

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

2011 Edition with Revision 1



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- 19 Each Section is comprised of 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). Some paragraphs have lettered or numbered items. As an example of how to cite this Manual, the phrase “Not less than 40 feet beyond the stop line” that appears in Section 4D.14 of this Manual would be referenced in writing as “Section 4D.14, P1, A.1,” and would be verbally referenced as “Item A.1 of Paragraph 1 of Section 4D.14.”

Standard:

- 20 **In accordance with 23 CFR 655.603(b) (3), 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. Substantial conformance of such State or other Federal agency MUTCDs or Supplements shall be as defined in 23 CFR 655.603(b)(1).**
- 21 **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 be in compliance with the new edition or revision.**
- 22 **In cases involving Federal-aid projects for new highway or bikeway construction or reconstruction, the traffic control devices installed (temporary or permanent) shall be in conformance 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)].**
- 23 **Unless a particular device is no longer serviceable, 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). 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)]. These target compliance dates established by the FHWA shall be as shown in Table I-2.**
- 24 **Except as provided in Paragraph 24, when a non-compliant traffic control device is being replaced or refurbished because it is damaged, missing, or no longer serviceable for any reason, it shall be replaced with a compliant device.**

Option:

- 25 A damaged, missing, or otherwise non-serviceable device that is non-compliant may be replaced in kind if engineering judgment indicates that:
- 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.

Table I-2. Target Compliance Dates Established by the FHWA

2009 MUTCD Section Number(s)	2009 MUTCD Section Title	Specific Provision	Compliance Date
2A.08	Maintaining Minimum Retroreflectivity	Implementation and continued use of an assessment or management method that is designed to maintain traffic sign retroreflectivity at or above the established minimum levels (see paragraph 2)	2 years from the effective date of this revision of the 2009 MUTCD*
2A.19	Lateral Offset	Crashworthiness of sign supports on roads with posted speed limit of 50 mph or higher	January 17, 2013 (date established in 2000 MUTCD)
2B.40	ONE WAY Signs (R6-1, R6-2)	New requirement in the 2009 MUTCD for the number and locations of ONE WAY signs	December 31, 2019
2C.06 thru 2C.14	Horizontal Alignment Warning Signs	Revised requirements in the 2009 MUTCD regarding the use of various horizontal alignment signs (see Table 2C-5)	December 31, 2019
2E.31, 2E.33, and 2E.36	Plaques for Left-Hand Exits	New requirement in the 2009 MUTCD to use E1-5aP and E1 -5bP plaques for left-hand exits	December 31, 2014
4D.26	Yellow Change and Red Clearance Intervals	New requirement in the 2009 MUTCD that durations of yellow change and red clearance intervals shall be determined using engineering practices (see paragraphs 3 and 6)	5 years from this revision of the 2009 MUTCD, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
4E.06	Pedestrian Intervals and Signal Phases	New requirement in the 2009 MUTCD that the pedestrian change interval shall not extend into the red clearance interval and shall be followed by a buffer interval of at least 3 seconds (see paragraph 4)	5 years from this revision of the 2009 MUTCD, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
6D.03***	Worker Safety Considerations	New requirement in the 2009 MUTCD that all workers within the right-of-way shall wear high-visibility apparel (see Paragraphs 4, 6, and 7)	December 31, 2011
6E.02**	High-Visibility Safety Apparel	New requirement in the 2009 MUTCD that all flaggers within the right-of-way shall wear high-visibility apparel	December 31, 2011
7D.04**	Uniform of Adult Crossing Guards	New requirement in the 2009 MUTCD for high-visibility apparel for adult crossing guards	December 31, 2011
8B.03, 8B.04	Grade Crossing (Crossbuck) Sign and Supports	Retroreflective strip on Crossbuck sign and support (See Paragraph 7 in Section 8B.03 and Paragraphs 15 and 18 in Section 8B.04)	December 31, 2019
8B.04	Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings	New requirement in the 2009 MUTCD for the use of STOP or YIELD signs with Crossbuck signs at passive grade crossings	December 31, 2019

* Types of signs other than regulatory or warning are to be added to an agency's management or assessment method as resources allow.

** MUTCD requirements is a result of a legislative mandate.

Note: All compliance dates that were previously published in Table I-2 of the 2011 Indiana MUTCD and that do not appear in this revised table have been eliminated.

Table I-3. Revision Summary (Sheet 1 of 3)

Revision #	Part	Section/ Figure/ Table	Page No.	Revision
1	Introduction	Table I-2	I-6	<p>Target Compliance Dates Re-established by the FHWA revised</p> <p>Dates revised for sections 2A.08, 2A.19, 4D.26, 4E.06, and 8B.03</p> <p>Dates Deleted for sections 2A.08, 2B.03, 2B.09, 2B.10, 2B.11, 2B.13, 2B .26, 2B .55, 2C.04, 2C .20, 2C.30, 2C .38, 2C.40 to 2C.42, 2C.46, 2C.49, 2C.50, 2C .61, 2C.63, 2D.43 to 2D.45, 2G.01 to 2G.07, 2G.11 to 2G.15, 2H.02 & .03, 2I.07, 2I.08, 2J.05, 2N.03, 3B.04 & 05, 3B.18, 4D.31, 4E.07, 5C.05, 7B.11, 7B.12, 7B16, 8B.19 and 8C.02 to .05, 8C.09, 9B.18</p> <p>Reference for Grade Crossing (Crossbuck) Sign and Supports changed from Section 8B.03 to 8B.03 and 8B.04</p>
1	Introduction	Table I-3	I-7 thru I-9	Added table to document revisions
1	Part 1	Section 1A.14	23	"LRT-light rail transit" added as a new item 27
1	Part 1	Table 1A-1	24	In the Row for "US Numbered Route", the "US" in the second column changed to "See Table 1A-2"
1	Part 1	Table 1A-2	25	In the Row for "State, county, or other non-US or non-Interstate numbered Route" the double asterisk in the second column is replaced with a single asterisk. And a double asterisk is added after "Number" in the fourth column
1	Part 1	Table 1A-2	25	A new Row is added between the rows for "Upper" and "Vehicle(s)" that has "US Numbered Route" in the first column, "US*" in the second column, a dash in the third column, and "Number*" in the fourth column.
1	Part 2	Section 2A.18	42	Paragraph 12, the reference to "Section 2D.31" changed to "Section 2D.12"
1	Part 2	Table 2B-1 (Sheet 2 of 4)	47	The Asterisk associated with the message to Table 9B-1 for minimum sign size for bicycle facilities shown next to signs R4-1, R4-2, R4-3, R4-7, R4-7a, R4-7b, R4-16,, and R5-6
1	Part 2	Table 2B-1 (Sheet 2 of 4)	47	The size of the Van Assessable (R7-8P) plaque changed to 12"x6" from 18"x9" in both of the Conventional Road columns.
1	Part 2	Table 2B-1 (Sheet 3 of 4)	48	In the Sign or Plaque column, the name of the R9-3 sign changed from "No Pedestrian Crossing (symbol)" changed to "No Pedestrians"
1	Part 2	Table 2B-1 (Sheet 3 of 4)	48	STOP HERE FOR FLASHING RED (R10-14b) sign added
1	Part 2	Figure 2B-27	96	STOP HERE ON FLASHING RED (R10-14b) sign added
1	Part 2	Table 2C-2 (Sheet 1 of 3)	105	In the Sign or Plaque column, the name of the W3-1,2,3 signs changed from "Advanced Traffic Control" to "Stop, Yield, or Signal Ahead" to be more descriptive and to be consistent with Table 9B-1
1	Part 2	Table 2C-2 (Sheet 1 of 3)	105	In the Sign or Plaque column, the name of the W4-1 sign changed from "Merge" to "Merging Traffic" to be more descriptive and to be consistent with Table 6F-1.
1	Part 2	Section 2C.65	136	Paragraph 3, the word "appurtances" changed to "appurtenances"
1	Part 2	Table 2D-1	139	In the Conventional Road column, the asterisk deleted from the sizes for the 2-lines and 3-line D3-2 signs.
1	Part 2	Table 2D-1	139	Size of the 4-line D3-2 sign changed to "Varies x 54" from "Varies x 60**".
1	Part 2	Table 2E-1 (Sheet 2 of 2)	189	<p>The minimum sizes of the following signs are changed:</p> <p>D1-1 and D1-1a changed to "Varies x 24" from "Varies x 30"</p> <p>D1-2 and D1-2a changed to "Varies x 42" from "Varies x 54"</p> <p>D1-3 and D1-3a changed to "Varies x 60" from "Varies x 72"</p> <p>D2-1 changed to "Varies x 24" from "Varies x 30"</p> <p>D2-2 changed to "Varies x 36" from "Varies x 54"</p> <p>D2-3 changed to "Varies x 48" from "Varies x 72"</p> <p>2-line D3-2 sign changed to "Varies x 36" from "Varies x42**"</p> <p>3-line D3-2 sign changed to "Varies x 48" from "Varies x66**"</p> <p>4-line D3-2 sign changed to "Varies x 66" from "Varies x84**"</p>

Table I-3. Revision Summary (Sheet 2 of 3)

Revision #	Part	Section/ Figure/ Table	Page No.	Revision
1	Part 2	Section 2F.10	244	Paragraph 1. the reference to "section 2E.30 and 2E.33" changed to "Section 2E.33 and 2E.36"
1	Part 2	Figure 2G-27	291	Note number 5 changed to 3
1	Part 2	Table 2I-1	302	The size of the D12-5 sign changed to "48 x 60" from "42 x 60" in the Conventional Road column, and "66 x 72" from "66 x 78" in the Freeway or Expressway column.
1	Part 2	Section 2I.02	304	Paragraph 19 at the end of the first line and beginning of the second the word "sign" changed to "plaque"
1	Part 2	Section 2I.02	304	Paragraph 19 the designation "D9-13a", "D9-13b", "D9-13c", and "D9-13d" changed to "D19-13aP", "D9-13bP", "D19-13cP", and "D19-13dP" respectively
1	Part 2	Figure 2I-8	312	In the note the reference to "Section 2I.08" changed to "Section 2I.10"
1	Part 2	Figure 2J-2	318	Replaced ½ Mile Advance Guide Sign with an Exit Direction Sign.
1	Part 2	Section 2J.06	320	Changed paragraph 01 so that limitations on specific service sign placement are based on Exit Direction sign location.
1	Part 2	Table 2M.1	335	The Radiator Water (RS-124) sign has been added to the "Services" portion of the table
1	Part 2	Figure 2M-7	342	Designation of the Radiator Water sign changed from RS-114 to RS-124
1	Part 3	Figure 3B-8 (Sheet 2 of 2)	363	The label for the "Theoretical gore" deleted
1	Part 3	Figure 3C-1	403	The "optional" label near the bottom of the figure that point to the edges lines along the approach roadway deleted
1	Part 3	Figure 3C-13	415	The note "Optional diagonal yellow crosshatch markings" added
1	Part 4	Table 4C-3	446	In first column "Major" street changed to "Minor" street, and in second column "Minor" street changed to "Major" street
1	Part 4	Table 4C-4	446	In first column "Major" street changed to "Minor" street, and in second column "Minor" street changed to "Major" street
1	Part 4	Table 4C-5	448	In first column "Major" street changed to "Minor" street, and in second column "Minor" street changed to "Major" street
1	Part 4	Table 4C-6	448	In first column "Major" street changed to "Minor" street, and in second column "Minor" street changed to "Major" street
1	Part 4	Section 4E.11	516	Paragraph 15, the reference to "section 4D.13" changed to "Section 4E.13"
1	Part 4	Figure 4F-3	521	In step 5 the phrase "Pedestrian Clearance Interval " changed to "Pedestrian Change Interval"
1	Part 4	Section 4F.03	521 & 522	Paragraphs 2 and 3 the phrase "pedestrian clearance interval" changed to "pedestrian change interval"
1	Part 6	Section 6E.06	581 & 583	Paragraphs 2 to 10 added back in as INFORMATION ONLY
1	Part 6	Table 6F-1 (Sheet 1 of 3)	588	Name of the sign R3-7 changed from "Mandatory Movement (text) to "Right (Left) lane Must Turn Right (Left)"
1	Part 6	Table 6F-1 (Sheet 1 of 3)	588	Name of the W1-8 sign changed from "Chevron" to "Chevron alignment"
1	Part 6	Table 6F-1 (Sheet 3 of 3)	590	G20-5aP "Work Zone" plaque deleted and XG20-5P "Worksite" plaque added

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

Revision #	Part	Section/ Figure/ Table	Page No.	Revision
1	Part 6	Table 6F-1 (Sheet 3 of 3)	590	Name of the signs "XR2-6", "XR2-6a", and "XR2-6b" changed to "XW2-6", "XW2-6a", and "XW2-6b"
1	Part 6	Figure 6F-3 (Sheet 1 of 2)	594	G20-5aP "Work Zone" plaque deleted and XG20-5P "Worksite" plaque added
1	Part 6	Section 6F.12	596	Paragraph 1 changed plaque from "Work Zone" G20-5aP to "Worksite" XG20-5P. Paragraph 6 name of the signs "XR2-6", "XR2-6a", and "XR2-6b" changed to "XW2-6", "XW2-6a", and "XW2-6b"
1	Part 6	Figure 6F-4 (Sheet 3 of 3)	600	Image of W20-5 sign corrected
1	Part 7	Table 7B-1	755	Size for "Watch for School Bus" sign (S3-Y3) changed for Conventional Road from 30"x30" to 36" x 36", and for minimum from 36" x 36" to 30" x 30"
1	Part 9	Table 9B-1 (Sheet 1 of 2)	817	In the sign or Plaque column, the name of of the W1-1,2,3,4,5 changed from "Turn and Curve Warning" to "Horizontal Alignment"
1	Part 9	Table 9B-1 (Sheet 2 of 2)	818	In the sign or Plaque column, the numbers of the digits for the D10-1a, D10-2a, and D10-3a signs changed to 2, 3, and 4 respectively
1	Appendix	Table A2-4	A2-1	The "010" in the mph column changed to "10". The conversion for 65 mph to 110 km/h deleted and a conversion for 70 mph to 115 km/h added.

