a grade crossing if additional emphasis is desired for the warning sign. The Warning Beacon or LED-enhanced sign may operate continuously or be activated upon the approach or presence of rail traffic.

Support:

02 Most of the warning signs that are used at or on an approach to a grade crossing warn of physical conditions that exist at the grade crossing regardless of whether rail traffic is approaching or occupying the grade crossing. In these cases, a Warning Beacon or LED-enhanced sign would typically be operated continuously to enhance the conspicuity of the sign.

~~03 Some warning signs, such as a BE PREPARED TO STOP (W3-4) sign (see Section 2C.35), if used in advance of a grade crossing and supplemented with a WHEN FLASHING (W16-13P) plaque, provide information that is typically not applicable except when rail traffic is approaching or occupying the grade crossing. Likewise, a special word message sign (see Section 2A.04) with a legend such as TRAIN WHEN FLASHING provides notice of a condition that only exists when rail traffic is~~

~~approaching or occupying the grade crossing. These signs would not typically be operated continuously, but instead only when the condition is present.~~

MoDOT does not use the BE PREPARED TO STOP sign. Revised Dec. 2025

Standard:

04 If a Warning Beacon or LEDs within the legend, symbol, or border of the sign is activated by the approach or presence of rail traffic ~~in conjunction with a warning sign that includes the legend WHEN FLASHING either on the sign itself or on a supplemental plaque~~, the activation of the Warning Beacon or LEDs shall be accomplished by a supervised preemption interconnection using fail-safe design principles (see Section 8D.09) between the control circuits of the grade crossing warning system and the Warning Beacon or LED-enhanced sign.

MoDOT does not use the WHEN FLASHING word message on signage. Revised Dec. 2025

Support:

05 In the event of a system failure, the normal fault state using a fail-safe interconnection for a Warning Beacon or LED-enhanced sign that is activated by the approach or presence of rail traffic at the grade crossing would be for the Warning Beacon or LEDs to operate when no rail traffic is present.

Option:

06 A Warning Beacon or LED-enhanced sign that is activated by the approach or presence of rail traffic at the grade crossing may continue to operate for a period of time following the passage of the rail traffic to permit the standing queue to dissipate.

Guidance:

07 If a Warning Beacon or LED-enhanced sign is activated by the approach or presence of rail traffic at the grade crossing, the Warning Beacon or LED-enhanced sign should begin operating prior to the activation of the flashing-light signals at the grade crossing based upon the typical travel time from the location of the Warning Beacon or LED-enhanced sign to the stop line for the grade crossing.

08 If a Warning Beacon or LED-enhanced sign that is activated by the approach or presence of rail traffic at the grade crossing is operated by commercial AC power, a back-up power system should be provided.

Section 8D.14 Traffic Control Signals at or Near Highway-LRT Grade Crossings

Support:

01 There are two types of traffic control signals for controlling vehicular and LRT movements at interfaces of the two modes. The first is the standard traffic control signal described in Part 4, which is the focus of this ~~Section~~ article. The other type of signal is referred to as an LRT signal and is discussed in Section 8D.15.

Standard:

02 The provisions of Part 4 and Sections 8D.08 through 8D.12 relating to traffic control signal design, installation, and operation, including interconnection with nearby automatic gates or flashing-light signals, shall be applicable as appropriate where traffic control signals are used at highway-LRT grade crossings.

03 If traffic control signals are in operation at an LRT grade crossing that is used by pedestrians, bicyclists, and/or other non-motorized road users, an audible device such as a bell shall also be provided and shall be operated in conjunction with the traffic control signals.

Guidance:

04 If the highway traffic signal has emergency-vehicle preemption capability, it should be coordinated with LRT operation.

05 Where LRT operates in a wide median, motor vehicles crossing the tracks and being controlled by both near and far side traffic signal faces should receive a protected left-turn phase from the far side signal face to clear motor vehicles from the crossing when LRT traffic is approaching the crossing.

Option:

06 Signal indications that permit the movement of motor vehicles, pedestrians, and bicyclists and do not conflict with LRT movements may be provided during LRT phases.

07 A traffic control signal may be installed in addition to Exit Gate systems and automatic gates at a highway-LRT grade crossing if the crossing occurs within a highway-highway intersection and if the installation of the traffic control signal can be justified based on the warrants described in Chapter 4C.

08 Where a highway-LRT grade crossing is at a location other than an intersection and LRT operating speeds are less than 25 mph, traffic control signals may be used in lieu of flashing-light signals.

Support:

09 Typical circumstances for using traffic control signals might include:

A. Geometric conditions preclude the installation of highway-LRT grade crossing warning devices,
B. LRT vehicles share the same roadway with road users, or
C. Traffic control signals already exist.

10 Section 4F.18 contains information regarding traffic control signals at or near highway-LRT grade crossings that are not equipped with highway-LRT grade crossing warning devices.

11 Section 4C.10 describes the Intersection Near a Grade Crossing signal warrant that is intended for use at a location where the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

Guidance:

12 When a highway-LRT grade crossing exists within a signalized intersection, consideration should be given to providing separate turn signal faces (see definition in Section 1C.02) for the movements crossing the tracks.

Standard:

13 Separate turn signal faces that are provided for turn movements toward the crossing shall display a steady red indication during the approach and/or passage of LRT traffic.

Support:

14 Section 8D.10 contains information regarding the prohibition of turning movements toward the crossing during preemption.

Section 8D.15 Use of LRT Signals for Control of LRT Vehicles at Highway-LRT Grade Crossings

Guidance:

M00 LRT signals are not currently used on MoDOT facilities. When considering the use of LRT signals the Highway Safety and Traffic Division should be contacted for guidance.

Option:

01 LRT signal indications may be used at grade crossings and at intersections in mixed-use alignments in conjunction with standard traffic control signals where special LRT signal phases are used to accommodate turning LRT vehicles or where additional LRT clearance time is desirable.

02 LRT signal indications may be used at intersections where special signal phases are used for bus movements.

Standard:

03 If the LRT crossing control is separate from the intersection control, the two shall be interconnected. The LRT signal phase shall not be terminated until after the LRT vehicle has cleared the crossing or intersection.

04 If a separate set of standard traffic control signal indications (red, yellow, and green circular and arrow indications) is used to control LRT movements, the indications shall be positioned so they are not visible to motorists, pedestrians, and bicyclists (see Section 4D.06).

Guidance:

05 If a signal face used to control LRT movements cannot be positioned where the indications are not visible to road users, the LRT signal indications shown in Figure 8D-3 should be used.

Standard:

06 If special LRT signal indications such as those shown in Figure 8D-3 are used, the color of the signal indications shall be white.

Option:

07 If used, individual LRT signal sections may be displayed to form clustered signal faces or multiple LRT signal indications may be displayed in an individual housing.

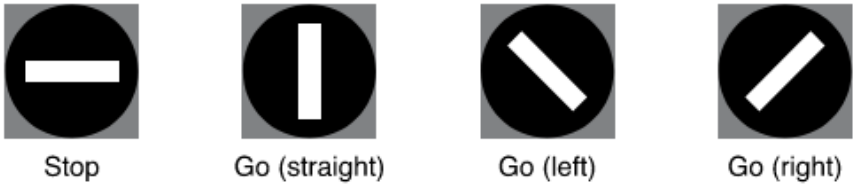
Guidance:

08 LRT signal faces should be located at least 3 feet from the nearest highway traffic signal face for the same approach measured either horizontally perpendicular to the approach between the centers of the signal faces or vertically from the center of the lowest signal indication of the top signal face to the center of the highest signal indication of the bottom signal face.

Support:

09 Section 4F.18 contains information about the use of the LRT signal indications shown in Figure 8D-3 for the control of exclusive bus movements at "queue jumper lanes" and for the control of exclusive bus rapid transit movements on mixed-use alignments.

Figure 8D-3. Light Rail Transit Signal Indications



Notes:

1. All rectangular bar signal indications shall be white.
2. Go signal indications may be flashed to inform LRT operators to prepare to stop.

CHAPTER 8E. PATHWAY AND SIDEWALK GRADE CROSSINGS [EPG 913.5]

Section 8E.01 Purpose

Support:

01 Traffic control for pathway and sidewalk grade crossings includes all signs, signals, markings, other warning devices, and their supports at pathway and sidewalk grade crossings and along pathway and sidewalk approaches to grade crossings. The function of this traffic control is to promote safety and provide effective operation of both rail and pathway or sidewalk traffic at pathway or sidewalk grade crossings.

02 Other physical treatments that are described in this ~~Chapter~~ article that are also applicable to pathways and sidewalks at grade crossings, such as detectable warnings, swing gates, and fencing, provide increased safety for pathway and sidewalk users.

03 Crosswalk markings at intersections where pedestrians cross LRT tracks in mixed-use alignments are covered by the provisions of Chapter 3C rather than by the provisions of this ~~Chapter~~ article.

04 Figure 8E-1 illustrates the difference between a pathway grade crossing and a sidewalk grade crossing. A pathway is frequently placed in its own right-of-way on an alignment that is independent of any roadway. If a pathway is built parallel to a roadway, it is physically separated from the roadway by an open space or barrier such that the traffic control devices for the roadway grade crossing do not exert an influence over or provide adequate warning to pathway users. A sidewalk runs parallel to a roadway within the highway right-of-way and is close enough to the edge of the roadway's traveled way that the traffic control devices for the roadway grade crossing can frequently exert an influence over or provide adequate warning to sidewalk users. Pathways are typically used by both pedestrians and bicyclists, whereas sidewalks are typically used only by pedestrians.

Section 8E.02 Use of Standard Devices, Systems, and Practices

Guidance:

01 The pathway or sidewalk user's ability to detect the presence of approaching rail traffic should be considered in determining the type and placement of traffic control devices at pathway or sidewalk grade crossings.

02 The traffic control devices, including the appropriate traffic control system to be used, and other physical treatments at a pathway or sidewalk grade crossing should be determined by a Diagnostic Team that includes the agency with jurisdiction over the pathway or sidewalk.

03 At skewed grade crossings, the adjustment, re-alignment, or relocation of existing sidewalk grade crossings should be considered when determining the placement of traffic control devices for roadway users.

Support:

04 The safety of pathway and sidewalk users is enhanced when pathways and sidewalks are designed such that they do not cross the tracks at a narrow angle. The casters of wheelchairs and the wheels of bicycles could fall into and might be constrained in the flangeway gap at a skewed crossing. The flangeway gap is typically 2.5 inches wide at LRT grade crossings and 3 inches wide at railroad grade crossings.

05 It is desirable that pathways and sidewalks be designed such that they maintain a relatively consistent horizontal alignment and profile from the nearest rail to the detectable warning (if present) or from the nearest rail to the stop line (if present) on each approach to the crossing. Providing a pedestrian refuge area in advance of the stop line or the detectable warning surface so that pedestrians have a place to wait while rail traffic approaches and occupies the crossing can be beneficial to pedestrian safety.

06 When designing new sidewalk grade crossings, placing the sidewalk outside of the area occupied by grade crossing traffic control devices for vehicular traffic is desirable (see Figure 8E-2). This includes

making sure that the counterweights and support arms for the automatic gates for vehicular traffic do not obstruct the sidewalk when the gate is fully lowered.

07 Additional information regarding the design of pathways and sidewalks is contained in the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Figure 8E-1. Illustration of the Difference between a Pathway Grade Crossing and a Sidewalk Grade Crossing

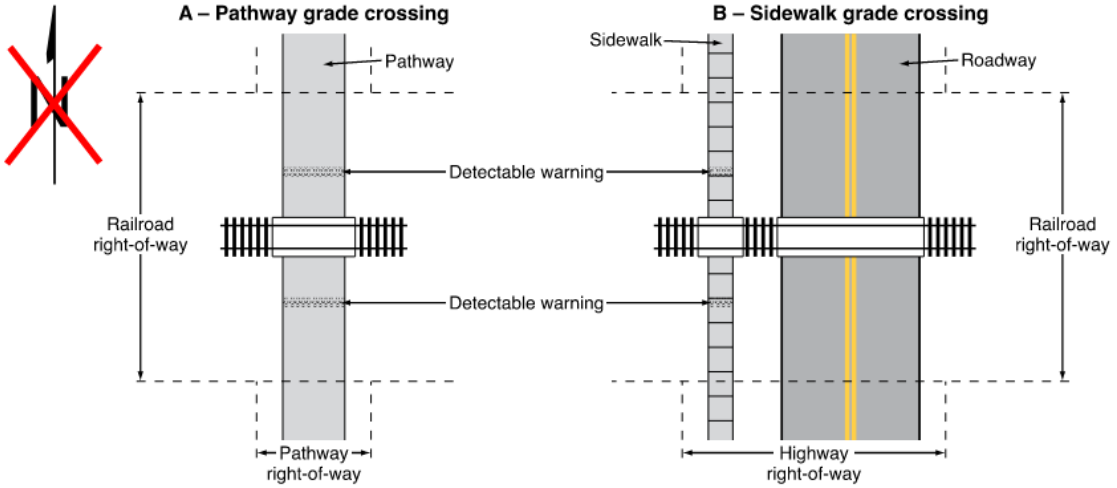
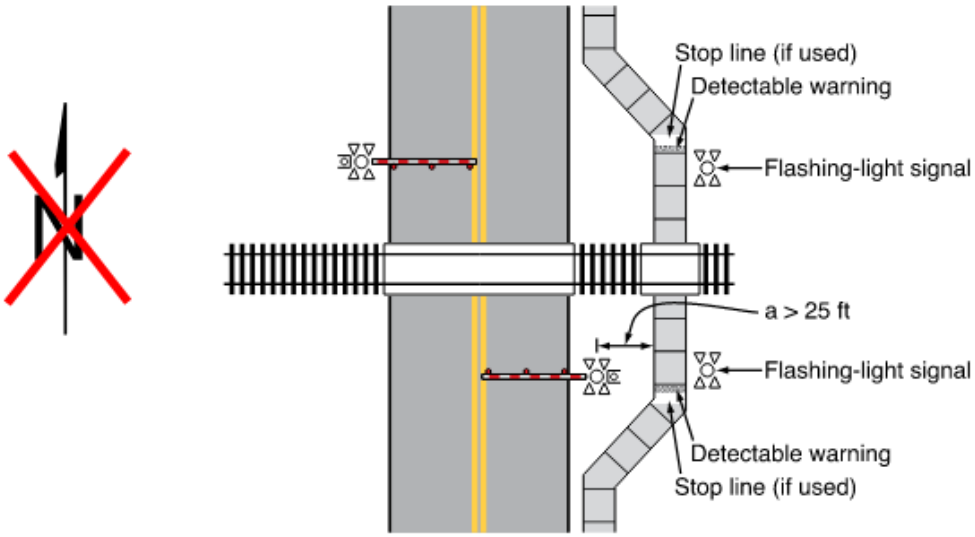


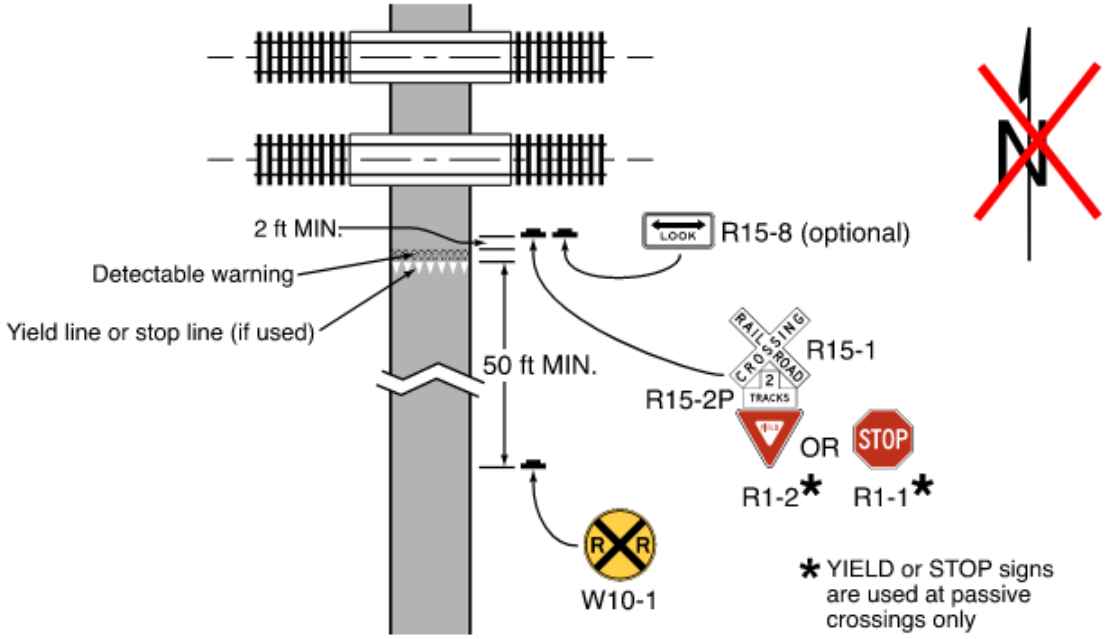
Figure 8E-2. Example of an Active Traffic Control System for a Sidewalk or Pathway Grade Crossing



Notes: The dimension "a" is the distance from the edge of the sidewalk grade crossing to the center of the traffic control warning devices at the grade crossing.

If a ≤ 25 feet, flashing-light signals may be omitted at a pathway or sidewalk grade crossing (see Section 8E.07).

Figure 8E-3. Example of Signing and Markings at a Pathway Grade Crossing



Section 8E.03 Pathway and Sidewalk Grade Crossing Signs and Markings

Standard:

01 Pathway and sidewalk grade crossing signs shall be standard in shape, legend, and color.

02 The minimum sizes of sidewalk grade crossing signs that are intended to be viewed only by sidewalk users and of pathway grade crossing signs shall be as shown in the shared-use path column in Table 9A-1.

Guidance:

03 No portion of a traffic control device or its support should protrude into the pathway or sidewalk grade crossing. Sidewalk and pathway grade crossing traffic control devices should be located such that all physical features of the device, including the support hardware, conform to clearance requirements provided by the railroad company and/or transit agency, and the ~~regulatory agency with statutory authority (if applicable)~~ MoDOT Multimodal Division (Rail Section).

04 The minimum mounting height for post-mounted signs adjacent to pathways and sidewalks should be 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pathway or sidewalk surface (see Figure 9A-1).

05 If overhead traffic control devices are placed above pathways, the clearance from the bottom of the device to the pathway surface directly under the sign or device should be at least 8 feet.

06 If overhead traffic control devices are placed above pathways that are used by equestrians, the clearance from the bottom of the device to the pathway surface directly under the sign or device should be at least 10 feet.

Standard:

07 If overhead traffic control devices are placed above sidewalks, the clearance from the bottom of the device to the sidewalk surface directly under the sign or device shall be at least 7 feet.

Guidance:

08 Traffic control devices mounted adjacent to pathways at a height of less than 8 feet measured vertically from the bottom of the device to the elevation of the near edge of the pathway surface should have a minimum lateral offset of 2 feet from the near edge of the device to the near edge of the pathway (see Figure 9A-1).

09 If pathway users include those who travel faster than pedestrians, such as bicyclists or skaters, warning signs should be installed in advance of the pathway grade crossing (see Figure 8E-3).

~~Option:~~

~~10 The Skewed Crossing (W10-12) sign (see Section 8B.22) may be used at a skewed pathway or sidewalk grade crossing to warn pathway or sidewalk users that the tracks are not perpendicular to the pathway or sidewalk.~~

~~11 The LOOK (R15-8) sign (see Figure 8B-1) may be used at a pathway or sidewalk grade crossing to inform pathway or sidewalk users to look in both directions prior to crossing the track(s).~~

~~*Guidance:*~~

~~*12 If a LOOK (R15-8) sign is used at a pathway or sidewalk grade crossing, it should be mounted on a separate post that is farther from the pathway or sidewalk than the Crossbuck sign or Crossbuck Assembly.*~~

MoDOT does not use the W10-12 or R15-8 signs. Revised Dec. 2025

Section 8E.04 Stop Lines, Edge Lines, and Detectable Warnings

Guidance:

01 A stop line should be provided at a pathway grade crossing if the surface where the marking is to be applied is capable of retaining the application of the marking.

Option:

02 A stop line may be provided at a sidewalk grade crossing if the surface where the marking is to be applied is capable of retaining the application of the marking.

Guidance:

03 If used at pathway or sidewalk grade crossings, the stop line should be a transverse line that extends across the full width of the pathway or sidewalk at the point where a pathway or sidewalk user is to stop. If no detectable warning is provided, the stop line should be placed at least 2 feet in advance of the automatic gate, counterweight, flashing-light signals, or Crossbuck Assembly (if any of these are present), and at least 12 feet from the nearest rail.

Option:

04 Edge lines (see Section 3B.09) to delineate the designated user route may be used on the approach to and across the tracks at a pathway grade crossing, a sidewalk grade crossing, or a station crossing if the surface where the marking is to be applied is capable of retaining the application of the marking.

Support:

05 Edge line delineation can be beneficial where the distance across the tracks is long, commonly because of a skewed grade crossing or because of multiple tracks, or where the pathway or sidewalk surface is immediately adjacent to a traveled way.

06 Information regarding the design of detectable warning surfaces is contained in the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Standard:

07 Detectable warnings (see Chapter 3C) shall be used at pathway grade crossings where pedestrian travel is permitted and at sidewalk grade crossings and shall extend across the full width of the pathway or sidewalk.

Guidance:

08 The dimension of the detectable warning in the direction of pedestrian travel should be at least 2 feet.

09 Detectable warnings should be placed immediately beyond the pathway or sidewalk stop line (if a stop line is present) or should be incorporated into and made a part of the stop line. The downstream edge of the detectable warning should be located at least 2 feet upstream from the automatic gate, counterweight, flashing-light signals, or Crossbuck Assembly (if any of these are present) and at least 12 feet from the nearest rail (see Figures 8E-2 and 8E-3).

10 If the distance between the nearest rail of two adjacent tracks at a sidewalk or pathway grade crossing is 30 feet or more, additional detectable warnings should be used to designate the limits of the pedestrian refuge area (see Figure 8E-4).

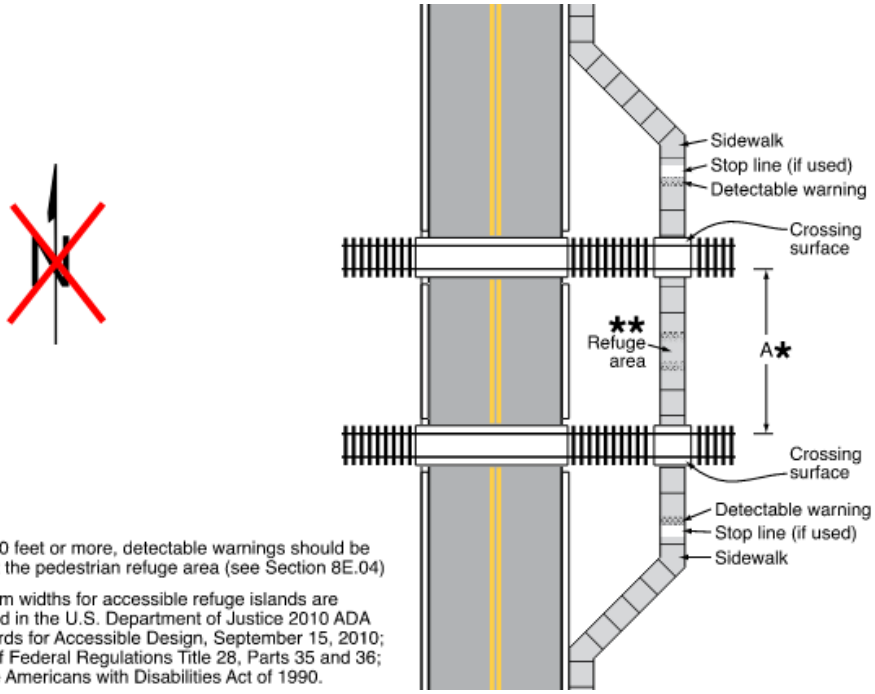
Option:

11 At pathway-LRT and sidewalk-LRT grade crossings, the downstream edge of the detectable warning may be located less than 12 feet from the nearest rail.

Guidance:

12 The downstream edge of the detectable warning at pathway-LRT and sidewalk-LRT grade crossings should be located at least 2 feet upstream from the automatic gate, counterweight, flashing-light signals, or Crossbuck assembly (if any of these are present), at least 6 feet from the nearest rail, and in accordance with the requirements of the railroad company and/or transit agency, and ~~regulatory agency with statutory authority~~ MoDOT Multimodal Division (Rail Section), (if applicable).

Figure 8E-4. Example of Detectable Warning and Stop Lines for a Refuge Area at a Sidewalk Grade Crossing



Section 8E.05 Passive Traffic Control Devices– Crossbuck Assemblies

Support:

M00 The Crossbuck Assembly is provided by the appropriate railroad company. Railroad companies and/or transit agencies are responsible for the installation and maintenance of these signs.

Standard:

01 Where the nearest edge of a passive pathway or sidewalk grade crossing is located more than 25 feet from the center of the nearest traffic control warning device at the grade crossing, a Crossbuck Assembly (see Figure 8E-5) shall be installed on each approach to the pathway or sidewalk grade crossing. The distance shall be measured perpendicular to the traveled way from the center of the support post of a Crossbuck Assembly at a passive grade crossing or from the center of the mast of an active traffic control warning device at an active grade crossing to the nearest edge of the pathway or sidewalk surface where it crosses the track(s) (see Figure 8E-2).

Option:

02 A Crossbuck Assembly may be installed on the approaches to a pathway or sidewalk grade crossing where the nearest edge of the pathway or sidewalk is located 25 feet or less from the center of the nearest traffic control warning device at a grade crossing.

03 The Crossbuck Assembly may be omitted at station crossings.

04 The retroreflective strip on the back of the support may be omitted on the Crossbuck support at a pathway or sidewalk grade crossing.

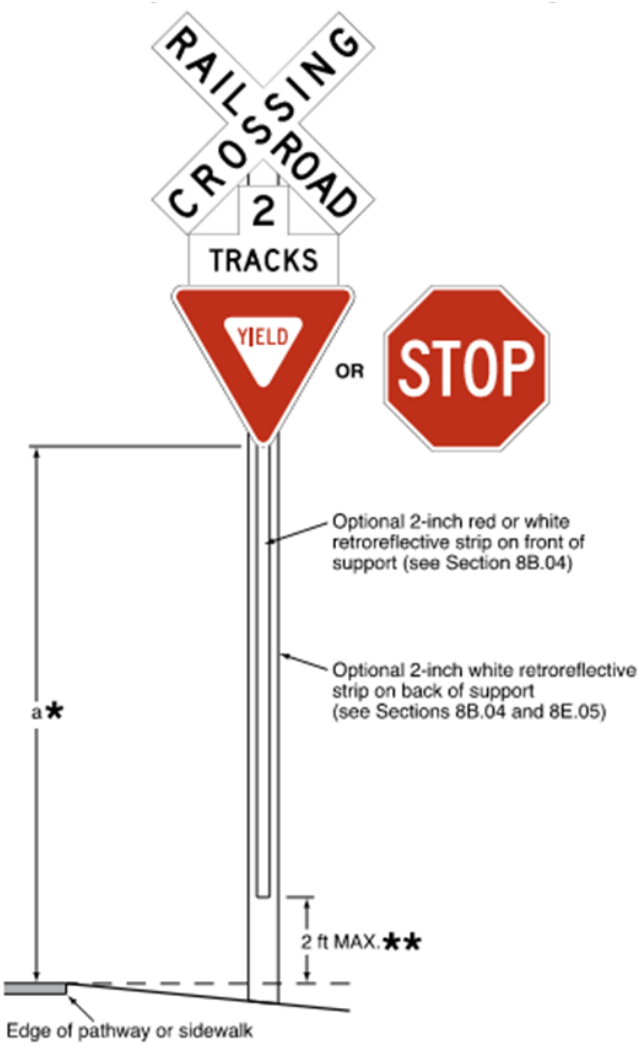
Standard:

05 The minimum height, measured vertically from the bottom of the YIELD or STOP sign to the elevation of the near edge of the pathway or sidewalk, of Crossbuck Assemblies installed on pathways or sidewalks shall be 4 feet where the lateral offset to the nearest edge of the sign is 2 feet

or more and shall be 7 feet where the lateral offset to the nearest edge of the sign is less than 2 feet (see Figure 8E-5).

06 The minimum lateral offset, measured horizontally from the nearest edge of the pathway or sidewalk to the nearest edge of the Crossbuck Assembly signs, shall be 0 feet for sidewalks and 2 feet for pathways.

Figure 8E-5. Example of a Crossbuck Assembly at a Pathway or Sidewalk Grade Crossing



* Mounting height shall be at least 7 feet for sidewalks where the lateral offset is less than 2 feet, at least 4 feet for sidewalks where the lateral offset is 2 feet or more, and at least 4 feet for pathways.

** Measured to the elevation at the near edge of the pathway or sidewalk.

Notes: 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.

Section 8E.06 Channelizing Devices used with Sidewalk and Pathway Traffic Control Devices

Support:

M00 The design, installation and maintenance of these devices are normally the responsibility of the railroad company with the approval of the MoDOT Multimodal Division (Rail Section).

01 The pathway or sidewalk user's ability to detect the presence of approaching rail traffic needs to be considered in determining the type and placement of channelizing devices such as swing gates, fencing, and pedestrian barriers.

02 Where automatic gates and swing gates are used, it is desirable to design the pathway or sidewalk in a manner that channelizes or directs users to the entrance to and exit from the pathway or sidewalk grade crossing.

03 Swing gates (see Figures 8E-6, 8E-9, and 8E-10) are designed to open away from the track(s) so that pathway or sidewalk users can quickly push the swing gate open when moving away from the track(s), and to automatically return to the closed position after each use.

04 It is important to use retroreflective material~~, appropriate object markers (see Section 9C.09),~~ and/or signs on swing gates, maze fencing, or pedestrian barriers that are placed at pathway or sidewalk grade crossings. Illumination of such areas can also be beneficial.

05 When used in conjunction with automatic gates at a pathway or sidewalk grade crossing, swing gates are typically equipped with a latching device that permits the swing gate to be opened only from the track side of the swing gate. Push bars, kick plates, or similar devices are also appropriate for use on a swing gate.

06 Latching devices that are used on swing gates need to be designed in a manner such that they are operable by all users of the pathway or sidewalk.

Guidance:

07 A swing gate should be equipped with a PUSH TO EXIT (I13-2) sign on the track side of the swing gate, and a DO NOT ENTER (R5-1) sign on the side of the swing gate facing away from the tracks (see Figure 8E-10).

Support:

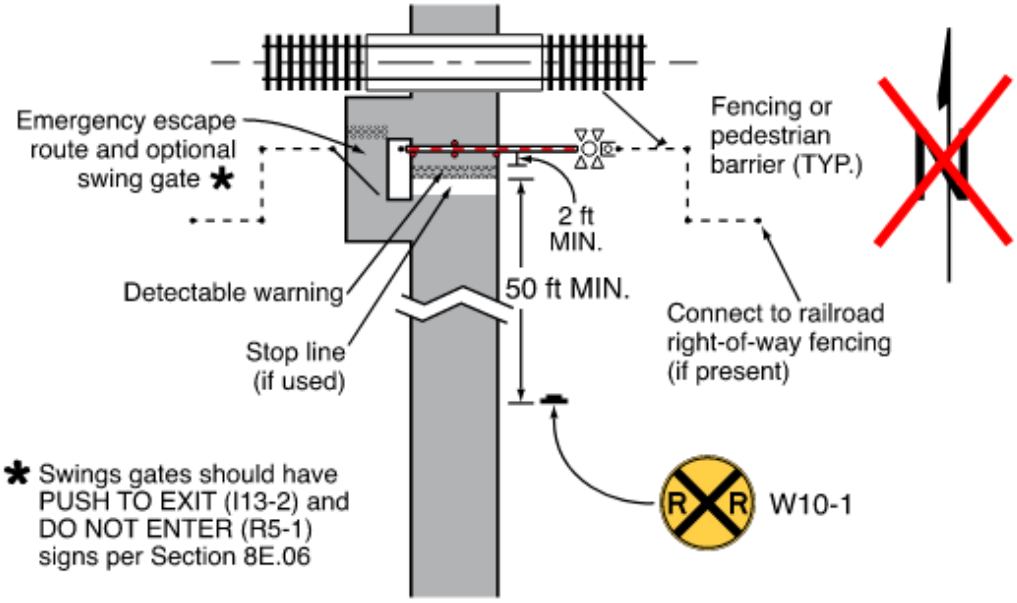
08 The U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990 contains information regarding the design of swing gates and related hardware.

09 Where fencing (see Figures 8E-6 and 8E-9) is installed to direct pathway or sidewalk users to the grade crossing, it is desirable that this fencing be connected to any continuous existing or new fencing or channelization that has been installed parallel to the track(s) to discourage pedestrians from circumventing the grade crossing.

10 Pedestrian barriers or fencing, sometimes referred to as a "maze fencing," direct pathway or sidewalk users to face approaching rail traffic before entering the trackway.

11 Where used, maze fencing or pedestrian barriers need to be designed to permit the passage of wheelchairs and power-assisted mobility devices, and if bicycles are permitted, to permit the passage of dismounted bicyclists with tandem bicycles, cargo bicycles, or bicycles with trailers.

Figure 8E-6. Example of an Automatic Pedestrian Gate and an Emergency Escape Route at a Pathway Grade Crossing



Section 8E.07 Active Traffic Control Systems

Support:

M00 The design, installation and maintenance of these devices are normally the responsibility of the railroad company with the approval of the MoDOT Multimodal Division (Rail Section).

Standard:

01 Except as provided in ~~Paragraph 5 of this Section~~ the first Option paragraph below, at pathway-LRT and sidewalk-LRT grade crossings where LRT operating speeds on a semi-exclusive alignment exceed 25 mph, active traffic control systems shall be used.

02 Except as provided in ~~Paragraph 5 of this Section~~ the first Option paragraph below, at pathway-LRT and sidewalk-LRT grade crossings where LRT operating speeds on a semi-exclusive alignment exceed 40 mph, active traffic control systems, including automatic gates, shall be used.

03 If used at a pathway or sidewalk grade crossing, an active traffic control system (see Section 8D.01) shall include flashing-light signals (see Figure 8E-7) on each approach to the crossing.

Guidance:

04 If used at a pathway or sidewalk grade crossing, an active traffic control system (see Section 8D.01) should include an audible device such as a bell that is operated in conjunction with the flashing-light signals.

Option:

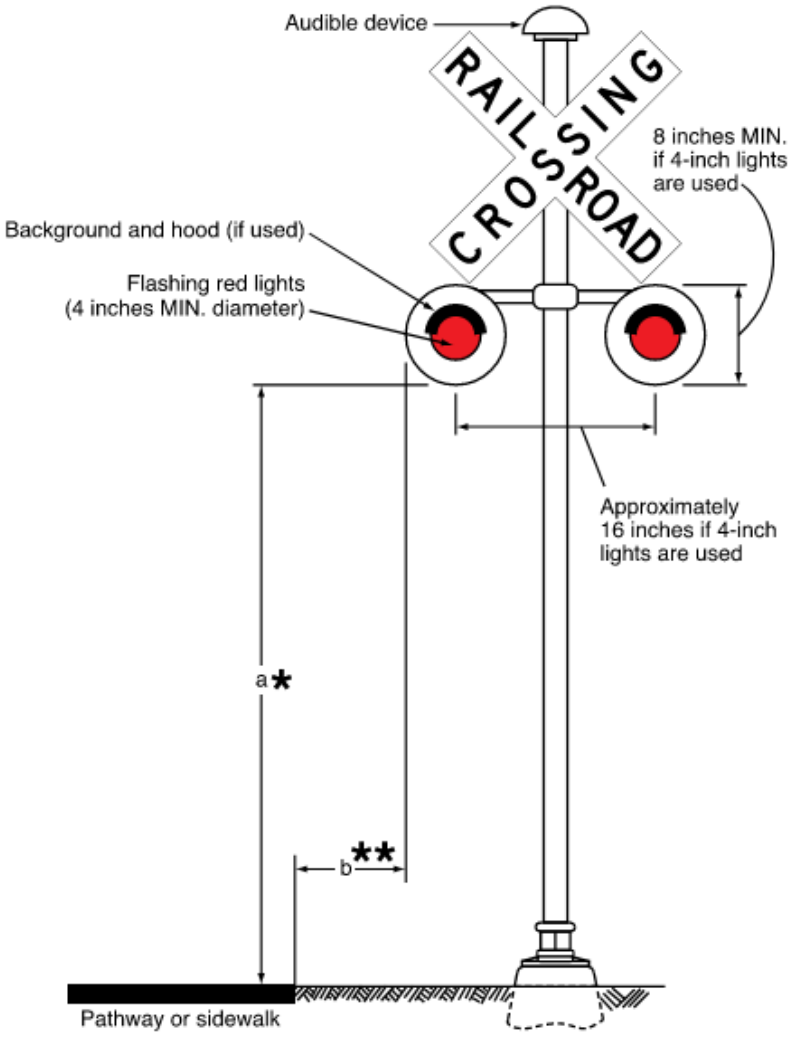
05 Flashing-light signals, bells, and other audible warning devices may be omitted at pathway or sidewalk grade crossings that are located within 25 feet of an active warning device at a grade crossing that is equipped with those devices.