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- 256. Wayside Horn System**--- a stationary horn (or 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.
- 257. Worker**—a person on foot whose duties place him or her within the right-of-way of a street, highway, or pathway, such as street, highway, or pathway construction and maintenance forces, survey crews, utility crews, responders to incidents within the street, highway, or pathway 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 of a street, highway, or pathway.
- 258. Worksite** ---a location or area upon which (1) a public purpose construction or maintenance activity; or (2) a private purpose construction or maintenance activity that is authorized by a governmental agency; is being performed on a highway. Worksite includes the lanes of a highway leading up to the area upon which an activity described in (1) or (2) is being performed, beginning at the point where appropriate signs directing vehicles are posted.
- 259. 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.
- 260. Yellow Change Interval**—the first interval following the green or flashing arrow interval during which the steady yellow signal indication is displayed.
- 261. 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 1A.14 Meanings of Acronyms and Abbreviations in this Manual

Standard:

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

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. AADT—annual average daily traffic 2. AASHTO —American Association of State Highway and Transportation Officials 3. ADA—Americans with Disabilities Act 4. ADAAG —Americans with Disabilities Accessibility Guidelines 5. ADT— average daily traffic 6. AFAD—Automated Flagger Assistance Device 7. ANSI—American National Standards Institute 8. CFR— Code of Federal Regulations 9. CMS—changeable message sign 10. DBA—A-weighted decibels 11. EPA—Environmental Protection Agency 12. ETC—electronic toll collection 13. EV—electric vehicle 14. FHWA—Federal Highway Administration 15. FRA—Federal Railroad Administration 16. FTA—Federal Transit Administration 17. HOT—high occupancy tolls 18. HOTM—FHWA’s Office of Transportation Management 19. HOTO—FHWA’s Office of Transportation Operations 20. HOV—high-occupancy vehicle 21. ILEV—inherently low emission vehicle 22. ISEA—International Safety Equipment Association | <ul style="list-style-type: none"> 23. ITE—Institute of Transportation Engineers 24. ITS—intelligent transportation systems 25. LED—light emitting diode 26. LP—liquid petroleum 27. LRT— light rail transit 28. MPH or mph—miles per hour 29. MUTCD—Manual on Uniform Traffic Control Devices 30. NCHRP—National Cooperative Highway Research Program 31. ORT—open-road tolling 32. PCMS—portable changeable message sign 33. PRT—perception-response time 34. RPM—raised pavement marker 35. RRPM—raised retroreflective pavement marker 36. RV—recreational vehicle 37. TDD—telecommunication devices for the deaf 38. TRB—Transportation Research Board 39. TTC—temporary traffic control 40. U.S. United States 41. U.S.C. United States Code 42. USDOT—United States Department of Transportation 43. UVC—Uniform Vehicle Code 44. VPH or vph—vehicles per hour |
|---|---|

Section 1A.15 Abbreviations Used on Traffic Control Devices

Standard:

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

02 When the word messages shown in Table 1A-2 need to be abbreviated on a portable changeable message sign, the abbreviations shown in Table 1A-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 1A-2 that also show a prompt word should not be used on a portable changeable message sign unless the prompt word shown in Table 1A-2 either precedes or follows the abbreviation, as applicable.

Standard:

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

Guidance:

05 If multiple abbreviations are permitted in Table 1A-1 or 1A-2, the same abbreviation should be used throughout a single jurisdiction.

06 Except as otherwise provided in Table 1A-1 or 1A-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 1A-1. Acceptable Abbreviations

Word Message	Standard Abbreviation
Afternoon / Evening	PM
Alternate	ALT
AM Radio	AM
Avenue	AVE, AV
Bicycle	BIKE
Boulevard	BLVD*
Bridge	(See Table 1A-2)
CB Radio	CB
Center (as part of a place name)	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	FRWY, FWY*
Friday	FRI
Hazardous Material	HAZMAT
High Occupancy Vehicle	HOV

Word Message	Standard Abbreviation
Highway	HWY*
Hospital	HOSP
Hour(s)	HR, HRS
Information	INFO
Inherently Low Emission Vehicle	ILEV
International	INTL
Interstate	(See Table 1A-2)
Junction / Intersection	JCT
Lane	(See Table 1A-2)
Liquid Propane Gas	LP-GAS
Maximum	MAX
Mile(s)	MI
Miles Per Hour	MPH
Minimum	MIN
Minute(s)	MIN
Monday	MON
Morning / Late Night	AM
Mount	MT
Mountain	MTN
National	NATL
North	N
Parkway	PKWY*
Pedestrian	PED
Place	PL*

Word Message	Standard Abbreviation
Pounds	LBS
Road	RD*
Saint	ST
Saturday	SAT
South	S
State, county, or other non-US or non-Interstate numbered route	(See Table 1A-2)
Street	ST*
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Terrace	TER*
Thursday	THURS
Thruway	THWY*
Tons of Weight	T
Trail	TR*
Tuesday	TUES
Turnpike	TPK*
Two-Way Intersection	2-WAY
US Numbered Route	(See Table 1A-2)
Wednesday	WED
West	W

*This abbreviation shall not be used for any application other than the name of a roadway.

**Table 1A-2. Abbreviations That Shall be Used Only
on Portable Changeable Message Signs**

Word Message	Standard Abbreviation	Prompt Word That Should Precede the Abbreviation	Prompt Word That Should Follow the Abbreviation
Access	ACCS	—	Road
Ahead	AHD	Fog	—
Blocked	BLKD	Lane	—
Bridge	BR*	[Name]	—
Cannot	CANT	—	—
Center	CNTR	—	Lane
Chemical	CHEM	—	Spill
Condition	COND	Traffic	—
Congested	CONG	Traffic	—
Construction	CONST	—	Ahead
Crossing	XING	—	—
Do Not	DONT	—	—
Downtown	DWNTN	—	Traffic
Eastbound	E-BND	—	—
Emergency	EMER	—	—
Entrance, Enter	ENT	—	—
Exit	EX	Next	—
Express	EXP	—	Lane
Frontage	FRNTG	—	Road
Hazardous	HAZ	—	Driving
Highway-Rail Grade Crossing	RR XING	—	—
Interstate	I-*	—	[Number]
It Is	ITS	—	—
Lane	LN	[Roadway Name]*, Right, Left, Center	—
Left	LFT	—	—
Local	LOC	—	Traffic
Lower	LWR	—	Level
Maintenance	MAINT	—	—
Major	MAJ	—	Accident
Minor	MNR	—	Accident
Normal	NORM	—	—
Northbound	N-BND	—	—
Oversized	OVRSZ	—	Load
Parking	PKING	—	—
Pavement	PVMT	Wet	—
Prepare	PREP	—	To Stop
Quality	QLTY	Air	—
Right	RT	Keep, Next	—
Right	RT	—	Lane
Roadwork	RDWK	—	Ahead, [Distance]
Route	RT, RTE	Best	—
Service	SERV	—	—
Shoulder	SHLDR	—	—
Slippery	SLIP	—	—
Southbound	S-BND	—	—
Speed	SPD	—	—
State, county, or other non-US or non-Interstate numbered route	[Route Abbreviation determined by highway agency]*	—	[Number]**
Tires With Lugs	LUGS	—	—
Traffic	TRAF	—	—
Travelers	TRVLRS	—	—
Two-Wheeled Vehicles	CYCLES	—	—
Upper	UPR	—	Level
US Numbered Route	US	—	[Number]**
Vehicle(s)	VEH, VEHS	—	—
Warning	WARN	—	—
Westbound	W-BND	—	—
Will Not	WONT	—	—

* This abbreviation, when accompanied by the prompt word, may be used on traffic control devices other than portable changeable message signs.

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

Table 1A-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

Support:

- 07 The clear zone is the total roadside border area, starting at the edge of the traveled way, available for use by errant vehicles. The width of the clear zone is dependent upon traffic volumes, speeds, and roadside geometry. Additional information can be found in AASHTO's "Roadside Design Guide" (see Section 1A.11).

Guidance:

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

Support:

- 09 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.

Guidance:

- 10 *Because regulatory and warning information is more critical to the road user than guidance information, regulatory and warning signing whose location is critical should be displayed rather than guide signing in cases where conflicts occur. Community wayfinding and acknowledgment guide signs should have a lower priority as to placement than other guide signs. Information of a less critical nature should be moved to less critical locations or omitted.*

Option:

- 11 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:

- 12 *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).*

Section 2A.17 Overhead Sign Installations**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.*

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.

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 exit ramps.

- 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.18 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.**

Support:

- 02 The mounting height requirements for object markers are provided in Chapter 2C.
- 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 AASHTO's "Roadside Design Guide" (see Section 1A.11).

Standard:

- 04 **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 in rural areas shall be 5 feet (see Figure 2A-2).**
- 05 **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 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 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.

Standard:

- 07 **The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks 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 6D.02), the secondary sign shall not project more than 4 inches into the pedestrian facility.**

Option:

- 09 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:

- 10 **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.**
- 11 **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:

- 12 A route sign assembly consisting of a route sign and auxiliary signs (see Section 2D.12) may be treated as a single sign for the purposes of this Section.
- 13 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:

- 14 **Overhead signs shall provide a vertical clearance of not less than 17 feet to the sign, light fixture, or sign bridge 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.**

Option:

- 15 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.