06 Additional pairs of flashing-light signals, bells, or other audible warning devices may be installed on the active traffic control devices at a grade crossing for pathway or sidewalk users approaching the grade crossing from the back side of those devices.

Guidance:

07 Where railroad or LRT tracks in a semi-exclusive alignment are parallel and immediately adjacent to a roadway and if adequate space exists, a pedestrian refuge area or island should be provided between the tracks and the roadway to permit pedestrians to stand clear of the tracks while waiting to cross the roadway and to stand clear of the roadway while waiting to cross the tracks. If a pedestrian refuge area or island is provided at a signalized crossing of the roadway, additional pedestrian features (see Chapter 4I), such as signal heads, signing, and detectors, should be installed in the refuge area or on the island.

Figure 8E-7. Example of a Flashing-Light Signal Assembly at a Pathway or Sidewalk Grade Crossing



Section 8E.08 Active Traffic Control Devices – Signals

Support:

M00 The design, installation and maintenance of these devices are normally the responsibility of the railroad company with the approval of the MoDOT Multimodal Division (Rail Section).

01 Pedestrian signal heads are typically used at highway-highway intersections where pedestrians have an expectation that other roadway users will sometimes be legally required to yield the right-of-way to them. At grade crossings where rail traffic does not stop, pedestrians will not have the right-of-way yielded to them. Therefore, pedestrian signal heads are not an appropriate traffic control device to use at a pathway or sidewalk grade crossing where rail traffic does not stop. Instead, the universal application of horizontally-aligned, alternately-flashing red lights is the uniform active traffic control device for all grade crossings where rail traffic does not stop including pathway and sidewalk grade crossings.

Standard:

02 Except as provided in ~~Paragraph 3 of this Section~~ the Option paragraph below, pedestrian signal heads as described in Chapter 4I comprised of Upraised Hand and Walking Person symbols shall not be used at a pathway or sidewalk grade crossing.

Option:

03 Pedestrian signal heads may be used at a pathway or sidewalk grade crossing where the movement of LRT vehicles is controlled by a traffic control signal or by special LRT signals (see Section 8D.15).

Standard:

04 If used at a pathway or sidewalk grade crossing, flashing-light signals shall be aligned horizontally, and the light units shall have a diameter of at least 4 inches. For 4-inch diameter light units, the light centers shall be spaced approximately 16 inches apart and, if used, the flashing light unit backgrounds shall be at least 8 inches in diameter.

05 Each red signal unit in the flashing-light signal shall flash alternately. The number of flashes per minute for each lamp shall be 35 minimum and 65 maximum. Each lamp shall be illuminated for approximately the same length of time. The total time of illumination of each pair of lamps shall be the entire operating time.

06 The minimum mounting height of the flashing-light signals shall be 4 feet, measured vertically from the bottom edge of the lights to the elevation of the near edge of the pathway or sidewalk surface.

Option:

07 At station, pathway, or sidewalk grade crossings with multiple tracks, traffic control devices may be installed between the tracks in compliance with any railroad clearance requirements.

Standard:

08 The mounting height for flashing-light signals that are installed between the tracks at multiple-track crossings shall be a minimum of 1 foot, measured vertically from the bottom edge of the lights to the elevation of the near edge of the pathway surface.

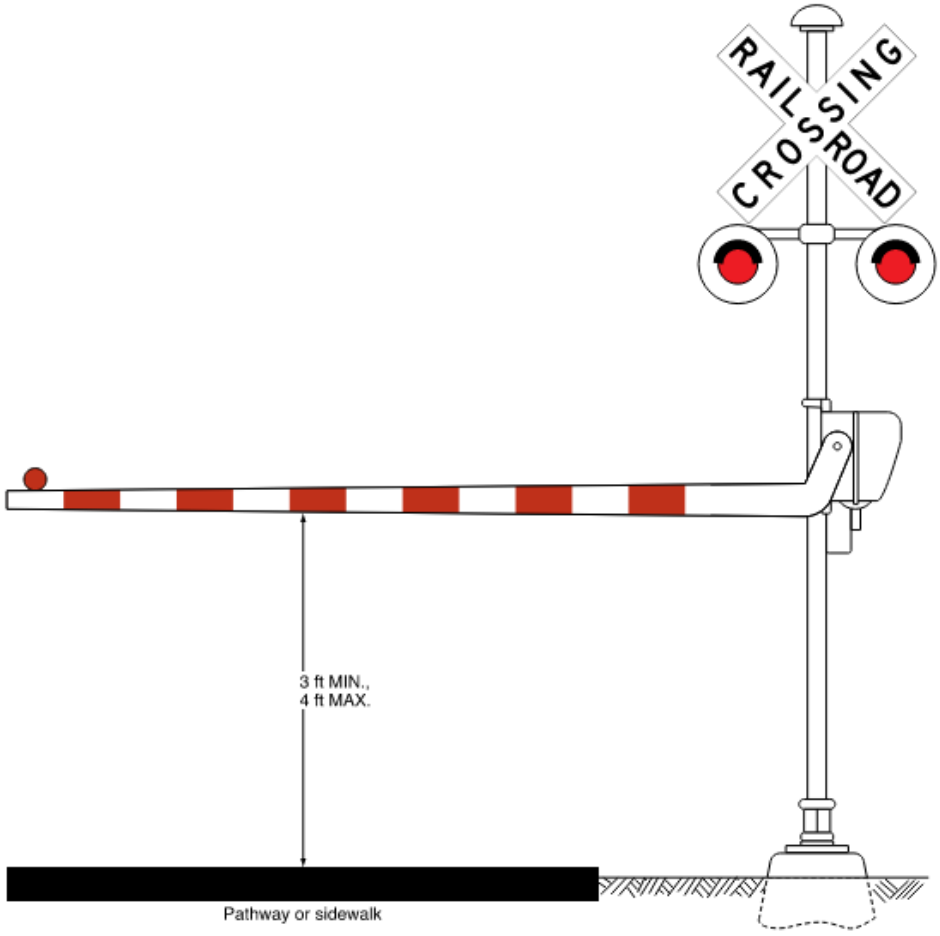
Guidance:

09 If a Diagnostic Team finds that a flashing-light signal with a Crossbuck sign and an audible device is still not resulting in appropriate pedestrian behavior, consideration should be given to also installing an automatic pedestrian gate (see Section 8E.09).

10 Flashing-light signals (see Figure 8E-7) with a Crossbuck (R15-1) sign and an audible device should be installed along semi-exclusive LRT alignments at station, pathway, or sidewalk grade crossings where the Diagnostic Team has determined that the sight distance is not sufficient for pathway or sidewalk users to complete their crossing prior to the arrival of LRT traffic at the crossing.

11 If the Diagnostic Team determines that flashing-light signals with a Crossbuck sign and an audible device would not provide sufficient notice of approaching LRT traffic, consideration should be given to also installing an automatic pedestrian gate (see Section 8E.09) with appropriate channelization or fencing.

Figure 8E-8. Example of an Automatic Pedestrian Gate at a Pathway or Sidewalk Grade Crossing



Section 8E.09 Active Traffic Control Devices – Automatic Pedestrian Gates

Support:

M00 The design, installation and maintenance of these devices are normally the responsibility of the railroad company with the approval of the MoDOT Multimodal Division (Rail Section).

Option:

01 Automatic pedestrian gates *(see Figures 8E-6, 8E-8, 8E-9, 8E-11,and 8E-12)* may be used at pathway or sidewalk grade crossings.

Standard:

02 A pathway or sidewalk grade crossing across tracks where trains are permitted to travel at speeds of 80 mph or higher shall be equipped with a system of automatic pedestrian gates and an escape area with swing gates and fencing installed in the vicinity of the crossing to direct users to the pathway or sidewalk grade crossing (see Figure 8E-6) unless the Diagnostic Team determines that other safety treatments for the crossing would be more appropriate.

Guidance:

03 Where automatic pedestrian gates are installed across a pathway or sidewalk at a grade crossing, or where a sidewalk is located between the edge of a roadway and the support for an automatic gate arm that extends across the sidewalk and into the roadway, an emergency escape route (see Figures 8E-9 and 8E-10) should be provided to allow pedestrians to egress away from the track area when the automatic pedestrian gates are activated.

Standard:

04 Except as provided in ~~Paragraph 6 of this Section~~ the Option paragraph below, automatic pedestrian gate arms shall be provided with at least one red light as shown in Figures 8E-6, 8E-8, 8E-9, 8E-11, and 8E-12. This light shall be continuously illuminated whenever the warning system is active.

05 If any red lights in addition to the continuously-illuminated red light that is required in ~~Paragraph 4 of this Section~~ the preceding paragraph are provided on the automatic pedestrian gate arm, they shall be installed in pairs and shall be flashed alternately in unison with the other flashing-light units at the crossing.

Option:

06 The red light on an automatic pedestrian gate arm may be omitted if the pathway or sidewalk grade crossing is located within 25 feet of the traveled way at a highway-rail or highway-LRT grade crossing that is equipped with active warning devices (see Figure 8E-11).

Guidance:

07 If used at a pathway or sidewalk grade crossing, the height of the automatic pedestrian gate arm when in the down position should be a minimum of 3 feet and a maximum of 4 feet above the pathway or sidewalk.

08 If used at a pathway or sidewalk grade crossing, the gate configuration, which might include a combination of automatic pedestrian gates and swing gates, should provide for full-width coverage of the pathway or sidewalk on each approach to the crossing.

Standard:

09 Where a sidewalk is located between the edge of a roadway and the support for an automatic gate arm that extends across the sidewalk and into the roadway, the location, placement, and height prescribed for vehicular gates shall be used (see Section 8D.03).

Guidance:

10 Except as provided in ~~Paragraph 11 of this Section~~ the first Option paragraph below, if a separate automatic pedestrian gate is used for a sidewalk at a highway-rail or highway-LRT grade crossing, instead of a supplemental or auxiliary gate arm installed as a part of the same mechanism as the vehicular gate, a separate mechanism (see Figure 8E-11) should be provided for the separate automatic pedestrian gate so that if a pedestrian manually raises the pedestrian gate arm, it will have no effect on the vehicular gate.

Option:

11 A supplemental or auxiliary pedestrian gate arm installed as a part of the same mechanism as the vehicular gate may be used if the operating mechanism is designed to prevent the vehicular gate from being raised as a result of a pedestrian manually raising the pedestrian gate arm.

12 A horizontal hanging bar (see Figure 8E-12) may be attached to an automatic pedestrian gate at a pathway or sidewalk grade crossing to inform pedestrians with vision disabilities that the automatic pedestrian gate is in the down position and to reduce the likelihood that pedestrians will violate a lowered crossing gate.

Guidance:

13 If a horizontal hanging bar is attached to an automatic pedestrian gate, the height of the horizontal hanging bar when in the down position should be a maximum of 26 inches above the pathway or sidewalk.

Figure 8E-9. Example of Active Traffic Control Systems with Automatic Pedestrian Gates and Swing Gates at a Sidewalk Grade Crossing

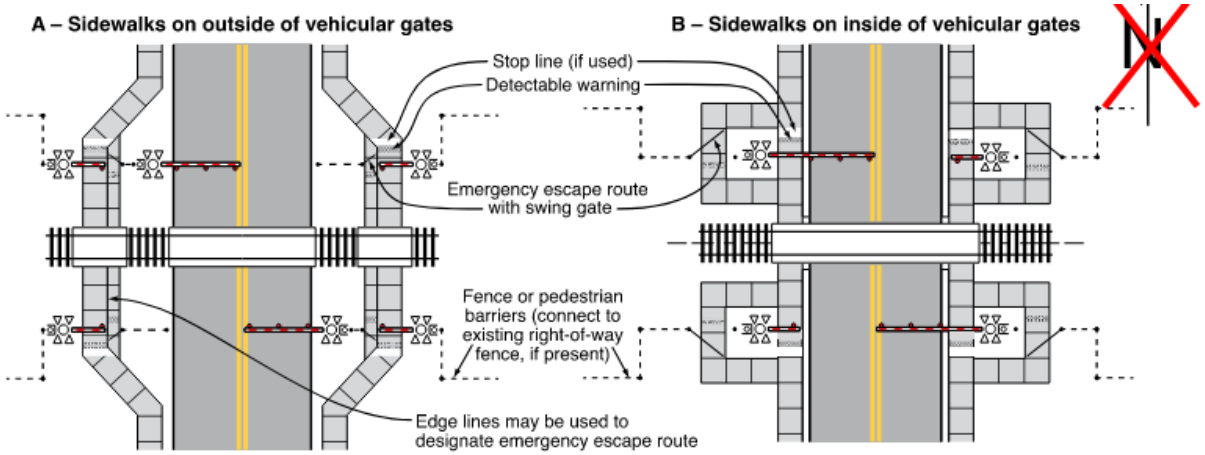


Figure 8E-10. Example of Traffic Control Devices for an Optional Swing Gate

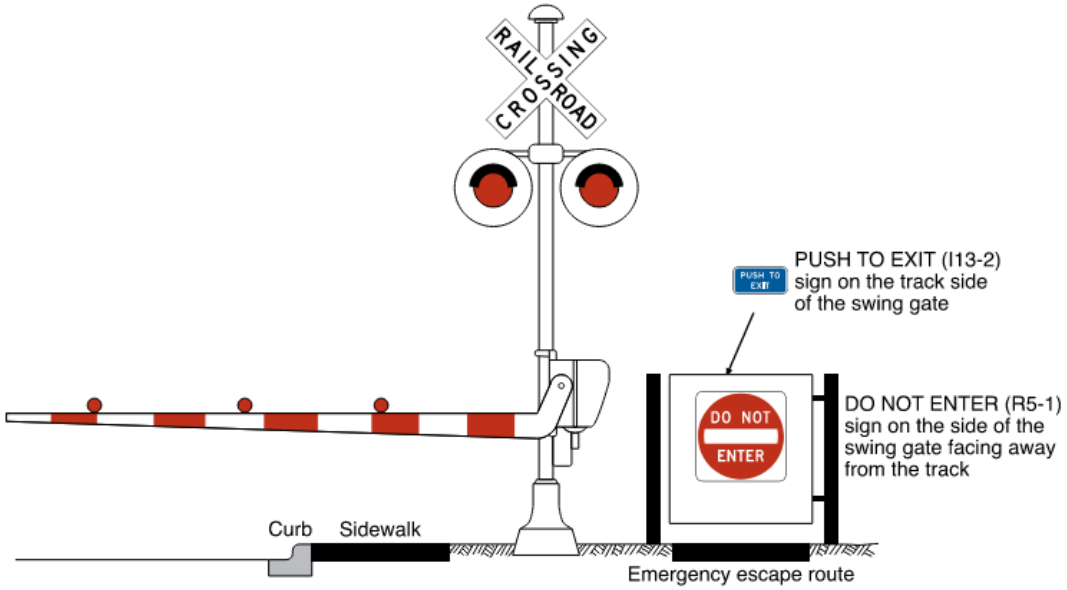
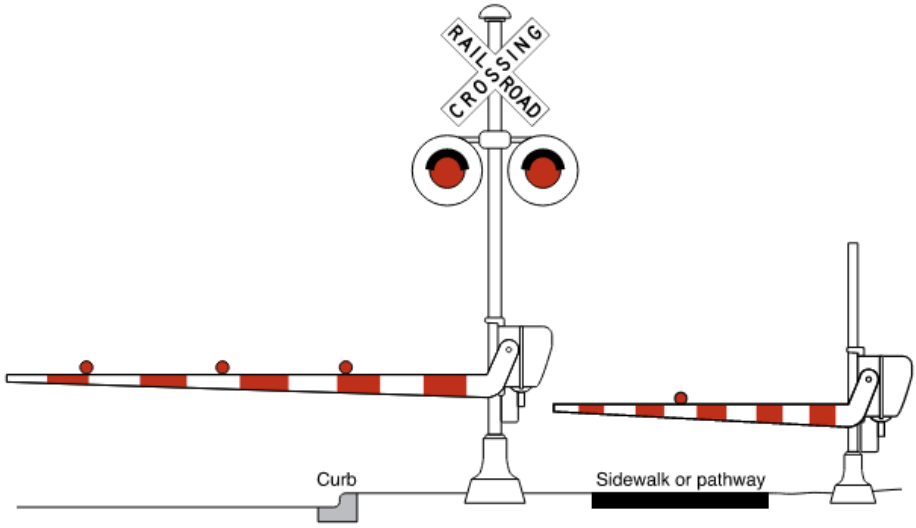


Figure 8E-11. Example of a Separate Automatic Pedestrian Gate

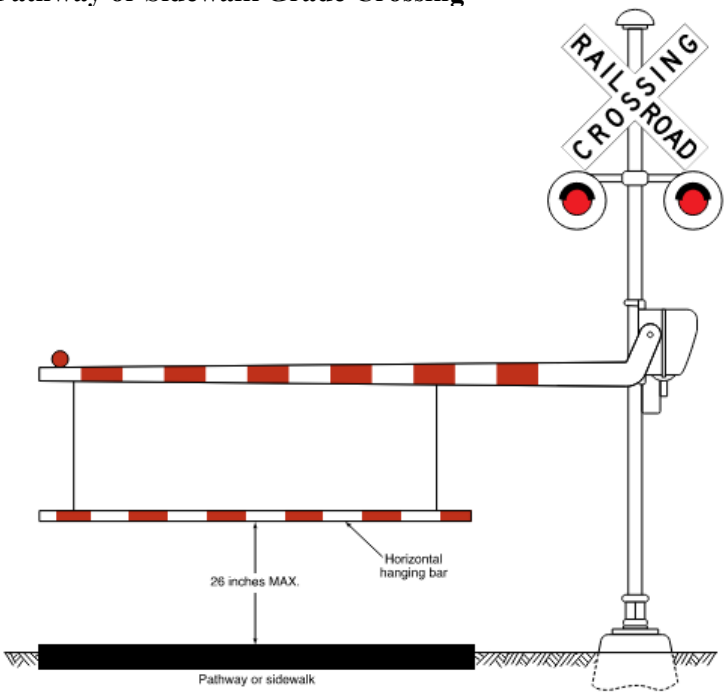


Section 8E.10 Active Traffic Control Devices – Multiple-Track Pathway or Sidewalk Grade Crossings

Guidance:

01 Where railroad or LRT tracks are immediately adjacent to other tracks, the traffic control devices that control pedestrian movements should be designed to avoid having pedestrians wait between sets of tracks.

Figure 8E-12. Example of an Automatic Pedestrian Gate with a Horizontal Hanging Bar at a Pathway or Sidewalk Grade Crossing



PART 9 [EPG 914]
TRAFFIC CONTROL FOR BICYCLE FACILITIES
CHAPTER 9A. GENERAL [EPG 914.1]

Section 9A.01 General

Support:

M00 MoDOT only adopts those portions of the National MUTCD that are relevant to state-maintained highways. MoDOT does not typically install or maintain traffic control devices for shared-use paths or green pavement markings for bicycle facilities. For these reasons, MUTCD content related to these items is not included in the EPG. These devices may be installed and maintained by other agencies with district approval. Practitioners should reference the National MUTCD for provisions related to traffic control devices that are not included in the EPG.

01 ~~Part 9~~ EPG 914 covers signs and pavement markings specifically related to bicycle operation on roadways~~,~~ separated bikeways, and shared-use paths. In jurisdictions where small, low-speed, human or electric-powered transportation devices (often referred to as a micromobility device~~s~~) are allowed to use bicycle facilities, they can be regulated by signs, pavement markings, and other traffic control devices related to bicycle operations. ~~Part 4~~ EPG 902 contains information on highway traffic signals and bicycle signal faces. ~~Part 6~~ EPG 616 contains information on work zones for bicycle facilities and the mitigation of impacts to bicycle travel through work zones.

02 Definitions and acronyms pertaining to ~~Part 9~~ EPG 914 are provided in EPG 911 ~~Sections 1C.02 and 1C.03~~.

03 When operating on a roadway, bicycles are typically defined as vehicles and the operator of a bicycle is given the same rights and duties as an operator of a motor vehicle. Bicyclists are also vulnerable road users who have little to no protection from crash forces.

04 Designing bicycle facilities and the traffic control devices on those facilities in a manner that encourages predictable behavior and compliance with traffic laws from all roadway users can improve safety and increase public acceptance of bicyclists from other road users. The misuse of traffic control devices for improperly designed bicycle facilities or non-uniform applications can produce ineffective or counterproductive results. EPG 911~~Section 1D.01~~ provides more information on the importance of uniformity of traffic control devices.

05 The "Bikeway Selection Guide" (FHWA-SA-18-077), FHWA, provides information on the designs and configuration of bicycle facilities.

~~Support:~~

06 The operation of bicycles is generally allowed on rights-of-way open to motor vehicles, even if the bicycle-specific traffic control devices outlined in ~~Part 9~~ EPG 914 are not present.

Guidance:

07 All signs, signals, and markings, including those on bicycle facilities, should be properly maintained to command respect from all road users. When installing signs and markings on bicycle facilities, an agency should be designated to maintain these devices.

Section 9A.02 Standardization of Application for Signing

Support:

01 The installation of nonstandard signing on bikeways or modifying standard signing in a manner inconsistent with ~~Chapter 2A of this Manual~~ EPG 903.1 to draw special attention, educate users or the community, or brand a bicycle facility can contribute to problems with public acceptance and enforcement.

Standard:

02 Bicycle signs shall comply with the provisions of ~~this Manual~~ the EPG for standard shape, legend, and color.

03 All signs installed on bikeways shall be retroreflective, including those on shared-use paths and bicycle lane facilities.

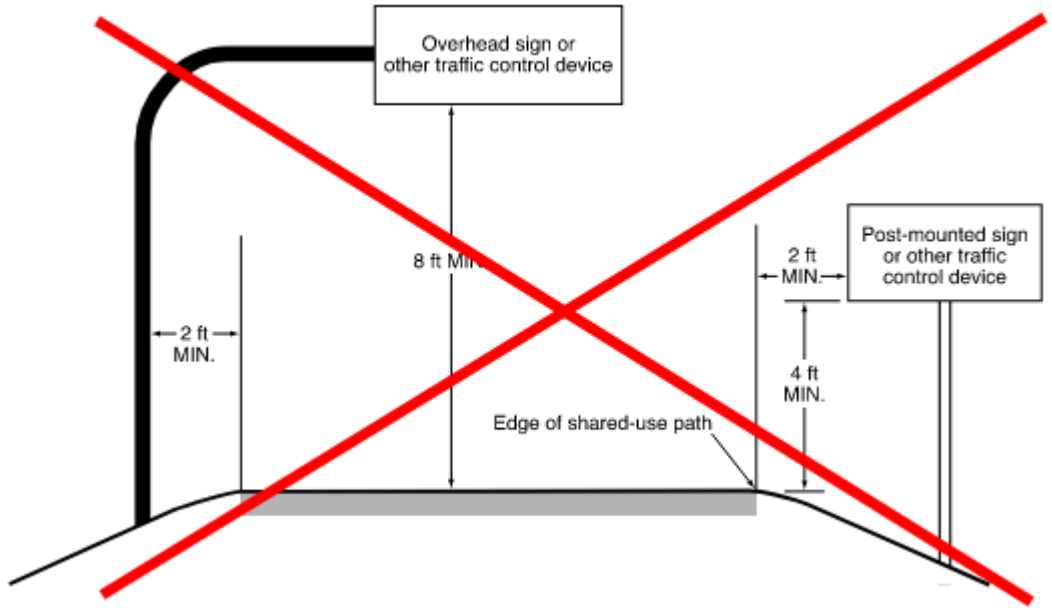
04 Where signs serve both bicyclists and other road users, vertical mounting height and lateral placement shall be as provided in ~~Sections 2A.15 and 2A.16 of this Manual~~ EPG 903.1.15 and 903.1.16.

Guidance:

05 Where used on a shared-use path, no portion of a sign or its support should be placed less than 2 feet laterally from the near edge of the path~~, or less than 8 feet vertically over the entire width of the shared-use path (see Figure 9A-1)~~.

06 Mounting height for post-mounted signs on shared-use paths should be a minimum of 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the path surface ~~(see Figure 9A-1)~~.

Figure 9A-1. Sign Placement on Shared-Use Paths



07 Signs for the exclusive use of bicyclists should be located so that other road users are not confused by them.

~~08 The clearance for overhead signs on shared-use paths should be adjusted when appropriate to accommodate path users requiring more clearance, such as equestrians, or typical maintenance or emergency vehicles.~~

MoDOT typically does not install overhead signs on shared use paths. Revised Dec. 2025

Standard:

09 If the sign or plaque applies to motorists and bicyclists, then the size shall be as shown for conventional roads in Tables ~~2B-1~~903.2.1, ~~2C-1~~903.3.1, ~~2D-1~~903.4.1, and ~~8B-1~~913.2.1, as applicable.

10 The minimum sign and plaque sizes for signs specific to bicycle-only facilities and shared-use paths shall be those shown in Table 9A-1. These sizes shall be used only for signs and plaques installed specifically for bicyclist applications.

Option:

11 Larger sizes of signs and plaques may be used on bicycle facilities when appropriate (see ~~Section 2A.07~~ EPG 903.1.7).

Table 9A-1. Bicycle Facility Sign and Plaque Minimum Sizes

Sign or Plaque	Sign Designation	EPG Article	Roadway (in. x in.)
Bike Lane	R3-17	903.20.3	30 X 24
Bike Lane Ahead (plaque)	R3-17aP	903.20.3	30 X 12
Bike Lane Ends (plaque)	R3-17bP	903.20.3	30 X 12
Begin Right Turn Lane Yield to Bikes	R4-4	903.20.4	36 X 30
No Motor Vehicles	R5-3		24 X 24
Bicycles Allowed Use of Full Lane	R9-20		30 X 30
Bicycles Use Shoulder Only	R9-21		24 X 30
Push Button for Green	R10-4		9x12
Push Button for Warning Lights - Wait for Gap in Traffic	R10-25		9x12
Bicycle Lane Ends	W9-5		30 X 30
Bicycle Warning	W11-1	903.20.10	36 X 36
Bicycle Crossing (plaque)	W11-1P	903.20.10	24 X 18
Trail Crossing	W11-15		36 X 36
In Road (plaque)	W16-1P	903.20.11	24 X 18
XX Feet (plaque)	W16-2P		18 X 12
Downward Diagonal Arrow (plaque)	W16-7P		12 X 9
Ahead (plaque)	W16-9P		24 X 12
Bike Route	D11-1	903.20.12	24 X 18
US Bicycle Route	M1-9	903.20.13	18 X 24
Bicycle Route Arrow (Left/Right)	M7-1	903.20.14	12 X 9
Bicycle Route Arrow (Straight)	M7-2	903.20.14	12 X 9
Bicycle Route Arrow Signs (45° Left)	M7-4L	903.20.14	12 X 9
Bicycle Route Arrow Signs (45° Right)	M7-4R	903.20.14	12 X 9

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

12 Any diamond-shaped warning sign that is placed such that it is applicable only to bicyclists or pedestrians on shared-use paths or separated bicycle lanes may be 18” x 18”.

Guidance:

13 Except for size, the design of signs and plaques for bicycle facilities should be identical to that provided in ~~this Manual~~the EPG for signs and plaques for streets and highways.

Support:

14 Uniformity in design of bicycle signs and plaques includes shape, color, symbols, arrows, wording, lettering, and illumination or retroreflectivity.

Section 9A.03 Standardization of Application for Markings

Support:

01 Markings indicate the separation of the lanes for road users, assist the bicyclist by indicating assigned travel paths, indicate correct position for traffic control signal actuation, and provide advance information for turning and crossing maneuvers.

Guidance:

02 Pavement marking word messages, symbols, and/or arrows should be used in bikeways where appropriate.

03 Consideration should be given to selecting pavement marking materials that will minimize loss of traction for bicycles under wet conditions.

Standard:

04 Pavement markings on bicycle facilities that must be visible at night or in low-light conditions shall be retroreflective unless the markings are adequately visible under provided lighting.

05 The colors, width of lines, patterns of lines, symbols, and arrows used for marking bicycle facilities shall be as defined in ~~Part 3~~EPG 620.

Support:

06 ~~Section 3H.06~~EPG 620.7.6 contains information on green-colored pavement for use with certain traffic control devices for bicycles and bicycle facilities.

M06A MoDOT does not typically install or maintain green colored pavement for bicycle lanes.

Guidance:

M06B If green colored pavement is installed on a MoDOT route, an agreement should be in place with the local agency that will maintain the green-colored pavement.

Paragraphs 6A and 6B clarify MoDOT policy for green colored pavement. Revised Dec. 2025

Support:

07 ~~Section 9E.17~~EPG 914.5.10 contains information on the use of channelizing devices to emphasize the pavement markings for bicycle facilities.

Guidance:

08 Raised pavement markers should not be used on bicycle lanes or shared-use paths.

09 If used around bicycle facilities, raised pavement markers should not be placed immediately adjacent to the travel path of bicyclists in a bicycle lane or on a shared-use path.

Support:

10 Using raised pavement markers creates a collision potential for bicyclists by placing fixed objects immediately adjacent to the travel path of the bicyclist. Raised pavement markers can cause a bicyclist to lose balance and fall, and might not be visible to a bicyclist who is following another bicyclist.

CHAPTER 9B. REGULATORY SIGNS [914.2]

Section 9B.01 STOP ~~and YIELD~~ Sign~~s~~ (R1-1 ~~and R1-2~~)

Standard:

01 STOP (R1-1) signs ~~(see Figure 9B-1)~~ shall be installed on bicycle facilities at points where bicyclists are required to stop, such as where a shared use path crosses a state-maintained roadway.

~~**02 YIELD (R1-2) signs (see Figure 9B-1) shall be installed on bicycle facilities at points where bicyclists have an adequate view of conflicting traffic as they approach the sign, and where bicyclists are required to yield the right-of-way to that conflicting traffic.**~~

03 A STOP sign ~~or a YIELD sign~~ shall not be installed in conjunction with a bicycle signal face (see ~~Chapter 4H~~EPG 902.8).

MoDOT does not maintain or install Yield signs for bicycle facilities. Revised Dec. 2025

Figure 9B-1. Regulatory Signs and Plaques for Bicycle Facilities (Sheet 1 of 2)

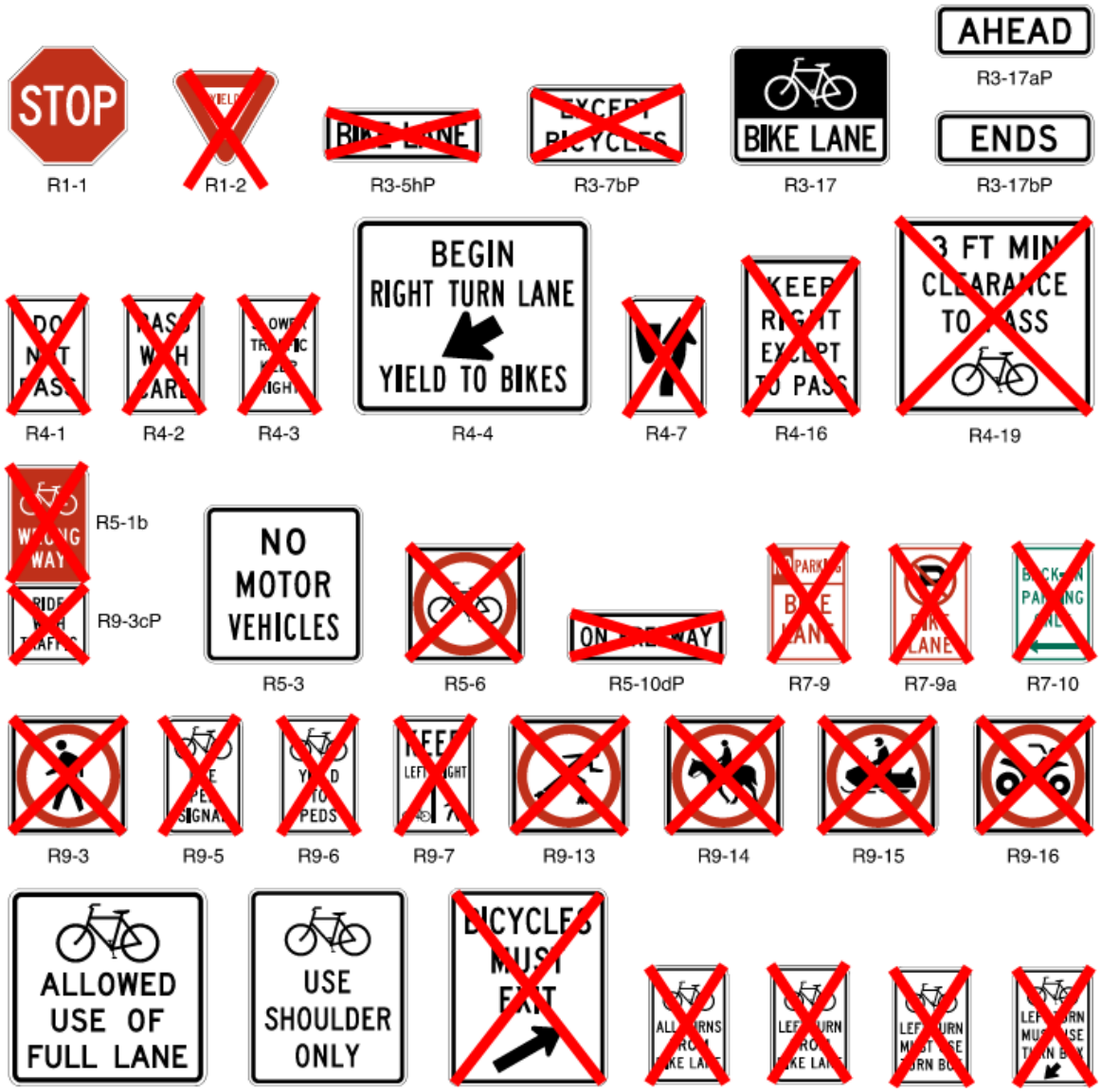
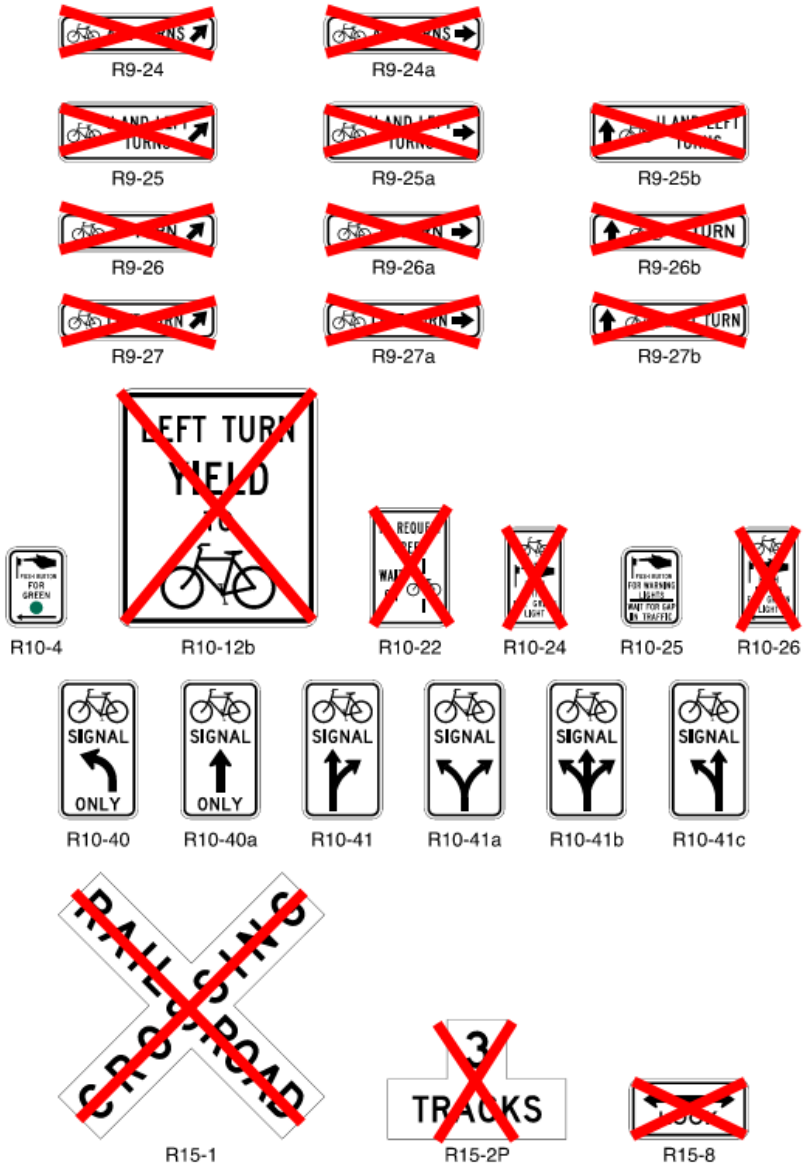


Figure 9B-1. Regulatory Signs and Plaques for Bicycle Facilities (Sheet 2 of 2)



Option:

04 Larger signs may be used on shared-use paths and separated bikeways for added emphasis.

Guidance:

05 Where conditions require shared-use path users or bicyclists on separated bikeways, but not roadway users, to stop or yield, the STOP ~~or YIELD~~ sign should be placed or shielded so that it is not readily visible to roadway users.

~~*06 When the placement of STOP or YIELD signs is being considered, the priority at a shared-use path/roadway intersection should be assigned with consideration of the following:*~~

~~*A. Relative speeds of shared-use path and roadway users,*~~
~~*B. Relative volumes of shared-use path and roadway traffic, and*~~
~~*C. Relative importance of shared-use path and roadway.*~~

~~*07 Speed should not be the sole factor used to determine priority, as it is sometimes appropriate to give priority to a high-volume shared-use path that crosses a low-volume street, or to a regional shared-use path that crosses a minor collector street.*~~

~~*08 When priority is assigned (see Sections 2B.06 and 2B.08), the least-restrictive control that is appropriate should be placed on the lower-priority approaches. STOP signs should not be used where YIELD signs would provided adequate control.*~~

Paragraphs 6 through 8 are not applicable to MoDOT facilities. Revised Dec. 2025

~~Section 9B.02 EXCEPT BICYCLES Regulatory Plaque (R3-7bP)~~

~~Support:~~

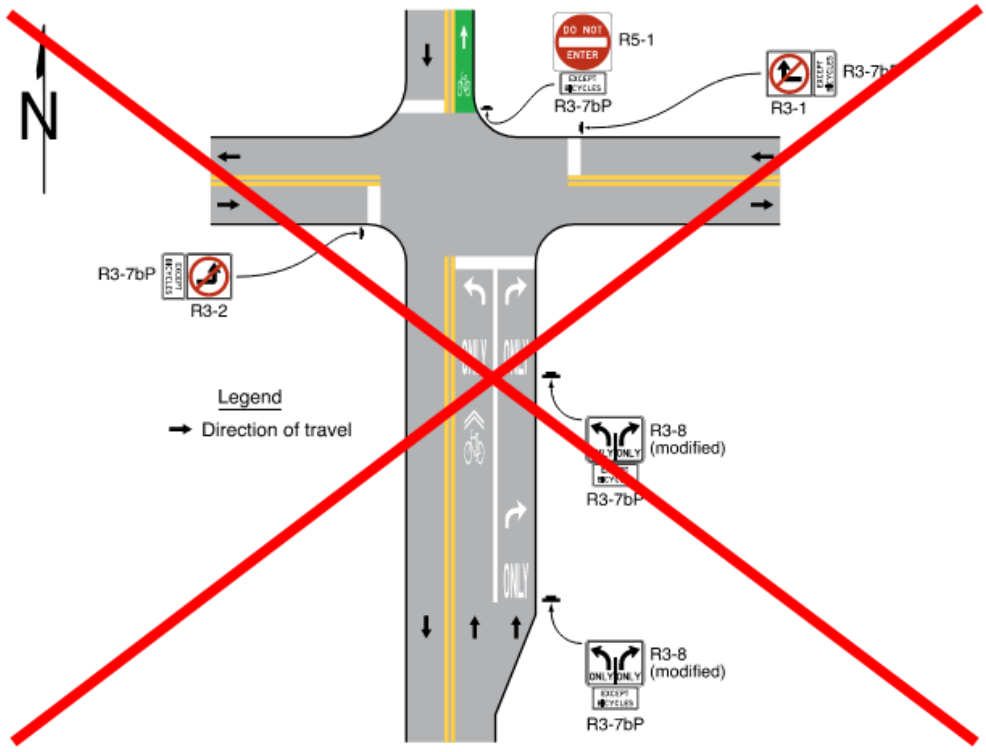
~~01 There are circumstances where it might be appropriate to exempt bicyclists from regulatory restrictions applied to other traffic.~~

~~Guidance:~~

~~02 Where an engineering study or engineering judgment demonstrates that it is appropriate to exempt bicyclists from the provisions of a regulatory sign, the EXCEPT BICYCLES (R3-7bP) regulatory plaque (see Figure 9B-1) should be used.~~

~~Support:03 Figure 9B-2 shows examples of how the EXCEPT BICYCLES (W16-20P) regulatory plaque can be applied.~~

Figure 9B-2. Examples of Applications of EXCEPT BICYCLES Regulatory Plaques



~~04 Section 9C.05 contains information regarding the EXCEPT BICYCLES warning plaque when applicable to a warning sign.~~

~~**Standard:**~~

~~05 The EXCEPT BICYCLES regulatory plaque shall not be used to exempt bicyclists from the legal requirement of a STOP or YIELD sign, Yield Here to Pedestrians Signs, Stop Here for Pedestrians Signs, or a traffic signal indication.~~

~~06 Where a regulatory sign, such as the No Left Turn (R3-2) sign (see Section 2B.26), is installed on the same post or mounting as a STOP sign or YIELD sign, the EXCEPT BICYCLES regulatory plaque shall not be installed in conjunction with the regulatory sign on that post or mounting that includes the STOP sign or YIELD sign.~~

~~07 The EXCEPT BICYCLES regulatory plaque shall be placed below the regulatory sign that it supplements.~~

MoDOT does not use the R3-7bP plaque. Revised Dec. 2025

Section 9B.03 Advance Intersection Lane Control Signs (R3-8 Series) for Bicycle Lanes

Option:

01 Advance Intersection Lane Control (R3-8 series) signs (see ~~Section 2B.30~~EPG 903.2.28) may display the arrangement of a conventional or buffer-separated bicycle lane in relation to other lanes in the same direction that are present on a roadway approach to an intersection.

Support:

02 The number and combination of permissible movements by both the motor vehicle and the bicycle on the same approach to an intersection might be practically limited by the amount of information that can be legibly displayed on signs or in signing sequences and still be readily comprehended by road users. The excessive display of all movements by more than one mode can result in unwieldy signs that are difficult to locate and install.

Guidance:

03 On an approach to an intersection with complex geometry that can include multiple through lanes and multiple turn lanes and also includes a bicycle lane, consideration should be given to displaying all allowable movements on separate signs, such as using Mandatory Movement Lane Control (R3-5) signs (see ~~Section 2B.28~~EPG 903.2.26) for the through lanes and Mandatory Movement Lane Control (R3-7) signs (see ~~Section 2B.28~~EPG 903.2.26) for the turn lanes, and guide signs for bicycle routes (see ~~Section 9D.02~~EPG 914.4.1 through ~~9D.07~~ EPG 914.4.3) and Bicycle Route Sign auxiliary plaques (see ~~Section 9D.08~~ EPG 914.4.4) for the bicycle movement.

Standard:

04 The portion of the sign face for the bicycle lane shall be limited to the relationship of the bicycle lane to the other lanes on the roadway approach to the intersection. The portion of the sign face for the bicycle lane shall not be modified to display specific, supplementary information about the bicycle lane such as bicycle lane extensions, contiguous buffer spaces, or other ancillary bicycle operations such as two-stage turn boxes or bicycle boxes.

05 Counter-flow bicycle lanes shall not be displayed on Advance Intersection Lane Control signs.

06 The shared-lane marking symbol shall not be displayed on Advance Intersection Lane Control signs.

07 Shared-use paths shall not be displayed on Advance Intersection Lane Control signs.

08 Advance Intersection Lane Control signs that display the bicycle lane shall use a contrasting white legend on a black background for the bicycle lane (see ~~Figure 2B-4~~ Figure 903.2.28). The portion of the display for the bicycle lane shall not use the color green on the sign face in an attempt to be consistent with the green-colored pavement that might be present on the intersection approach.

Section 9B.04 Bicycle Lane Signs and Plaques (R3-17, ~~R3-5bP,~~ R3-17aP, and R3-17bP)

Standard:

01 The BIKE LANE (R3-17) sign and the ~~BIKE LANE (R3-5hP),~~ AHEAD (R3-17aP), and ENDS (R3-17bP) plaques ~~(see Figure 9B-1)~~ shall be used only in conjunction with marked bicycle lanes as described in ~~Sections 9E.01, 9E.06, and 9E.07~~EPG 914.5.1, 914.5.6, and 914.5.7.

MoDOT does not use the R3-5hP plaque. Revised Dec. 2025

Guidance:

02 If used, Bicycle Lane signs and plaques should be located at the beginning of the bicycle lane and in advance of the downstream end of the bicycle lane.

Option:

03 Additional Bicycle Lane signs and plaques may be used at periodic intervals along the bicycle lane as determined by engineering judgment based on the operating speed of bicycle and other traffic, block length, distances from adjacent intersections, and other considerations.

M03A The AHEAD (R3-17aP) or ENDS (R3-17bP) plaque, mounted directly below a regulatory sign, may be used to inform road users of the location where a regulatory condition begins or ends.

MUTCD content from Section 2B.33, not included in EPG 903.2. Location of plaque changed to be below the sign. Revised Dec. 2025

Support:

~~04 Section 2B.33 contains information for the application of BEGIN and END plaques.~~

05 ~~Section 9B.03~~EPG 914.2.1 contains information on displaying the bicycle lane on Advance Intersection Lane Control signs.

Option:

~~06 Where two or more movements from a bicycle lane are allowed, or where the emphasis of allowed bicycle movements is needed, an Optional Movement Lane Control sign (see Section 2B.29) may be supplemented with a BIKE LANE (R3-5hP) plaque above the Optional Movement Lane Control sign.~~

~~07 Where bicycle lanes are located between travel lanes on intersection approaches or where only a single bicycle movement is allowed from a certain bicycle lane, a Mandatory Movement Lane Control sign (see Section 2B.28) may be supplemented with a BIKE LANE plaque to require a bicyclist in a particular bicycle lane at an intersection to stay in the same lane and proceed straight through the intersection, or to indicate a required turn from a particular bicycle lane.~~

MoDOT does not use the R3-5hP plaque. Revised Dec. 2025

Section 9B.05 BEGIN RIGHT TURN LANE YIELD TO BIKES Sign (R4-4)

Option:

01 Where motor vehicles entering a mandatory right-turn lane must weave across bicyclists in bicycle lanes, the BEGIN RIGHT TURN LANE YIELD TO BIKES (R4-4) sign ~~(see Figure 9B-1)~~ may be used to inform both the motorist and the bicyclist of this weaving maneuver (see Figures 914.5.1.1 through 914.5.1.4~~9E-3 and 9E-4~~).

Guidance:

02 The R4-4 sign should not be used when bicyclists need to move left because of a right-turn lane drop situation.

~~Section 9B.06 Bicycle Wrong Way Sign and RIDE WITH TRAFFIC Plaque (R5-1b and R9-3cP)~~

~~Option:~~

~~01 The Bicycle WRONG WAY (R5-1b) sign and RIDE WITH TRAFFIC (R9-3cP) plaque (see Figure 9B-1) may be placed facing wrong-way bicyclists, such as on the left-hand side of a roadway.~~

~~02 This sign and plaque may be mounted back-to-back with other signs to minimize visibility to other traffic.~~

~~*Guidance:*~~

~~*03 The RIDE WITH TRAFFIC plaque should be used only in conjunction with the Bicycle WRONG WAY sign, and should be mounted directly below the Bicycle WRONG WAY sign.*~~

MoDOT does not use the R5-1b or R9-3cP signs. Revised Dec. 2025

Section 9B.07 NO MOTOR VEHICLES Sign (R5-3)

Option:

01 The NO MOTOR VEHICLES (R5-3) sign ~~(see Figure 9B-1)~~ may be installed at the entrance to a shared-use path.

~~Section 9B.08 Selective Exclusion Signs~~

~~Option:~~

~~01 Selective Exclusion signs (see Figure 9B-1) may be installed at the entrance to a roadway or facility to notify road or facility users that designated types of traffic are excluded from using the roadway or facility.~~

~~Support:~~

~~02 Typical exclusion messages include:~~

~~A. No Bicycles (R5-6);~~
~~B. No Pedestrians (R9-3);~~
~~C. No Skaters (R9-13);~~
~~D. No Equestrians (R9-14);~~
~~E. No Snowmobiles (R9-15); and~~
~~F. No All-Terrain Vehicles (R9-16).~~

~~Option:~~

~~03 Where bicyclists, pedestrians, and motor-driven cycles are all prohibited, the R5-10a word message sign (see Section 2B.45) may be used.~~

MoDOT does not use the selective exclusion signs described in Section 9B.08. Revised Dec. 2025

~~Section 9B.09 No Parking Bike Lane Signs (R7-9 and R7-9a)~~

~~**Standard:**~~

~~**01 If the installation of signs is necessary to restrict parking, standing, or stopping in a bicycle lane, appropriate signs as described in Sections 2B.53 through 2B.55, or the No Parking Bike Lane (R7-9 or R7-9a) signs (see Figure 9B-1) shall be installed.**~~

MoDOT does not use the R7-9 or R7-9a signs. Revised Dec. 2025

~~Section 9B.10 Back-In Parking Sign (R7-10)~~

~~Option:~~

~~01 The Back-In Parking (R7-10) sign (see Section 2B.52 and Figure 9B-1) may be used where back-in parking is required by motor vehicles in the presence of a bicycle lane or movement.~~

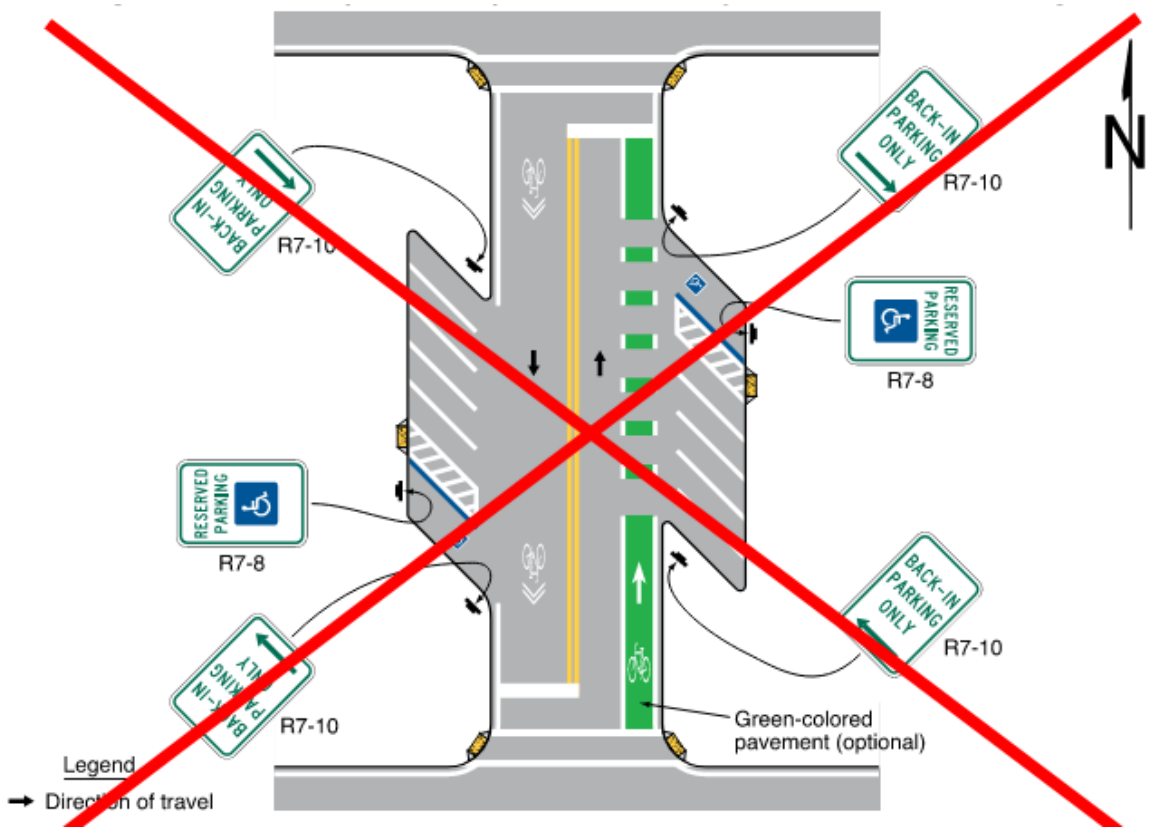
~~Support:~~

~~02 Angled back-in curb parking is commonly applied on streets where a bicycle lane is present so that the scanning behavior of a motorist associated with the back-in angle parking task, both entering and exiting the parking space, would place a bicyclist in a bicycle lane in a more direct view of the motor vehicle operator.~~

~~03 Figure 9B-3 shows an example of the use of back-in parking signs in conjunction with bicycle lanes.~~

MoDOT does not use the R7-10 sign. Revised Dec. 2025

Figure 9B-3. Examples of Bicycle Facilities Adjacent to Back-In Parking



~~Section 9B.11 Bicycles Use Ped Signal Sign (R9-5)~~

~~Option:~~

~~01 The Bicycles Use Ped Signal (R9-5) sign (see Figure 9B-1) may be used where the crossing of a street by bicyclists is controlled by pedestrian signal indications.~~

~~02 In order to remind drivers who are making turns to yield to or stop for pedestrians or bicyclists, a Turning Vehicles Yield to Pedestrians (R10-15) sign, Turning Vehicles Stop for Pedestrians (R10-15a) sign (see Section 2B.59), or Left Turn Yield to Bicycles (R10-12b) sign (see Section 9B.21) may be used.~~

~~*Guidance:*~~

~~*03 If used, the R9-5 sign should be installed in the vicinity of where bicyclists will be crossing the street.*~~

MoDOT does not use the R9-5 sign. Revised Dec. 2025

~~Section 9B.12 Bicycles Yield to Peds Sign (R9-6)~~

~~Option:~~

~~01 The Bicycles Yield to Peds (R9-6) sign (see Figure 9B-1) may be used at locations where a bicyclist is required to cross or share a facility used by pedestrians and is required to yield to the pedestrians.~~

~~**Standard:**~~

~~**02 Where the Bicycles Yield to Peds sign is supported by a yield line pavement marking (see Section 3B.19) to establish the yielding point, the sign and the pavement marking shall be installed adjacent to each other.**~~

~~**03 The Bicycles Yield to Peds sign shall not be used in bicycle corridors to establish a programmatic regulation where no yielding point exists.**~~

~~**04 The Bicycles Yield to Peds sign shall not be used in conjunction with a STOP or YIELD sign, Yield Here to Pedestrians Sign, or a Stop Here for Pedestrians Sign.**~~

MoDOT does not use the R9-6 sign. Revised Dec. 2025

~~Section 9B.13 Shared-Use Path Restriction Sign (R9-7)~~

~~Option:~~

~~01 The Shared-Use Path Restriction (R9-7) sign (see Figure 9B-1) may be installed to supplement a solid white pavement marking line (see Section 9E.13) on facilities that are to be shared by pedestrians and bicyclists in order to provide a separate designated pavement area for each mode of travel. The symbols may be transposed as appropriate.~~

~~*Guidance:*~~

~~*02 If two-way operation is allowed on the facility for pedestrians and/or bicyclists, the designated pavement area that is provided for each two-way mode of travel should be wide enough to accommodate both directions of travel for that mode.*~~

MoDOT does not use the R9-7 sign. Revised Dec. 2025

Section 9B.14 Bicycles Allowed Use of Full Lane Sign (R9-20)

Support:

01 The Uniform Vehicle Code (UVC) defines a “substandard width lane” as a “lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the same lane.”

Option:

02 The Bicycles Allowed Use of Full Lane (R9-20) sign ~~(see Figure 9B-1)~~ may be used on roadways where no bicycle lanes or adjacent shoulders usable by bicycles are present and where travel lanes are too narrow for bicycles and motor vehicles to operate side-by-side.

03 The Bicycles Allowed Use of Full Lane sign may be used in locations where it is important to inform road users that bicyclists might occupy the travel lane.

04 ~~Section 9E.09~~EPG 914.5.8 describes a shared-lane marking that may be used in addition to or instead of the Bicycles Allowed Use of Full Lane sign to inform road users that bicyclists might occupy the travel lane.

~~Section 9B.15 Bicycle Passing Clearance Sign (R4-19)~~

~~Option:~~

~~01 The Bicycle Passing Clearance (R4-19) sign (see Figure 9B-1) may be used in jurisdictions that have defined in law or ordinance a specific clearance to be provided by motor vehicles when they pass bicycles.~~

~~02 The specific clearance displayed on the Bicycle Passing Clearance (R4-19) sign may be adjusted to reflect the applicable law or ordinance.~~

~~**Standard:**~~

~~**03 The Bicycle Passing Clearance (R4-19) sign shall not be used in jurisdictions that do not have a specific passing clearance to be provided by motor vehicles passing bicycles, as defined in law or ordinance.**~~

~~*Guidance:*~~

~~*04 The Bicycle Passing Clearance (R4-19) sign should not be used on roadways with bicycle lanes or with shoulders usable for bicycle travel.*~~

MoDOT does not use the R4-19 sign. Revised Dec. 2025

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 a 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 at or near the location where the full-width shoulder resumes beyond the entrance ramp taper.

~~**Section 9B.17 Signing for Bicycles on Freeways and Expressways**~~

~~**Standard:**~~

~~**01 The Bicycles Must Exit (R9-22) sign (see Figure 9B-1) shall be used in advance of a location where a freeway or expressway becomes prohibited to bicycle travel, and shall be placed in advance of the intersection or exit ramp prior to the prohibited segment of roadway (see Figure 9B-4).**~~

~~Option:~~

~~02 The Bicycles Must Exit sign may be used below a post-mounted Exit Direction sign.~~

~~**Standard:**~~

~~**03 If the Bicycles Must Exit sign is used, a No Bicycles (R5-6) sign (see Figure 9B-1) shall be placed downstream from the intersection or exit ramp departure point where the prohibited segment of freeway or expressway begins. The No Bicycles sign shall not be placed below the Exit Gore sign.**~~

~~Option:~~

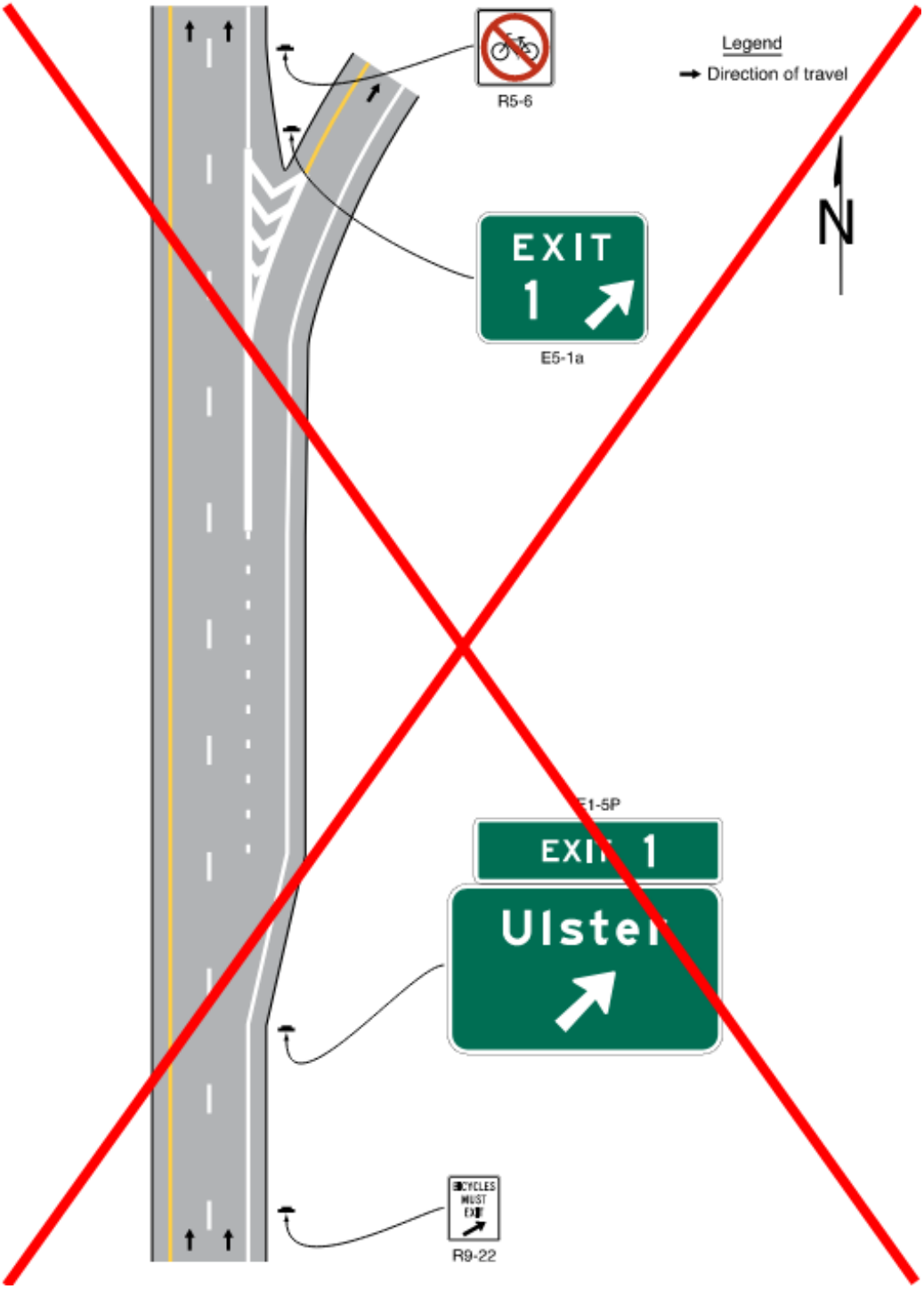
~~04 The ON FREEWAY (R5-10dP) plaque (see Figure 9B-1) may be used with an appropriate Selective Exclusion sign to indicate a prohibition along ramps leading to an adjacent or parallel freeway.~~

~~Support:~~

~~05 Section 2B.45 contains information on regulatory signing for prohibiting bicycles from using particular roadways or facilities.~~

MoDOT does not provide bicycle facilities on expressways or freeways. Revised Dec. 2025

Figure 9B-4. Signing for Termination of Bicycle Access on Freeways and Expressways



~~Section 9B.18 Two-Stage Bicycle Turn Box Regulatory Signing (R9-23 Series)~~

~~Support:~~

~~01 Where two-stage bicycle turn boxes are provided in an intersection, the design of an approach to that intersection will determine whether the use of a two-stage bicycle turn box is required by bicycles to facilitate a turn.~~

~~02 Situations in which a two-stage bicycle turn box might be necessary to facilitate turns include, but are not limited to, those in which:~~

~~A. A separated bicycle facility is provided where upstream access to a lane used to facilitate turns by motor vehicle traffic is physically inaccessible to bicycles;~~

~~B. Left turns are prohibited from the left-most lane, or right turns are prohibited from the right-most lane, at an intersection; or~~

~~C. Locations where physical or operational conditions make it impracticable or unsafe for a bicyclist to merge and make the appropriate turn as would any other vehicle.~~

~~Standard:~~

~~03 Where bicycles are required to use a two-stage bicycle turn box (see Figure 9B-5), the Two-Stage Bicycle Turn Box regulatory sign series (see Figure 9B-5) shall be used.~~

~~04 Where bicycles are required to use a two-stage bicycle turn box, the Bicycles All Turns from Bike Lane (R9-23) or Bicycle Left Turn from Bike Lane (R9-23a) advance regulatory sign shall be mounted in advance of the intersection, and at least one Bicycle Turn Must Use Turn Box (R9-23b or R9-23c) sign shall be used at the intersection.~~

~~05 Where used, the Bicycle Turn Must Use Turn Box (R9-23b) sign shall be mounted at the near side of the intersection.~~

~~06 Where used, the Bicycle Turn Must Use Turn Box location (R9-23c) sign shall be mounted at the far side of the intersection.~~

~~Option:~~

~~07 Where use of a two-stage bicycle turn box is optional, the Two-Stage Bicycle Turn Box guide sign series (see Section 9D.13) may be used to provide directional information.~~

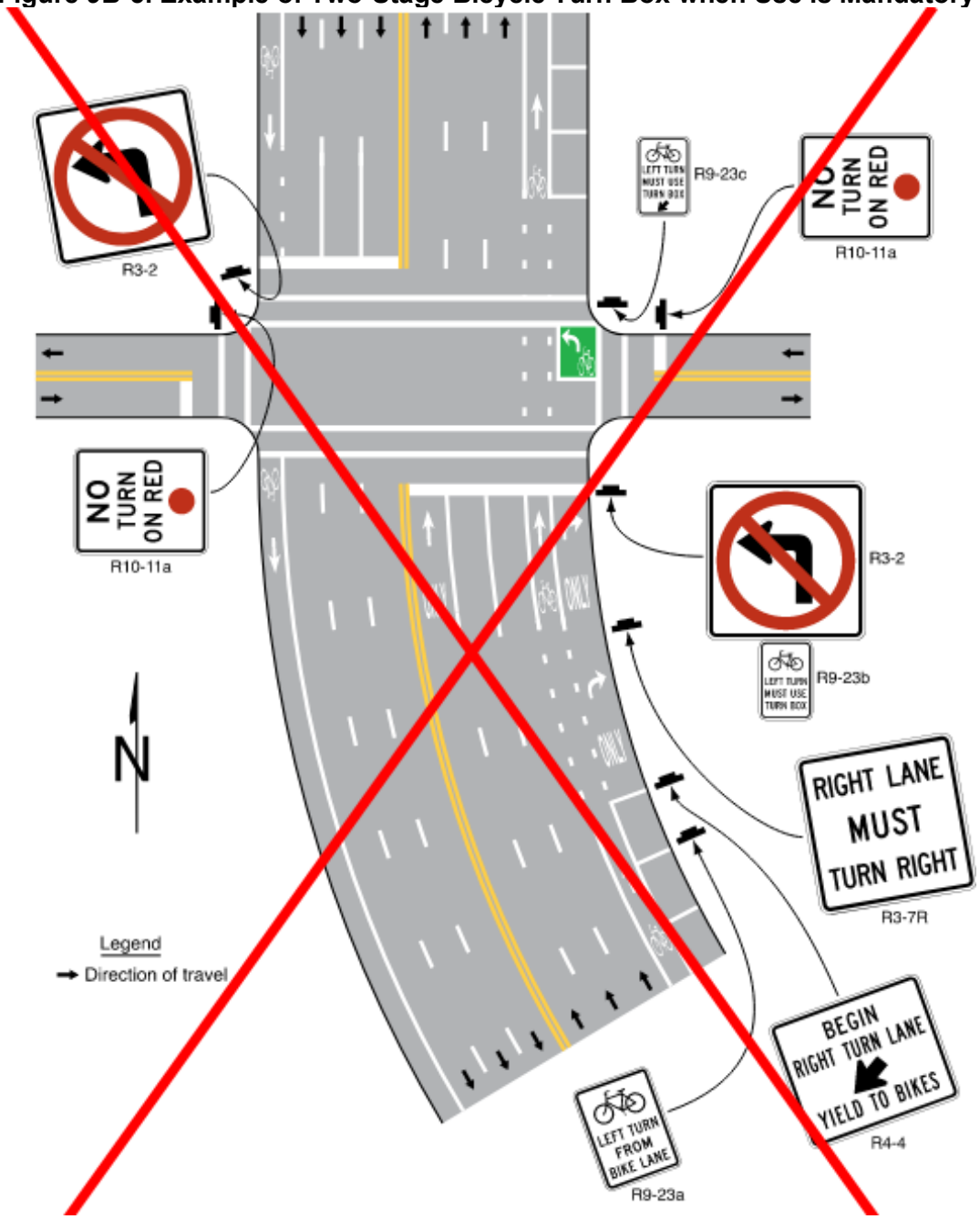
~~08 If used, an appropriately sized Street Name (D3-1) sign (see Section 2D.45) may be installed below the All Turns from Bike Lane sign or Left Turn from Bike Lane sign to identify the crossroad where the turn box will be available.~~

~~Support:~~

~~09 Section 9E.11 contains information regarding pavement markings and turning restrictions for two-stage turn boxes.~~

MoDOT does not typically install or maintain bicycle turn boxes. Revised Dec. 2025

Figure 9B-5. Example of Two-Stage Bicycle Turn Box when Use is Mandatory



Section 9B.19 Bicycle Jughandle Signs (R9-24, R9-25, R9-26, and R9-27 Series)

Support:

01 Bicycle jughandle turns allow bicycles to use the traffic control provided for the crossroad for facilitating a left turn, right turn, or U-turn.

Option:

02 The R9-23 sign (see Figure 9B-1) may be used in advance of where bicyclists are required to use the bicycle jughandle turn in order to facilitate all turns.

03 The R9-24 series sign (see Figure 9B-1) may be used where bicyclists are required to use the bicycle jughandle turn in order to facilitate all turns.

04 The R9-25 series sign (see Figure 9B-1) may be used where bicyclists are required to use a bicycle jughandle turn to facilitate U-turns and left turns and where right-turning bicyclists are exempted or the right turn is not available or possible (see Figure 9B-6).

05 The R9-26 series sign (see Figure 9B-1) may be used where bicyclists are required to use a jughandle to facilitate U-turns and where left-turning and right-turning bicyclists are exempted or the left turn or right turn is not available or possible.

06 The R9-27 series sign (see Figure 9B-1) may be used where bicyclists are required to use a jughandle to facilitate left turns and where U-turning and right-turning bicyclists are exempted or the U-turn or right turn is not available or possible.

07 A Bicycle Jughandle sign may be used to indicate a jughandle turn initially made by a left turn for a bicycle lane on the left-hand side of a one-way street or for a counter-flow bicycle lane. The legend RIGHT may be substituted for the legend LEFT on Bicycle Jughandle signs to represent bicycle facilities on the left-hand side of the roadway where facilitating a right turn would be applicable.

Guidance:

08 Applications of Bicycle Jughandle signs should be limited to brief independent alignments either through physical separation or islands formed by pavement markings. Bicycle Jughandle signs should not be used for a turning movement facilitated by a two-stage turn box (see Section 9B.18).

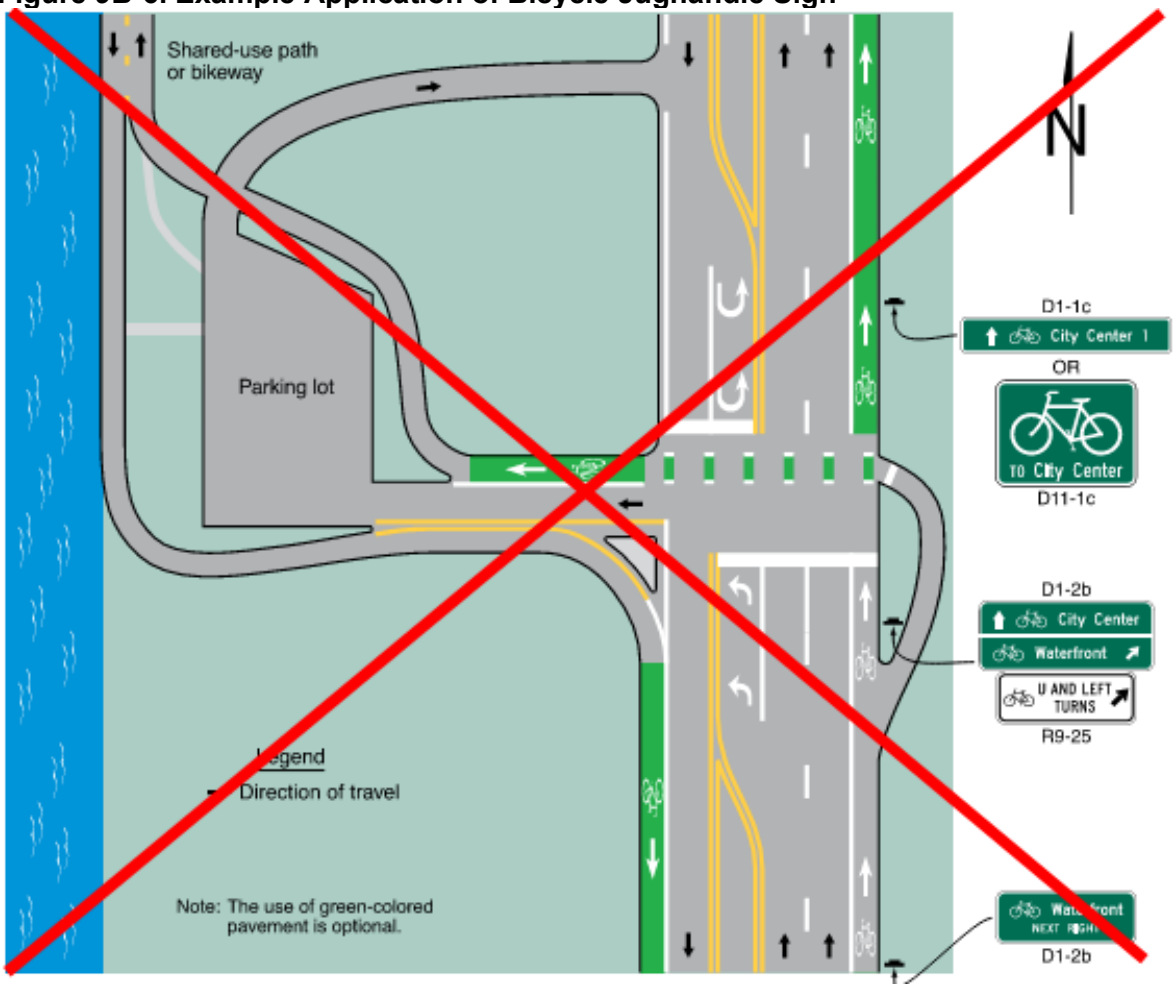
Support:

09 Bicycle Jughandle signs are designed to be mounted below guide signs.

10 Section 9D.01 contains information regarding the use of Bicycle Destination signs that can be used for jughandles.

MoDOT does not use bicycle jughandle signage. Revised Dec. 2025

Figure 9B-6. Example Application of Bicycle Jughandle Sign



Section 9B.20 Bicycle Actuation Signs (R10-4 and, ~~R10-22, R10-24,~~ R10-25~~, and R10-26~~)

Option:

01 Where bicycles are not controlled by pedestrian signal indications, the R10-4, R10-24, or R10-26 sign (see ~~Section 2B.58~~EPG 903.2.47) may be used.