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

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Do Not Pass	R4-1	2B.28	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Pass With Care	R4-2	2B.29	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Slower Traffic Keep Right	R4-3	2B.30	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Trucks Use Right Lane	R4-5	2B.31	24 x 30	24 x 30	36 x 48	48 x 60	—	36 x 48
Keep Right	R4-7,7a,7b	2B.32	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Narrow Keep Right	R4-7c	2B.32	18 x 30	18 x 30	—	—	—	—
Keep Left	R4-8,8a,8b	2B.32	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24	36 x 48
Narrow Keep Left	R4-8c	2B.32	18 x 30	18 x 30	—	—	—	—
Stay in Lane	R4-9	2B.33	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24	36 x 48
Runaway Vehicles Only	R4-10	2B.34	48 x 48	48 x 48	—	—	—	—
Slow Vehicles with XX or More Following Vehicles Must Use Turn-Out	R4-12	2B.35	42 x 24	42 x 24	—	—	—	—
Slow Vehicles Must Use Turn-Out Ahead	R4-13	2B.35	42 x 24	42 x 24	—	—	—	—
Slow Vehicles Must Turn Out	R4-14	2B.35	30 x 42	30 x 42	—	—	—	—
Keep Right Except to Pass	R4-16	2B.30	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Do Not Drive on Shoulder	R4-17	2B.36	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24	36 x 48
Do Not Pass on Shoulder	R4-18	2B.36	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24	36 x 48
Do Not Enter	R5-1	2B.37	30 x 30*	36 x 36	36 x 36	48 x 48	—	36 x 36
Wrong Way	R5-1a	2B.38	36 x 24*	42 x 30	36 x 24*	42 x 30	30 x 18*	42 x 30
No Trucks	R5-2,2a	2B.39	24 x 24	24 x 24	30 x 30	36 x 36	—	36 x 36
No Motor Vehicles	R5-3	2B.39	24 x 24	24 x 24	—	—	24 x 24	—
No Commercial Vehicles	R5-4	2B.39	24 x 30	24 x 30	36 x 48	36 x 48	—	—
No Vehicles with Lugs	R5-5	2B.39	24 x 30	24 x 30	36 x 48	48 x 60	—	—
No Bicycles	R5-6	2B.39	24 x 24	24 x 24	30 x 30	36 x 36	24 x 24*	48 x 48
No Non-Motorized Traffic	R5-7	2B.39	30 x 24	30 x 24	42 x 24	48 x 30	—	42 x 24
No Motor-Driven Cycles	R5-8	2B.39	30 x 24	30 x 24	42 x 24	48 x 30	—	42 x 24
No Pedestrians, Bicycles, Motor-Driven Cycles	R5-10a	2B.39	30 x 36	30 x 36	—	—	—	—
No Pedestrians or Bicycles	R5-10b	2B.39	30 x 18	30 x 18	—	—	—	—
No Pedestrians	R5-10c	2B.39	24 x 12	24 x 12	—	—	—	—
Authorized Vehicles Only	R5-11	2B.39	30 x 24	30 x 24	—	—	—	—
One Way	R6-1	2B.40	36 x 12*	54 x 18	54 x 18	54 x 18	—	54 x 18
One Way	R6-2	2B.40	24 x 30*	30 x 36	36 x 48	48 x 60	18 x 24*	36 x 48
Divided Highway Crossing	R6-3,3a	2B.42	30 x 24	30 x 24	36 x 30	—	—	36 x 30
Roundabout Directional (2 chevrons)	R6-4	2B.43	30 x 24	30 x 24	—	—	—	—
Roundabout Directional (3 chevrons)	R6-4a	2B.43	48 x 24	48 x 24	—	—	—	—
Roundabout Directional (4 chevrons)	R6-4b	2B.43	60 x 24	60 x 24	—	—	—	—
Roundabout Circulation (plaque)	R6-5P	2B.44	30 x 30	30 x 30	—	—	—	—
BEGIN ONE WAY	R6-6	2B.40	24 x 30	30 x 36	—	—	—	—
END ONE WAY	R6-7	2B.40	24 x 30	30 x 36	—	—	—	—
Parking Restrictions	R7-1, 2,2a,3,4,5,6,7,8, 21,21a,22,23, 23a,107,108	2B.46	12 x 18	12 x 18	—	—	—	—
Van Accessible (plaque)	R7-8P	2B.46	12 x 6	12 x 6	—	—	—	—
Fee Station	R7-20	2B.46	24 x 18	24 x 18	—	—	—	—
No Parking (with transit logo)	R7-107a	2B.46	12 x 30	12 x 30	—	—	—	—
No Parking/Restricted Parking (combined sign)	R7-200	2B.46	24 x 18	24 x 18	—	—	—	—
No Parking/Restricted Parking (combined sign)	R7-200a	2B.46	12 x 30	12 x 30	—	—	—	—
Tow Away Zone (plaque)	R7-201 P,201aP	2B.46	12 x 6	12 x 6	—	—	—	—
This Side of Sign (plaque)	R7-202P	2B.46	12 x 6	12 x 6	—	—	—	—

Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 3 of 4)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Emergency Snow Route	R7-203	2B.46	18 x 24	18 x 24	—	—	—	24 x 30
No Parking on Pavement	R8-1	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	—	36 x 48
No Parking Except on Shoulder	R8-2	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	—	36 x 48
No Parking (symbol)	R8-3	2B.46	24 x 24*	30 x 30	36 x 36	48 x 48	12 x 12*	36 x 36
No Parking	R8-3a	2B.46	24 x 30	24 x 30	36 x 36	48 x 48	18 x 24	36 x 36
Except Sundays and Holidays (plaque)	R8-3bP	2B.46	24 x 18	24 x 18	—	—	12 x 9	30 x 24
On Pavement (plaque)	R8-3cP	2B.46	24 x 18	24 x 18	—	—	12 x 9	30 x 24
On Bridge (plaque)	R8-3dP	2B.46	24 x 18	24 x 18	—	—	12 x 9	30 x 24
On Tracks (plaque)	R8-3eP	2B.46	12 x 9	12 x 9	—	—	—	30 x 24
Except on Shoulder (plaque)	R8-3fP	2B.46	24 x 18	24 x 18	—	—	12 x 9	30 x 24
Loading Zone (plaque)	R8-3gP	2B.46	24 x 18	24 x 18	—	—	12 x 9	30 x 24
Times of Day (plaque)	R8-3hP	2B.46	24 x 18	24 x 18	—	—	12 x 9	30 x 24
Emergency Parking Only	R8-4	2B.49	30 x 24	30 x 24	30 x 24	48 x 36	—	48 x 36
No Stopping on Pavement	R8-5	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	—	36 x 48
No Stopping Except on Shoulder	R8-6	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	—	36 x 48
Emergency Stopping Only	R8-7	2B.49	30 x 24	30 x 24	48 x 36	48 x 36	—	48 x 36
Walk on Left Facing Traffic	R9-1	2B.50	18 x 24	18 x 24	—	—	—	—
Cross Only at Crosswalks	R9-2	2B.51	12 x 18	12 x 18	—	—	—	—
No Pedestrians	R9-3	2B.51	18 x 18	18 x 18	24 x 24	30 x 30	—	30 x 30
No Pedestrian Crossing	R9-3a	2B.51	12 x 18	12 x 18	—	—	—	—
Use Crosswalk (plaque)	R9-3bP	2B.51	18 x 12	18 x 12	—	—	—	—
No Hitchhiking (symbol)	R9-4	2B.50	18 x 18	18 x 18	—	—	—	24 x 24
No Hitchhiking	R9-4a	2B.50	18 x 24	18 x 24	—	—	12 x 18	—
No Skaters	R9-13	2B.39	18 x 18	18 x 18	24 x 24	30 x 30	—	30 x 30
No Equestrians	R9-14	2B.39	18 x 18	18 x 18	24 x 24	30 x 30	—	30 x 30
Cross Only On Green	R10-1	2B.52	12 x 18	12 x 18	—	—	—	—
Pedestrian Signs and Plaques	R10-2, 3,3b,3c,3d,4	2B.52	9 x 12	9 x 12	—	—	—	—
Pedestrian Signs	R10-3a,3e,3f, 3g,3h,3i,4a	2B.52	9 x 15	9 x 15	—	—	—	—
Left on Green Arrow Only	R10-5	2B.53	30 x 36	30 x 36	48 x 60	—	24 x 30	48 x 60
Stop Here on Red	R10-6	2B.53	24 x 36	24 x 36	—	—	—	36 x 48
Stop Here on Red	R10-6a	2B.53	24 x 30	24 x 30	—	—	—	36 x 42
Do Not Block Intersection	R10-7	2B.53	24 x 30	24 x 30	—	—	—	—
Use Lane with Green Arrow	R10-8	2B.53	36 x 42	36 x 42	36 x 42	—	—	60 x 72
Left (Right) Turn Signal	R10-10	2B.53	30 x 36	30 x 36	—	—	—	—
No Turn on Red	R10-11	2B.54	24 x 30*	36 x 48	—	—	—	36 x 48
No Turn on Red	R10-11a	2B.54	30 x 36*	36 x 48	—	—	—	—
No Turn on Red	R10-11b	2B.54	36 x 36	36 x 36	—	—	—	—
No Turn on Red Except From Right Lane	R10-11c	2B.54	30 x 42	30 x 42	—	—	—	—
No Turn on Red From This Lane	R10-11d	2B.54	30 x 42	30 x 42	—	—	—	—
Left Turn Yield on Green	R10-12	2B.53	30 x 36	30 x 36	—	—	—	—
Emergency Signal	R10-13	2B.53	42 x 30	42 x 30	—	—	—	—
Emergency Signal - Stop on Flashing Red	R10-14	2B.53	36 x 42	36 x 42	—	—	—	—
Emergency Signal - Stop on Flashing Red (overhead)	R10-14a	2B.53	60 x 24	60 x 24	—	—	—	—
Stop Here on Flashing Red	R10-14b	2B.53	24 x 36	24 x 36	—	—	—	36 x 48
Turning Vehicles Yield to Peds	R10-15	2B.53	30 x 30	30 x 30	—	—	—	—
U-Turn Yield to Right Turn	R10-16	2B.53	30 x 36	30 x 36	—	—	—	—
Right on Red Arrow After Stop	R10-17a	2B.54	36 x 48	36 x 48	—	—	—	—
Traffic Laws Photo Enforced	R10-18	2B.55	36 x 24	36 x 24	48 x 30	54 x 36	—	54 x 36
Photo Enforced (symbol plaque)	R10-19P	2B.55	24 x 12	24 x 12	36 x 18	48 x 24	—	48 x 24
Photo Enforced (plaque)	R10-19aP	2B.55	24 x 18	24 x 18	36 x 30	48 x 36	—	48 x 36
MON—FRI (and times) (3 l i n e s) (p l a q u e)	R10-20aP	2B.53	24 x 24	24 x 24	—	—	—	—

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

Option:

- 01 To supplement traffic signal control, Traffic Signal signs R10-5 through R10-30 may be used to regulate road users.
- 02 Traffic Signal signs (see Figure 2B-27) may be installed at certain locations to clarify signal control. Among the legends that may be used for this purpose are LEFT ON GREEN ARROW ONLY (R10-5), LEFT ON ARROW ONLY (R10-Y5a), STOP HERE ON RED (R10-6 or R10-6a) for observance of stop lines, DO NOT BLOCK INTERSECTION (R10-7) for avoidance of traffic obstructions, USE LANE(S) WITH GREEN ARROW (R10-8) for obedience to lane-use control signals (see Chapter 4M), LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12), and LEFT TURN, WAIT DELAYED SIGNAL (R10-Y14), YIELD ON FLASHING RED ARROW AFTER STOP (R10-27).

Guidance:

- 03 *If used, the LEFT ON GREEN ARROW ONLY (R10-5) sign, the LEFT ON ARROW ONLY (R10-Y5a) sign, the LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign, or the LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign should be located adjacent to the left-turn signal face.*

Option:

- 04 If needed for additional emphasis, an additional LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign with an AT SIGNAL (R10-31P) supplemental plaque (see Figure 2B-27) may be installed in advance of the intersection.
- 05 In situations where traffic control signals are coordinated for progressive timing, the Traffic Signal Speed (I1-1) sign may be used (see Section 2H.03).

Standard:

- 06 **The CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign (see Figure 2B-27) shall only be used in conjunction with pedestrian hybrid beacons (see Section 4F.02).**
- 07 **The EMERGENCY SIGNAL (R10-13) sign (see Figure 2B-27) shall be used in conjunction with emergency-vehicle traffic control signals (see Section 4G.02).**
- 08 **The EMERGENCY SIGNAL—STOP ON FLASHING RED (R10-14 or R10-14a) sign (see Figure 2B-27) shall be used in conjunction with emergency-vehicle hybrid beacons (see Section 4G.04).**

Option:

- 09 In order to remind drivers who are making turns to yield to pedestrians, a Turning Vehicles Yield to Pedestrians (R10-15) sign (see Figure 2B-27) may be used.
- 10 A U-TURN YIELD TO RIGHT TURN (R10-16) sign (see Figure 2B-27) may be installed near the left-turn signal face if U-turns are allowed on a protected left-turn movement on an approach from which a right-turn GREEN ARROW signal indication is simultaneously being displayed to drivers making a right turn from the conflicting approach to their left.