Guidance:

02 If used, the R10-4~~, R10-24, or R10-26~~ sign~~s (see Figure 9B-1)~~ should be installed in the vicinity of where bicycles will be crossing the street.

Option:

03 If bicycles are crossing a roadway where In-Roadway Warning Lights (see ~~Section 4U.02~~EPG 902.20.2) or other warning lights or beacons have been provided, the R10-25 sign may be used.

~~04 The Bicycle Detector (R10-22) sign (see Figure 9B-1) may be installed at signalized intersections where pavement markings are used to indicate the location where a bicycle is to be positioned to actuate the signal (see Section 9E.15).~~

~~*Guidance:*~~

~~*05 If the Bicycle Detector sign is installed, it should be placed at the roadside adjacent to the marking to emphasize the location of the marking.*~~

MoDOT does not use R10-22, R10-24 or R10-26 signs. Revised Dec. 2025

Section 9B.21 Left Turn Yield to Bicycles Sign (R10-12b)

~~Option:~~

~~01 The Left Turn Yield to Bicycles (R10-12b) sign (see Figure 9B-1) may be used to emphasize the requirement for motorists to yield to bicyclists in situations where the motorist is turning across a bicycle movement that may be unexpected in direction, location, or some other quality that would be inconsistent with the typical bicycle lane.~~

Support:

02 ~~Section 2B.59~~ EPG 903.2.48 contains provisions on the placement and use of regulatory Traffic Signal signs.

Section 9B.22 Bicycle Signal Signs (R10-40, R10-40a, R10-41, R10-41a, R10-41b, and R10-41c)

Support:

01 The purposes of the Bicycle Signal signs ~~(see Figure 9B-1)~~ are to inform road users that the signal indications in the bicycle signal face are intended only for bicyclists, and to inform bicyclists which specific bicycle movements are controlled by the bicycle signal face.

02 ~~Section 4H.03~~EPG 902.8.3 contains information on signs that are used in conjunction with bicycle signal faces.

Standard:

03 The Bicycle Signal – Mandatory Movement (R10-40 or R10-40a) sign or the Bicycle Signal – Optional Movement (R10-41. R10-41a, R10-41b, or R10-41c) sign shall require bicycles to turn, shall permit turns where such turns would otherwise not be allowed, shall require a bicycle to stay in the same lane and proceed straight through an intersection, or shall indicate allowed movements when a GREEN BICYCLE signal indication is displayed on a bicycle signal face.

~~Section 9B.23 LOOK Sign (R15-8)~~

~~Option:~~

~~01 At railroad or LRT grade crossings with shared-use paths or separated bikeways, the LOOK (R15-8) sign (see Figure 9B-1) may be mounted on the Crossbuck support below the Crossbuck (R15-1) sign or any other signs, or on a separate post in the immediate vicinity of the grade crossing on the railroad or LRT right-of-way.~~

~~*Guidance:*~~

~~*02 A LOOK sign should not be mounted on a Crossbuck Assembly that has a YIELD or STOP sign mounted on the same support as the Crossbuck.*~~

MoDOT does not use the R15-8 sign. Revised Dec. 2025

Section 9B.24 Other Regulatory Signs

Option:

01 Other regulatory signs described in ~~Chapters 2B~~EPG 902.2 and ~~8B~~EPG 913.2 may be installed on bicycle facilities as appropriate.

CHAPTER 9C. WARNING SIGNS ~~AND OBJECT MARKERS~~ [914.3]

~~Section 9C.01 Turn or Curve Warning Signs (W1 Series)~~

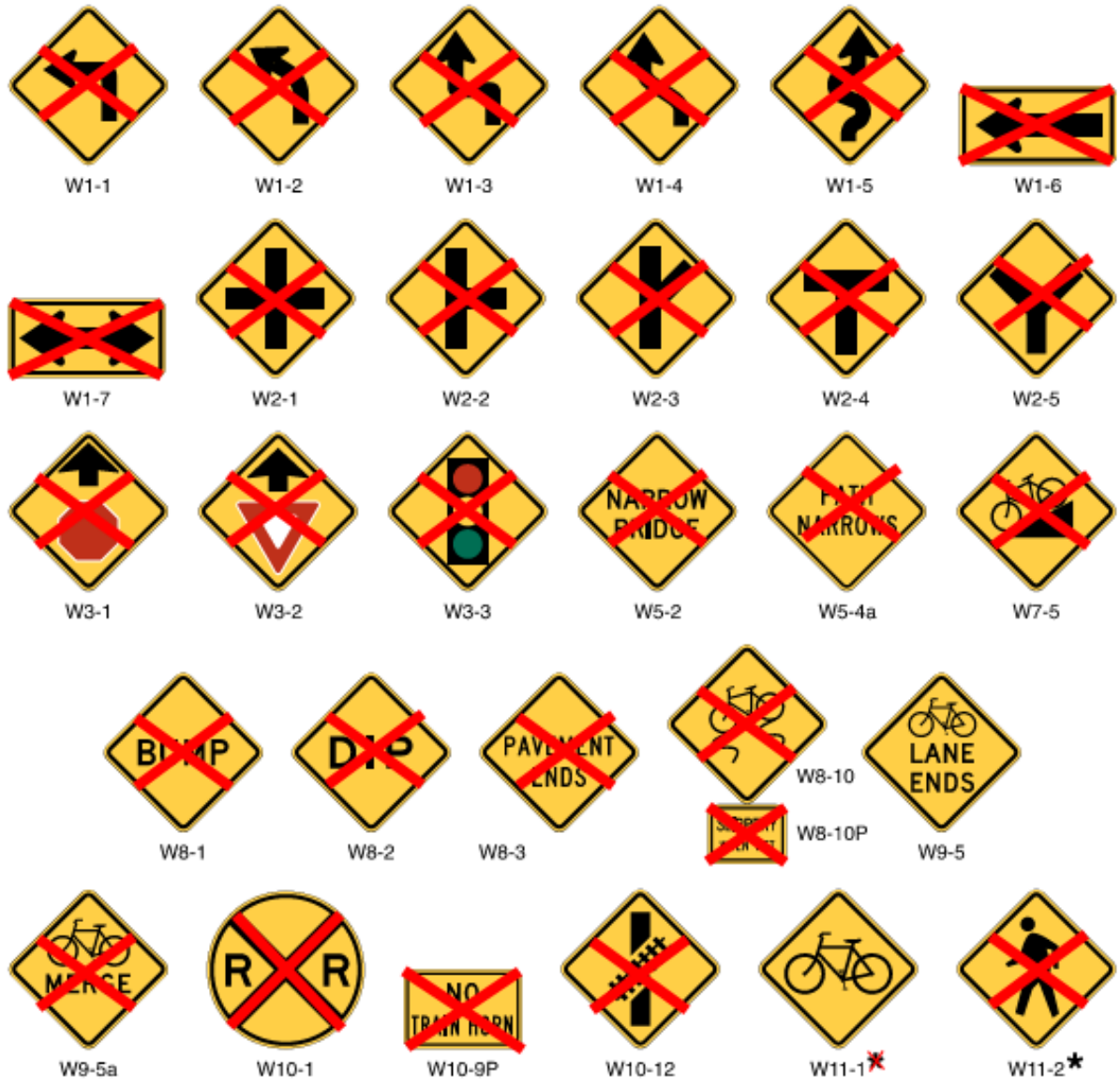
~~*Guidance:*~~

~~*01 To warn bicyclists of unexpected changes in shared-use path direction, appropriate Turn, Curve, or Large Arrow (W1-1 through W1-7) signs (see Figure 9C-1) should be used.*~~

~~*02 The W1-1 through W1-5 signs should be installed at least 50 feet in advance of the beginning of the change of alignment.*~~

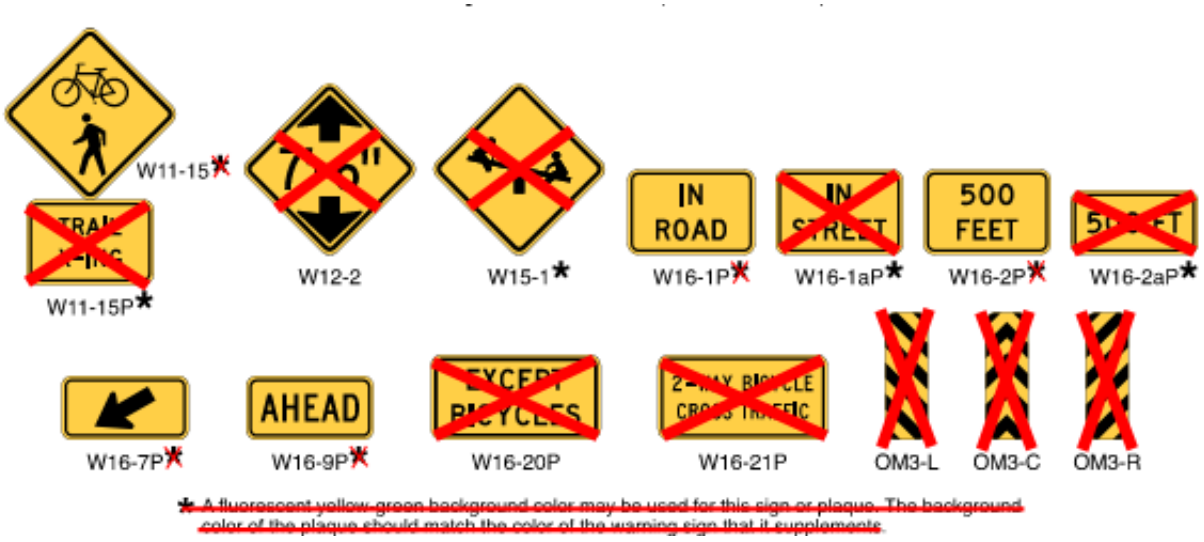
MoDOT does not install W1 Series signs specifically for bicyclists. Revised Dec. 2025

Figure 9C-1. Warning Signs and Plaques and Object Markers for Bicycle Facilities (Sheet 1 of 2)



~~* A fluorescent yellow-green background color may be used for this sign or plaque. The background color of the plaque should match the color of the warning sign that it supplements.~~

Figure 9C-1. Warning Signs and Plaques and Object Markers for Bicycle Facilities (Sheet 2 of 2)



Section 9C.02 Intersection Warning Signs (W2 Series)

Option:

01 Intersection Warning (W2-1 through W2-5) signs (see Figure 9C-1) may be used on a roadway, street, or shared-use path in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic.

Guidance:

02 When engineering judgment determines that the visibility of the intersection is limited on the shared-use path approach, Intersection Warning signs should be used.

03 Intersection Warning signs should not be used where the shared-use path approach to the intersection is controlled by a STOP sign, a YIELD sign, or a traffic control signal.

MoDOT does not install W2 Series signs specifically for bicyclists. Revised Dec. 2025

Section 9C.03 Bicycle Surface Condition Warning Sign (W8-10)

Option:

01 The Bicycle Surface Condition Warning (W8-10) sign (see Figure 9C-1) may be installed where roadway or shared-use path conditions could cause a bicyclist to lose control of the bicycle.

02 Signs warning of other conditions that might be of concern to bicyclists, including BUMP (W8-1), DIP (W8-2), PAVEMENT ENDS (W8-3), and any other word message that describes conditions that are of concern to bicyclists, may also be used (see Figure 9C-1).

03 A supplemental plaque may be used to clarify the specific type of surface condition.

MoDOT does not use the W8-10 sign. Revised Dec. 2025

Section 9C.04 Bicycle Warning and Trail Crossing Signs (W11-1 and W11-15)

Support:

M00 See EPG 903.3.44 for information regarding W11-1 and W11-15 signs.

~~01 The Bicycle Warning (W11-1) sign (see Figure 9C-1) alerts the road user to unexpected entries into the roadway by bicyclists, and other crossing activities that might cause conflicts. These conflicts might be relatively confined, or might occur randomly over a segment of roadway.~~

MoDOT has developed criteria for the use of W11-1 and W11-15 signs in Section 2C.54. Revised Dec. 2025

~~02 Section 9C.06 contains information for Bicycle Cross Traffic Warning plaques that can be used below STOP signs on crossroads or driveways that intersect with bicycle facilities.~~

MoDOT does not use the W16-21P plaque. Revised Dec. 2025

~~Option:~~

~~03 The Trail Crossing (W11-15) sign (see Figure 9C-1) may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path. A TRAIL X-ING (W11-15P) supplemental plaque may be mounted below the W11-15 sign.~~

~~*Guidance:*~~

~~*04 If used in advance of a trail crossing, a W11-15 or W11-15a sign should be supplemented with an AHEAD (W16-9P) or XX FEET (W16-2P or W16-2aP) plaque to inform road users that they are approaching a point where crossing activity might occur.*~~

~~*05 If used in advance of a specific crossing point, the Bicycle Warning or Trail Crossing sign should be placed at a distance in advance of the crossing location that complies with Table 2C-3.*~~

~~**Standard:**~~

~~**06 Bicycle Warning and Trail Crossing signs, when used at the location of the crossing, shall be supplemented with a diagonal downward-pointing arrow (W16-7P) plaque to show the location of the crossing.**~~

~~Option:~~

~~07 A fluorescent yellow-green background color with a black legend and border may be used for Bicycle Warning and Trail Crossing signs and supplemental plaques.~~

~~*Guidance:*~~

~~*08 When the fluorescent yellow-green background color 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 zone or area should be avoided.*~~

~~Section 9C.05 EXCEPT BICYCLES Warning Plaque (W16-20P)~~

~~Option:~~

~~01 Where it might be advantageous to notify bicyclists that the conditions or hazards depicted by a warning sign are not applicable to bicycles, the EXCEPT BICYCLES (W16-20P) warning plaque (see Figure 9C-1) may be used.~~

~~Support:~~

~~02 Examples of warning signs where an EXCEPT BICYCLES warning plaque can be mounted include DEAD END (W14-1) and NO OUTLET (W14-2) signs (see Section 2C.24).~~

~~03 Sections 2C.57 and 2C.58 contain information on the design of supplemental warning plaques.~~

MoDOT does not use the W16-20P plaque. Revised Dec. 2025

~~**Section 9C.06 Two-Way Bicycle Cross Traffic Warning Plaque (W16-21P)**~~

~~**Standard:**~~

~~**01 When used, the Two-Way Bicycle Cross Traffic (W16-21P) warning plaque (see Figure 9C-1) shall be installed below a STOP or YIELD sign.**~~

~~Option:~~

~~02 The Two-Way Bicycle Cross Traffic warning plaque may be used below STOP or YIELD signs on crossroads and driveways to alert road users of an unexpected bicycle movement.~~

~~Support:~~

~~03 The Two-Way Bicycle Cross Traffic warning plaque can help minimize overuse or misapplication of other warning signs such as the Bicycle Warning (W11-1) sign.~~

~~*Guidance:*~~

~~*04 The Two-Way Bicycle Cross Traffic warning plaque should be used in combination with a STOP or YIELD sign when a counter flow or two-way bicycle facility has an approach that is counter to the customary scanning behavior of a motorist at that location.*~~

MoDOT does not use the W16-21P plaque. Revised Dec. 2025

Section 9C.07 Bicycle Lane Ends Warning Sign (W9-5) ~~and Bicycles Merging Sign (W9-5a)~~

Support:

01 Where a warning sign is appropriate, the Bicycle Lane Ends (W9-5) warning sign ~~(see Figure 9C-1)~~ is intended to alert road users that a bicycle lane is ending and that bicycles will share or occupy the travel lane after merging.

Option:

02 The Bicycle Lane Ends warning sign may be used in advance of the end of a bicycle lane to warn that a bicycle lane will be ending.

~~03 The Bicycles Merging (W9-5a) sign (see Figure 9C-1) may be used where a bicycle merging maneuver might occur. The Bicycles Merging sign may be used in addition to the Bicycle Lane Ends (W9-5) warning sign.~~

MoDOT does not use the W9-5a sign. Revised Dec. 2025

Guidance:

04 To avoid excessive use of signs, the Bicycle Lane Ends warning sign should not be used where a bicycle lane is dropped on the approach to an intersection and resumes immediately after the intersection.

Option:

05 A Bicycles Allowed Use of Full Lane (R9-20) sign (see ~~Section 9B.14~~EPG 914.2.5) and/or shared-lane markings (see ~~Section 9E.09~~ EPG 914.5.8) may be installed downstream of the merge area.

~~06 A W16-2aP supplemental warning plaque may be used to inform road users of the distance to the end of the bicycle lane and/or to the bicycle merge.~~

MoDOT does not use the W16-2aP plaque. Revised Dec. 2025

Section 9C.08 Other Bicycle Warning Signs

Option:

~~01 Other bicycle warning signs (see Figure 9C-1) such as PATH NARROWS (W5-4a) and Hill (W7-5) may be installed on shared-use paths to warn bicyclists of conditions not readily apparent.~~

MoDOT does not use the W5-4a or W7-5 signs. Revised Dec. 2025

02 In situations where there is a need to warn road users to watch for bicycles traveling along the highway, the Bicycle Warning (W11-1) sign may be used with the IN ROAD (W16-1P) plaque ~~or the IN STREET (W16-1aP) plaque~~ (see ~~Figure 9C-1~~).

MoDOT does not use the W16-1aP plaque. Revised Dec. 2025

Guidance:

03 If used, other advance bicycle warning signs should be installed at least 50 feet in advance of the beginning of the condition.

04 Where temporary traffic control zones are present on bikeways, appropriate signs from ~~Part 6~~ EPG 616 should be used.

Option:

05 Other warning signs described in ~~Chapters 2C~~EPG 903.3 and ~~8C~~EPG 913.3 may be installed on bicycle facilities as appropriate.

~~Section 9C.09 Object Markers~~

~~**Standard:**~~

~~**01 Obstructions in a shared-use path shall be marked with retroreflective material or appropriate object markers as described in Section 2C.70.**~~

~~Option:~~

~~02 Fixed objects adjacent to shared-use paths may be marked with Type 1, Type 2, or Type 3 object markers. If the object marker is not also intended to be seen by motorists, a smaller version of the Type 3 object marker may be used (see Table 9A-1).~~

MoDOT does not install object markers specifically for bicyclists. Revised Dec. 2025

CHAPTER 9D. GUIDE ~~AND SERVICE~~ SIGNS [914.4]

~~Section 9D.01 Bicycle Destination Signs (D1-1b, D1-1c, D1-2b, D1-2c, D1-3b, D1-3c, D2-1a, D2-2a, and D2-3a)~~

~~Support:~~

~~01 The purpose of Bicycle Destination (D1-1b, D1-1c, D1-2b, D1-2c, D1-3b, and D1-3c) signs (see Figure 9D-1) and Bicycle Distance (D2-1a, D2-2a, and D2-3a) signs (see Figure 9D-1) is to provide guidance to bicyclists traveling along a bikeway network directing them to typical bicycle destinations or points of interest. The smaller size of Bicycle Destination and Distance signs can deemphasize the messages to motorists, especially when the direction(s) or destination(s) displayed provides access to routes or pathways where the use of motor vehicles is prohibited or discouraged. Examples include, but are not limited to:~~

- ~~A. Bicycles can go in a direction counter to conventional traffic,~~
- ~~B. Access to a separated bikeway or shared-use path from a street,~~
- ~~C. Access to a bicycle route,~~
- ~~D. Bicycles are directed to another roadway or bikeway that facilitates a parallel or alternative route to the same destination, or~~
- ~~E. Access to a sidewalk that provides connectivity between bicycle facilities.~~

~~02 Section 2D.36 contains information on Destination signs used for when the destinations listed would apply to both motorists and bicyclists.~~

~~03 Section 2D.43 contains information on Distance signs used for when the destinations listed would apply to both motorists and bicyclists.~~

~~Standard:~~

~~04 Because of their smaller size, Bicycle Destination and Distance signs shall not be used as a substitute for vehicular destination signs when the message is also intended to be applicable to motorists.~~

~~Option:~~

~~05 Bicycle Destination and Distance (D1-1b, D1-1c, D1-2b, D1-2c, D1-3b, D1-3c, D2-1a, D2-2a, and D2-3a) signs may be installed to provide direction, destination, and distance information as needed for bicycle travel. If several destinations are to be shown at a single location, they may be placed on a single sign with an arrow (and the distance, if desired) for each name. If more than one destination lies in the same direction, a single arrow may be used for the destinations.~~

~~06 Destination (D1-1 and D1-1a) signs (see Section 2D.36) and Street Name (D3-1) signs (see Section 2D.45) may be installed instead of or in addition to Bicycle Destination signs as needed if the Destination or Street Name sign applies to motorists and bicyclists.~~

~~07 Distance (D2-1 through D2-3) signs (see Section 2D.43) may be installed instead of, or in addition to, Bicycle Distance (D2-1a through D2-3a) signs, as needed, if the destination and distance information applies to motorists and bicyclists.~~

~~*Guidance:*~~

~~*08 Adequate separation should be made between any destination or group of destinations in one direction and those in other directions by suitable design of the arrow, spacing of lines of legend, heavy lines entirely across the sign, or separate signs.*~~

~~*09 Where a Bicycle Destination sign with distance information is located less than ½ mile from the destination, the distance displayed should be to the nearest ¼ mile. Where the distance to be displayed on a Bicycle Destination sign is less than ¼ mile, the distance should be displayed in feet, rather than miles, to the nearest 50 feet.*~~

Figure 9D-1. Guide Signs and Plaques for Bicycle Facilities (Sheet 1 of 3)

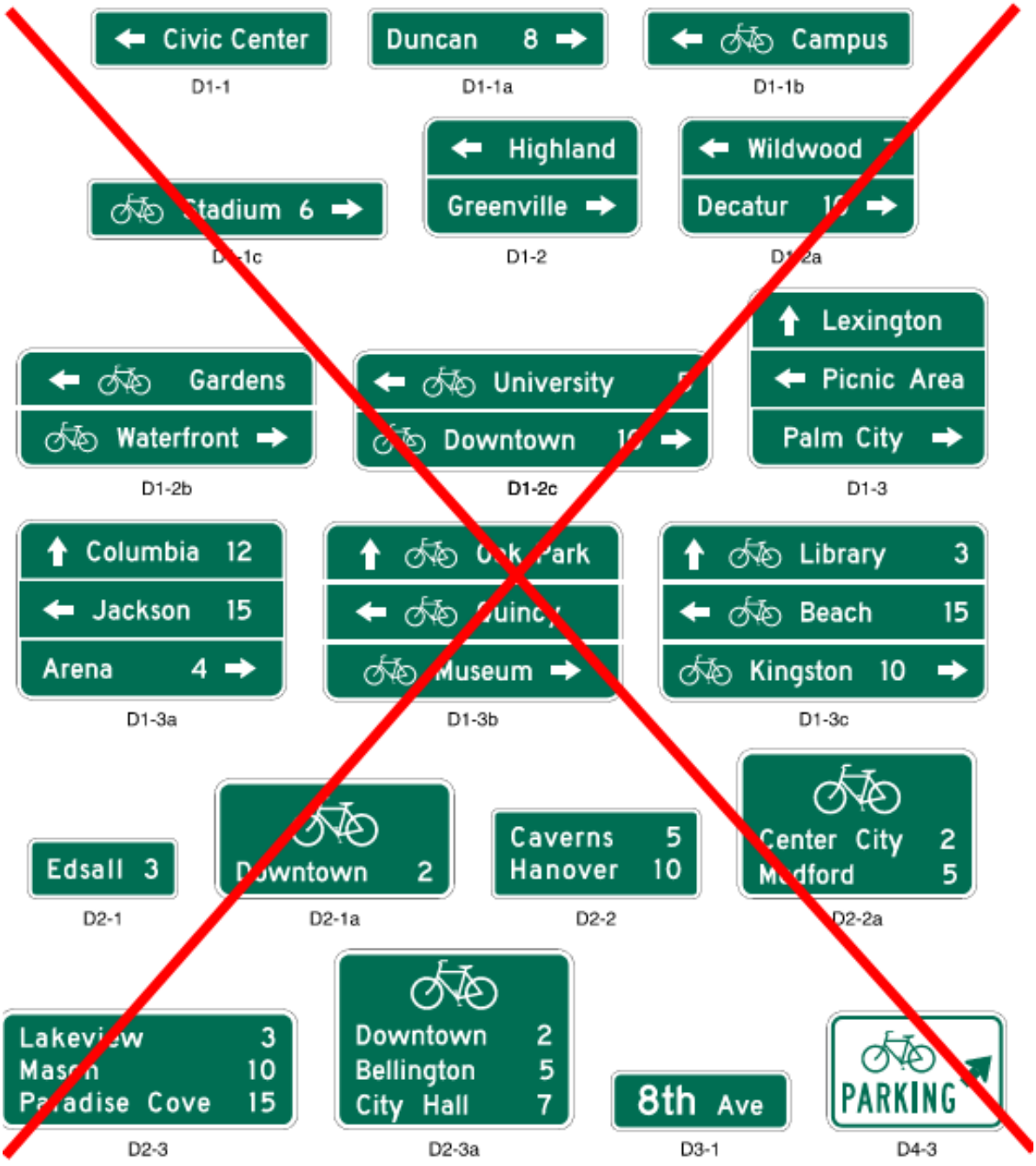
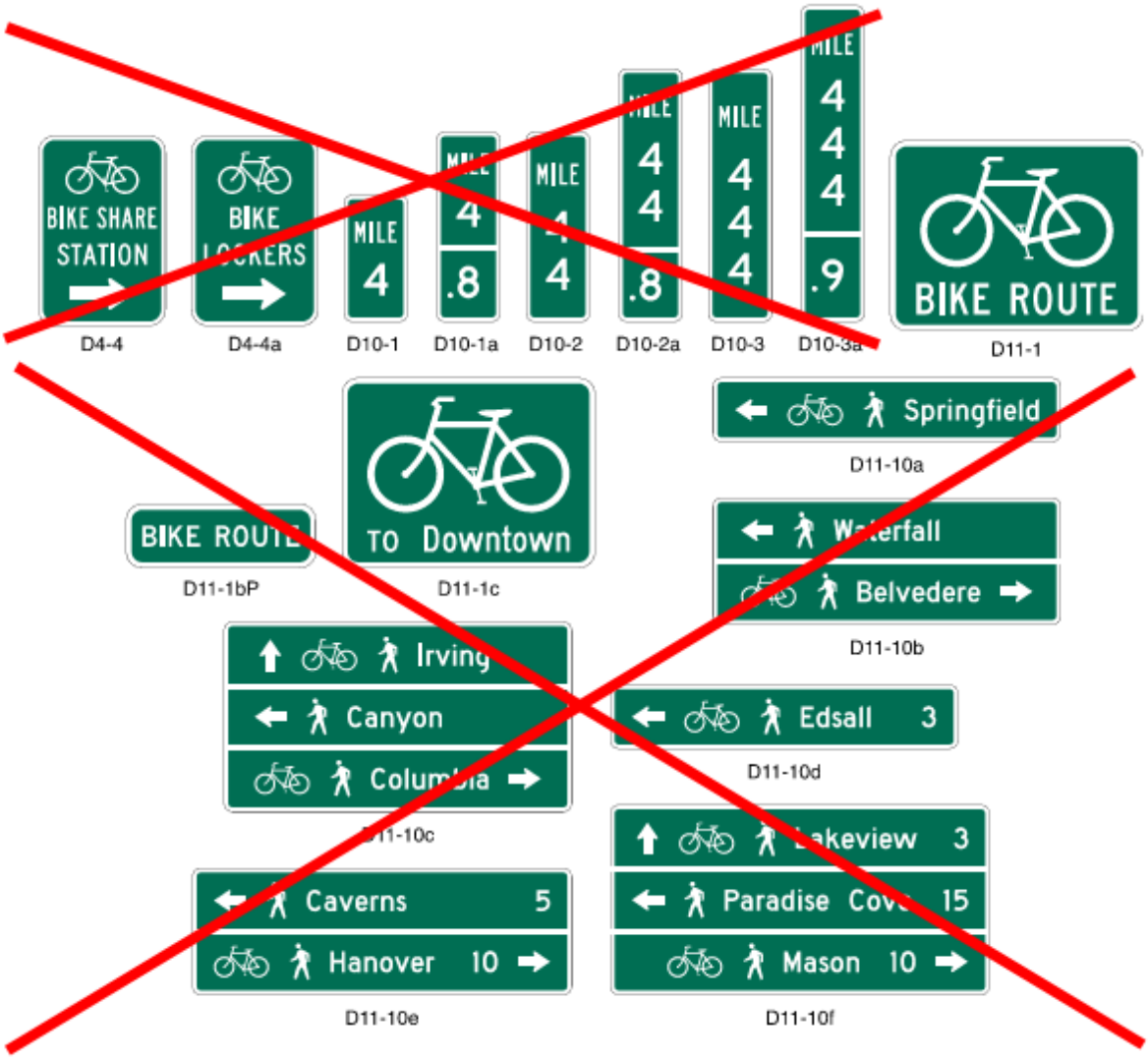


Figure 9D-1. Guide Signs and Plaques for Bicycle Facilities (Sheet 2 of 3)



~~Option:~~

~~10 Distances may be displayed in fractions of a mile to the nearest 1/8 mile to communicate distance information on Bicycle Destination signs where the distance to a destination is desired to be more precise than ¼ mile increments. Support:~~

~~11 Section 2A.08 contains provisions on the display of fractions on guide signs.~~

~~**Standard:**~~

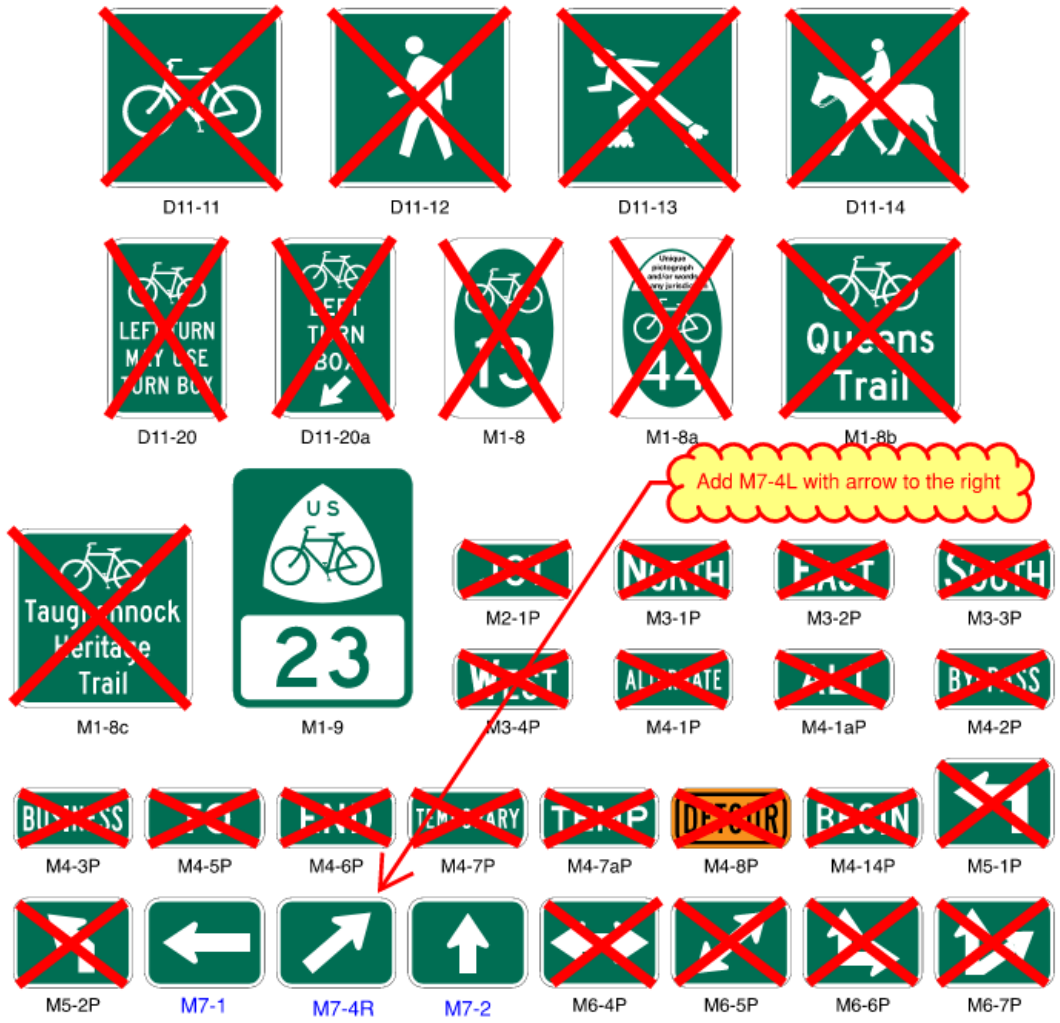
~~**12 An arrow pointing to the right, if used, shall be at the extreme right-hand side of the sign. An arrow pointing left or up, if used, shall be at the extreme left-hand side of the sign. The distance numerals, if used, shall be placed to the right of the destination names.**~~

~~**13 Except as provided in Paragraph 14 of this Section, a bicycle symbol shall be placed next to each destination or group of destinations.**~~

~~Option:~~

~~14 An oversized bicycle symbol may be displayed as the top line of a Bicycle Destination sign instead of individual bicycle symbols for each of the destination/distance lines.~~

Figure 9D-1. Guide Signs and Plaques for Bicycle Facilities (Sheet 3 of 3)



~~**Standard:**~~

~~**15 If an arrow is at the extreme left, the bicycle symbol shall be placed to the right of the respective arrow.**~~

~~*Guidance:*~~

~~*16 Where the arrow is at the extreme right, the bicycle symbol should be to the left of the destination legend.*~~

~~*17 Unless a sloping arrow will convey a clearer indication of the direction to be followed, the directional arrows should be either horizontal or vertical.*~~

~~*18 If several individual name signs are assembled into a group, all of the signs in the assembly should have the same horizontal width.*~~

~~*19 Travel times should not be used on Bicycle Destination signs.*~~

~~Support:~~

~~20 Travel times can vary greatly for bicyclists based on a variety of factors including individual speed, bicycle type, and type of facility.~~

MoDOT does not use Bicycle Destination signs. Revised Dec. 2025

Section 9D.02 Bike Route Guide Sign~~s~~ (D11-1 ~~and D11-1c~~)

Support:

01 The Bike Route Guide (D11-1 ~~or D11-1c~~) sign ~~(see Figure 9D-1)~~ is used where no unique designation of routes is desired. ~~Sections 9D.04~~ EPG 914.4.1 through ~~9D.07~~EPG 914.4.3 contain information for Bicycle Route signs where the bicycle route is designated by number, name, or both.

Option:

02 Bike Route Guide signs may be provided along designated unnumbered, unnamed bicycle routes to inform bicyclists of bicycle route direction changes and to confirm route direction and destination.

03 If used, Bike Route Guide signs may be repeated at regular intervals so that bicycles entering from side streets will have an opportunity to know that they are on a bicycle route. Similar guide signing may be used for shared roadways with intermediate signs placed for bicycle guidance.

~~04 The Alternative Bike Route Guide (D11-1c) sign may be used to display a word legend that provides information on route direction, destination, and/or route name in place of the "BIKE ROUTE" word legend on the D11-1 sign (see Figure 9D-1).~~

~~05 Other plaques such as BEGIN (M4-14P) and END (M4-6P) may be used with Bike Route Guide signs.~~

MoDOT does not use D11-1c, M4-14P or M4-6P signs. Revised Dec. 2025

Guidance:

06 Travel times should not be used on Bike Route Guide signs.

Support:

07 Travel times can vary greatly for bicyclists based on a variety of factors including individual speed, bicycle type, and type of facility.

~~08 Figure 9D-2 shows examples of guide sign applications for bicycle travel.~~

~~Section 9D.03 BIKE ROUTE Plaque (D11-1bP)~~

~~Option:~~

~~01 The BIKE ROUTE (D11-1bP) plaque (see Figure 9D-1) may be installed to supplement:~~

~~A. The Alternative Bike Route Guide (D11-1c) sign (see Section 9D.02);~~
~~B. The Bicycle Directional (D11-11) sign (see Section 9D.11) for use on a shared-use path; or~~
~~C. A Street Name (D3-1) sign (see Section 2D.45).~~

02 When installed above or below a Street Name sign, the D11-1bP supplemental plaque may include a bicycle symbol to the left of the BIKE ROUTE legend.

Standard:

03 The bicycle symbol shall not be used on a Street Name sign.

Standard Paragraph 3 is relocated to Section 2D.45. Revised Dec. 2025

04 Where a BIKE ROUTE plaque is used in conjunction with a Street Name sign to identify a street that is part of an overall bicycle network, one of the following signs shall also be used systematically to establish the designated bicycle route on the street identified by the BIKE ROUTE plaque:

A. Bike Route Guide signs (see Section 9D.02),
B. Alternative Bike Route Guide (D11-1c) sign (see Section 9D.02),
C. State or Local Bicycle Route (M1-8 and M1-8a) signs (see Section 9D.05),
D. Non-Numbered Bicycle Route (M1-8b and M1-8c) signs (see Section 9D.06), or
E. United States Bicycle Route (M1-9) sign (see Section 9D.07).

05 BIKE ROUTE plaques shall not incorporate replicas of the United States Bicycle Route, State or Local Bicycle Route, or Non-Numbered Bicycle Route sign to replace or supplement the bicycle symbol.

Option:

06 The BIKE ROUTE plaque and the Street Name sign may be different widths.

Support:

07 Figure 9D-3 shows an example of bicycle guide signing using the BIKE ROUTE plaque.

Figure 9D-2. Examples of Bicycle Guide Signing (Sheet 1 of 2)

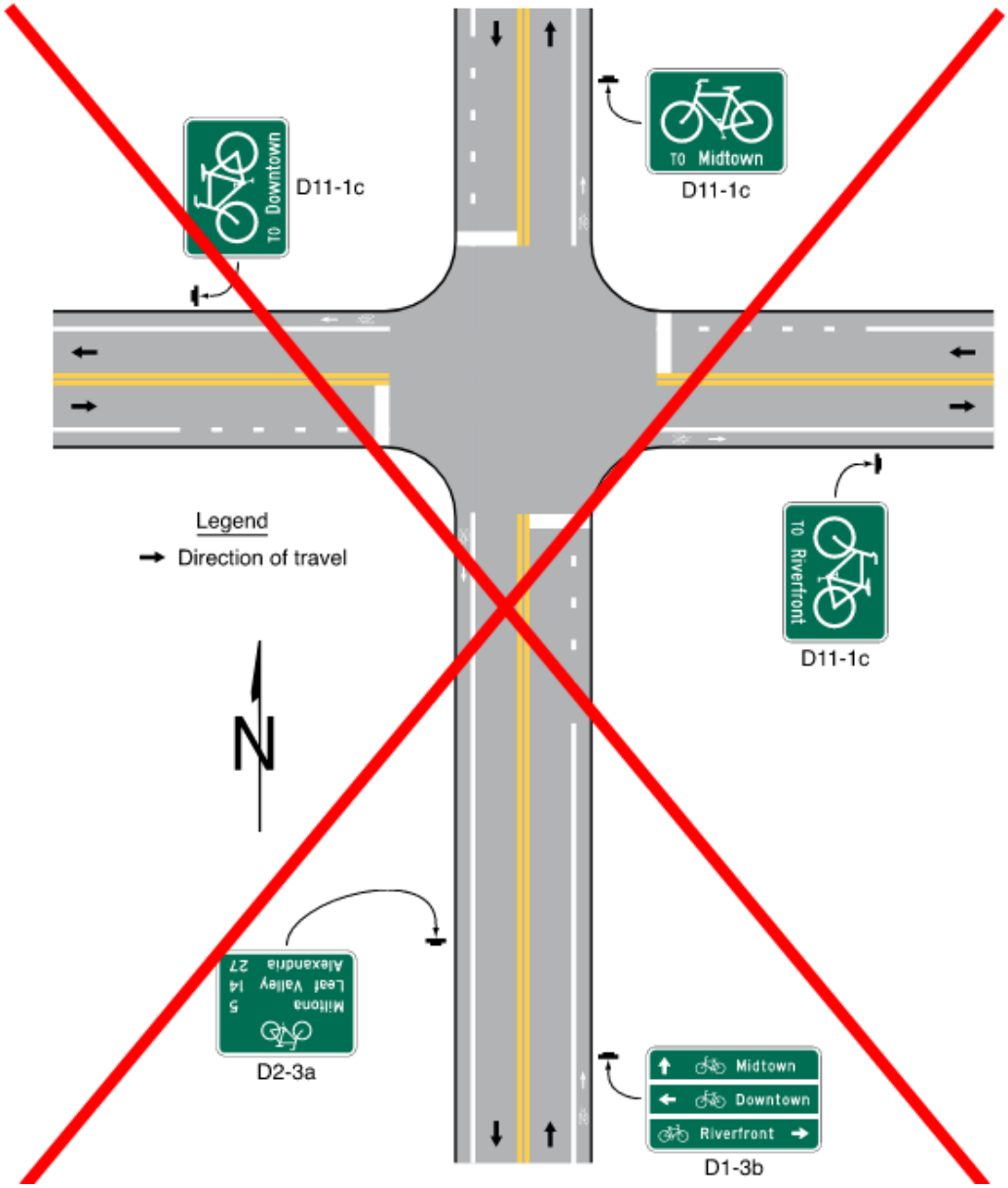


Figure 9D-2. Examples of Bicycle Guide Signing (Sheet 2 of 2)

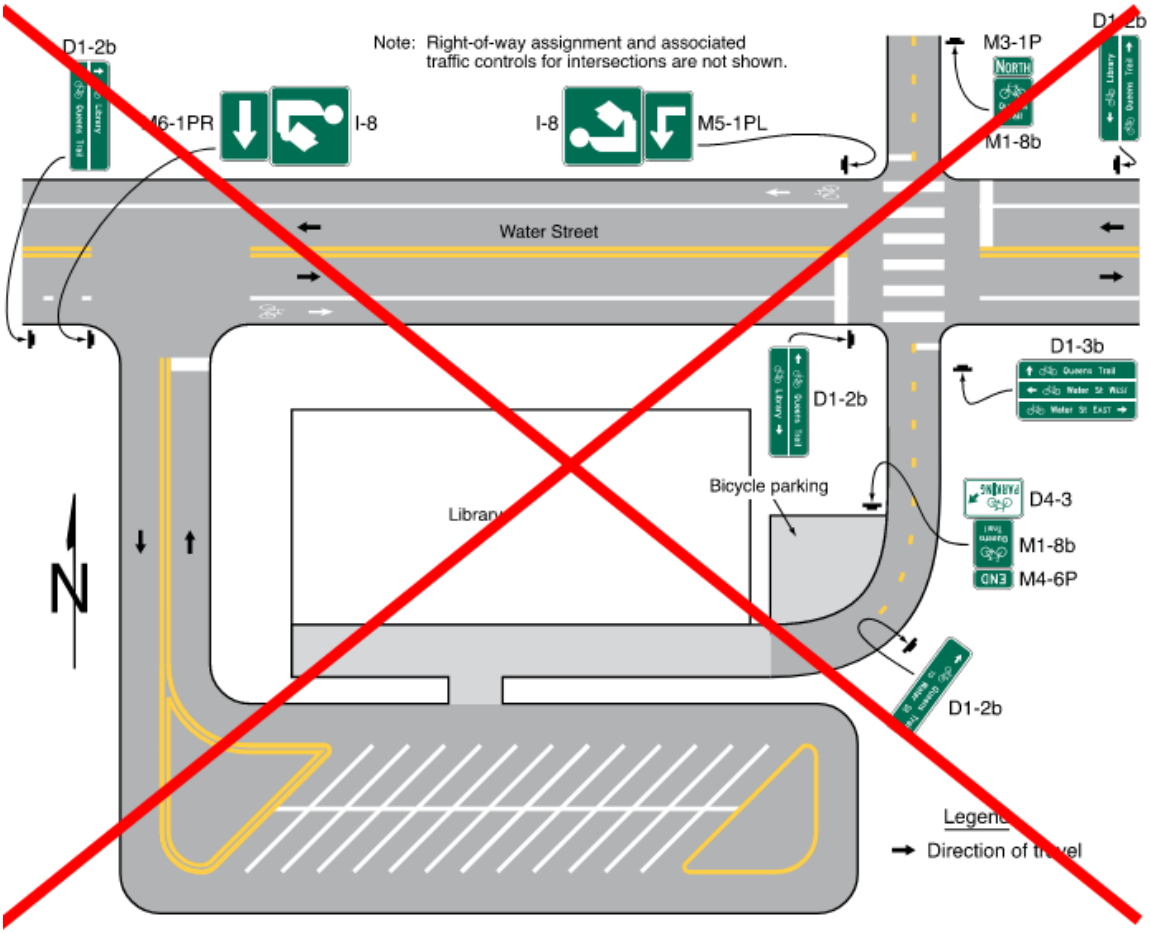
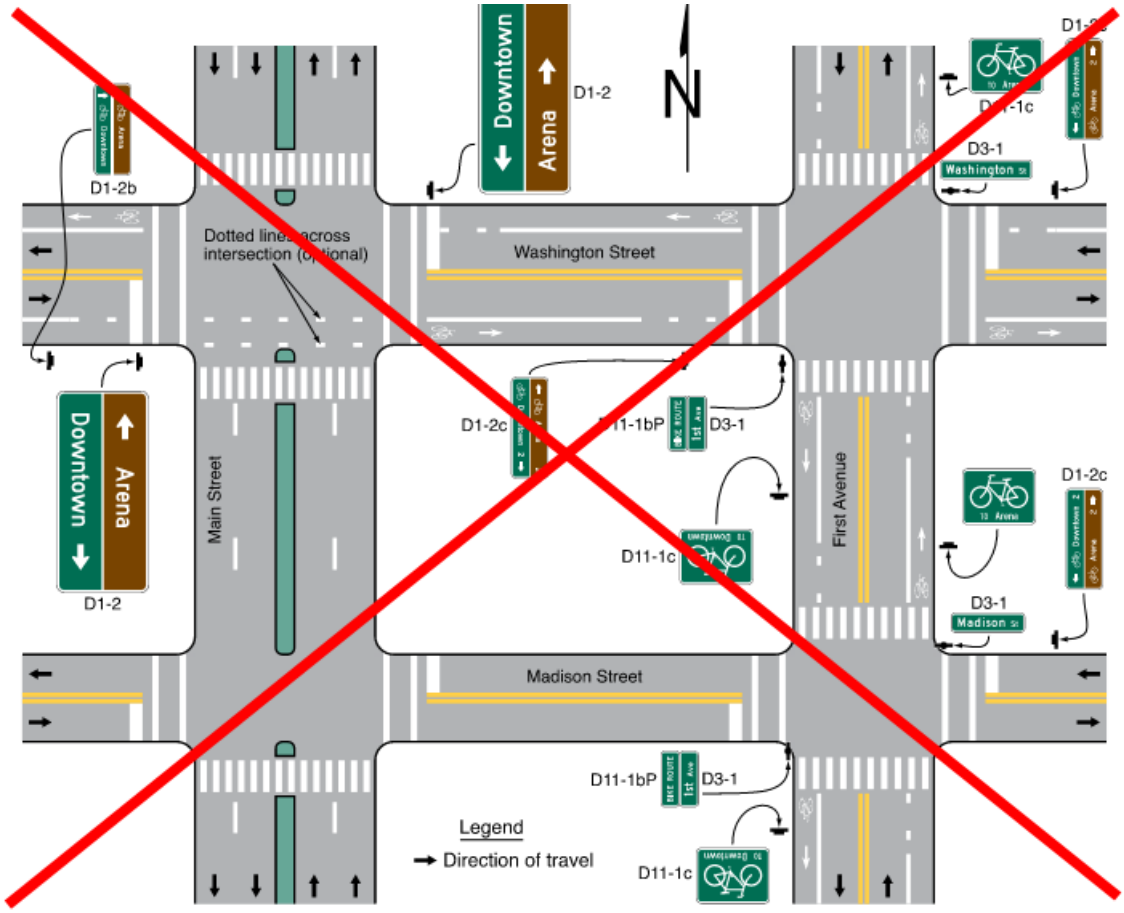


Figure 9D-3. Examples of Bicycle Route Guide Signing



Note: The D1-2 signs are larger than the other guide signs on this figure because the legends on the D1-2 signs need to be legible to motorists.

Section 9D.04 Numbered Bikeway Systems

Support:

M00 MoDOT will only install signage for designated United States Bicycle Routes.

~~01 The purpose of numbering and signing bikeways and bicycle routes is to identify routes and facilitate travel.~~

02 The United States Bicycle Routes are numbered by the American Association of State Highway and Transportation Officials (AASHTO) upon recommendations of State highway organizations. ~~County and local bikeways and bicycle routes are numbered by the appropriate authorities.~~

03 Bicycle route sign systems can be used to distinguish junctions, turns, the beginning of routes, and route termination points. Extensive use of reassurance markers is typically not needed.

~~04 An agency or jurisdiction can use several methods for bicycle route guidance including maps, information guides, or signing.~~

Guidance:

05 Establishing bicycle route systems described in ~~Paragraph 2 of this Section~~ the second paragraph of this article and any other bicycle route system should be followed with effective communication between affected jurisdictions. County and local jurisdictions that are establishing numbered routes

should coordinate with ~~the respective State transportation agency~~ MoDOT. Care should be taken to avoid the use of numbers or other designations that have been assigned to U.S. Bicycle Routes or other routes in the same geographical region or State. Overlapping numbered routes should be kept to a minimum.

~~*06 Bicycle routes, which might be a combination of various types of bikeways, should establish a continuous routing.*~~

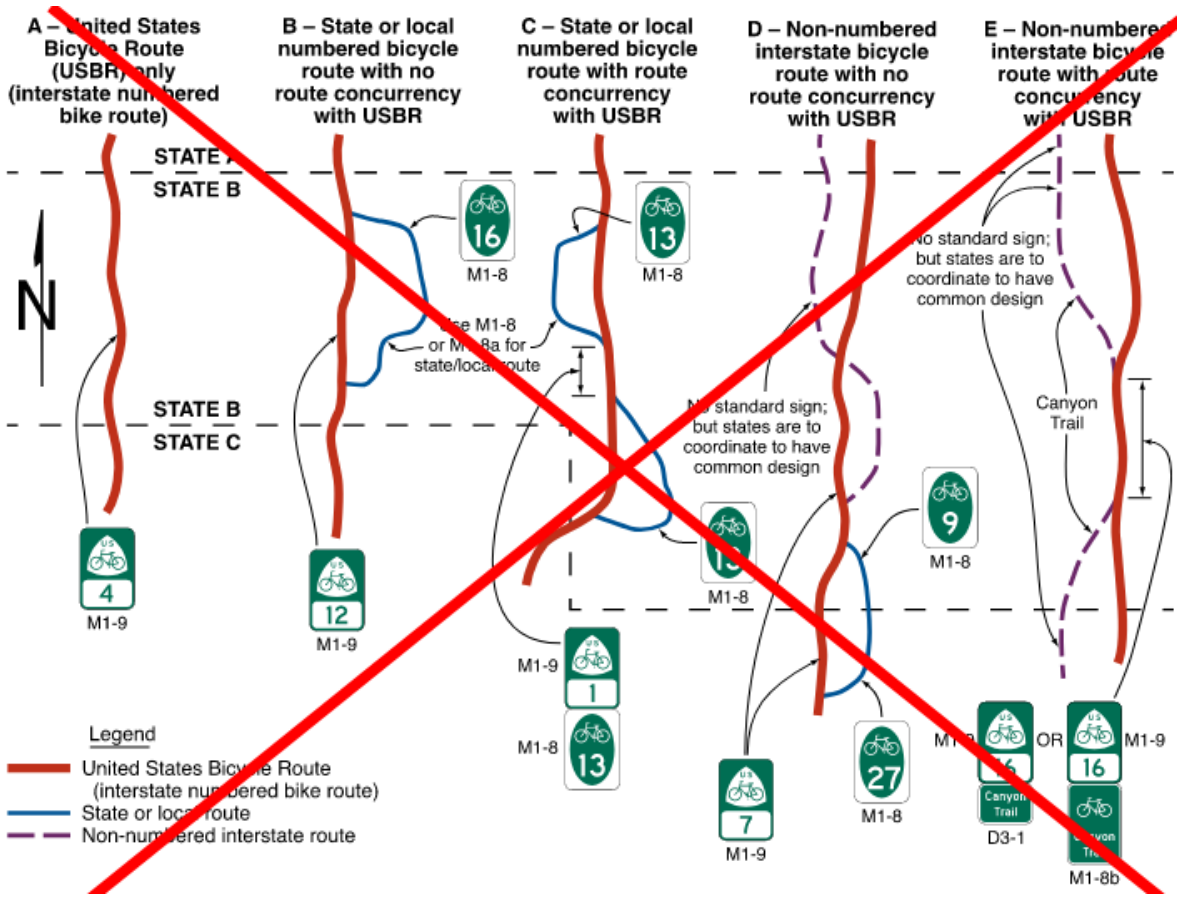
~~**Standard:**~~

~~**07 Multiple numbered bicycle route systems shall be given preference in this order: United States, State, and county or local. The preference shall be given by installing the highest-priority legend on the top or the left of the sign assembly with other numbered overlapping bicycle routes.**~~

~~**08 Where applicable, multiple bicycle route systems with concurrency shall be signed in accordance with Figure 9D-4.**~~

MoDOT only installs signs for US bicycle routes. Revised Dec. 2025

Figure 9D-4. Examples of Route Signing for Numbered or Named Bicycle Routes



Guidance:

09 Numbered bicycle routes should be identified by route signs (see ~~Sections 9D.05 through 9D.07~~EPG 914.4.3) and auxiliary plaques (see ~~Section 9D.08~~EPG 914.4.4).

10 If used, Bicycle Route signs should be placed at locations to keep bicyclists informed of changes in route direction.

Option:

11 Bicycle Route signs may be installed on shared roadways, shared-use paths, or separated bikeways to provide navigational guidance for bicyclists.

MoDOT only installs signs for US bicycle routes. Revised Dec. 2025

Section 9D.05 Numbered Bicycle Route Signs (M1-8 and M1-8a)

Option:

01 To establish a unique identification (route designation) for a State or local bicycle route, the Bicycle Route (M1-8 or M1-8a) sign (see Figure 9D-1) may be used.

Standard:

02 The Numbered Bicycle Route (M1-8) sign shall display a route designation and shall have a green background with a white legend and border.

03 The Numbered Bicycle Route (M1-8a) sign shall display the same information as the M1-8 sign and in addition shall display a pictograph or words on the upper portion of the sign panel that are associated with the route or with the agency that has jurisdiction over the route.

04 If a Numbered Bicycle Route (M1-8 or M1-8a) sign is used on a roadway, it shall include a bicycle symbol.

Guidance:

05 If a pictograph is used on the M1-8a sign the maximum dimension (height or width) of the pictograph should not exceed 2 times the height of the route numeral, and should be contained within a green border. The minimum width of the graphic on the M1-8a sign should be ⅔ of the sign width, and the maximum width should be 9/10 of the sign width.

06 If a bicycle symbol is used on the M1-8a sign, it should have a minimum height of ¼ of the M1-8a sign panel height.

MoDOT does not use M1-8 signs. Revised Dec. 2025

Section 9D.06 Non-Numbered Bicycle Route Signs (M1-8b and M1-8c)

Standard:

01 Except as provided in Paragraph 2 of this Section, Non-Numbered Bicycle Route (M1-8b and M1-8c) signs (see Figure 9D-1) used on roadways shall have a green background with a white border and shall include words identifying the bicycle route or a legend consisting of words identifying the bicycle route and a pictograph or bicycle symbol.

Option:

02 Words identifying the bicycle route may be omitted on Non-Numbered Bicycle Route (M1-8b and M1-8c) signs where a pictograph includes the likeness of a bicycle that clearly identifies the route as a bicycle route.

Support:

03 Bicycle routes are sometimes designated specifically by name or established using a distinctive route identity, but are not numbered or are intentionally excluded from an overall numbered bicycle route system.

04 Section 9D.02 contains information for Bicycle Route signs where no unique designation route is beneficial or desired.

Option:

05 Where a bicycle route is named instead of numbered, the Non-Numbered Bicycle Route sign may be used.

06 A green background or white border may be omitted on Non-Numbered Bicycle Route (M1-8b or M1-8c) signs used on shared-use paths.

~~Support:~~

~~07 Certain uninterrupted, long-distance interstate bicycle routes can largely be on shared-use paths, or other off-roadway facilities. In order to achieve continuity, these bicycle systems might have to share alignments with urban streets, rural highways, or water crossings.~~

~~08 Long-distance interstate bicycle routes can be administered by independent organizations serving other non-transportation objectives.~~

~~*Guidance:*~~

~~*09 In order to provide signing on a facility managed by a transportation agency, a statewide policy for encouraging independent organizations to adopt the Non-Numbered Bicycle Route sign should be established.*~~

MoDOT does not use M1-8 signs. Revised Dec. 2025

Section 9D.07 U.S. Bicycle Route Sign (M1-9)

Guidance:

01 Where a designated bicycle route extends through two or more States, a coordinated submittal by the affected States for an assignment of a U.S. Bicycle Route number designation should be sent to the American Association of State Highway and Transportation Officials.

Standard:

02 The U.S. Bicycle Route (M1-9) sign ~~(see Figure 9D-1)~~ shall have a green legend and border with a white background and shall display the route designation as assigned by AASHTO.

Section 9D.08 Bicycle Route Sign and Auxiliary Plaques

Support:

01 EPG 903.4.12~~Section 2D.12~~ contains additional provisions for the design of route sign auxiliary plaques. EPG 903.4.25~~Sections 2D.29~~ through 903.4.30~~2D.34~~ contain additional provisions for the general application of route signs.

Guidance

02 If a designated or numbered bicycle route is concurrent with a numbered highway, the route sign and auxiliary plaques for the bikeway should be installed as independent assemblies and should not be installed with other Route signs or confirmation assemblies for the numbered or named highway on the same assembly.

Standard:

03 Route signs for bikeways shall not be installed on guide signs or overhead.

Option:

04 Route assemblies for a designated or numbered bicycle route may be installed at locations or distances other than those prescribed in EPG 903.4.25~~Sections 2D.29~~ through 903.4.30~~2D.34~~ if engineering judgment indicates that the operation or speed of the bicycle justifies alternate locations or distances.

05 Auxiliary plaques ~~(see Figure 9D-1)~~ may be used in conjunction with Bicycle Route signs as needed.

Guidance:

~~*06 If used, Junction (M2-1P), Cardinal Direction (M3 series), and Alternative Route (M4 series) auxiliary plaques should be mounted above the appropriate Bicycle Route signs.*~~

MoDOT does not use M2-1P, M3 series or M4 series signs for bicycle routes. Revised Dec. 2025

07 ~~*If used, Advance Turn Arrow (M5 series) and*~~ *Directional Arrow (M7~~6~~ series) auxiliary plaques should be mounted below the appropriate Bicycle Route signs.*

MoDOT does not use M5 series signs for bicycle routes. Revised Dec. 2025

08 ~~Except for the M4-8P plaque, a~~ All route sign auxiliary plaques should match the color combination of the route sign that they supplement.

MoDOT does not use the M4-8P plaque for bicycle routes. Revised Dec. 2025

09 ~~*Route sign auxiliary plaques carrying word legends that are used on bicycle routes should have a minimum size of 12 x 6 inches.*~~ *Route sign auxiliary plaques carrying arrow symbols that are used on bicycle routes should have a minimum size of 12 x 9 inches.*

MoDOT does not use auxiliary plaques with word legends for bicycle routes. Revised Dec. 2025

Standard:

10 If ~~both~~ the ~~Junction (M2-1P), Cardinal Direction (M3 series), or Alternative Route (M4 series) auxiliary plaque and the Advance Turn Arrow (M5 series) or~~ Directional Arrow (M6~~7~~ series) auxiliary plaques are used on the same sign assembly as a Bicycle Route sign, the ~~Junction, Cardinal Direction, or Alternative Route auxiliary plaque shall be installed above the Bicycle Route sign, and the Advance Turn Arrow or~~ Directional Arrow auxiliary plaque shall be installed below the Bicycle Route sign.

Option:

11 With route signs of larger sizes, auxiliary plaques may be suitably enlarged, but not such that they exceed the width of the route sign.

12 A route sign and any auxiliary plaques used with it may be combined on a single sign as a guide sign.

~~Support:~~

~~13 Figure 9D-3 shows typical placements of signs for bicycle routes.~~

Standard:

14 If used, a Bicycle Route sign assembly shall consist of a route sign and auxiliary plaques that identify the route and indicate the direction.

Guidance:

15 If the bicycle route is signed, Bicycle Route sign assemblies should be installed on all approaches where that route intersects with other numbered bicycle routes.

Standard:

16 Within groups of assemblies, information for bicycle routes intersecting from the left shall be mounted at the left in horizontal arrangements and at the top or center of vertical arrangements. Similarly, information for bicycle routes intersecting from the right shall be at the right or bottom, and for straight-through bicycle routes at the center in horizontal arrangements or top in vertical arrangements.

~~17 A Junction assembly shall consist of a Junction auxiliary plaque and a Bicycle Route sign. The Bicycle Route sign shall carry the number of the intersected or joined bicycle route.~~

~~Option:~~

~~18 The Junction assembly may be installed in advance of intersections where a numbered bicycle route is intersected or joined by another numbered bicycle route.~~

MoDOT does not use Junction assemblies for bicycle routes. Revised Dec. 2025

~~Standard:~~

~~19 An Advance Bicycle Route Turn assembly shall consist of a Bicycle Route sign, an Advance Turn Arrow or word message auxiliary plaque, and a Cardinal Direction auxiliary plaque, if needed. If used, it shall be installed in advance of an intersection where a turn must be made to remain on the indicated route.~~

~~Option:~~

~~20 The Advance Bicycle Route Turn assembly may be used in advance of intersecting routes. On the approach to an intersection with a numbered bicycle route, the Advance Bicycle Route Turn assembly may be used to pre-position turning bicyclists in the correct lane position from which to make their turn.~~

MoDOT does not use Advance Bicycle Route Turn assemblies for bicycle routes. Revised Dec. 2025

Standard:

21 A Directional assembly shall consist of ~~a Cardinal Direction auxiliary plaque, if needed,~~ a route sign, and a Directional Arrow auxiliary plaque.

MoDOT does not use Cardinal Direction auxiliary plaques for bicycle routes. Revised Dec. 2025

Guidance:

22 The various uses of Directional assemblies should be as follows:

A. Turning movements should be marked by a Directional assembly with a route sign displaying the number of the turning route and a single-headed arrow pointing in the direction of the turn.

B. The beginning of a route should be marked by a Directional assembly with a route sign displaying the number of that route and a single-headed arrow pointing in the direction of the route.

C. An intersected route on a crossroad where the route is designated on both legs should be designated by:

1. Two Directional assemblies, each with a route sign displaying the number of the intersected route~~, a Cardinal Direction auxiliary plaque,~~ and a single-headed arrow pointing in the direction of movement on that route; or

2. A Directional assembly with a route sign displaying the number of the intersected route and a double-headed arrow, pointing at appropriate angles to the left, right, or ahead.

D. An intersected route on a side road or on a crossroad where the route is designated only on one of the legs should be designated by a Directional assembly with a route sign displaying the number of the intersected route~~, a Cardinal Direction auxiliary plaque,~~ and a single-headed arrow pointing in the direction of movement on that route.

Option:

23 Straight-through movements may be indicated by a Directional assembly with a route sign displaying the number of the continuing route and a ~~M6-3P~~ M7-2 Directional Arrow – Through auxiliary plaque.

~~*Guidance:*~~

~~*24 A Directional assembly should not be used for a straight-through movement in the absence of other assemblies indicating right or left turns, as the Confirming assembly sign beyond the intersection normally provides adequate guidance.*~~

MoDOT does not use Confirming assemblies for bicycle routes. Revised Dec. 2025

25 Directional assemblies should be located on the near-right corner of the intersection. Where unusual conditions exist, the location of a Directional assembly should be determined by engineering judgment.

Support:

26 It is more important that guide signs be readable, and that the information and direction displayed thereon be readily understood, at the appropriate time and place than to be located with absolute uniformity.

~~*Guidance:*~~

~~*27 If used, Confirming or Reassurance assemblies should consist of a Cardinal Direction auxiliary plaque and a route sign. Where the Confirming or Reassurance assembly is for an alternative route, the appropriate auxiliary plaque for an alternative route should also be included in the assembly.*~~

28 If used, a Confirming assembly should be installed just beyond intersections of numbered routes.

29 If used, Reassurance assemblies should be installed between intersections in urban areas as needed, and beyond the built-up area of any incorporated city or town.

30 If used, Bicycle Route signs for either confirming or reassurance purposes should be spaced at such intervals as necessary to keep bicyclists informed of their routes.

MoDOT does not use Confirming or Reassurance assemblies for bicycle routes. Revised Dec. 2025

Section 9D.09 Bicycle Parking Area, Sharing Station, and Lockers Guide Signs (D4-3, D4-4, and D4-4a)

Support:

01 Bicycle parking areas include bicycle racks or stands, parking stations or structures, sharing systems, or lockers. These facilities can be either regulated or unregulated.

Option:

02 The Bicycle Parking Area (D4-3) guide sign (see Figure 9D-1) may be installed where it is desirable to show the direction to a designated bicycle parking area. The arrow may be reversed as appropriate.

03 The Bicycle Sharing Station (D4-4) guide sign (see Figure 9D-1) may be installed to provide directional information to a designated bicycle-sharing system. The arrow may be reversed as appropriate.

04 The Bicycle Sharing Station guide sign may be modified with two lines to accommodate installation in constrained areas.

05 The Bicycle Lockers (D4-4a) guide sign (see Figure 9D-1) may be installed where it is desirable to show the direction to designated bicycle lockers. The arrow may be reversed as appropriate.

Guidance:

06 If used, the Bicycle Sharing Station guide sign should be used in conjunction with a regulated bicycle-sharing system such as one that requires the user to pre-register or provide a deposit in order to use a bicycle.

07 Where it is determined that unregulated bicycle-sharing parking facilities necessitate a bicycle parking sign, the Bicycle Parking Area guide sign should be used.

Standard:

08 In accordance with Section 1D.07, Bicycle Parking Area, Sharing Station, and Lockers guide signs shall not include promotional advertising, business logos, or other identification that would convey the involvement of a public-private partnership for operating the bicycle parking facility or sharing system.

MoDOT does not use D4-3, D4-4, or D4-4a signs. Revised Dec. 2025

Section 9D.10 Reference Location Signs (D10-1 through D10-3) and Intermediate Reference Location Signs (D10-1a through D10-3a)

Support:

01 There are two types of reference location signs:

A. Reference Location (D10-1, D10-2, and D10-3) signs (see Figure 9D-1) show an integer distance point along a shared-use path; and
B. Intermediate Reference Location (D10-1a, D10-2a, and D10-3a) signs (see Figure 9D-1) show the same information as Reference Locations signs, but they also show a tenth-of-a-mile decimal so that they can be installed between integer distance points along a shared-use path.

~~Option:~~

~~02 Reference Location (D10-1 through D10-3) signs may be installed along any section of a shared-use path to assist users in estimating their progress, to provide a means for identifying the location of emergency incidents and crashes, and to aid in maintenance and servicing.~~

~~03 To augment the reference location sign system, Intermediate Reference Location (D10-1a to D10-3a) signs, which show the tenth of a mile with a decimal point, may be installed at one-tenth-of-a-mile intervals, or at some other regular spacing.~~

~~*Guidance:*~~

~~*04 If Intermediate Reference Location (D10-1a through D10-3a) signs are used to augment the reference location sign system, the Reference Location sign at the integer mile point should display a decimal point and a zero numeral.*~~

~~*05 Reference location signs for shared-use paths should have a minimum mounting height of 2 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the shared-use path, and should not be governed by the mounting height requirements prescribed in Section 9A.02.*~~

~~Option:~~

~~06 Reference location signs may be installed on one side of the shared-use path only and may be installed back-to-back.~~

~~07 If a reference location sign cannot be installed in the correct location, it may be moved in either direction as much as 50 feet.~~

~~*Guidance:*~~

~~*08 If a reference location sign cannot be placed within 50 feet of the correct location, it should be omitted.*~~

~~09 Zero distance should begin at the south and west terminus points of shared-use paths.~~

~~Support:~~

~~10 Section 2H.11 contains additional information regarding reference location signs.~~

MoDOT does not use D10-1 through D10-3 signs. Revised Dec. 2025

~~Section 9D.11 Mode-Specific Directional Guide Signs for Shared-Use Paths (D11-11, D11-12, D11-13, and D11-14)~~

~~Option:~~

~~01 Where separate pathways are provided for different types of users, mode-specific Directional Guide (D11-11, D11-12, D11-13, and D11-14) signs (see Figure 9D-1) may be used to guide different types of users to the pathway that is intended for their respective modes.~~

~~02 Mode-specific Directional Guide signs may be installed at the entrance to shared-use paths where the signed mode(s) are permitted or encouraged, and periodically along these facilities as needed.~~

~~03 The Bicycle Directional (D11-11) sign, when combined with the BIKE ROUTE (D11-1bP) supplemental plaque, may be substituted for the D11-1 Bike Route Guide sign on shared-use paths.~~

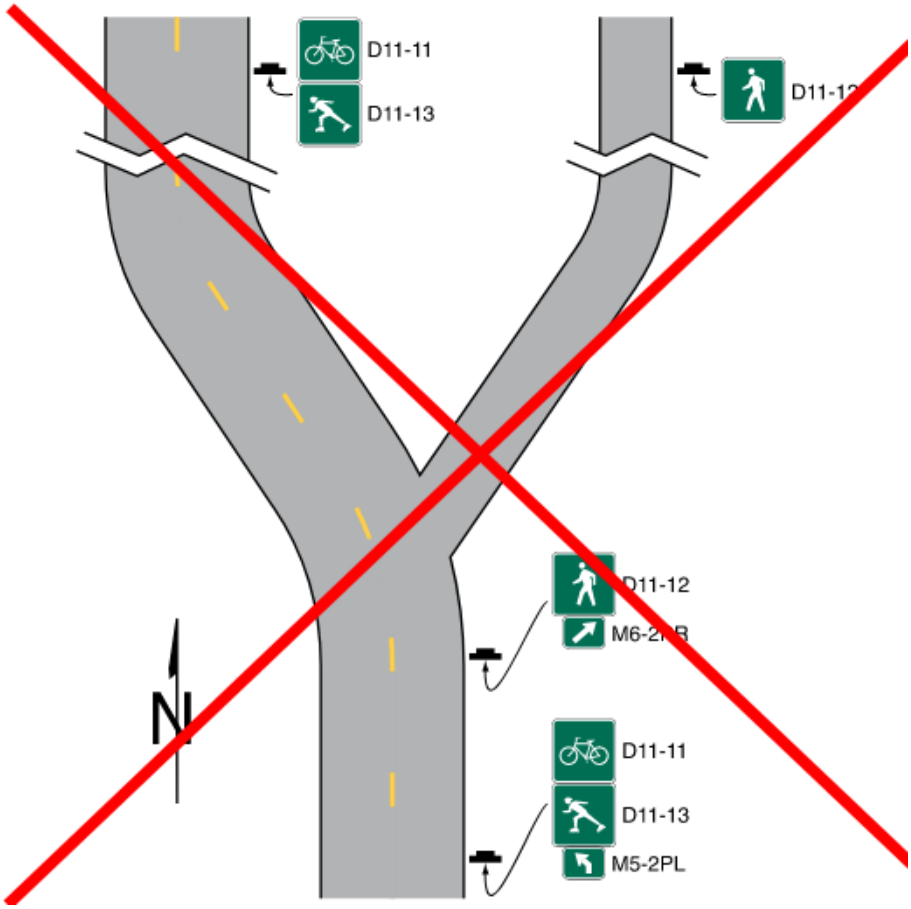
~~04 When some, but not all, non-motorized user types are encouraged or permitted on a shared-use path, mode-specific Directional Guide signs may be placed in combination with each other, and in combination with signs (see Section 9B.08) that prohibit travel by particular modes.~~

~~Support:~~

~~05 Figure 9D-5 shows an example of signing where separate pathways are provided for different non-motorized user types.~~

MoDOT does not use Mode Specific Directional Guide signs. Revised Dec. 2025

Figure 9D-5. Examples of Mode-Specific Guide Signing on a Shared-Use Path



~~Section 9D.12 Destination Guide Signs for Shared-Use Paths (D11-10a, D11-10b, D11-10c, D11-10d, D11-10e, and D11-10f)~~

~~Support:~~

~~01 This Section contains information on the application of Destination Guide signs for shared-use paths.~~

~~**Standard:**~~

~~**02 Where bicycle traffic is allowed on the shared-use path, Destination Guide signs for shared-use paths and any identification markers shall be retroreflective.**~~

~~*Guidance:*~~

~~*03 Destination Guide signs for shared-use paths should be installed on independent assemblies and should not be combined with regulatory and warning signs.*~~

~~Option:~~

~~04 Destination Guide signs for shared-use paths may use symbols detailed in the "Standard Highway Signs" publication (see Section 1A.05) in addition to the bicycle symbol to display other modes permitted to use the shared-use path.~~

~~**Standard:**~~

~~**05 If used, symbols on Destination Guide signs for shared-use paths shall be limited to those where the symbol displayed is an allowable mode on the path or pathway alignment, and where the**~~

~~**symbol is supported by other regulatory signs to convey the operation. Symbols unrelated to the allowable modes that would otherwise display directional navigation to a facility, activity, or point of interest shall not be used.**~~

~~Support:~~

~~06 Chapter 2M contains information for symbol signs used for facilities, activities, and points of interest.~~

~~*Guidance:*~~

~~*07 Destination Guide signs for shared-use paths, exclusive of any identification marker used, should be rectangular in shape. Simplicity and uniformity in design, position, and application as described in Section 2A.04 are important and should be incorporated into the sign design.*~~

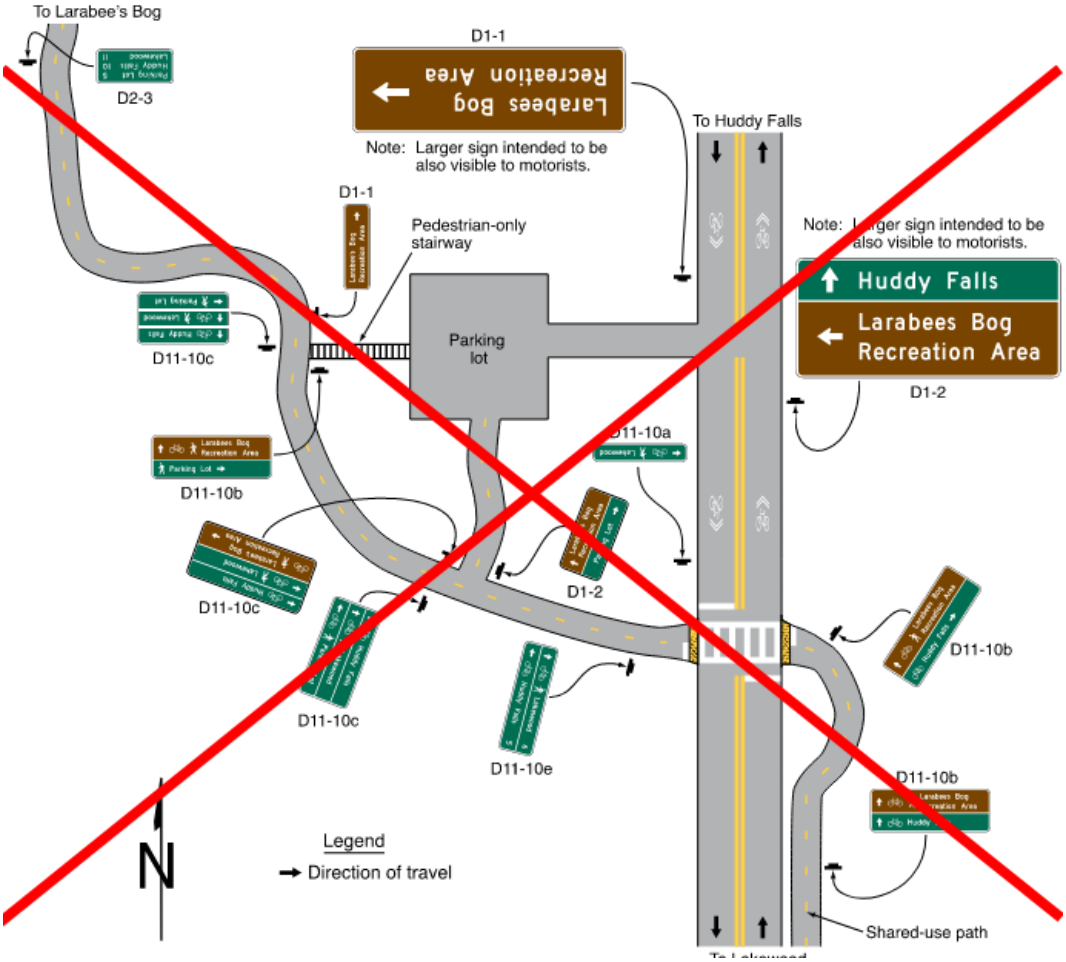
~~*08 Destination Guide signs for shared-use paths should be limited to three destinations per sign (see Section 2D.06).*~~

~~*09 Abbreviations (see Section 1D.08) should be kept to a minimum, and should include only those that are commonly recognized and understood.*~~

~~Support:~~

~~10 Figure 9D-6 shows an example of a signing system of Destination Guide signs used on shared-use paths.~~

Figure 9D-6. Examples of Destination Guide Signs for Shared-Use Paths



Standard:

11 The arrow location and priority order of destinations shall follow the provisions described in Sections 2D.08 and 2D.36. Arrows shall be of the designs provided in Section 2D.08.