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

Standard:

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

Guidance:

- 02 *If used, the No Turn on Red sign should be installed near the appropriate signal head.*
- 03 *A No Turn on Red sign should be considered when an engineering study finds that one or more of the following conditions exists:*
- A. *Inadequate sight distance to vehicles approaching from the left (or right, if applicable);*
 - B. *Geometrics or operational characteristics of the intersection that might result in unexpected conflicts;*
 - C. *An exclusive pedestrian phase;*
 - D. *An unacceptable number of pedestrian conflicts with right-turn-on-red maneuvers, especially involving children, older pedestrians, or persons with disabilities;*
 - E. *More than three right-turn-on-red accidents reported in a 12-month period for the particular approach; or*
 - F. *The skew angle of the intersecting roadways creates difficulty for drivers to see traffic approaching from their left.*

Figure 2B-27. Traffic Signal Signs and Plaques

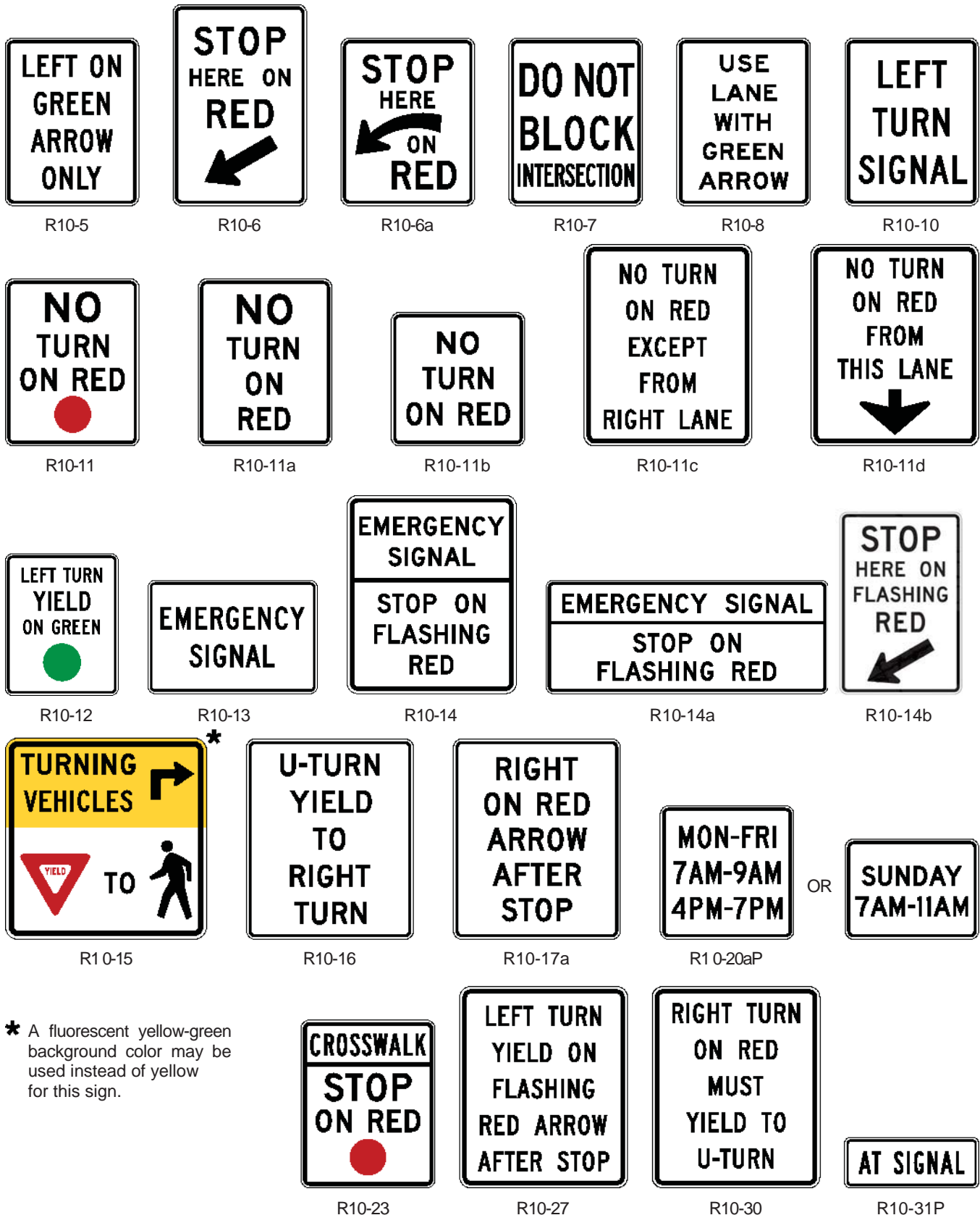


Table 2C-2. Warning Sign and Plaque Sizes (Sheet 1 of 3)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Horizontal Alignment	W1-1,2,3,4,5	2C.07	30 x 30*	36 x 36	36 x 36	36 x 36	—	48 x 48
Combination Horizontal Alignment/Advisory Speed	W1-1a,2a	2C.10	36 x 36	36 x 36	48 x 48	48 x 48	—	48 x 48
One-Direction Large Arrow	W1-6	2C.12	48 x 24	48 x 24	60 x 30	60 x 30	—	60 x 30
Two-Direction Large Arrow	W1-7	2C.47	48 x 24	48 x 24	—	—	—	60 x 30
Chevron Alignment	W1-8	2C.09	18 x 24	18 x 24	30 x 36	36 x 48	—	24 x 30
Combination Horizontal Alignment/Intersection	W1-10,10a,10b,10c,10d,10e	2C.11	36 x 36	36 x 36	36 x 36	48 x 48	—	—
Hairpin Curve	W1-11	2C.07	30 x 30	30 x 30	36 x 36	48 x 48	—	48 x 48
Truck Rollover	W1-13	2C.13	36 x 36	36 x 36	36 x 36	48 x 48	—	36 x 36
270-degree Loop	W1-15	2C.07	30 x 30	30 x 30	36 x 36	48 x 48	—	48 x 48
Intersection Warning	W2-1,2,3,4,5,6,7,8	2C.46	30 x 30	30 x 30	36 x 36	—	24 x 24	48 x 48
Stop, Yield, or Signal Ahead	W3-1,2,3	2C.36	30 x 30	30 x 30	48 x 48	48 x 48	30 x 30	—
Be Prepared to Stop	W3-4	2C.36	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	—
Reduced Speed Limit Ahead	W3-5	2C.38	36 x 36	36 x 36	48 x 48	48 x 48	—	—
XX MPH Speed Zone Ahead	W3-5a	2C.38	36 x 36	36 x 36	48 x 48	48 x 48	—	—
Draw Bridge	W3-6	2C.39	36 x 36	36 x 36	48 x 48	—	—	60 x 60
Ramp Meter Ahead	W3-7	2C.37	36 x 36	36 x 36	—	—	—	—
Ramp Metered When Flashing	W3-8	2C.37	36 x 36	36 x 36	—	—	—	—
Merging Traffic	W4-1	2C.40	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30*	—
Lane Ends	W4-2	2C.42	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30*	—
Added Lane	W4-3	2C.41	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30*	—
Cross Traffic Does Not Stop (plaque)	W4-4P	2C.59	24 x 12	24 x 12	36 x 18	—	—	48 x 24
Traffic From Left (Right) Does Not Stop (plaque)	W4-4aP	2C.59	24 x 12	24 x 12	36 x 18	—	—	48 x 24
Oncoming Traffic Does Not Stop (plaque)	W4-4bP	2C.59	24 x 12	24 x 12	36 x 18	—	—	48 x 24
Entering Roadway Merge	W4-5	2C.40	36 x 36	36 x 36	48 x 48	—	—	—
No Merge Area (plaque)	W4-5P	2C.40	18 x 24	18 x 24	24 x 30	—	—	—
Entering Roadway Added Lane	W4-6	2C.41	36 x 36	36 x 36	48 x 48	—	—	—
Road Narrows	W5-1	2C.19	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30*	—
Narrow Bridge	W5-2	2C.20	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30*	—
One Lane Bridge	W5-3	2C.21	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30*	—
Divided Highway	W6-1	2C.22	36 x 36	36 x 36	48 x 48	48 x 48	—	—
Divided Highway Ends	W6-2	2C.23	36 x 36	36 x 36	48 x 48	48 x 48	—	—
Two-Way Traffic	W6-3	2C.44	36 x 36	36 x 36	48 x 48	48 x 48	—	—
Hill	W7-1	2C.16	30 x 30*	36 x 36	36 x 36	36 x 36	24 x 24*	48 x 48
Hill with Grade	W7-1a	2C.16	30 x 30*	36 x 36	36 x 36	36 x 36	24 x 24*	48 x 48
Use Low Gear (plaque)	W7-2P	2C.57	24 x 18	24 x 18	—	—	—	—
Trucks Use Lower Gear (plaque)	W7-2bP	2C.57	24 x 18	24 x 18	—	—	—	—
XX% Grade (plaque)	W7-3P	2C.57	24 x 18	24 x 18	—	—	—	—
Next XX Miles (plaque)	W7-3aP	2C.55	24 x 18	24 x 18	—	—	—	—
XX% Grade, XX Miles (plaque)	W7-3bP	2C.57	24 x 18	24 x 18	—	—	—	—
Runaway Truck Ramp XX Miles	W7-4	2C.17	78 x 48	78 x 48	78 x 48	78 x 48	—	—
Runaway Truck Ramp (with arrow)	W7-4b	2C.17	78 x 60	78 x 60	78 x 60	78 x 60	—	—
Truck Escape Ramp	W7-4c	2C.17	78 x 60	78 x 60	78 x 60	78 x 60	—	—
Sand, Gravel, Paved (plaques)	W7-4dP, 4eP, 4fP	2C.17	24 x 12	24 x 12	24 x 12	24 x 12	—	—
Hill Blocks View	W7-6	2C.18	30 x 30*	36 x 36	36 x 36	—	—	48 x 48
Bump or Dip	W8-1,2	2C.28	30 x 30*	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48

Table 2C-2. Warning Sign and Plaque Sizes (Sheet 2 of 3)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Pavement Ends	W8-3	2C.30	36 x 36	36 x 36	48 x 48	—	30 x 30*	—
Soft Shoulder	W8-4	2C.31	36 x 36	36 x 36	48 x 48	48 x 48	24 x 24*	48 x 48
Slippery When Wet	W8-5	2C.32	30 x 30*	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Road Condition (plaques)	W8-5P,5bP,5cP	2C.32	24 x 18	24 x 18	30 x 24	36 x 30	—	36 x 30
Ice	W8-5aP	2C.32	24 x 12	24 x 12	30 x 18	30 x 18	—	—
Truck Crossing	W8-6	2C.49	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Loose Gravel	W8-7	2C.32	36 x 36	36 x 36	36 x 36	—	24 x 24*	48 x 48
Rough Road	W8-8	2C.32	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Low Shoulder	W8-9	2C.31	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Uneven Lanes	W8-11	2C.32	36 x 36	36 x 36	36 x 36	48 x 48	—	48 x 48
No Center Line	W8-12	2C.34	36 x 36	36 x 36	36 x 36	48 x 48	—	—
Bridge Ices Before Road	W8-13	2C.32	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Fallen Rocks	W8-14	2C.32	30 x 30*	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Grooved Pavement	W8-15	2C.33	30 x 30*	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Motorcycle (plaque)	W8-15P	2C.33	24 x 18	24 x 18	30 x 24	36 x 30	—	36 x 30
Metal Bridge Deck	W8-16	2C.33	30 x 30*	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Shoulder Drop Off (symbol)	W8-17	2C.31	30 x 30*	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Shoulder Drop-Off (plaque)	W8-17P	2C.31	24 x 18	24 x 18	30 x 24	36 x 30	—	36 x 30
Road May Flood	W8-18	2C.35	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Flood Gauge	W8-19	2C.35	12 x 72	12 x 72	—	—	—	—
Gusty Winds Area	W8-21	2C.35	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Fog Area	W8-22	2C.35	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
No Shoulder	W8-23	2C.31	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Shoulder Ends	W8-25	2C.31	30 x 30*	36 x 36	36 x 36	48 x 48	24 x 24*	48 x 48
Left (Right) Lane Ends	W9-1	2C.42	36 x 36	36 x 36	36 x 36	48 x 48	30 x 30*	48 x 48
Lane Ends Merge Left (Right)	W9-2	2C.42	36 x 36	36 x 36	36 x 36	48 x 48	30 x 30*	48 x 48
Right (Left) Lane Exit Only Ahead	W9-7	2C.43	132 x 72	132 x 72	132 x 72	132 x 72	—	—
Bicycle	W11-1	2C.49	30 x 30	30 x 30	36 x 36	—	24 x 24*	48 x 48
Pedestrian	W11-2	2C.50	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Large Animals	W11-3,4,16,17,18,19,20,21,22	2C.50	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Farm Vehicle	W11-5,5a	2C.49	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Snowmobile	W11-6	2C.50	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Equestrian	W11-7	2C.50	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Emergency Vehicle	W11-8	2C.49	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Handicapped	W11-9	2C.50	30 x 30*	36 x 36	36 x 36	—	—	48 x 48
Truck	W11-10	2C.49	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Golf Cart	W11-11	2C.49	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Emergency Signal Ahead (plaque)	W11-12P	2C.49	36 x 30	36 x 30	36 x 30	—	—	—
Horse-Drawn Vehicle	W11-14	2C.49	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Bicycle / Pedestrian	W11-15	2C.49	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Trail Crossing	W11-15a	2C.49	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48
Trail X-ing (plaque)	W11-15P	2C.49	24 x 18	24 x 18	30 x 24	—	—	36 x 30
Double Arrow	W12-1	2C.25	30 x 30*	36 x 36	36 x 36	—	—	—
Low Clearance (with arrows)	W12-2	2C.27	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30*	—
Low Clearance	W12-2a	2C.27	78 x 24	78 x 24	—	—	—	—
Advisory Speed (plaque)	W13-1P	2C.08	18 x 18	18 x 18	24 x 24	30 x 30	—	30 x 30
Advisory Exit or Ramp Speed	W13-2,3	2C.14	24 x 30	24 x 30	36 x 48	48 x 60	—	48 x 60
Combination Horizontal Alignment/Advisory Exit or Ramp Speed	W13-6,7	2C.15	24 x 42	24 x 42	36 x 60	36 x 60	—	48 x 84
Dead End, No Outlet	W14-1,2	2C.26	30 x 30*	36 x 36	36 x 36	—	24 x 24*	48 x 48

of the near edge of the traveled way, should be 4 feet.