12 The lettering for destinations on Destination Guide signs for shared-use paths shall be a combination of lower-case letters with initial upper-case letters (see Section 2D.04). All other word messages on Destination Guide signs for shared-use paths shall be in all upper-case letters.

13 Except as provided in Paragraph 15 of this Section, the lettering style used for destination and directional legends on Destination Guide signs for shared-use paths shall comply with the provisions of Section 2D.04.

Option:

14 The distance to the place named may be displayed on the Destination Guide sign. If several destinations are to be displayed at a single point, the several names may be placed on a single sign with an arrow (and the distance, if desired) for each name. If more than one destination lies in the same direction, a single arrow may be used for such a group of destinations.

15 A lettering style other than the Standard Alphabets provided in the "Standard Highway Signs" publication (see Section 1A.05) may be used on Destination Guide signs for shared-use paths if an engineering study determines that the legibility and recognition values for the chosen lettering style at minimum letter heights meet or exceed the values for the Standard Alphabets for the same legend height and stroke width.

Standard:

16 Where a shared-use path is within the highway right-of-way or crosses a street or highway, an alternative lettering style shall not be used.

Option:

17 Pictographs (see definition in Section 1C.02) may be used on Destination Guide signs for shared-use paths.

Standard:

18 If a pictograph is used, its height shall not exceed 2 times the height of the upper-case letters of the principal legend on the sign.

19 Business logos, commercial graphics, or other forms of advertising (see Section 1D.07) shall not be used on Destination Guide signs for shared-use paths or sign assemblies.

Option:

20 An identification marker may be used in an assembly for Destination Guide signs applied to shared-use paths, or may be incorporated into the overall design of Destination Guide sign, as a means of visually identifying the sign as part of an overall system of signs.

Standard:

21 The size of an identification marker shall be smaller than the Destination Guide sign. Identification markers shall not be designed to have an appearance that could be mistaken by road users as being a traffic control device.

Guidance:

22 The area of the identification marker should not exceed ⅓ of the area of the Destination Guide sign with which it is mounted in the same sign assembly.

Standard:

23 Except as provided in Paragraph 26 of this Section, Destination Guide signs for shared-use paths shall have a white legend and border on a green or brown background and shall be consistent with the basic design principles for guide signs.

24 Color coding or pictographs shall not be used to distinguish between different types of destinations. If used, color coding shall be accomplished by the use of different colored square or rectangular panels on the face of the sign, each positioned to the left of the named geographic area to which the color-coding panel applies. The height of the colored square or rectangular panels shall not exceed 2 times the height of the upper-case letters of the principal legend on the sign.

Option:

25 The different colored square or rectangular panels may include either a black or a white (whichever provides the better contrast with the color of the panel) letter, numeral, or other appropriate designation to identify the destination.

26 Except where a shared-use path is within the highway right-of-way or crosses a street or highway, Destination Guide signs for shared-use paths may use background colors other than green or brown in order to provide a color identification for systematic destinations within the overall guide signing system.

Standard:

27 The standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink shall not be used as background colors for Destination Guide signs for shared-use paths, in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by path users.

Option:

28 Destination Guide signs for shared-use paths may display telephone numbers, Internet addresses, and e-mail addresses, including domain names and uniform resource locators (URLs).

Standard:

29 If used, the use of telephone numbers, Internet addresses, and e-mail addresses shall be limited to direct contact information of the jurisdiction with authority of the shared-use path, or contact information for emergency service response, or both. Contact information for advertising purposes shall not be used.

MoDOT does not use Destination Guide signs for shared use paths. Revised Dec. 2025

Section 9D.13 Two-Stage Bicycle Turn Box Guide Signs (D11-20 Series)

Support:

01 Two-stage bicycle turn boxes provide a way for a bicyclist to make a turn in a manner such that a merge across the general-purpose lanes is not required.

02 Section 9B.18 provides information about situations when the use of a two-stage bicycle turn box is required and also contains information about the Two-Stage Bicycle Turn Box (R9-23 series) regulatory signs.

03 Section 9E.11 contains information regarding pavement markings for two-stage bicycle turn boxes.

Option:

04 Where a two-stage bicycle turn box is provided, the Two-Stage Bicycle Turn Box guide sign series (see Figure 9D-1) may be used.

Standard:

05 Where used, the Two-Stage Bicycle Turn Box Advance (D11-20) guide sign shall be mounted in advance of the intersection where the turn box is located.

06 Where used, the Two-Stage Bicycle Turn Box (D11-20a) guide sign shall be mounted on the far side of the intersection.

~~Option:~~

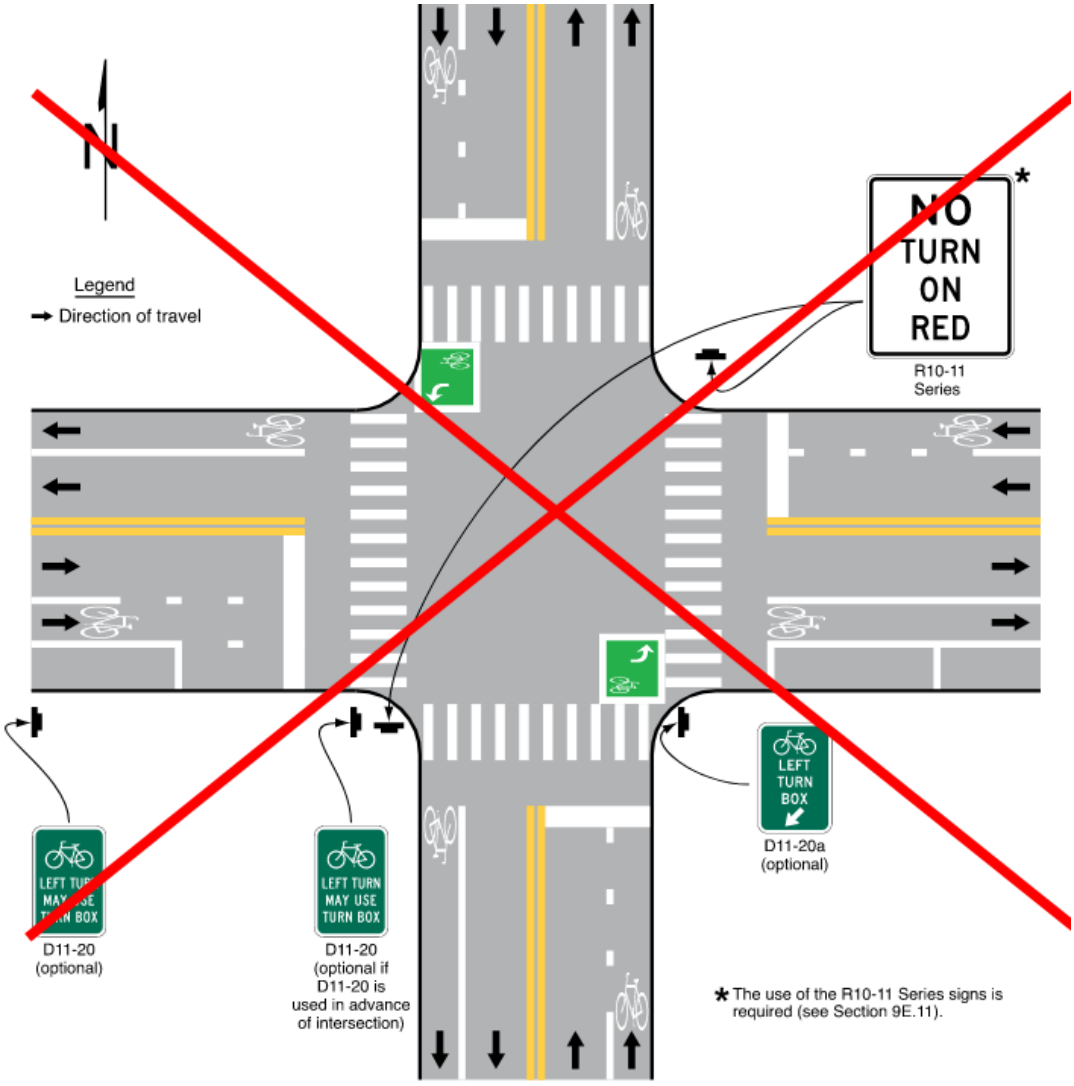
~~07 Where the Two-Stage Bicycle Turn Box Advance (D11-20) guide sign is used, an additional Two-Stage Bicycle Turn Box Advance guide sign may be mounted on the near side of the intersection where the turn box is located.~~

~~08 If used, an appropriately-sized Street Name (D3-1) sign (see Section 2D.45) may be installed below the Two-Stage Bicycle Turn Box Advance guide sign to identify the crossroad where the turn box will be available.~~

~~09 Figure 9D-7 shows an example of Two-Stage Bicycle Turn Box guide signs at a location where the use of the turn box is optional.~~

MoDOT does not use D11-20 series signs. Revised Dec. 2025

Figure 9D-7. Example of Two-Stage Bicycle Turn Box when Use is Optional



~~Section 9D.14 General Service Signing for Bikeways~~

~~Option:~~

~~01 General Service signs (see Chapter 2I) may be used on bikeways.~~

~~Standard:~~

~~02 The sizes of General Service signs intended for viewing by both bicyclists and other road users shall comply with the sizes in Table 2I-1.~~

~~Option:~~

~~03 General Service signs intended for the exclusive use of bicyclists may be of reduced size.~~

MoDOT does not use General Service signs for bikeways. Revised Dec. 2025

Section 9E.01 Bicycle Lanes

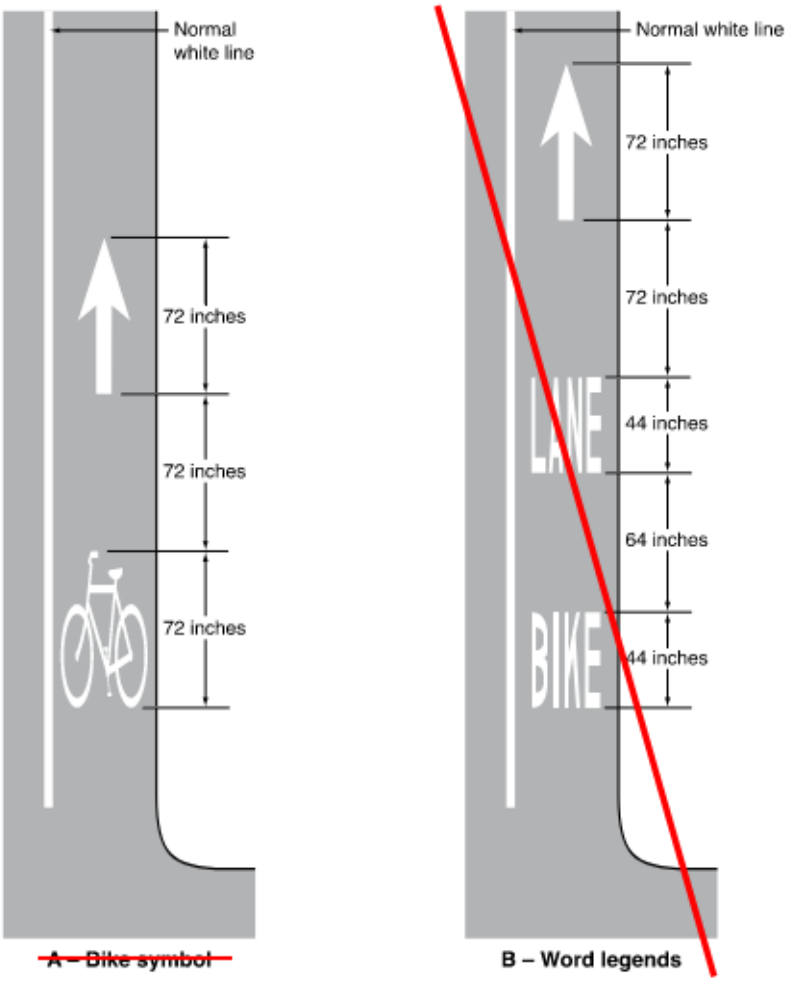
Support:

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 914.5.1.1 ~~9E-1~~) shall be used to define bicycle lanes.

Figure 914.5.1.1. Word, Symbol, and Arrow Pavement Markings for 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~~EPG 914.2.2) 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.~~

M06A MoDOT does not typically install or maintain green-colored pavement for bicycle lanes.

Guidance:

M06B If green-colored pavement is installed on a MoDOT route, an agreement should be in place with the local agency that will maintain the green-colored pavement.

Paragraphs 6A and 6B replace MUTCD Paragraph 6. Revised Dec. 2025

Standard:

07 The bicycle symbol or BIKE LANE pavement word marking and the pavement marking arrow shall not be used in a shoulder.

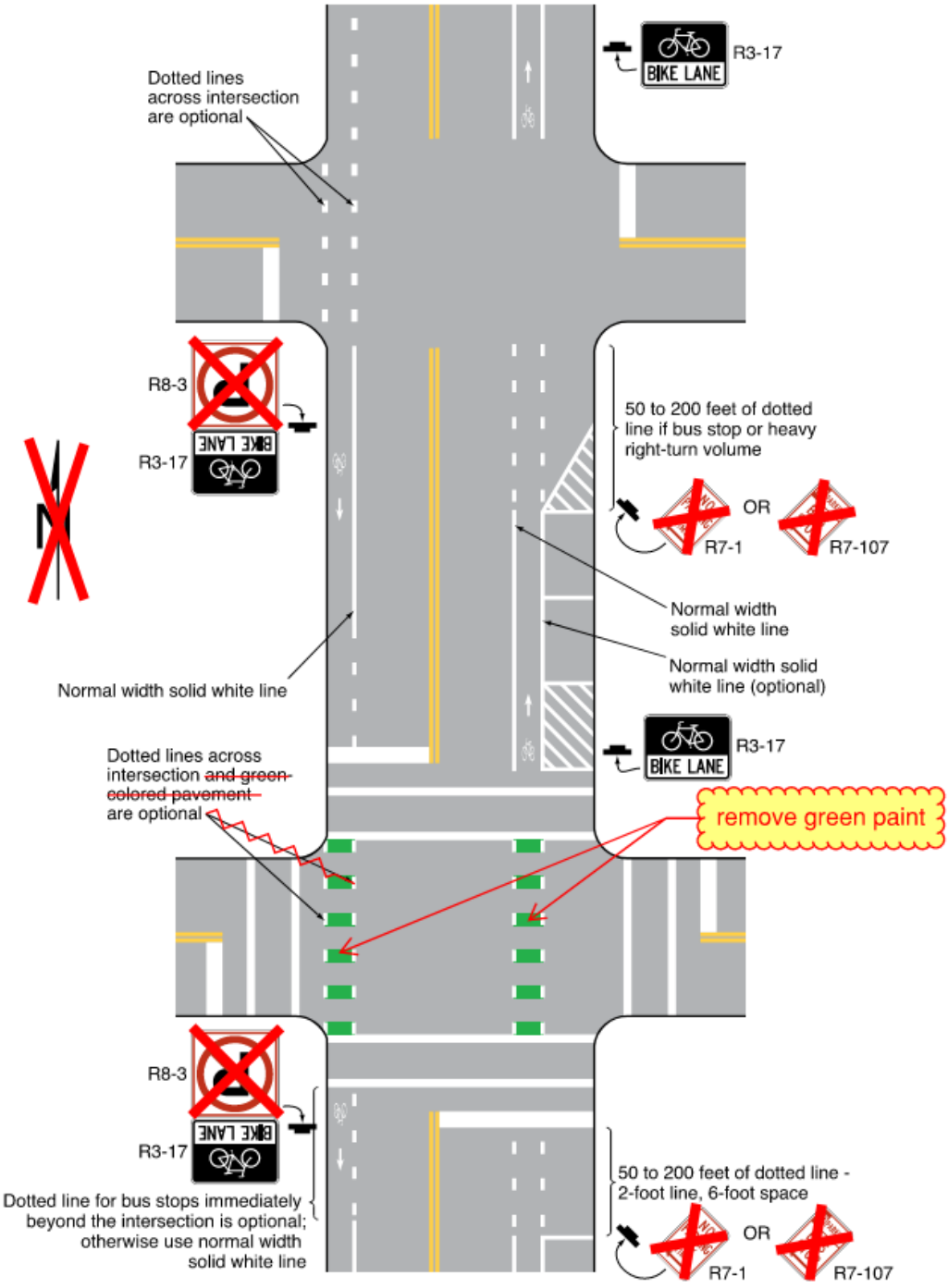
08 A portion of the roadway shall not be established as both a shoulder and a bicycle lane.

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~~EPG 914.2.7 contains information regarding the Bicycles Use Shoulder Only sign that can be used to denote locations on a 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 914.5.1.2~~9E-2~~.

Figure 9E-2. Example of Pavement Markings for Bicycle Lanes on a Two-Way Street



Section 9E.02 Bicycle Lanes at Intersection Approaches

Standard:

01 Except as provided in ~~Paragraph 2 of this Section~~ the subsequent paragraph, a through bicycle lane shall not be positioned to the right of a right turn only lane or to the left of a left turn only lane.

Option:

02 A through bicycle lane may be positioned to the right of a right turn only lane or to the left of a left turn only lane provided that the bicycle lane is controlled by a traffic signal that displays bicycle signal indications (see ~~Chapter 4H~~EPG 902.8).

Support:

03 Unless controlled by a bicycle signal indication, a bicyclist continuing straight through an intersection from the right of a right turn only lane or from the left of a left turn only lane would be inconsistent with normal traffic behavior and would violate the expectations of right-turning or left-turning motorists.

Guidance:

04 When the right (left) through lane is dropped to become a mandatory right-turn (left-turn) lane, the bicycle lane markings should stop at least 100 feet before the beginning of the right-turn (left-turn) lane. Through bicycle lane markings should resume to the left (right) of the mandatory right-turn (left-turn) lane.

05 Except as provided in ~~Paragraph 2 of this Section~~ the first Option paragraph of this article, an optional through-right (through-left) turn lane next to a mandatory right-turn (left-turn) lane should not be used where there is a through bicycle lane.

Standard:

06 A bicycle lane located on an intersection approach between general-purpose lanes for motor vehicle movements shall be marked with at least one bicycle symbol and at least one arrow pavement marking as provided in ~~Paragraph 4 of Section 9E.01~~the first Option paragraph of EPG 914.5.1.

07 A bicycle lane shall not be marked within a general-purpose lane, either with dotted or any other line markings.

Option:

08 Where there is insufficient width in the roadway to include both a bicycle lane and a general-purpose turn lane, bicycle travel may be accommodated within the turn lane or general-purpose lane using shared-lane markings.

Standard:

09 Where a general-purpose turn lane is controlled by a traffic control signal, through bicycle movements shall not be accommodated in the turn lane unless the turning movement is always permitted to proceed simultaneously with the adjacent through movement.

Support:

10 Examples of bicycle lane markings on approaches to intersections are shown in Figures 914.5.1.1 through 914.5.1.4 and 914.5.8~~9E-3, 9E-4, and 9E-9~~.

Guidance:

11 The longitudinal line defining a bicycle lane should be dotted on approaches to intersections where turning vehicles are permitted to cross the path of through-moving bicycles ~~(see Figure 9D-7)~~.

Support:

12 Buffer-separated and separated bicycle lanes require additional considerations at intersections, including sight distances for bicycles and other road users, user expectations, and intersection geometry.

Option:

13 A buffer-separated or separated bicycle lane may be shifted closer to, or farther away from the adjacent general-purpose lane depending upon site-specific conditions (see Drawing~~s D and E~~C in Figure 914.5.7~~9E-7~~).

Figure 9E-3. Example of Bicycle Lane Markings on an Approach to an Intersection
(Sheet 1 of 3)

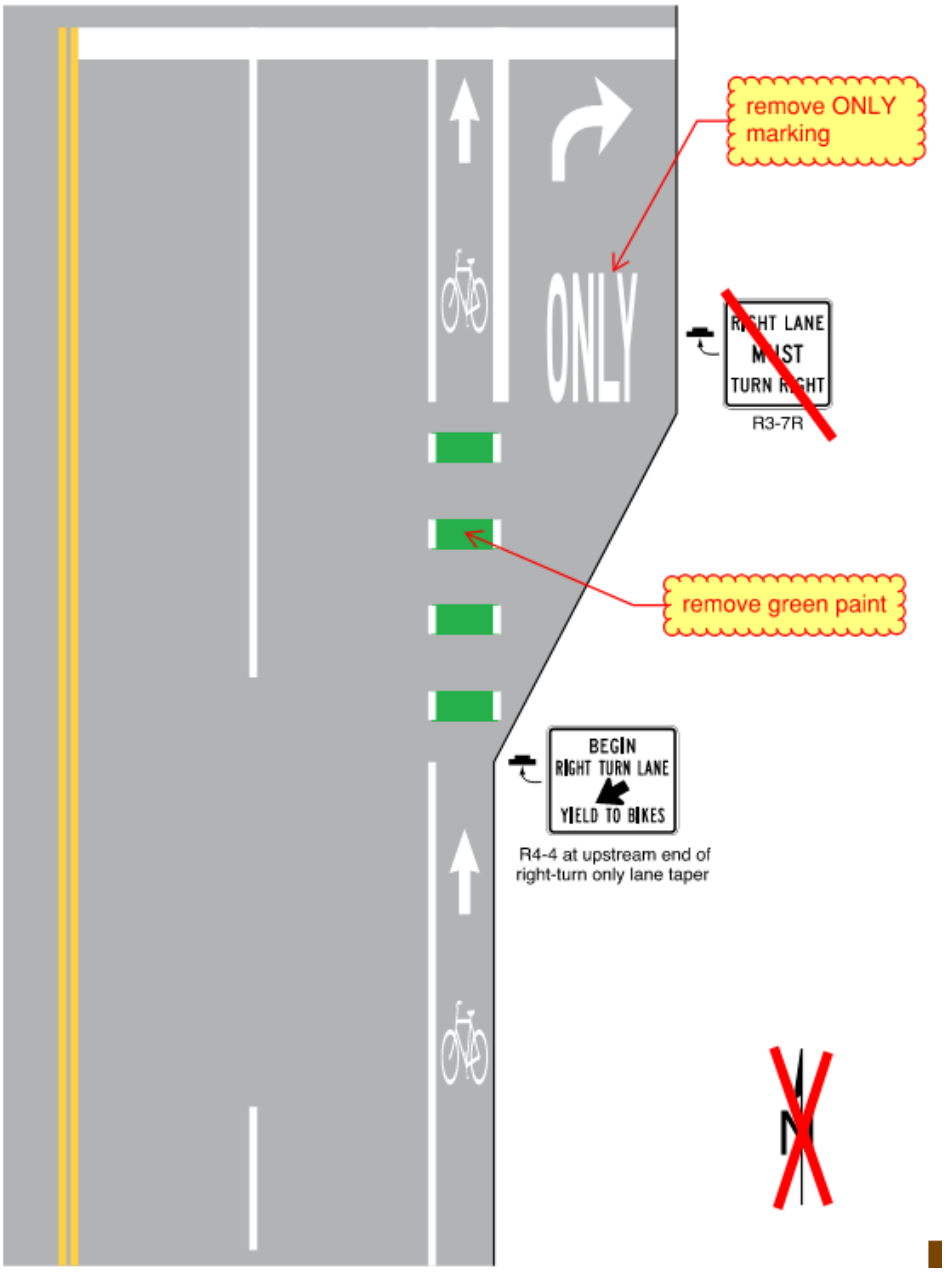


Figure 9E-3. Example of Bicycle Lane Markings on an Approach to an Intersection (Sheet 2 of 3)

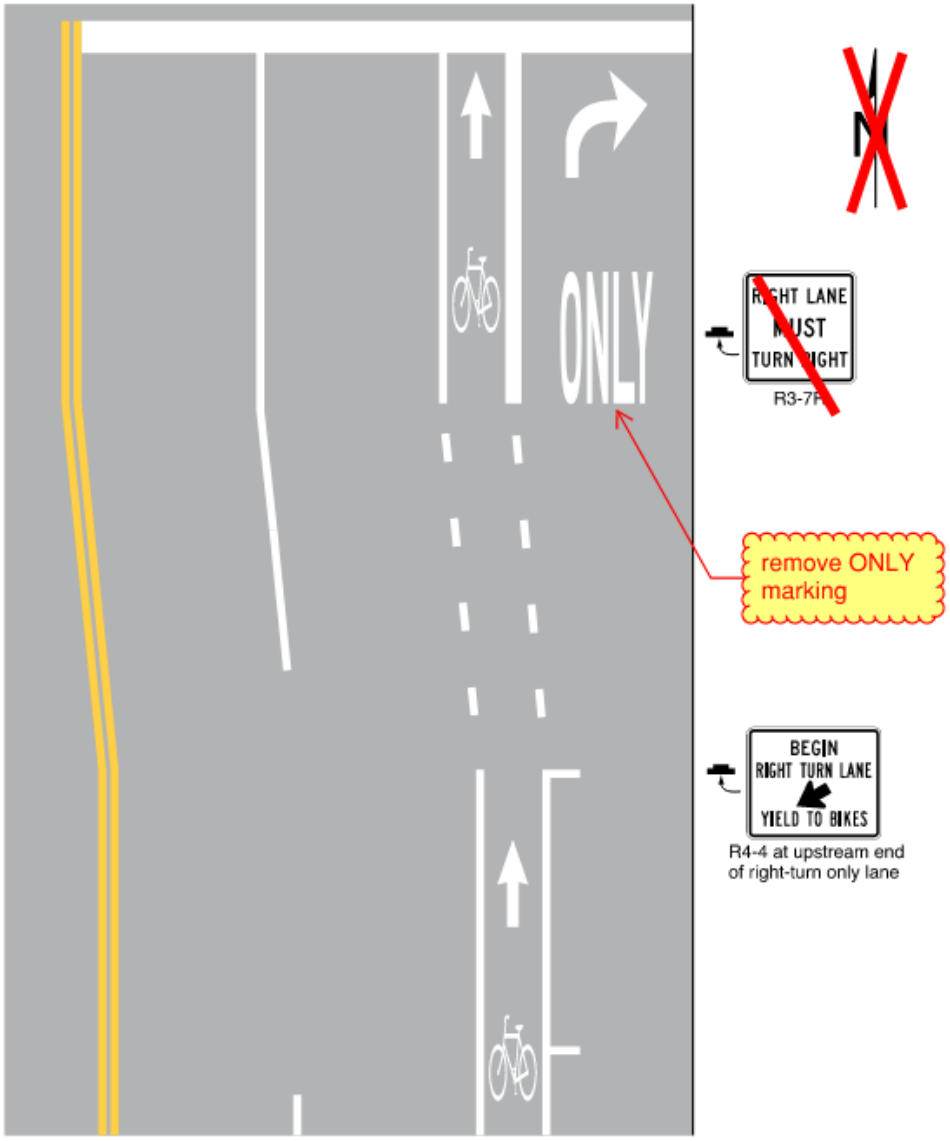


Figure 9E-3. Example of Bicycle Lane Markings on an Approach to an Intersection
(Sheet 3 of 3)

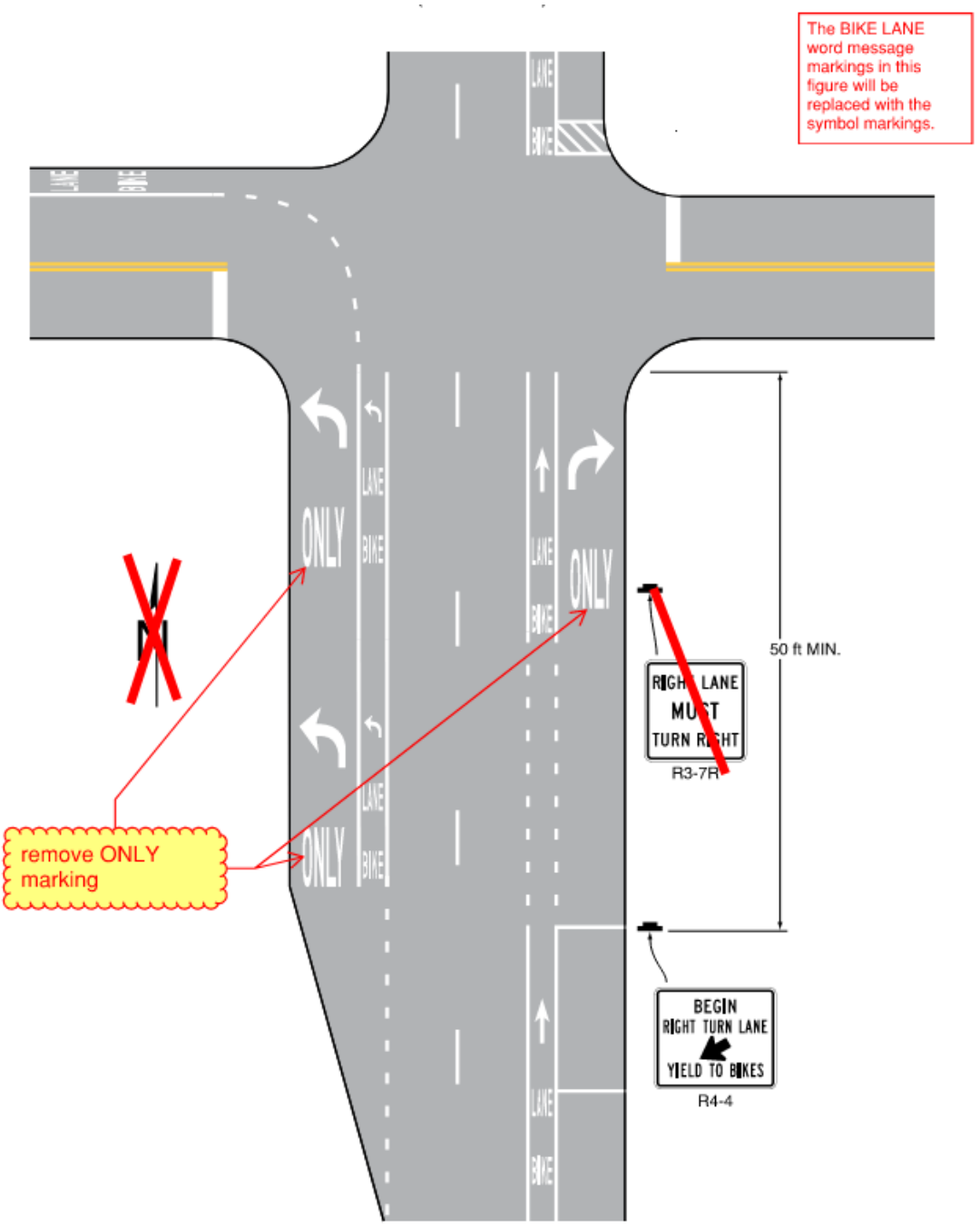
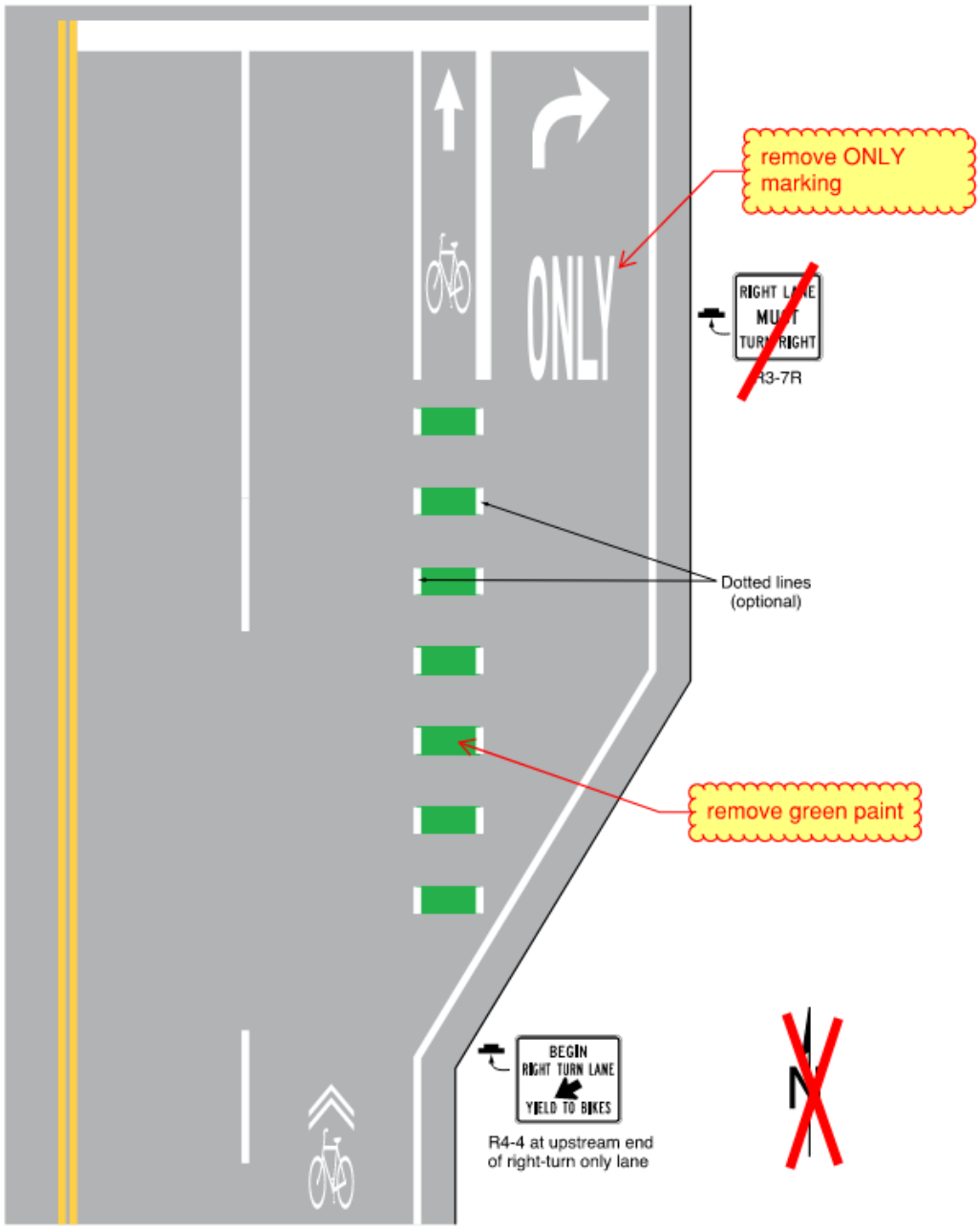


Figure 9E-4. Example of Bicycle Lane Markings on an Approach to an Intersection that Transitions from a Shared Lane



Support:

14 A buffer-separated or separated bicycle lane shifted away from the adjacent general-purpose lane at an intersection can create space for a motor vehicle to queue between the general-purpose lane and the extension of the bicycle lane. This design can also improve the safety and comfort of bicyclists by reducing the speed of turning motor vehicles, improving sightlines, and creating additional buffer space prior to the conflict point with turning motor vehicles.

15 The purpose of shifting a buffer-separated or separated bicycle lane away from the adjacent general-purpose lane is to allow the driver of a turning vehicle to undertake the tasks of turning and scanning for bicycle cross traffic in isolation versus simultaneously. Sufficient sight distance for both drivers and bicyclists is important in this design (see Drawing ~~E~~C in Figure 914.5.7~~9E-7~~).

16 The purpose of shifting a buffer-separated or separated bicycle lane toward the adjacent general-purpose lane is to improve the visibility of bicyclists to the adjacent traffic and avoid conflicts between turning motor vehicles and bicyclists ~~(see Drawing D in Figure 9E-7)~~.

~~17 Staggering stop lines (see Section 3B.19) so that general-purpose lanes stop further in advance from the intersection than the bicycle lane can improve the visibility of bicyclists for drivers of turning vehicles (see Drawing D in Figure 9E-7).~~

MoDOT does not stagger stop lines for bicycle lanes. Revised Dec. 2025

Option:

18 Where a general-purpose mandatory turn lane is provided at an intersection and the approach also includes a separated or buffer-separated bicycle lane, a mixing zone may be established to allow general-purpose turning traffic to share the roadway space with bicyclists (see Figure 914.5.2.5~~9E-5~~).

Standard:

19 Mixing zones shall be used only where the bicycle lane is one-way in the same direction of travel as the adjacent general-purpose lane.

~~**20 Mixing zones with a yielding area shall have yield markings indicating where general-purpose traffic entering the shared space shall yield to bicyclists.**~~

21 Where a mixing zone continues to the intersection itself sharing space between bicyclists and general-purpose turning traffic, shared-lane markings and turn arrows shall be provided in the lane.

Support:

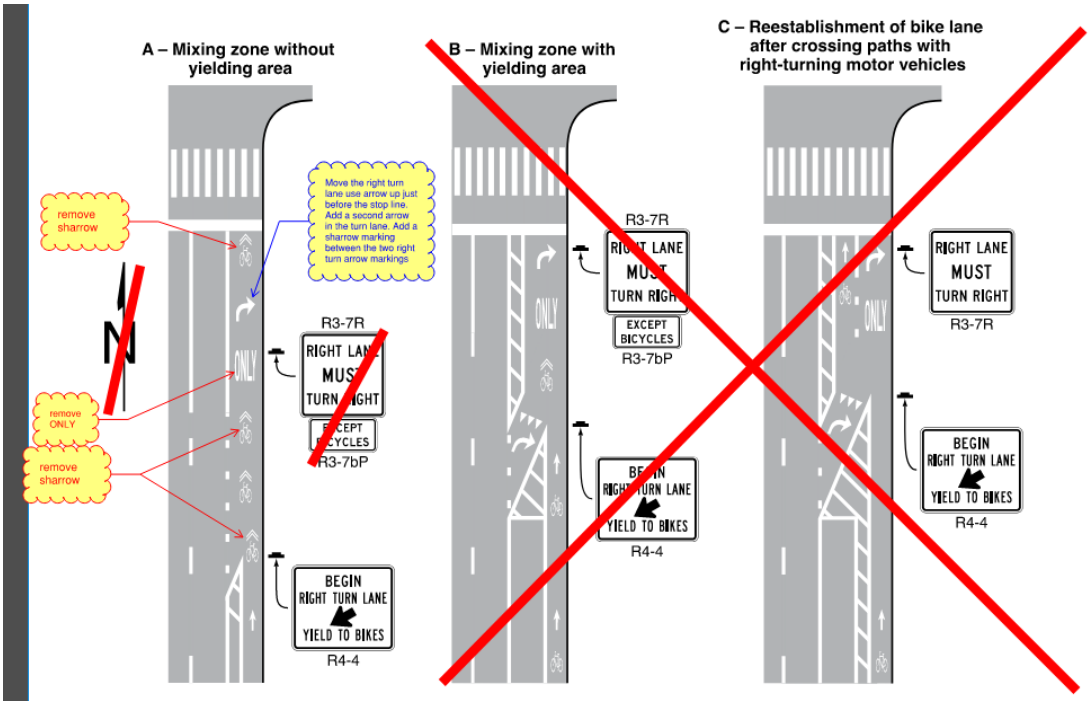
22 Mixing zones require bicycles and general traffic to share space, interrupting a buffer-separated or separated bicycle lane where bicycle traffic is otherwise separated from general traffic. The preference is to provide a dedicated bicycle facility for the intersection approach. If that is not possible, the mixing zone needs to indicate that bicyclists and motorists are entering a shared condition.

~~*Guidance:*~~

~~*23 Where a mixing zone provides for the re-establishment of a bicycle lane after bicycles and general-purpose lanes cross paths, a buffered or physically-separated space should be provided between the bicycle lane and the adjacent general-purpose lane (see Drawing C in Figure 9E-5).*~~

Text modified to be consistent with MoDOT's modifications to Figure 9E-5 and MoDOT practice for mixing zones at intersection approaches. Revised Dec. 2025

Figure 9E-5. Example of Pavement Markings for Mixing Zones



Section 9E.03 Extensions of Bicycle Lanes through Intersections

Support:

01 Extensions of bicycle lanes through intersections can help identify the paths of bicyclists and guide them on movements that could be difficult to discern. Extensions of bicycle lanes through intersections also assist other road users of the intersection to identify where bicyclists are expected to operate and to recognize potentially unexpected conflict points.

02 The design, placement, and maintenance of bicycle lane extensions through intersections are important considerations, especially when contiguous to a crosswalk, to avoid potential confusion to pedestrians with vision disabilities.

03 The width and color of lane extension markings are discussed in ~~Section 3B.11~~EPG 620.2.13.

~~Option:~~

~~04 The bicycle symbol, the arrow marking, pavement word markings, or a combination thereof may be used in bicycle lane extensions through intersections.~~

MoDOT typically does not use symbols, arrows, or word markings within intersections. Revised Dec. 2025

~~05 Green colored pavement may be used in a bicycle lane extension in accordance with the provisions of Section 3H.06.~~

M05A MoDOT does not typically install or maintain green colored pavement for bicycle lanes. If installed on a MoDOT route, an agreement must be in place with the local agency that will maintain green colored pavement.

Paragraph 5A replaces MUTCD Paragraph 5 content. Revised Dec. 2025

Standard:

06 Shared-lane markings or chevron markings shall not be used in bicycle lanes or bicycle lane extensions (see ~~Section 9E.09~~EPG 914.5.8).

07 Extensions of bicycle lanes through intersections shall use dotted line patterns.

Support:

08 Separated and buffer-separated bicycle lanes may have alignments that are not as obvious within an intersection as a standard bicycle lane, therefore additional conspicuity is important where these types of bicycle lanes cross intersections.

Guidance:

09 Lane extension markings should be used to extend a buffer-separated or separated bicycle lane through intersections ~~and driveways~~.

MoDOT does not mark bicycle lane extensions through driveways. Revised Dec. 2025

10 The extension of a bicycle lane through an intersection should use two lines defining both lateral limits of the bicycle lane.

Standard:

11 Where the path of the bicycle lane through the intersection is contiguous to a crosswalk, two longitudinal dotted lines shall be provided to establish the lateral limits of the bicycle lane extension. The transverse line establishing one side of the crosswalk, or the limit of a high-visibility crosswalk pattern (see ~~Section 3C.05~~EPG 620.3.5) that does not employ a transverse line, shall not be used to demarcate one side of the bicycle lane extension.

Section 9E.04 Bicycle Lanes at Driveways

Support:

01 The definition of an "Intersection" in EPG 911 (MUTCD Section 1C.02) contains information to determine if a driveway can be considered an intersection.

Option:

02 Bicycle lanes may be continued through a driveway using solid ~~or dotted~~ longitudinal lines.

MoDOT does not mark bicycle lane extensions through driveways. Revised Dec. 2025

~~03 The bicycle symbol, the arrow marking, pavement word markings, or a combination thereof may be used in bicycle lane extensions through driveways.~~

~~04 Green-colored pavement (see Section 3H.06) may be used as a background to enhance the conspicuity of the bicycle symbol at driveways.~~

MoDOT does not use symbols, arrows, words, or green colored pavement in driveways. Revised Dec. 2025

Section 9E.05 Bicycle Lanes at Circular Intersections

Standard:

01 Bicycle lanes shall not be provided in the circulatory roadway of an unsignalized circular intersection that includes conflicts at entry or exit points (see ~~Chapter 3D~~ EPG 620.4) except as provided in ~~Paragraph 4 of this Section~~ the first Option paragraph of this article.

Guidance:

02 Bicycle lane markings should stop at least 100 feet before the crosswalk, or if no crosswalk is provided, at least 100 feet before the yield line, or if no yield line is provided, then at least 100 feet before the edge of the circulatory roadway.

03 If used, bicycle crossings should be a minimum of 20 feet from the edge of the ~~circular~~ circulatory roadway.

Option:

04 Separated bicycle lanes may be used in circular intersections.

Support:

05 Separated bicycle lanes allow bicycles to navigate a circular intersection and its crossing points without merging into traffic and without dismounting and using a crosswalk at the intersection crossing point. This is beneficial at multi-lane and higher-speed circular intersections.

06 ~~Section 9E.10~~EPG 914.5.9 contains information on using shared-lane markings to facilitate the bicycle movement through a circular intersection.

07 The "Guide for the Development of Bicycle Facilities," 2012 Fourth Edition, American Association of State Highway and Transportation Officials, contains information on designing for bicycles on the sidewalk in lieu of, or in addition to, using shared-lane markings in the circulatory roadway of the intersection.

08 ~~The FHWA's informational guide "Improving Intersections for Pedestrians and Bicyclists"~~ The "Improving Intersections for Pedestrians and Bicyclists Informational Guide" (FHWA-SA-22-017), FHWA contains information on incorporating separated bicycle lanes and other bicycle facilities into circular intersections.

Section 9E.06 Buffer-Separated Bicycle Lanes

Support:

01 Buffer-separated bicycle lanes provide additional lateral separation between a bicycle lane and a general-purpose lane by a pattern of pavement markings without the presence of vertical elements. Providing a buffer space between a bicycle lane and a general-purpose lane creates more separation between motor vehicles and bicycles, can reduce vehicle encroachment into the bicycle lane, and can increase the comfort of bicyclists.

02 Providing a buffer space between a bicycle lane and a parking lane can reduce crashes involving bicycles and the opening of vehicle doors from the parking lane.

Standard:

03 If used, and except as provided in ~~Paragraph 5 of this Section~~ the first Option paragraph of this article, a buffer space shall be marked with a solid white line along both edges of the buffer space where crossing is discouraged.

Guidance:

04 Engineering judgment should be used to establish intermittent breaks or interruptions in the buffer space, such as for driveways, transit stops, or on-street parallel parking lanes, in order to convey access points or an otherwise general legal movement to cross the buffer space (see Figure 914.5.6~~9E-6~~).

Option:

05 Buffer spaces may be established without specific longitudinal lines if contiguous facilities have longitudinal lines or other pavement markings themselves that, when installed, automatically demarcate the buffer space (see Drawing D in Figure 914.5.6~~9E-6~~).

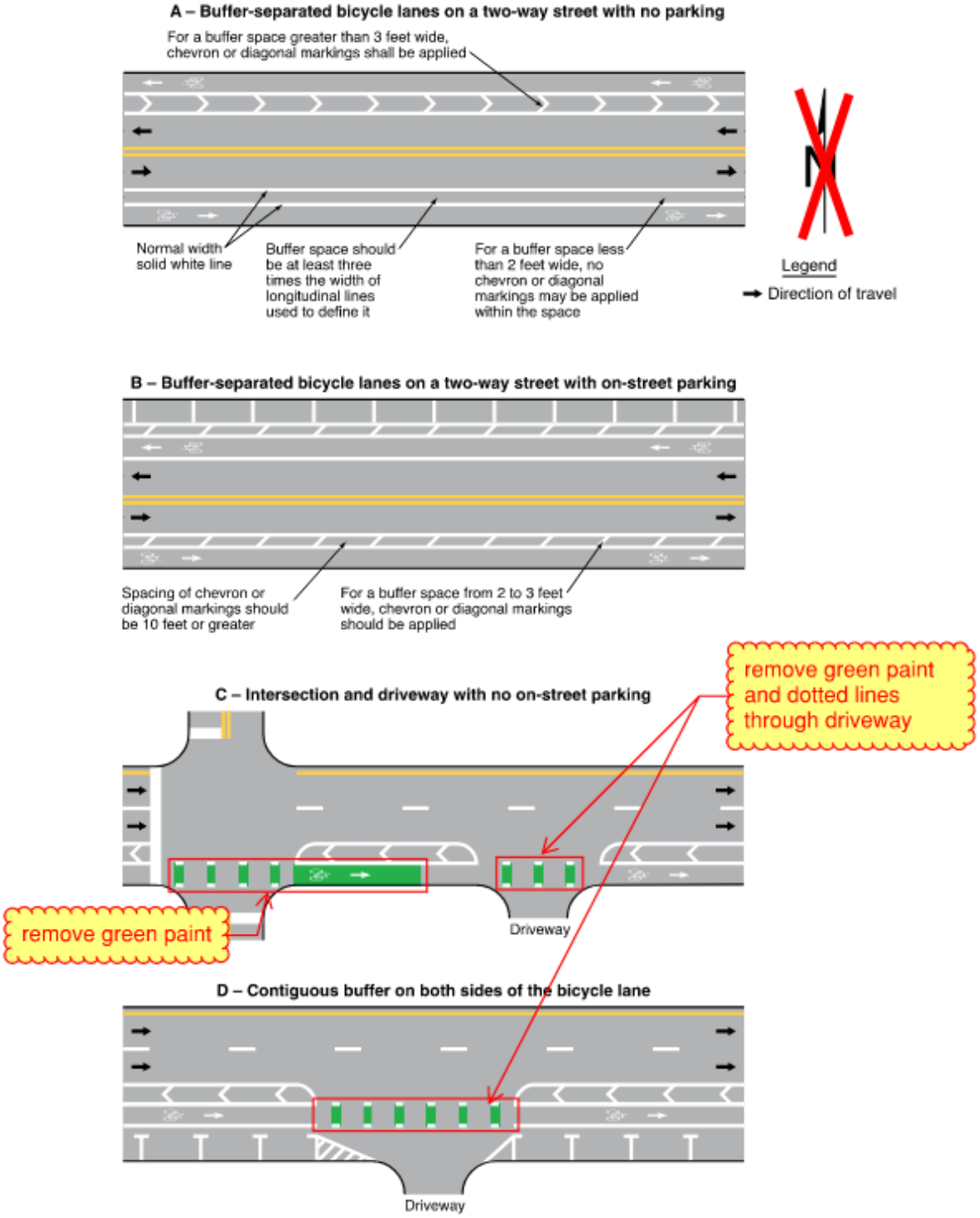
Standard:

06 Except as provided in ~~Paragraph 7 of this Section~~ the following paragraph, a through buffer-separated bicycle lane shall not be positioned to the right of a mandatory right-turn lane or to the left of a mandatory left-turn lane.

Option:

07 A buffer-separated bicycle lane may be placed to the right of a mandatory right-turn lane (or to the left of a mandatory left-turn lane) only if a bicycle signal face (see ~~Section 4H.01~~EPG 902.8.1) is used and the signal phasing and signing eliminates any potential conflicts between the bicycle movement and the turning movement.

Figure 9E-6. Examples of Markings for Buffer-Separated Bicycle Lanes



Guidance:

08 The width of the buffer space should be at least 3 times the width of the normal or wide longitudinal line used to mark the buffer space.

09 Where a buffer space is 2 to 3 feet wide, chevron or diagonal markings (see ~~Section 3B.25~~EPG 620.2.24) should be applied within the buffer space.

Option:

10 Where a buffer space is less than 2 feet wide, diagonal markings or no markings at all in the buffer space may be applied within the buffer space.

Standard:

11 If used, diagonal markings shall slant away from traffic in the adjacent travel lane for motor-vehicle traffic.

Guidance:

12 Where used, the spacing of chevrons or diagonal markings should be 10 feet or greater.

Support:

13 Chevron and diagonal markings convey that the buffer space is not an additional bicycle lane or other travel lane open to traffic.

Standard:

14 Where a buffer space is more than 3 feet wide, chevron or diagonal markings shall be applied within the buffer space.

Guidance:

15 Lane extension markings should be used to extend a buffer-separated bicycle lane across intersections ~~and driveways~~.

MoDOT does not use bicycle lane extensions at driveways. Revised Dec. 2025

Section 9E.07 Separated Bicycle Lanes

Support:

01 Separated bicycle lanes provide a physical separation between a general-purpose lane and a bicycle lane through the use of vertical objects or vertical separation between the general-purpose lane and bicycle lane. Providing a physical separation between a bicycle lane and a general-purpose lane can reduce vehicle encroachment into the bicycle lane beyond a marked buffer alone and can in some cases prevent that encroachment altogether.

02 Physical separation between general-purpose lanes and bicycle lanes introduces additional design considerations over buffer-separated bicycle lanes, including the awareness of a potentially unexpected conflict point for turning motor vehicles and the provision of adequate sight distance for all users at intersections and driveway crossings.

Option:

03 Vertical elements used to provide physical separation between general-purpose lanes and bicycle lanes may include, but are not limited to, tubular markers, raised islands, or parked vehicles.

Support:

04 Where on-street parking is provided adjacent to the buffer area of a separated bicycle lane, pedestrians will need to access those vehicles.

Guidance:

05 BIKE LANE (R3-17) signs ~~(see Figure 9B-1)~~ should be used to distinguish a separated bicycle lane from a general-purpose lane.

06 Where an on-street parking lane serves as the separation between a general-purpose lane and a separated bicycle lane, a buffer space should be provided between the parking lane and the bicycle lane to allow for opening doors of parked vehicles.

Support:

07 Separated bicycle lanes may be designed for one-way or two-way bicycle travel. Providing one-way separated bicycle lanes in the same direction as and on the right-hand side of the general-purpose

lane, whether on a one-way or two-way roadway, accommodates the expectations of road users and might result in fer conflict points at intersections or driveway crossings.

~~Option:~~

~~08 Separated bicycle lanes may be provided on one or both sides of a roadway or in a center median.~~

~~Support:~~

~~09 The presence of two-way separated bicycle lanes on one side of a roadway or in a center median can introduce additional challenges and conflict points, which can warrant additional design considerations when selecting the design for a separated bicycle lane. These considerations include design requirements for pedestrians who would interact with the separated bicycle lane.~~

Standard:

10 The edge line and lane line colors used for separated bicycle lanes shall conform to the requirements in ~~Chapter 3A~~ EPG 620.1 (see Figure 914.5.7~~9E-7~~).

11 Directional arrows shall be used in conjunction with the bicycle lane symbol or word marking in separated bicycle lanes, placed downstream from the symbol or word marking.

12 Turns on red shall be prohibited across separated bicycle lanes while bicyclists are allowed to proceed through the intersection.

Support:

13 Additional information on signals for bicycle facilities is found in ~~Chapter 4H~~EPG 902.8.

Standard:

14 The edges of the buffer space for a separated bicycle lane shall be marked with solid longitudinal lines.

15 A marked buffer space that is 2 feet or wider for a separated bicycle lane, including those buffer spaces where tubular markers are provided, shall use chevron or diagonal markings within the buffer, unless physical separation is provided that occupies the majority of the buffer space, such as raised islands or other physical dividers, or such as where an on-street parking lane occupies the majority of the buffer space.

Guidance:

16 Where used in the buffer area of a separated bicycle lane, the spacing of chevrons or diagonal markings should be 10 feet or greater.

17 Crosswalks that cross a separated bicycle lane should be marked consistent with the style of crosswalk marking provided across the adjacent general-purpose lane.

Support:

18 Where on-street parking is provided as the physical separation adjacent to the buffer area of a separated bicycle lane, the chevron or diagonal marking provisions in ~~Section 9E.06~~EPG 914.5.6 apply to the area outside of the marked parking area within the buffer (see Figure 914.5.7~~9E-7~~).

19 Intersection treatments for separated bicycle lanes can vary depending on the geometric and operational conditions at the intersection (see ~~Section 9E.02~~EPG 914.5.2).

Figure 9E-7. Examples of Lane Markings for Separated Bicycle Lanes (Sheet 1 of 2)

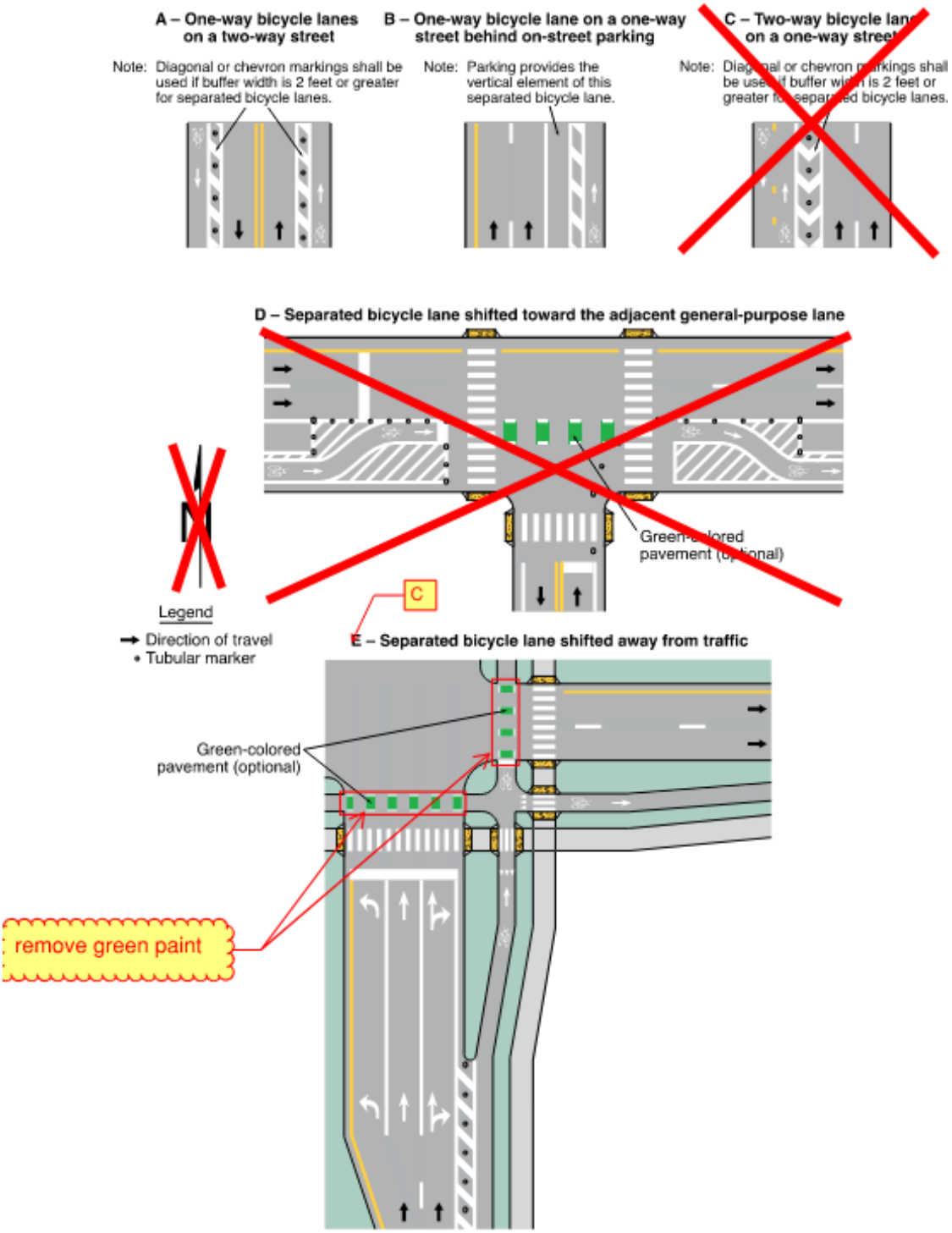
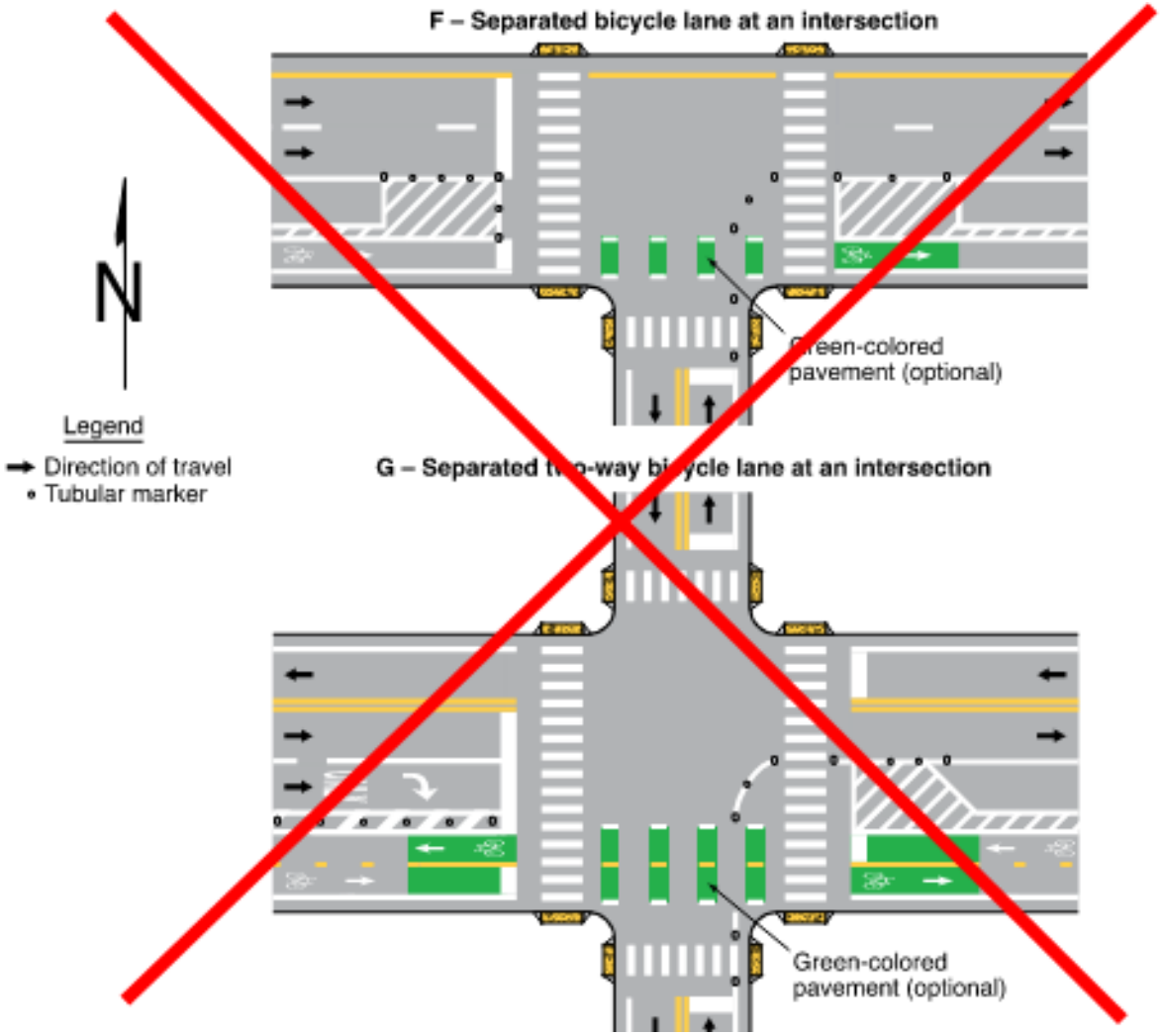


Figure 9E-7. Examples of Lane Markings for Separated Bicycle Lanes (Sheet 2 of 2)



~~Section 9E.08 Counter-Flow Bicycle Lanes~~

~~Support:~~

~~01 Counter-flow bicycle lanes are one-directional and provide 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.~~

~~02 Counter-flow bicycle lanes establish two-way traffic on a roadway. Section 9B.21 contains information on the Left Turn Yield to Bicycles (R10-12b) sign used with traffic signals and counter-flow bicycle lanes.~~

~~*Guidance:*~~

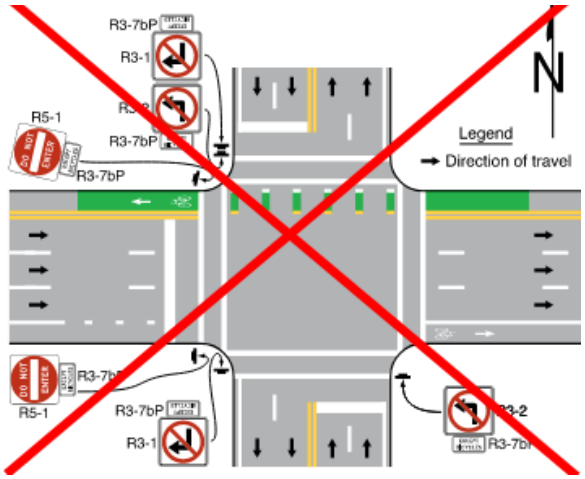
~~*03 Where used, a counter-flow bicycle lane should be marked such that bicycles in the counter-flow lane travel on their right-hand side of the road in accordance with normal rules of the road, with opposing traffic on the left.*~~

Standard:

04 Counter-flow bicycle lanes located at the edge of the roadway shall use double yellow center line pavement markings (see Section 3B.01), a painted median island, a raised median island (see Chapter 3J), or some form of physical separation where the speed limit is 30 mph or less.

05 For speed limits 35 mph or greater, a buffer per Section 3B.25, a painted or raised median island, or some form of physical separation shall be used to separate a counter-flow bicycle lane from the adjacent travel lane.

Figure 9E-8. Example of Counter-Flow Bicycle Lanes at an Intersection



Guidance:

06 Lane extension markings should be used where counter-flow bicycle movements cross intersections.

07 Counter-flow bicycle lanes should not be used between a general-purpose lane and an on-street parallel parking lane for motor vehicles.

Support:

08 Counter-flow bicycle lanes located between a general-purpose lane and an on-street parallel parking lane for motor vehicles can limit visibility of bicycles for vehicles exiting the parking lane, potentially impacting the safety of bicyclists. Locating counter-flow bicycle lanes at the edge of the roadway can reduce conflicts for bicycles.

Standard:

09 Where signs are provided to regulate turns from streets or driveways that intersect with a roadway that has a counter-flow bicycle lane, ONE WAY signs (see Section 2B.49) shall not be used. Movement Prohibition signs (see Section 2B.26) with supplemental EXCEPT BICYCLES (R3-7bP) regulatory plaque(s) shall be used (see Figure 9E-8).

10 If a DO NOT ENTER (R5-1) sign(s) is used at egress points for motor vehicle traffic, the EXCEPT BICYCLES (R3-7bP) regulatory plaque(s) shall be placed under the DO NOT ENTER sign (see Figure 9E-8) where a counter-flow bicycle lane is used.

11 Where intersection traffic controls are provided (such as STOP or YIELD signs or traffic signals), appropriate devices shall be provided and oriented toward bicyclists in the counter-flow lane.

12 At signalized locations, appropriate bicycle signalization (see Chapter 9F) shall be provided and oriented toward bicyclists in the counter-flow lane, including a method for counter-flow bicycles to actuate the green phase for the counter-flow movement.

~~Support:~~

~~13 Higher levels of traffic control or additional signalization, signing, and/or pavement marking treatments can be helpful for intersecting traffic where the counter-flow bicycle movement is unexpected.~~

~~*Guidance:*~~

~~*14 A Bicycle Cross Traffic warning plaque (see Section 9C.06) should be used below a STOP sign on the crossroad at intersections where a counter-flow bicycle lane is provided on the primary street.*~~

MoDOT does not use counter-flow bicycle lanes. Revised Dec. 2025

Section 9E.09 Shared-Lane Marking

Support:

01 The FHWA's "Standard Highway Signs" publication (see EPG 911 (MUTCD Section 1A.05)) contains details on the shared-lane marking symbol.

Option:

02 The shared-lane marking shown in Figure 914.5.8~~9E-9~~ may be used to:

A. Assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist impacting the open door of a parked vehicle,
B. Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side-by-side within the same traffic lane,
C. Alert road users of the lateral location bicycles are likely to occupy within the traveled way,
D. Encourage safe passing of bicycles by motor vehicles,
E. Reduce the incidence of wrong-way bicycling in the roadway, and
F. Assist bicyclists with lateral positioning in mixing zones.

MoDOT does not use mixing zones. Revised Dec. 2025

Guidance:

03 The shared-lane marking should not be placed on roadways that have a speed limit of 40 mph or greater.

Standard:

04 Shared-lane markings shall not be used in:

A. Shoulders;
B. Bicycle lanes or in designated extensions of bicycle lanes through intersections or driveways,
C. A travel lane in which light-rail transit vehicles also travel;
D. The transition area where a motor vehicle entering a mandatory turn lane must weave across bicyclists in bicycle lanes;
~~**E. Two-stage turn boxes;**~~
~~**F. Bicycle boxes;**~~
G. Shared-use paths or shared-use path crossings; or
H. Physically-separated bikeways, either in the roadway or on an independent right-of-way.

MoDOT does not use turn boxes or bicycle boxes. Revised Dec. 2025

05 Green-colored pavement shall not be applied as a background to shared-lane markings (see ~~Section 3H.06~~EPG 620.7.6).

~~Option:~~

~~06 Black background markings (see Section 3A.03) may be used in combination with shared-lane markings to enhance contrast.~~

MoDOT does not use black background marking for shared-lane markings. Revised Dec. 2025

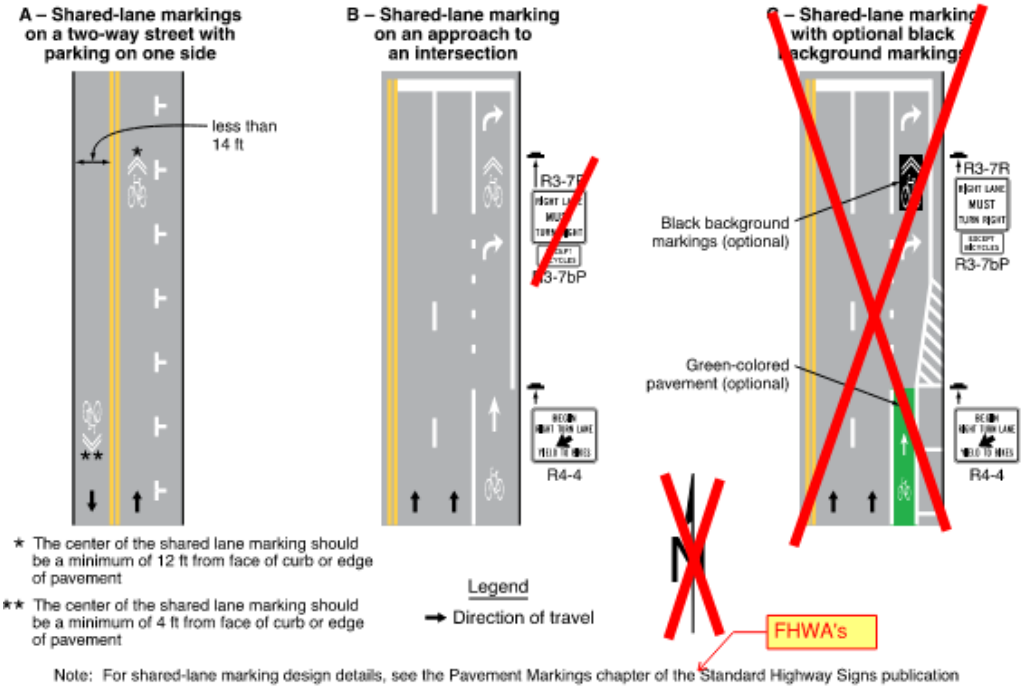
Guidance:

07 If used in a shared lane with on-street parallel parking, shared-lane markings should be placed so that the centers of the markings are a minimum of 12 feet from the face of the curb, or from the edge of the pavement where there is no curb.