06 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.

07 Object markers should not present a vertical or horizontal clearance obstacle for pedestrians.
Option:

08 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:

09 Section 9B.26 contains information regarding the use of object markers on shared-use paths.

Section 2C.64 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.10).**

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.32 and 2C.25) directing traffic to one or both sides of the obstruction may be used instead of the object marker.

Section 2C.65 Object Markers for Obstructions Adjacent to the Roadway

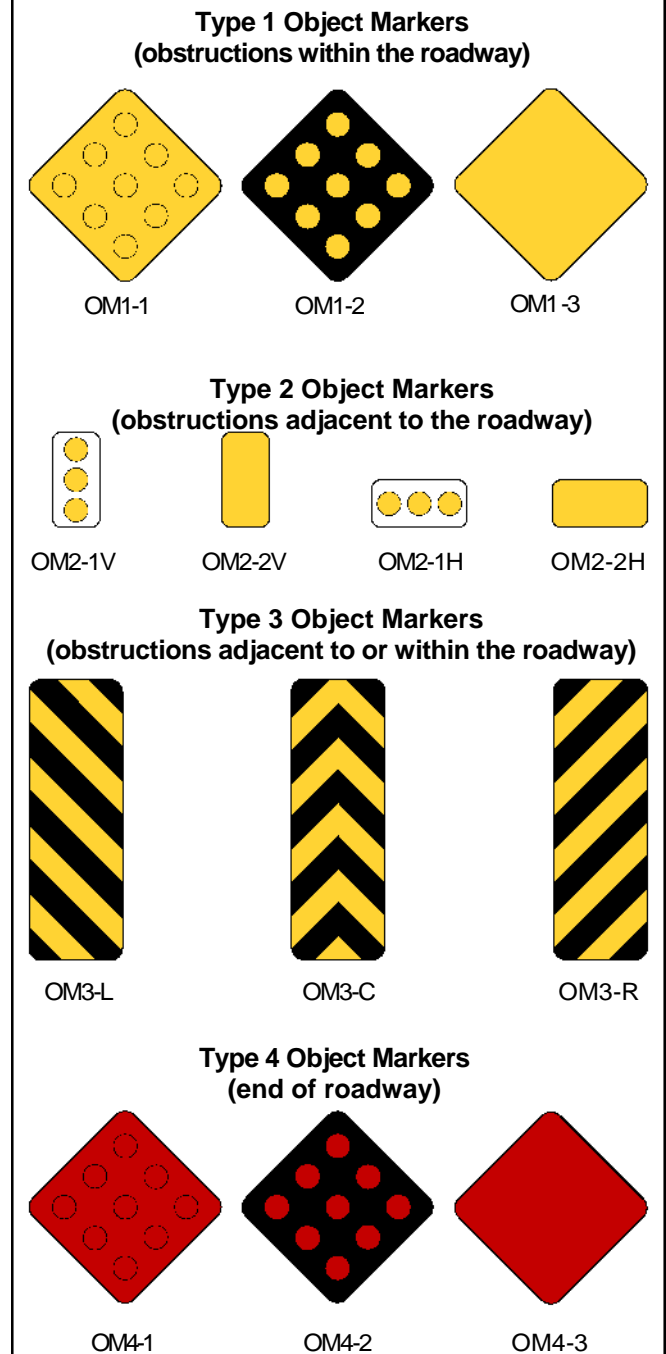
Support:

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.

Standard:

02 **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 shall be installed in line with the closest edge of the obstruction.**

Figure 2C-13. Object Markers



03 **Where Type 3 object markers are applied to the approach ends of guardrail and other roadside appurtenances, sheeting without a substrate shall be directly affixed to the approach end of the guardrail in a rectangular shape conforming to the size of the approach end of the guardrail with alternating black and retroreflective yellow stripes sloping downward at a angle of 45 degrees toward the side of the obstruction on which traffic is to pass.**

04 **Type 1 and Type 4 object markers shall not be used to mark obstructions adjacent to the roadway.**

Guidance:

05 *Standard warning signs in this Chapter should also be used where applicable.*

Section 2C.66 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.**

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 .67), may be used at the end of the roadway.

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 should be used.*

Table 2D-1. Conventional Road Guide Sign Sizes

Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
Interstate Route Sign (1 or 2 digits)	M1-1	2D.11	24 x 24	24 x 24	36 x 36
Interstate Route Sign (3 digits)	M1-1	2D.11	30 x 24	30 x 24	45 x 36
Off-Interstate Route Sign (1 or 2 digits)	M1 -2,3	2D.11	24 x 24	24 x 24	36 x 36
Off-Interstate Route Sign (3 digits)	M1 -2,3	2D.11	30 x 24	30 x 24	45 x 36
U.S. Route Sign (1 or 2 digits)	M1-4	2D.11	24 x 24	24 x 24	36 x 36
U.S. Route Sign (3 digits)	M1 -4	2D.11	30 x 24	30 x 24	45 x 36
State Route Sign (1 or 2 digits)	M1-5	2D.11	24 x 24	24 x 24	36 x 36
State Route Sign (3 digits)	M1-5	2D.11	30 x 24	30 x 24	45 x 36
County Route Sign (1, 2, or 3 digits)	M1-6	2D.11	24 x 24	24 x 24	36 x 36
Forest Route (1, 2, or 3 digits)	M1-7	2D.11	24 x 24	18 x 18	36 x 36
Junction	M2-1	2D.13	21 x 15	21 x 15	30 x 21
Combination Junction (2 route signs)	M2-2	2D.14	60 x 48*	—	—
Cardinal Direction	M3-1,2,3,4	2D.15	24 x 12	24 x 12	36 x 18
Alternate	M4-1,1a	2D.17	24 x 12	24 x 12	36 x 18
By-Pass	M4-2	2D.18	24 x 12	24 x 12	36 x 18
Business	M4-3	2D.19	24 x 12	24 x 12	36 x 18
Truck	M4-4	2D.20	24 x 12	24 x 12	36 x 18
To	M4-5	2D.21	24 x 12	24 x 12	36 x 18
End	M4-6	2D.22	24 x 12	24 x 12	36 x 18
Temporary	M4-7,7a	2D.24	24 x 12	24 x 12	36 x 18
Begin	M4-14	2D.23	24 x 12	24 x 12	36 x 18
Local Traffic	M4-Y15	2D.25	24 x 20	24 x 20	—
Frontage Road	M4-Y16	2D.25	40 x 20	40 x 20	—
Advance Turn Arrow	M5-1,2,3	2D.26	21 x 15	21 x 15	—
Lane Designation	M5-4,5,6	2D.27	24 x 18	24 x 18	36 x 24
Directional Arrow	M6-1,2,2a,3,4,5,6,7	2D.28	21 x 15	21 x 15	30 x 21
Destination (1 line)	D1-1	2D.37	Varies x 18	Varies x 18	—
Destination and Distance (1 line)	D1-1a	2D.37	Varies x 18	Varies x 18	—
Circular Intersection Destination (1 line)	D1-1d	2D.38	Varies x 18	Varies x 18	—
Circular Intersection Departure Guide	D1-1e	2D.38	Varies x 42*	—	—
Destination (2 lines)	D1-2	2D.37	Varies x 30	Varies x 30	—
Destination and Distance (2 lines)	D1-2a	2D.37	Varies x 30	Varies x 30	—
Circular Intersection Destination (2 lines)	D1-2d	2D.38	Varies x 30	Varies x 30	—
Destination (3 lines)	D1-3	2D.37	Varies x 42	Varies x 42	—
Destination and Distance (3 lines)	D1-3a	2D.37	Varies x 42	Varies x 42	—
Circular Intersection Destination (3 lines)	D1-3d	2D.38	Varies x 42	Varies x 42	—
Distance (1 line)	D2-1	2D.41	Varies x 18	Varies x 18	—
Distance (2 lines)	D2-2	2D.41	Varies x 30	Varies x 30	—
Distance (3 lines)	D2-3	2D.41	Varies x 42	Varies x 42	—
Street Name (1 line)	D3-1,1a	2D.43	Varies x 12	Varies x 8	Varies x 18
Advance Street Name (2 lines)	D3-2	2D.44	Varies x 30	—	—
Advance Street Name (3 lines)	D3-2	2D.44	Varies x 42	—	—
Advance Street Name (4 lines)	D3-2	2D.44	Varies x 54	—	—
Parking Area	D4-1	2D.47	30 x 24	18 x 15	—
Park - Ride	D4-2	2D.48	30 x 36	24 x 30	36 x 48
National Scenic Byways	D6-4	2D.55	24 x 24	24 x 24	—
National Scenic Byways	D6-4a	2D.55	24 x 12	24 x 12	—
Weigh Station XX Miles	D8-1	2D.49	78 x 60	60 x 48	96 x 72
Weigh Station Next Right	D8-2	2D.49	84 x 72	66 x 54	1 08 x 90
Weigh Station (with arrow)	D8-3	2D.49	66 x 60	48 x 42	84 x 78
Crossover	D13-1,2	2D.54	60 x 30	60 x 30	78 x 42
Freeway Entrance	D13-3	2D.46	48 x 30	48 x 30	—
Freeway Entrance (with arrow)	D13-3a	2D.46	48 x 42	48 x 42	—
Combination Lane Use / Destination	D15-1	2D.33	Varies x 96	Varies x 96	—
Next Truck Lane XX Miles	D17-1	2D.51	42 x 48	42 x 48	60 x 66
Truck Lane XX Miles	D17-2	2D.51	42 x 42	42 x 42	60 x 54
Slow Vehicle Turn-Out XX Miles	D17-7	2D.52	72 x 42	72 x 42	96 x 54

*The size shown is for a typical sign. The size should be appropriately based on the amount of legend required for the sign.

Notes: 1. Larger signs may be used when appropriate

2. Dimensions in inches are shown as width x height

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 and Markings” book (see Section 1A.11).**

03 **The principal legend on 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 height for lower-case letters. On low-volume roads (as defined in Section 5A.01) with speeds of 25 mph or less, and on urban streets with speeds of 25 mph or less, the principal legend 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 height for lower-case letters.**

Guidance:

04 *Lettering sizes should be consistent on any particular class of highway.*

05 *The minimum lettering sizes provided in this Manual should be exceeded where conditions indicate a need for greater legibility.*

Section 2D.07 Amount of Legend*Support:*

01 The longer the legend on a guide sign, the longer it will take road users to comprehend it, regardless of letter size.

Guidance:

02 *Except where otherwise provided in this Manual, 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.08 Arrows*Support:*

01 Arrows are used for lane assignment and to indicate the direction toward designated routes or destinations. Figure 2D-2 shows the various standard arrow designs that have been approved for use on guide signs. Detailed drawings and standardized sizes based on ranges of letter heights are shown for these arrows in the Standard Highway Signs and Markings book (see Section 1A.11).

Standard:

02 **On overhead signs where it is desirable to indicate a lane to be followed, a down arrow shall be positioned approximately over the 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.**

Option:

05 Curved-stem arrows (see Figure 2D-8) that represent the intended driver paths to destinations involving left-turn movements may be used on guide signs on approaches to circular intersections.

Standard:

06 **Curved-stem arrows shall not be used on any sign that is not associated with a circular intersection.**

Guidance:

07 *If curved-stem arrows are used, the principles set forth in Sections 2D.26 through 2D.29 should be followed.*

08 *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.19.*

09 *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.*

Table 2E-1. Freeway or Expressway Guide Sign and Plaque Sizes (Sheet 2 of 2)

Sign or Plaque	Sign Designation	Section	Minimum Size
State Route Sign (3 digits)	M1-5	2D.1 1	45 x 36
County Route Sign (1, 2, or 3 digits)	M1-6	2D.1 1	36 x 36
Forest Route (1, 2, or 3 digits)	M1-7	2D.1 1	36 x 36
Eisenhower Interstate System	M1-10,10a	2E.28	36 x 36
Junction	M2-1	2D.13	30 x 21
Combination Junction (2 route signs)	M2-2	2D.14	60 x 48*
Cardinal Direction	M3-1,2,3,4	2D.15	36 x 18
Alternate	M4-1,1a	2D.17	36 x 18
By-Pass	M4-2	2D.18	36 x 18
Business	M4-3	2D.19	36 x 18
Truck	M4-4	2D.20	36 x 18
To	M4-5	2D.21	36 x 18
End	M4-6	2D.22	36 x 18
Temporary	M4-7,7a	2D.24	36 x 18
Begin	M4-14	2D.23	36 x 18
Advance Turn Arrow	M5-1,2,3	2D.26	30 x 21
Lane Designation	M5-4,5,6	2D.27	36 x 24
Directional Arrow	M6-1,2,2a,3,4,5,6,7	2D.28	30 x 21
Destination (1 line)	D1-1	2D.37	Varies x 24
Destination and Distance (1 line)	D1 -1a	2D.37	Varies x 24
Destination (2 lines)	D1 -2	2D.37	Varies x 42
Destination and Distance (2 lines)	D1-2a	2D.37	Varies x 42
Destination (3 lines)	D1 -3	2D.37	Varies x 60
Destination and Distance (3 lines)	D1-3a	2D.37	Varies x 60
Distance (1 line)	D2-1	2D.41	Varies x 24
Distance (2 lines)	D2-2	2D.41	Varies x 36
Distance (3 lines)	D2-3	2D.41	Varies x 48
Street Name	D3-1,1a	2D.43	Varies x 18
Advance Street Name (2 lines)	D3-2	2D.44	Varies x 36
Advance Street Name (3 lines)	D3-2	2D.44	Varies x 48
Advance Street Name (4 lines)	D3-2	2D.44	Varies x 66
Park - Ride	D4-2	2D.48	36 x 48
National Scenic Byways	D6-4	2D.55	24 x 24
National Scenic Byways	D6-4a	2D.55	24 x 12
Weigh Station XX Miles	D8-1	2E.54	96 x 72 (F) 78 x 60 (E)
Weigh Station Next Right	D8-2	2E.54	108 x 90 (F) 84 x 72 (E)
Weigh Station (with arrow)	D8-3	2E.54	84 x 78 (F) 66 x 60 (E)
Crossover	D13-1,2	2D.54	78 x 42
Freeway Entrance	D13-3	2D.46	48 x 30
Freeway Entrance (with arrow)	D13-3a	2D.46	48 x 42
Combination Lane Use / Destination	D15-1	2D.33	Varies x 96
Next Truck Lane XX Miles	D17-1	2D.51	60 x 66
Truck Lane XX Miles	D17-2	2D.51	60 x 54
Slow Vehicle Turn-Out XX Miles	D17-7	2D.52	96 x 54

* The size shown is for a typical sign as illustrated in the figures in Chapters 2D and 2E. The size should be determined based on the amount of legend required for the sign.

** The width shown represents the minimum dimension. The width shall be increased as appropriate to match the width of the guide sign.

- Notes:
1. Larger signs may be used when appropriate
 2. Dimensions in inches are shown as width x height
 3. Where two sizes are shown, the larger size is for freeways (F) and the smaller size is for expressways (E)

Table 2E-2. Minimum Letter and Numeral Sizes for Expressway Guide Signs According to Interchange Classification

Type of Sign	Type of Interchange (see Section 2E.32)				Overhead
	Major		Intermediate	Minor	
	Category a	Category b			
A. Advance Guide, Exit Direction, and Overhead Guide Signs					
Exit Number Plaques					
Words	10	10	10	8	10
Numerals & Letters	15	15	15	12	15
Interstate Route Signs					
Numerals	18	—	—	—	18
1- or 2-Digit Shields	36 x 36	—	—	—	36 x 36
3-Digit Shields	45 x 36	—	—	—	45 x 36
U.S. or State Route Signs					
Numerals	18	18	18	12	18
1- or 2-Digit Shields	36 x 36	36 x 36	36 x 36	24 x 24	36 x 36
3-Digit Shields	45 x 36	45 x 36	45 x 36	30 x 24	45 x 36
U.S. or State Route Text Identification (Example: US 56)					
Numerals & Letters	18	15	15	12	15
Cardinal Directions					
First Letters	18	15	12	10	15
Rest of Words	15	12	10	8	12
Auxiliary and Alternative Route Legends (Examples: JCT, TO, ALT, BUSINESS)					
Words	15	12	10	8	12
Names of Destinations					
Upper-Case Letters	20	16	13.33	10.67	16
Lower-Case Letters	15	12	10	8	12
Distance Numbers	18	15	12	10	15
Distance Fraction Numerals	12	10	10	8	10
Distance Words	12	10	10	8	10
Action Message Words	10	10	10	8	10
B. Gore Signs					
Words	10	10	10	8	—
Numerals & Letters	12	12	12	10	—

Note: Sizes are shown in inches and where applicable are shown as width x height

- 04 An additional W9-6 sign may be installed approximately 2 miles in advance of a mainline toll plaza. This sign may be either overhead or post-mounted.
- 05 If the visibility of a ramp toll plaza at which some or all lanes are required to come to a stop to pay a toll is limited, the W9-6 sign may also be installed in advance of the ramp toll plaza.

Section 2F.07 Pay Toll Advance Warning Plaque (W9-6P)

Option:

- 01 The Pay Toll Advance Warning (W9-6P) plaque (see Figure 2F-3) may be installed above the appropriate guide sign(s) relating to toll payment types at the 1-mile and/or 1/2-mile advance locations on the approach to a toll plaza if there is insufficient space for the W9-6 sign (see Section 2F.06) at those advance locations.

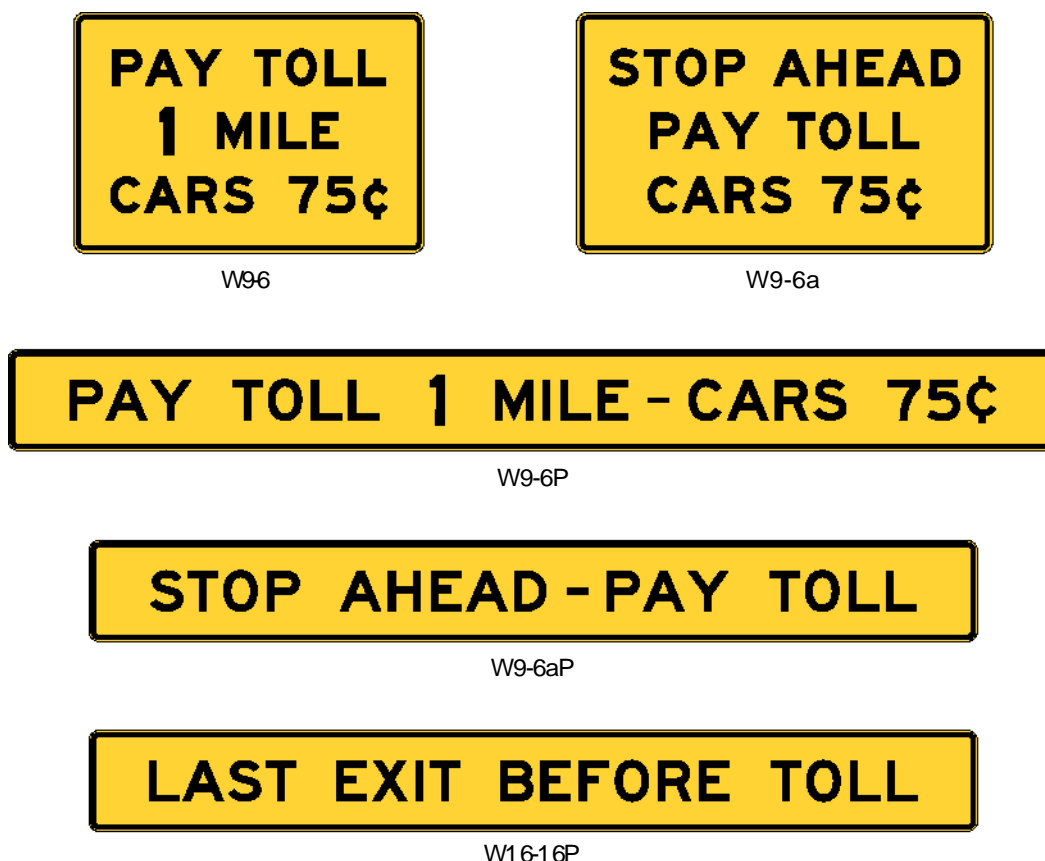
Standard:

- 02 **The W9-6P plaque shall be a horizontal rectangle with black legend and border on a yellow background. The legend shall include the distance to the toll plaza and, except for toll-ticket facilities, the toll for passenger or 2-axle vehicles. Where the toll for passenger or 2-axle vehicles is variable by time of day, a changeable message element shall be incorporated into the W9-6P plaque to display the toll in effect. For toll plazas where road users entering a toll-ticket facility are issued a toll ticket, the legend PAY TOLL shall be replaced with a suitable legend such as TAKE TICKET.**

Option:

- 03 The distance to the toll plaza may be omitted from the W9-6P plaque if the distance is displayed on the guide sign that the plaque accompanies.
- 04 The toll for passenger or 2-axle vehicles may be omitted from the W9-6P plaque if the toll information is displayed on the guide sign that the plaque accompanies.

Figure 2F-3. Toll Plaza Warning Signs and Plaques



Section 2F.08 Stop Ahead Pay Toll Warning Sign (W9-6a)**Standard:**

- 01 The Stop Ahead Pay Toll (W9-6a) sign shall be a horizontal rectangle with a black legend and border on a yellow background. The legend shall include STOP AHEAD PAY TOLL and, except for toll-ticket facilities, the toll for passenger or 2-axle vehicles (see Figure 2F-3). Where the toll for passenger or 2-axle vehicles is variable by time of day, a changeable message element shall be incorporated into the W9-6a sign to display the toll in effect. For toll plazas where road users entering a toll-ticket facility are issued a toll ticket, the legend PAY TOLL shall be replaced with a suitable legend such as TAKE TICKET.

Guidance:

- 02 The Stop Ahead Pay Toll sign should be installed overhead downstream from the W9-6 sign that is 1/2 mile in advance of a mainline toll plaza where some or all of the lanes are required to come to a stop to pay a toll (see Sections 2F.14 and 2F.15). The location of the overhead sign should coincide with the approximate location where the mainline lanes begin to widen on the approach to the toll plaza lanes.
- 03 Where open-road tolling is used in addition to a toll plaza at a particular location, the W9-6a sign should be located such that the message is clearly related to the lanes that access the toll plaza and not to the open-road tolling lanes.

Option:

- 04 If there is insufficient space for the W9-6a sign at the recommended location, the Stop Ahead Pay Toll (W9-6aP) plaque (see Section 2F.09) may be installed at that location above the appropriate guide sign that relates to toll payment types.
- 05 If the visibility of a ramp toll plaza at which some or all lanes are required to come to a stop to pay a toll is limited, the W9-6a sign may also be installed in advance of the ramp toll plaza.

Section 2F.09 Stop Ahead Pay Toll Warning Plaque (W9-6aP)**Option:**

- 01 The Stop Ahead Pay Toll (W9-6aP) plaque (see Figure 2F-3) may be installed above the appropriate guide sign at the location specified for the Stop Ahead Pay Toll (W9-6a) sign (see Section 2F.08) if there is insufficient space for the W9-6a sign at that location.

Standard:

- 02 The W9-6aP plaque shall be a horizontal rectangle with black legend and border on a yellow background. The legend shall include STOP AHEAD PAY TOLL and, except for toll-ticket facilities, the toll for passenger or 2-axle vehicles. Where the toll for passenger or 2-axle vehicles is variable by time of day, a changeable message element shall be incorporated into the W9-6aP plaque to display the toll in effect. For toll plazas where road users entering a toll-ticket facility are issued a toll ticket, the legend PAY TOLL shall be replaced with a suitable legend such as TAKE TICKET.

Option:

- 03 The toll for passenger or 2-axle vehicles may be omitted from the W9-6aP plaque if the toll information is displayed on the guide sign that the plaque accompanies.

Section 2F.10 LAST EXIT BEFORE TOLL Warning Plaque (W16-16P)**Guidance:**

- 01 The LAST EXIT BEFORE TOLL (W16-16P) plaque (see Figure 2F-3) should be used to notify road users of the last exit from a highway before it becomes a facility on which toll payments are required. The plaque should be installed above or below the appropriate guide signs for the exit (see Sections 2E.33 and 2E.36).

Standard:

- 02 The W16-16P plaque shall have a black legend and border on a yellow background.

Section 2F.11 TOLL Auxiliary Sign (M4-15)**Standard:**

- 01 The TOLL (M4-15) auxiliary sign (see Figure 2F-4) shall have a black legend and border on a yellow background and shall be mounted directly above the route sign of a numbered toll highway or, if used, above the cardinal direction and alternative route auxiliary signs, in any route sign assembly providing directions from a non-toll highway to the toll highway or to a segment of a highway on which the payment of a toll is required.