08 If used on a street without on-street parking that has an outside travel lane that is less than 14 feet wide, shared-lane markings should be placed so that the centers of the markings are a minimum of 4 feet from the face of the curb, or from the edge of the pavement where there is no curb.

09 At non-intersection locations, the shared-lane marking should be spaced at intervals of not less than 50 feet or greater than 250 feet.

Figure 9E-9. Examples of Shared-Lane Marking Applications



10 The first shared-lane marking downstream from an intersection should be placed no more than 50 feet from the intersection.

Option:

11 ~~Section 9B.14~~EPG 914.2.6 describes a Bicycles Allowed Use of Full Lane sign that may be used in addition to or instead of the shared-lane marking to inform road users that bicyclists might occupy the travel lane.

Guidance:

12 If the Bicycles Allowed Use of Full Lane (R9-20) sign is used as an addition to shared-lane marking, the shared-lane marking should be placed so that the center of the marking is in the approximate center of the travel lane.

Option:

13 The shared-lane marking may be used (see Figure 914.5.8~~9E-9~~) where the width of the roadway is insufficient to continue a bicycle lane or separated bikeway on the approach to the intersection, or it is advantageous to terminate the bicycle lane or separated bikeway in order to provide for a shared lane.

14 The shared-lane marking may be used on an approach to an intersection ~~(see Figure 9E-5)~~ in a mandatory turn lane to indicate a shared space for bicyclists and motorists where there is insufficient width in the roadway for both the bicycle lane and turn lane.

Section 9E.10 Shared-Lane Markings for Circular Intersections

Option:

01 Shared-lane markings may be used in the circulatory roadway of circular intersections.

Guidance:

02 If used, shared-lane markings should be placed in the center of the lane when used inside of circulatory roadways.

Support:

03 The "Guide for Development of Bicycle Facilities," 2012 Fourth Edition, American Association of State Highway and Transportation Officials, contains information on designing for bicycles on shared-used paths in lieu of, or in addition to, using shared-lane markings in the circulatory roadway of the intersection.

~~Section 9E.11 Two-Stage Bicycle Turn Boxes~~

~~Support:~~

~~01 Two-stage bicycle turn boxes allow bicyclists the opportunity to make turns at an intersection or crossing point instead of requiring them to merge into traffic upstream or to dismount and use a crosswalk at the intersection or crossing point.~~

~~02 Section 9B.18 contains information on regulatory signing that shall be used in conjunction with a two-stage bicycle turn box pavement marking where bicyclists are required to use the turn box.~~

~~03 Section 9D.13 contains information on guide signing that can be used in conjunction with a two-stage bicycle turn box pavement marking where bicyclists are not required to use the turn box.~~

~~Standard:~~

~~04 If used, two-stage bicycle turn boxes shall be located:~~

- **~~A. In an area between the closest through bicycle or motor vehicle movement and the parallel crosswalk (see Drawing A in Figure 9E-10),~~**
- **~~B. In an area between the through bicycle movement and the parallel pedestrian crossing movement if no crosswalk is established (see Drawing B in Figure 9E-10),~~**
- **~~C. On the innermost side of the bicycle facility provided that the two-stage turn box is located in a portion of the intersection where parallel or motor vehicle traffic does not travel, such as projections of islands or parking lanes (see Drawing C in Figure 9E-10), or~~**
- **~~D. In an area between the through bicycle movement and a pedestrian facility for T-intersections (see Drawing D in Figure 9E-10).~~**

~~05 A two-stage bicycle turn box shall consist of at least one bicycle symbol pavement marking and at least one pavement marking arrow.~~

~~06 A turn arrow in the appropriate direction shall be used if a two-stage turn box is used with a one-way bicycle lane, and a through arrow in the appropriate direction shall be used if a two-stage turn box is used with a two-way bikeway (see Figure 9E-11).~~

~~07 A two-stage bicycle turn box shall be bounded on all sides by a solid white line.~~

~~08 For two-stage bicycle turn boxes that facilitate turns from a one-way bikeway, the bicycle symbol shall precede the pavement marking turn arrow in the direction of bicycle travel (see Figure 9E-10).~~

~~09 Passive detection of bicycles in the two-stage bicycle turn box shall be provided if the signal phase that permits bicycles to enter the intersection during the second stage of their turn is actuated.~~

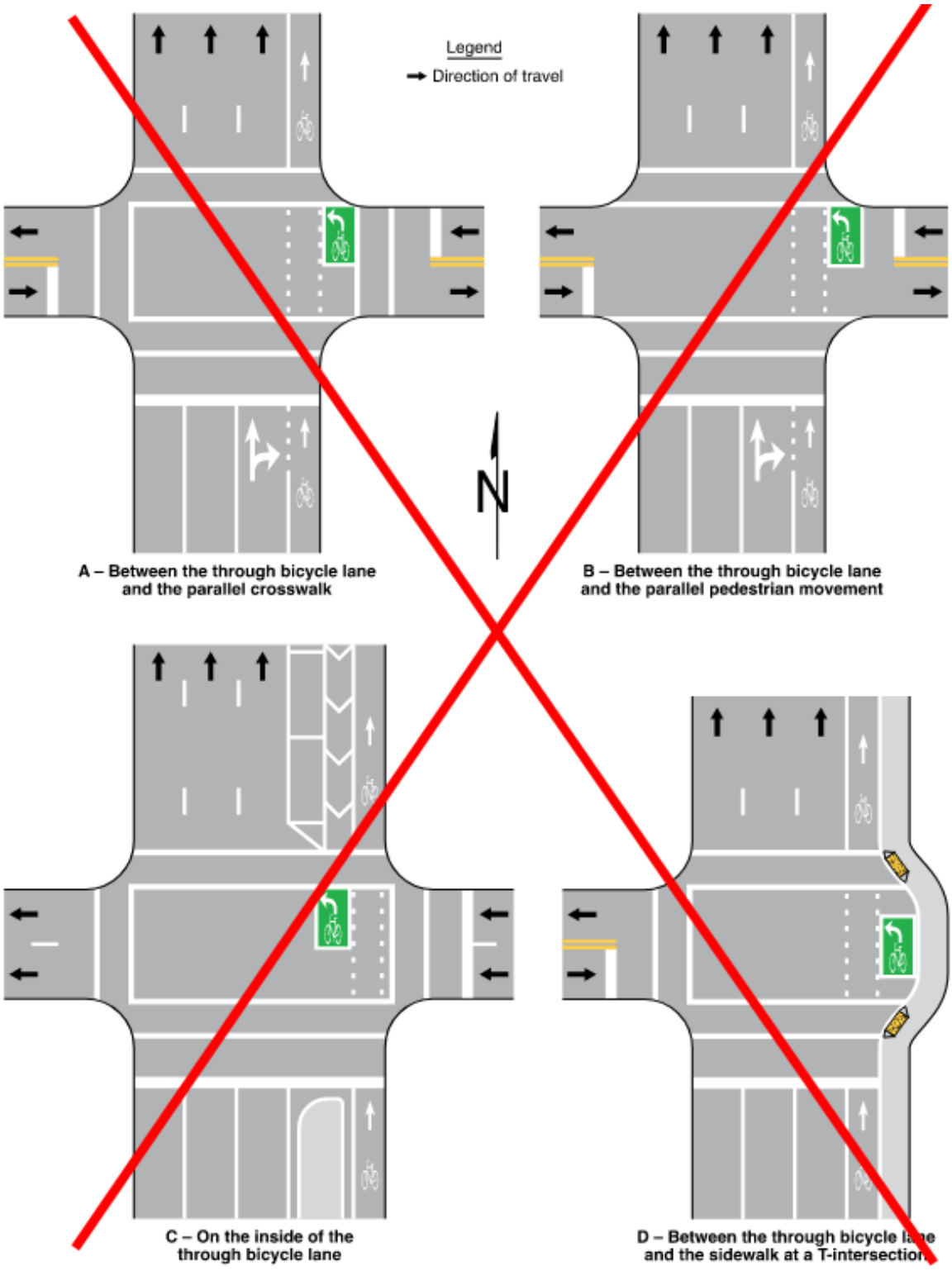
~~Guidance:~~

~~10 Engineering judgment should be used to develop the size of the two-stage bicycle turn box. Factors considered should include intersection geometry and keeping queued bicycles away from moving traffic, as well as peak hour bicycle volumes to avoid overflow of the two-stage turn box that subjects any bicyclist to conflicting movements.~~

~~Option:~~

~~11 The two-stage turn box may use green-colored pavement.~~

Figure 9E-10. Examples of Two-Stage Turn Box Locations at Intersections



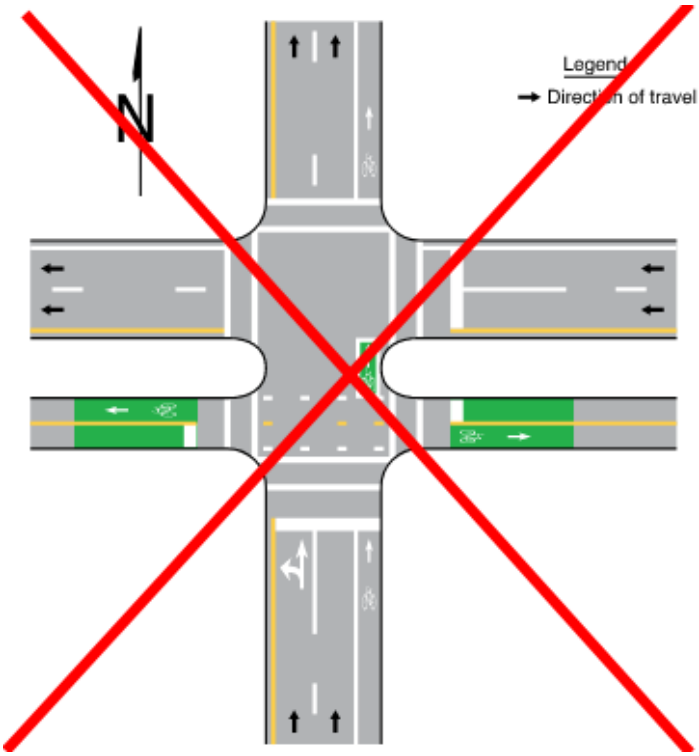
~~**Standard:**~~

~~**12 If used, green-colored pavement shall encompass all of the two-stage turn box.**~~

~~**13 Where the path of vehicles lawfully turning on red would pass through a two-stage bicycle turn box, a full-time no-turn-on-red prohibition (see Section 2B.60) shall be provided for the crossroad approach.**~~

MoDOT does not use two-stage bicycle turn boxes. Revised Dec. 2025

Figure 9E-11. Example of a Two-Stage Turn Box Location at an Intersection with a Two-Way Bikeway



~~Section 9E.12 Bicycle Box~~

~~Option:~~

~~01 A bicycle box (see Figure 9E-12) may be used to increase the visibility of stopped bicycles on the approach to a signalized intersection during the portion of the signal cycle when a red signal indication is being displayed to motor vehicles in the approach lane(s) that is behind the box.~~

~~*Guidance:*~~

~~*02 Providing a bicycle box on a signalized intersection approach where a discernible number of conflicts between vehicles turning across through bicycles in a bicycle lane has been demonstrated during the green interval of a signal should be evaluated based on engineering judgment or study.*~~

~~*03 Other treatments should be considered for conflicts between turning vehicles and through bicycles such as using leading or exclusive signal phases, or separating turning traffic from through traffic through mandatory turn lanes.*~~

~~*04 A bicycle lane should be used on the approach to a bicycle box.*~~

~~*05 A bicycle box should not be contiguous with a crosswalk. A stop line on the downstream end of the bicycle box should be used to mark the location where bicycles are required to stop.*~~

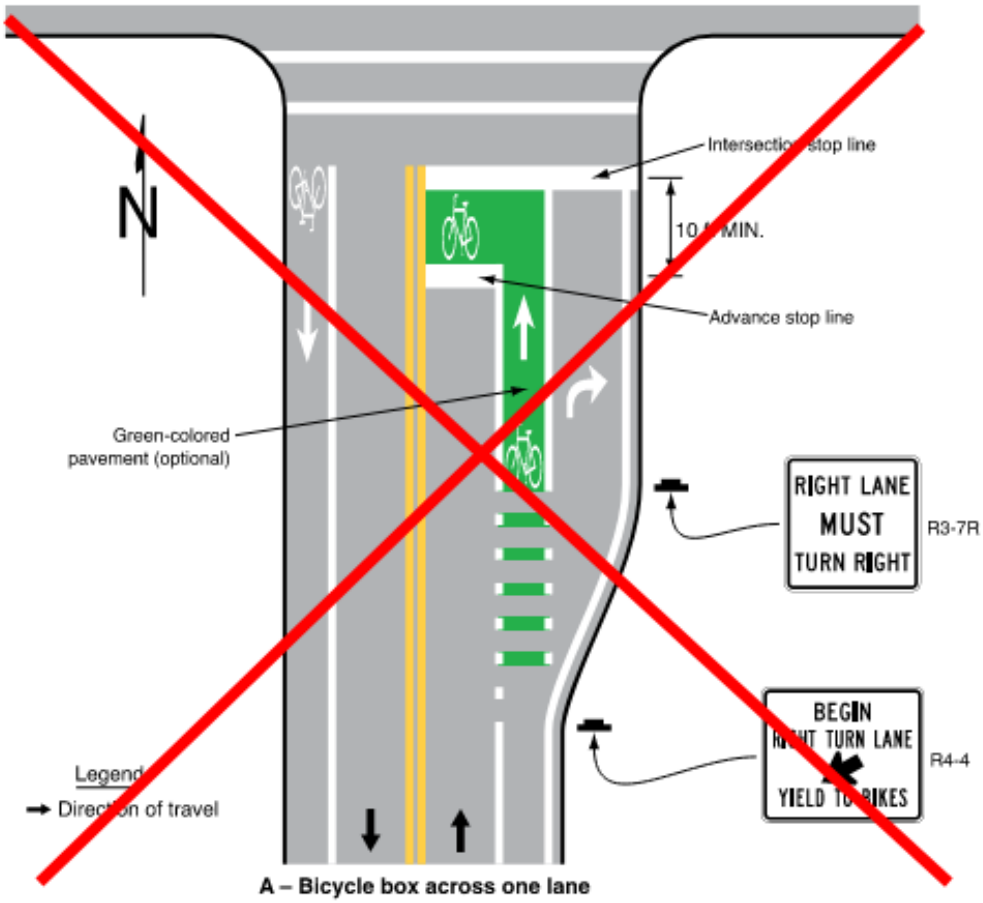
~~**Standard:**~~

~~**06 If used, the distance from the upstream edge of the bicycle box that is nearest to the stop line for motor vehicles to the downstream edge of the bicycle box that is nearest the crosswalk or intersection shall be at least 10 feet. At least one bicycle symbol marking (see Figure 9E-12) shall be used in the bicycle box.**~~

~~**07 Where an existing stop line for motor vehicles is relocated upstream to install a new bicycle box, the yellow change and red clearance intervals (see Section 4F.17) shall be recalculated and if necessary, reprogrammed to accommodate the length of the bicycle box.**~~

~~**08 Countdown pedestrian signals (see Section 4I.04) for the crosswalk or pedestrian crossing movement that crosses the approach shall accompany bicycle boxes that extend across more than one approach lane for motor vehicles. Countdown pedestrian signals used with bicycle boxes shall display the pedestrian change interval countdown without the need for actuation.**~~

Figure 9E-12. Examples of Intersection Bicycle Boxes (Sheet 1 of 2)



A – Bicycle box across one lane

~~**09 Turns on red shall be prohibited from the lane where a bicycle box is placed.**~~

~~Support:~~

~~10 Countdown pedestrian signals can inform bicyclists whether there is adequate time remaining to an adjacent lane before the onset of the green signal phase for that approach.~~

~~*Guidance:*~~

~~*11 Countdown pedestrian signals for the crosswalk or pedestrian crossing movement that crosses the approach should accompany single-lane bicycle boxes where it is demonstrated that bicycles arrive at the*~~

~~*intersection at or near the end of the red signal indication being displayed to traffic in the approach lane(s) that is behind the box.*~~

~~Option:~~

~~12 Green-colored pavement may be used in a bicycle box.~~

~~**Standard:**~~

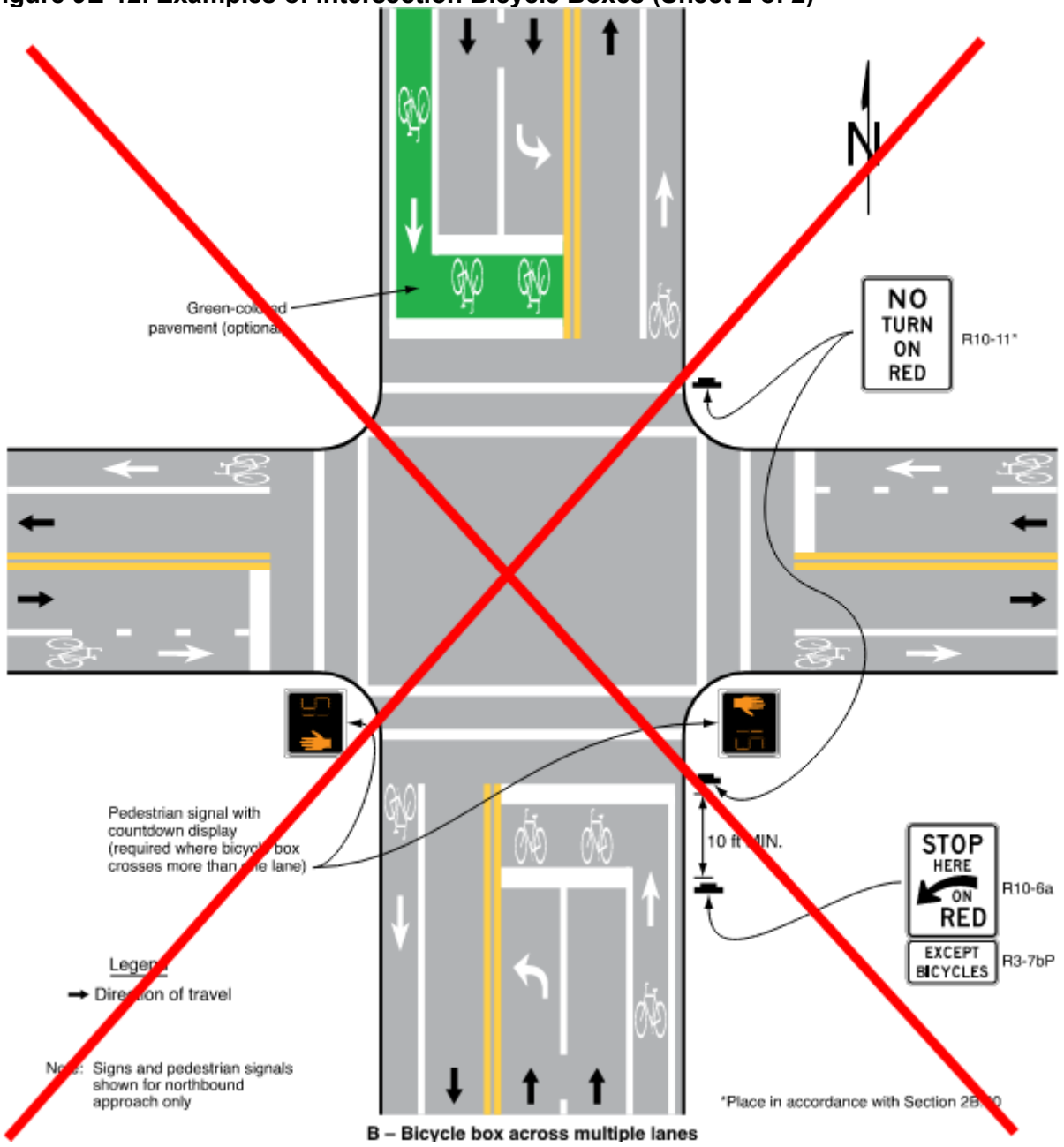
~~**13 If used, green-colored pavement shall be used in the full limits of the bicycle box.**~~

~~Support:~~

~~14 Section 9B.02 contains information on the EXCEPT BICYCLES (R3-7bP) regulatory plaque that can be used below the STOP HERE ON RED (R10-6 or R10-6a) sign (see Section 2B.59) to exempt bicyclists from the requirement of the advance stop line.~~

MoDOT does not use bicycle boxes. Revised Dec. 2025

Figure 9E-12. Examples of Intersection Bicycle Boxes (Sheet 2 of 2)



B – Bicycle box across multiple lanes

~~Section 9E.13 Shared-Use Paths~~

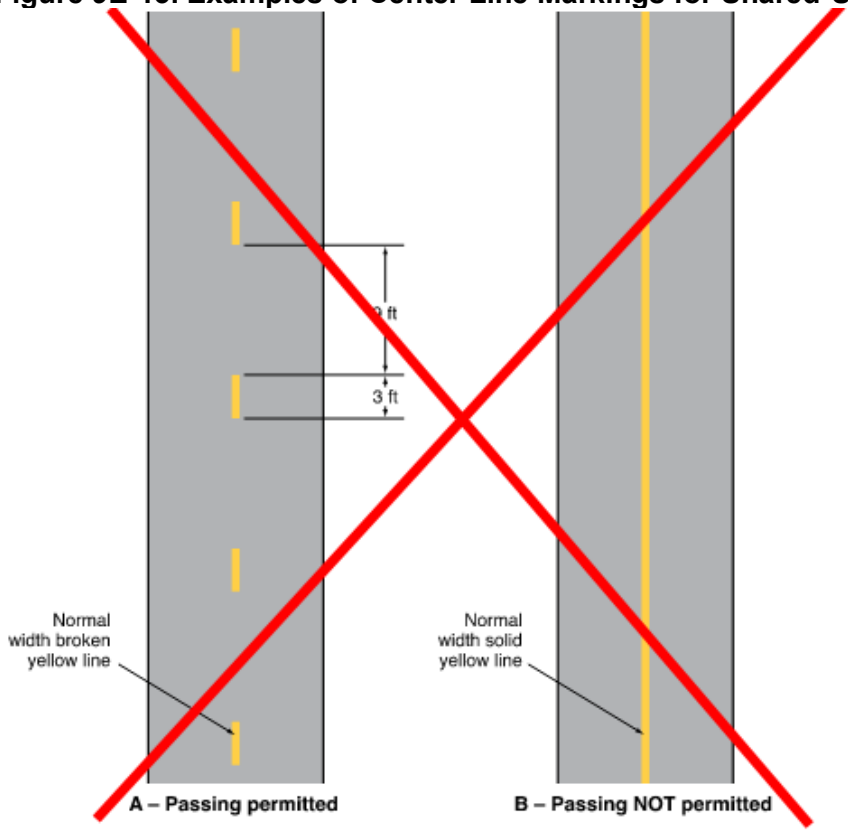
~~Option:~~

~~01 Where shared-use paths are of sufficient width to designate two minimum width lanes, a solid yellow center line may be used to separate the two directions of travel where passing or traveling to the left of the line is not permitted. A broken yellow center line may be used where passing is permitted (see Figure 9E-13).~~

~~*Guidance:*~~

~~*02 Broken lines used on shared-use paths should have a nominal 3-foot segment with a 9-foot gap.*~~

Figure 9E-13. Examples of Center Line Markings for Shared-Use Paths



~~Option:~~

~~03 A solid white line may be used on shared-use paths to separate different types of users in the same direction. The R9-7 sign (see Section 9B.13) may be used to supplement the solid white line.~~

~~04 Smaller size pavement word markings and symbols may be used on shared-use paths. Where arrows are needed on shared-use paths, half-size layouts of the arrows may be used (see Section 3B.20).~~

~~**Standard:**~~

~~**05 Where a shared-use path crosses a roadway, crosswalk markings shall be used (see Chapter 3C).**~~

Standard paragraph 5 is relocated to Section 3C.02. Revised Dec. 2025

~~Option:~~

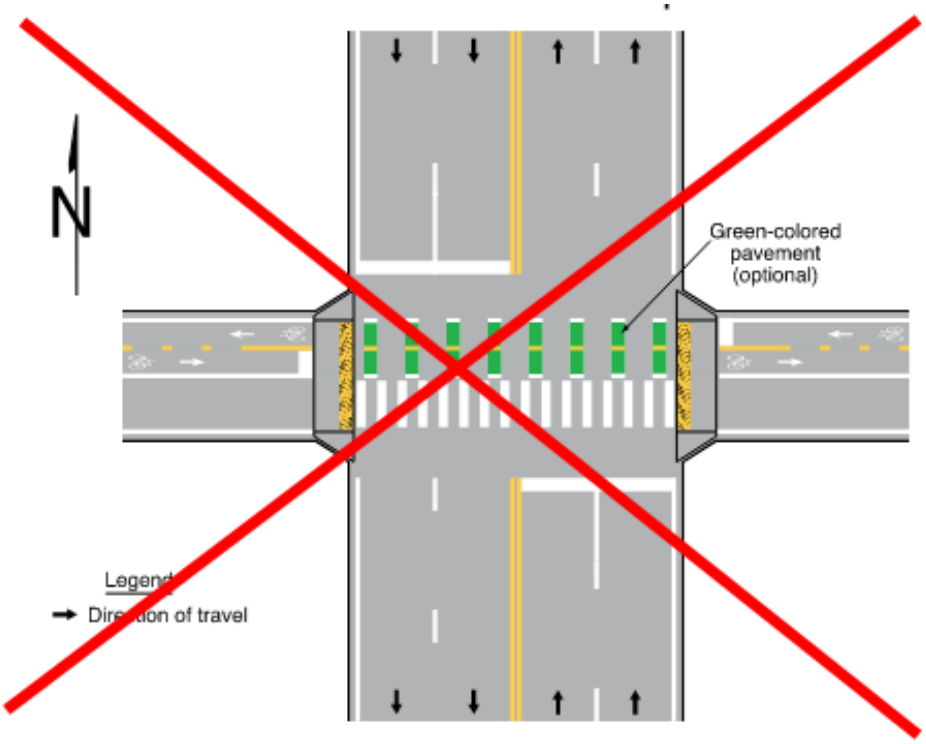
~~06 Where pedestrian and bicycle movements on a shared-use path are separated on the approach to a roadway crossing, parallel bicycle and pedestrian crossing markings may be used as shown in Figure 9E-14.~~

~~*Guidance:*~~

~~*07 If parallel bicycle and pedestrian crossing markings are used where a shared-use path crosses a roadway, crossing areas for bicycles should use green-colored pavement if the shared-use path crossing has a high volume of either mode.*~~

MoDOT does not mark shared use paths or install/maintain green colored pavement. Additional text (Standard Paragraph 05) has been added to Chapter 3C for marking when a shared use path crosses a roadway. Revised Dec. 2025

Figure 9E-14. Examples of Pavement Markings for a Shared-Use Path with Mode Separation



~~Section 9E.14 Bicycle Route Pavement Markings~~

~~Option:~~

~~01 Bicycle route pavement markings simulating guide signs for bicycle routes (see Section 9D.02 through 9D.07) and route auxiliary plaques (see Section 9D.08) may be used to supplement guide signing to help bicyclists in navigation (see Figure 9E-15).~~

~~**Standard:**~~

~~**02 Bicycle route pavement markings shall be limited to shared-use paths, separated bicycle lanes, or buffer-separated bicycle lanes. Bicycle route pavement markings shall not be used in standard bicycle lanes or in shared lanes.**~~

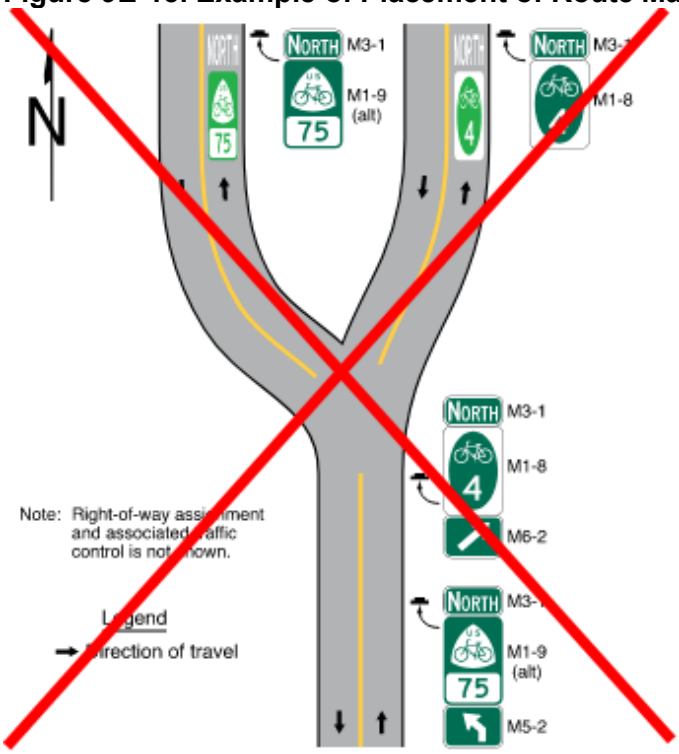
~~*Guidance:*~~

~~*03 A systematic methodology of locating guide signs for bicycle routes adjacent to the bicycle route pavement marking should be used that includes locations where either the sign or the pavement marking can exist alone to avoid overuse of the guide sign or the pavement marking.*~~

~~*04 The route marker pavement marking should be elongated.*~~

~~*05 The location, size, and materials of the route marker pavement marking should be designed in a manner that will minimize the loss of traction for bicyclists under wet conditions.*~~

Figure 9E-15. Example of Placement of Route Markers for Shared-Use Paths



MoDOT does not use Bicycle Route pavement markings. Revised Dec. 2025

~~Section 9E.15 Bicycle Detector Symbol~~

~~Option:~~

~~01 The bicycle detector symbol (see Figure 9E-16) may be placed on the pavement indicating the optimum position for a bicycle to actuate the signal.~~

~~02 Appropriately-sized WAIT HERE FOR GREEN word markings may be placed on the pavement immediately below the bicycle detector symbol.~~

~~03 A R10-22 sign (see Section 9B.20) may be installed to supplement the bicycle detector symbol pavement marking.~~

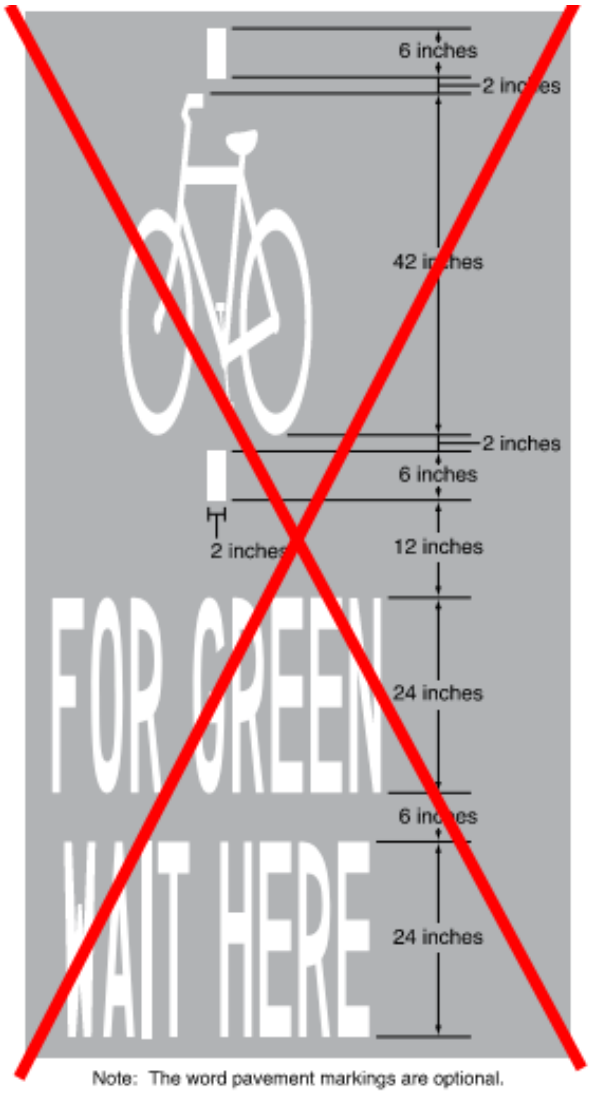
~~Support:~~

~~04 The "Standard Highway Signs" publication (see Section 1A.05) contains details on the bicycle detector symbol.~~

~~05 Section 3H.06 contains information on incorporating green-colored pavement as a background enhancement to the bicycle detector symbol.~~

MoDOT does not use Bicycle Detector symbols. Revised Dec. 2025

Figure 9E-16. Bicycle Detector Pavement Marking



Note: The word pavement markings are optional.

~~Section 9E.16 Pavement Markings for Obstructions~~

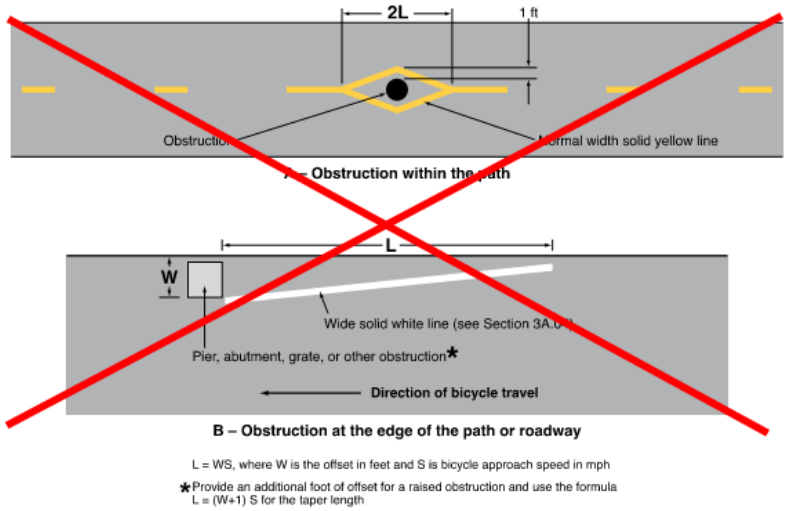
~~*Guidance:*~~

~~*01 Markings as shown in Figure 9E-17 should be used at the location of obstructions in the center of a shared-use path or a physically separated bikeway, including vertical elements intended to physically prevent unauthorized motor vehicles from entering the path.*~~

~~*02 For roadway situations where it is impracticable to eliminate a drain grate or other roadway obstruction that is inappropriate for bicycle travel, white markings applied as shown in Figure 9E-17 should be used to guide bicyclists around the condition.*~~

MoDOT does not use pavement markings for obstructions. Revised Dec. 2025

Figure 9E-17. Examples of Obstruction Pavement Markings



Section 9E.17 Raised Devices

Support:

01 ~~Chapter 3I~~ EPG 620.8 contains information on using channelizing devices to emphasize pavement marking patterns associated with certain bicycle facilities. A common application is the use of flexible raised devices to create separated bicycle lanes (see ~~Section 9E.07~~EPG 914.5.7).

02 Using inflexible raised devices immediately adjacent to the travel path of a bicyclist without a buffer creates a collision potential for bicyclists.

Option:

03 In accordance with ~~Chapter 3I~~ EPG 620.8, channelizing devices may be used to emphasize a pavement marking pattern that establishes a bicycle lane or other bicycle facility provided that the installation of channelizing devices does not prevent motor vehicles from turning when the turn requires the motor vehicle to merge with the bicycle lane or facility as required by law or ordinance.

Guidance:

04 If used, channelizing devices for bicycle facilities should be tubular markers (see ~~Section 3I.02~~ EPG 620.8.2).

05 The selection of a raised device for use with bicycle facilities should consider the collision potential of both the post and the base since the base might still be present in the event the post is struck and missing.

Support:

06 Measures to reduce the likelihood of a road user striking a channelizing device include marking a buffer space, improving lighting, improving retroreflectivity, or the periodic addition of taller vertical elements within runs of shorter elements.

Standard:

07 Channelizing devices that are used to emphasize the pavement marking patterns of bicycle facilities shall not incorporate the color green into either the device or its retroreflective element to supplement the presence of green-colored pavement.

Guidance:

08 If used in ~~buffer~~ separated bicycle lanes, channelizing devices should be placed in the buffer space and at least 1 foot from the longitudinal bicycle lane pavement marking.

CHAPTER 9F. SIGNALS [914.6]

Section 9F.01 Application

Support:

01 ~~Part 4~~ EPG 902 contains information regarding signal warrants and other requirements relating to signal installations.

Option:

02 For purposes of signal warrant evaluation, bicycles may be counted as either vehicles or pedestrians.

Section 9F.02 Bicycle Signal Faces

Support:

01 ~~Chapter 4H~~ EPG 902.8 contains information on the design and application of bicycle signal faces.

02 ~~Section 9B.22~~EPG 914.2.10 contains information for the Bicycle Signal sign that is required to be installed with a bicycle signal face.

Section 9F.03 Signal Operations for Bicycles

Standard:

01 At installations where visibility-limited signal faces are used, signal faces shall be adjusted so bicyclists for whom the indications are intended can see the signal indications. If the visibility-limited signal faces cannot be aimed to serve the bicyclist, then separate signal faces shall be provided for the bicyclist.

02 On bikeways, signal timing and actuation shall be reviewed and adjusted to consider the needs of bicyclists.