Figure 2G-27. Examples of Guide Signs for a Direct Access Ramp between Managed Lanes on Separate Freeways

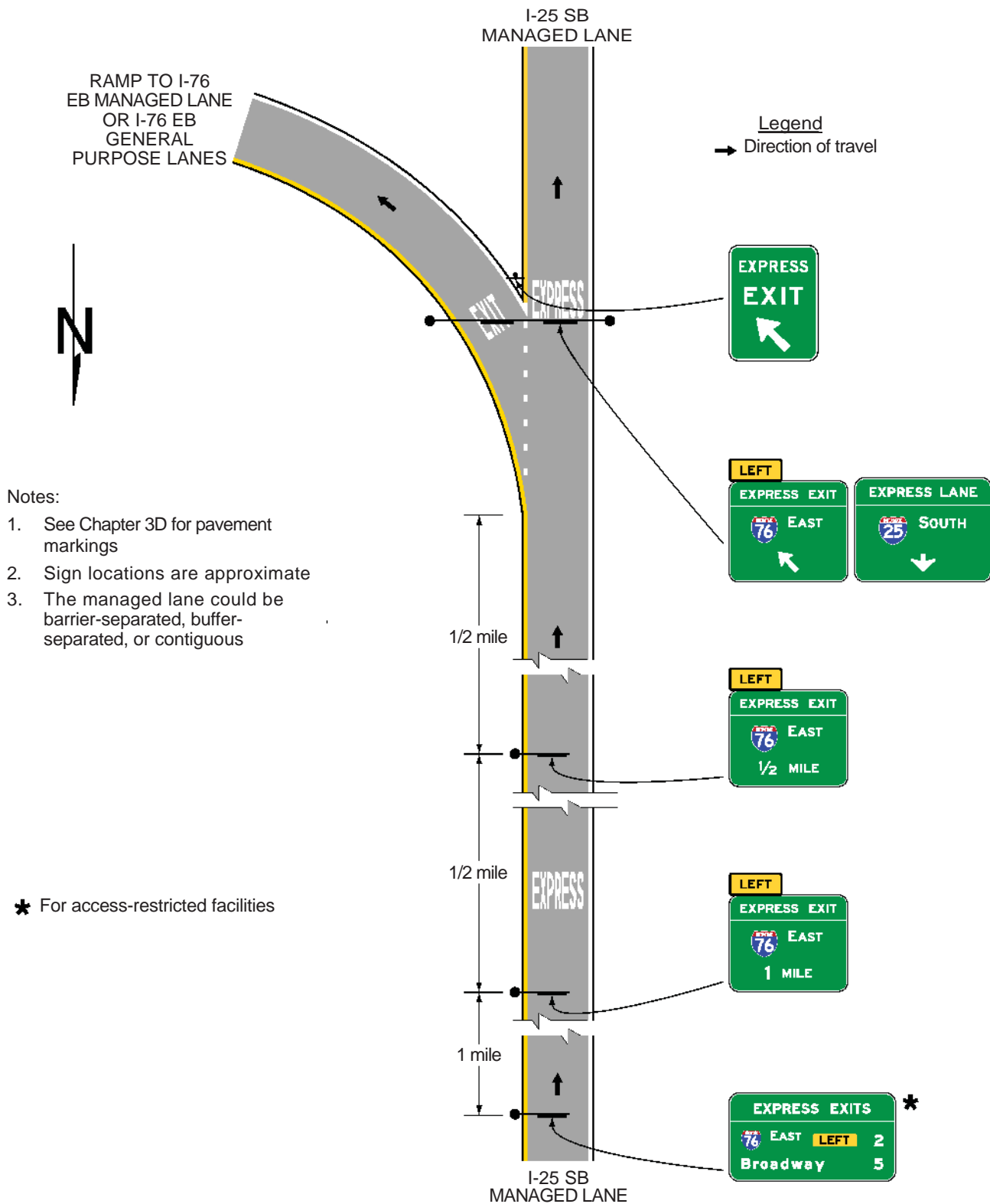
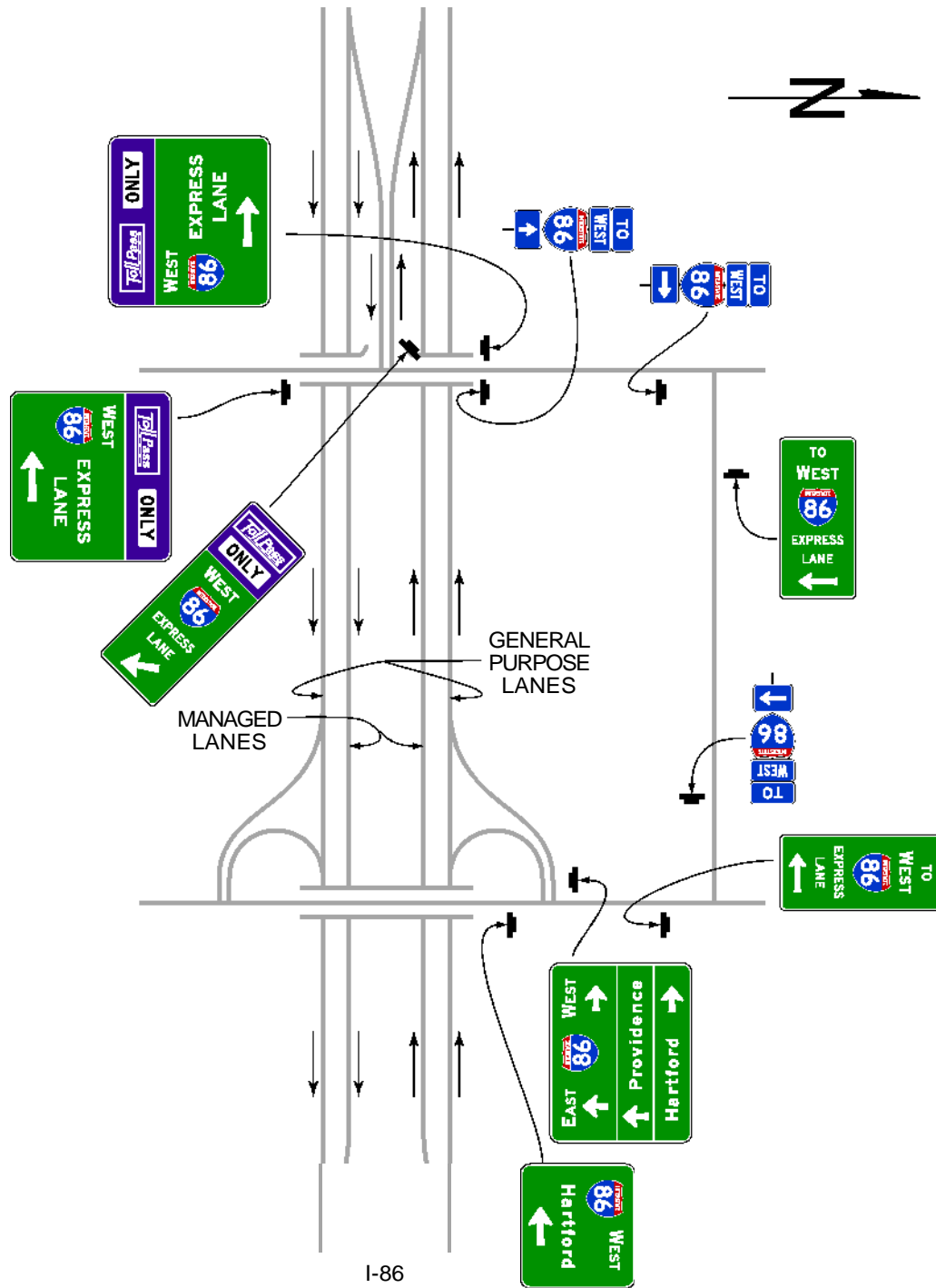


Figure 2G-28. Examples of Guide Signs for a Direct Entrance Ramp to a Priced Managed Lane and Trailblazing to a Nearby Entrance to the General-Purpose Lanes



CHAPTER 2I. GENERAL SERVICE SIGNS

Section 2I.01 Sizes of General Service Signs

Standard:

- 01 Except as provided in Section 2A.11, the sizes of General Service signs that have a standardized design shall be as shown in Table 2I-1.

Support:

- 02 Section 2A.11 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.11).

Table 2I-1. General Service Sign and Plaque Sizes (Sheet 1 of 2)

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway
Rest Area XX Miles	D5-1	2I.05	66 x 36*	96 x 54*
Rest Area Next Right	D5-1a	2I.05	78 x 36*	120 x 60* (F) 114 x 48* (E)
Rest Area (with arrow)	D5-2	2I.05	66 x 36*	96 x 54*
Rest Area Gore	D5-2a	2I.05	42 x 48*	78 x 78* (F) 66 x 72* (E)
Rest Area (with horizontal arrow)	D5-5	2I.05	42 x 48*	—
Next Rest Area XX Miles	D5-6	2I.05	60 x 48*	90 x 72*
Rest Area Vending Machines Plaque	D5-Y9	2I.05	-	96 x 24
Rest Area Tourist Info Center XX Miles	D5-7	2I.08	90 x 72*	114 x 102* (F) 132 x 96* (E)
Rest Area Tourist Info Center (with arrow)	D5-8	2I.08	84 x 72*	120 x 102* (F) 120 x 96* (E)
Rest Area Tourist Info Center Next Right	D5-11	2I.08	90 x 72*	144 x 102* (F) 132 x 96* (E)
Interstate Oasis	D5-12	2I.04	—	156 x 78
Interstate Oasis (plaque)	D5-12P	2I.04	—	114 x 48
Brake Check Area XX Miles	D5-13	2I.06	84 x 48	126 x 72
Brake Check Area (with arrow)	D5-14	2I.06	78 x 60	96 x 72
Chain-Up Area XX Miles	D5-15	2I.07	66 x 48	96 x 72
Chain-Up Area (with arrow)	D5-16	2I.07	72 x 54	96 x 66
Point of Interest XX Miles	D5-Y17	2I.08	36 x 24	-
Historical Marker XX Miles	D5-Y18	2I.08	36 x 24	-
Telephone	D9-1	2I.02	24 x 24	30 x 30
Hospital	D9-2	2I.02	24 x 24	30 x 30
Camping	D9-3	2I.02	24 x 24	30 x 30
Trailer Camping	D9-3a	2I.02	24 x 24	30 x 30
Litter Container	D9-4	2I.02	24 x 30	36 x 48
Handicapped	D9-6	2I.02	24 x 24	30 x 30
Van Accessible (plaque)	D9-6P	2I.02	18 x 9	—
Gas	D9-7	2I.02	24 x 24	30 x 30
Food	D9-8	2I.02	24 x 24	30 x 30
Lodging	D9-9	2I.02	24 x 24	30 x 30
Tourist Information	D9-10	2I.02	24 x 24	30 x 30
Diesel Fuel	D9-11	2I.02	24 x 24	30 x 30
Alternative Fuel - Compressed Natural Gas	D9-11a	2I.02	24 x 24	30 x 30
Electric Vehicle Charging	D9-11b	2I.02	24 x 24	30 x 30
Electric Vehicle Charging (plaque)	D9-11bP	2I.02	24 x 18	30 x 24
Alternative Fuel - Ethanol	D9-11c	2I.02	24 x 24	30 x 30
RV Sanitary Station	D9-12	2I.02	24 x 24	30 x 30
Emergency Medical Services	D9-13	2I.02	24 x 24	30 x 30

Table 2I-1. General Service Sign and Plaque Sizes (Sheet 2 of 2)

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway
Hospital (plaque)	D9-13aP	2I.02	24 x 12	30 x 12
Ambulance Station (plaque)	D9-13bP	2I.02	24 x 12	30 x 15
Emergency Medical Care (plaque)	D9-13cP	2I.02	24 x 18	30 x 24
Trauma Center (plaque)	D9-13dP	2I.02	24 x 12	30 x 15
Police	D9-14	2I.02	24 x 24	30 x 30
Propane Gas	D9-15	2I.02	24 x 24	30 x 30
Truck Parking	D9-16	2I.02	24 x 24	30 x 30
Next Services XX Miles (plaque)	D9-17P	2I.02	102 x 24	156 x 30
General Services (up to 6 symbols)	D9-18	2I.03	—	96 x 60
General Services	D9-18a	2I.03	—	96 x 60
General Services (up to 6 symbols) with Action or Exit Information	D9-18b	2I.03	108 x 84	132 x 114 (F) 132 x 108 (E)
General Services with Action or Exit Information	D9-18c	2I.03	72 x 60**	132 x 108** (F) 108 x 84** (E)
Pharmacy	D9-20	2I.02	24 x 24	30 x 30
24-Hour (plaque)	D9-20aP	2I.02	24 x 12	30 x 12
Telecommunication Device for the Deaf	D9-21	2I.05	24 x 24	30 x 30
Wireless Internet	D9-22	2I.05	24 x 24	30 x 30
Weather Information	D12-1	2I.09	84 x 48	132 x 84
Traffic Information	D12-Y1a, Y1b	2I.09	84 x 48	132 x 84
Carpool Information	D12-2	2I.11	60 x 42	96 x 66
Channel 9 Monitored	D12-3	2I.09	84 x 48	132 x 84
Emergency Call 911	D12-4	2I.09	66 x 30	96 x 48
Travel Info Call 511 (pictograph)	D12-5	2I.10	48 x 60	66 x 72
Travel Info Call 511	D12-5a	2I.10	48 x 36	66 x 48
Travel Time	D12-Y6	2I.12	-	Varies

* The size shown is for a sign with a REST AREA and/or TOURIST INFO CENTER legend. The size should be appropriately adjusted if an alternate legend is used.

** The size shown is for a sign with four lines of services. The size should be appropriately adjusted depending on the amount of legend displayed.

Notes: 1. Larger signs may be used when appropriate

2. Dimensions in inches are shown as width x height

3. Where two sizes are shown, the larger size is for freeways (F) and the smaller size is for expressways (E)

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 required 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 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 white letters, symbols, arrows, and borders 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.*

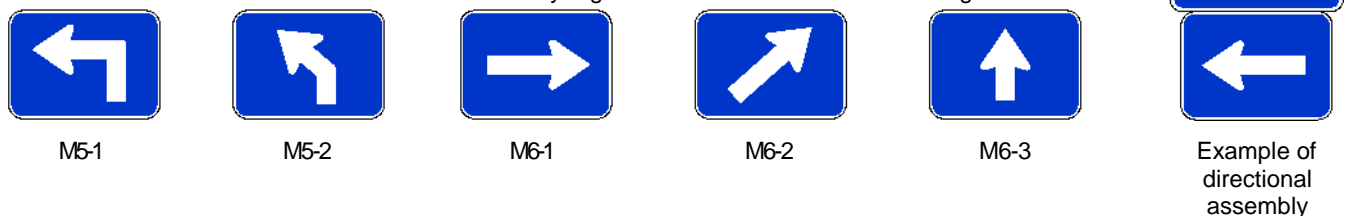
- 05 *States that elect to provide General Service signing should establish a statewide policy or warrant for its use, and criteria for the availability of services. Local jurisdictions electing to use such signing should follow State policy for the sake of uniformity.*

Option:

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

Figure 2I-1. General Service Signs and Plaques

Advance Turn and Directional Arrow Auxiliary Signs for use with General Service Signs



Standard:

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

Option:

- 08 The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary signs with white arrows on blue backgrounds as shown in Figure 2I-1 may be used with General Service symbol signs to create a General Service Directional Assembly.

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

Standard:

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

Support:

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

Option:

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

- 13 The International Symbol of Accessibility for the Handicapped (D9-6) sign may be used beneath General Service signs where paved ramps and rest room facilities accessible to, and usable by, the physically handicapped are provided.

Guidance:

- 14 *When the D9-6 sign is used in accordance with Paragraph 13, 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:

- 15 The Recreational Vehicle Sanitary Station (D9-12) sign may be used as needed to indicate the availability of facilities designed for the use of dumping wastes from recreational vehicle holding tanks.
- 16 The Litter Container (D9-4) sign may be placed in advance of roadside turnouts or rest areas, unless it distracts the drivers attention from other more important regulatory, warning, or directional signs.
- 17 The Emergency Medical Services (D9-13) symbol sign 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:

- 18 **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 identifying the type of service provided.**

Option:

- 19 The Emergency Medical Services symbol sign may be used above the HOSPITAL (D9-13aP) plaque or Hospital (D9-2) symbol sign 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), or POLICE (D9-14) signs.

Standard:

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

Guidance:

- 21 *Each State should develop guidelines for the implementation of the Emergency Medical Services symbol sign.*

Figure 2I-2. Example of Next Services Plaque



D9-17P

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 Advance Guide (D5-7) sign should be REST AREA, TOURIST INFO CENTER, XX MILES or REST AREA, STATE NAME (optional), WELCOME CENTER XX MILES. On the Exit Direction (D5-8 or D5-11) 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.*

Option:

06 An alternative to the supplemental TOURIST INFO CENTER legend is the Tourist Information (D9-10) sign (see Figure 2I-1), which 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.*

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. Advance signage for points of interest and historical markers may also be utilized as conditions permit.

Figure 2I-7. Examples of Tourist Information and Welcome Center Signs



Note: Alternate legends may be substituted for the TOURIST INFO CENTER legend, such as WELCOME CENTER and (State Name) WELCOME CENTER.

Section 2I.09 Radio Information Signing

Option:

- 01 Radio-Weather Information (D12-1, D12-Y1a, D12-Y1b) signs (see Figure 2I-8) may be used in areas where difficult driving conditions commonly result from weather systems. Radio-Traffic Information 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.

Figure 2I-8. Radio, Telephone, and Carpool Information Signs

Figure 2J-1. Examples of Specific Service Signs

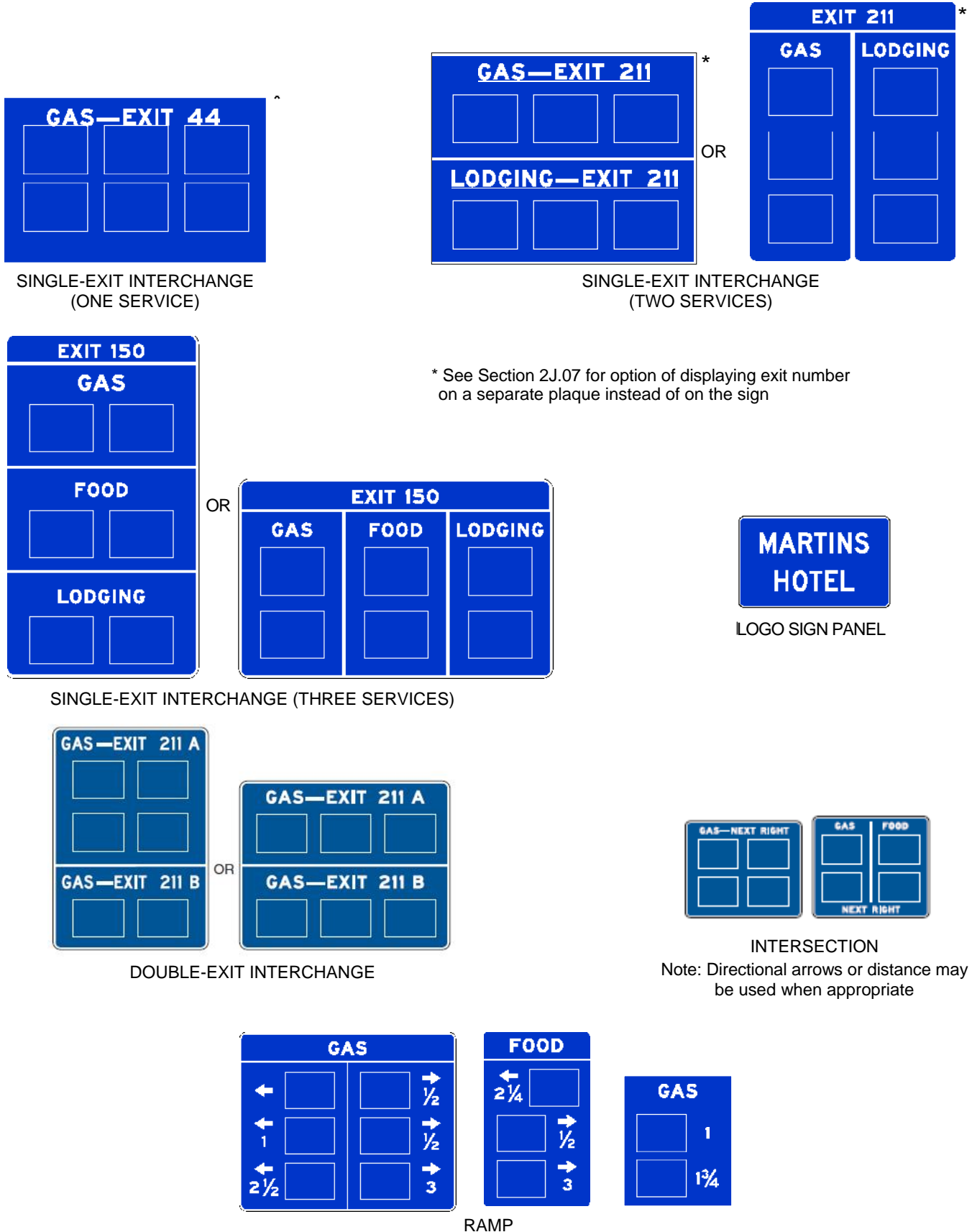
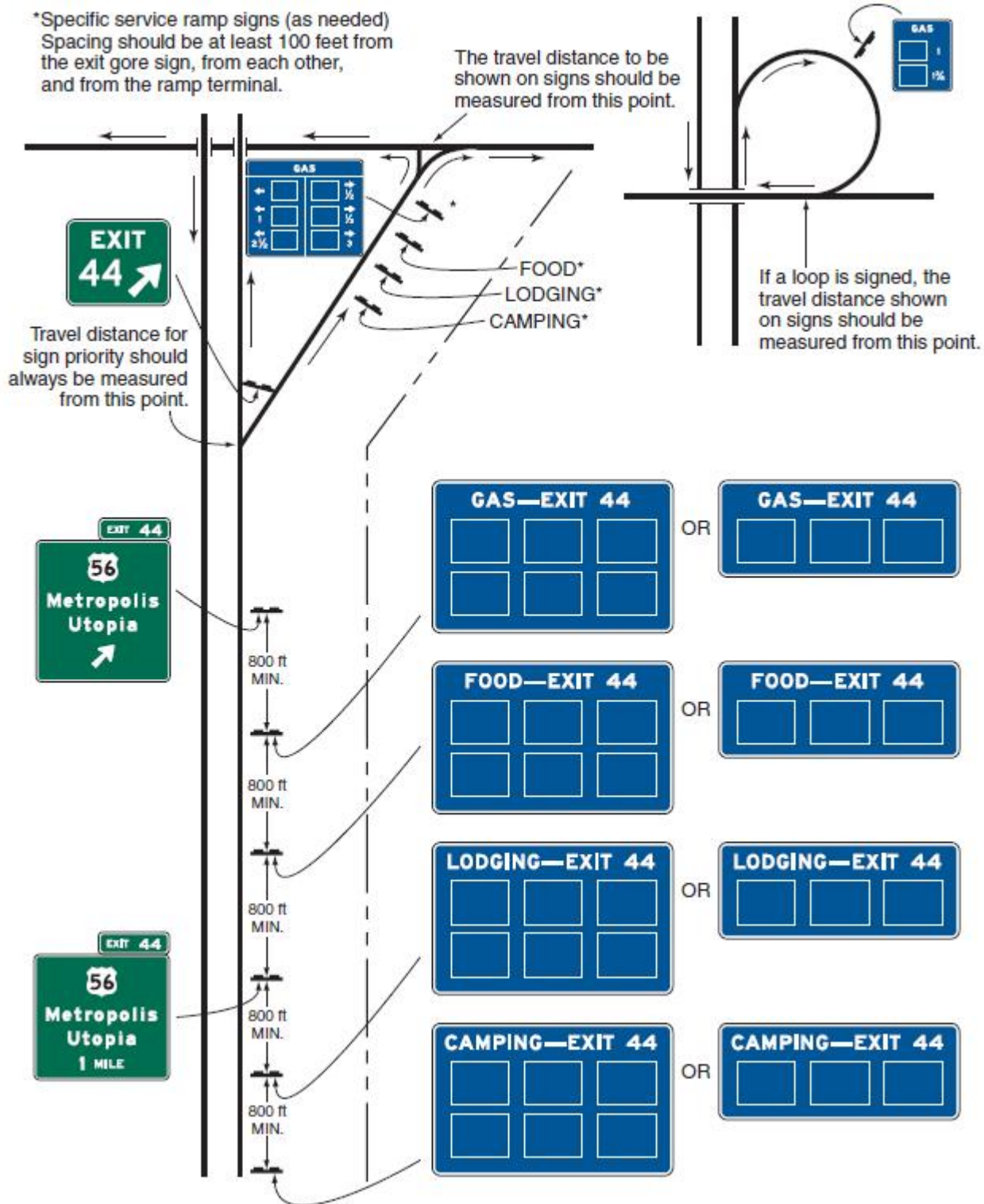


Figure 2J-2. Examples of Specific Service Sign Locations**Guidance:**

- 02 A word message logo, not using a symbol or trademark, should have a blue background with white legend and border.

Support:

- 03 Section 2J.05 contains information regarding the minimum letter heights for logo sign panels.

Option:

- 04 Where business identification symbols or trademarks are used alone for a logo, the border may be omitted from the logo sign panel.

- 05 A portion of a logo sign panel may be used to display a supplemental message horizontally along the bottom of the logo sign panel, provided that the message displays essential motorist information (see Figure 2J-3).

Standard:

- 06 **All supplemental messages shall be displayed within the logo sign panel and shall have letters and numerals that comply with the minimum height requirements shown in Table 2J-1.**

Guidance:

- 07 *A logo sign panel should not display more than one supplemental message.*

- 08 *The supplemental message should be displayed in a color to contrast effectively with the background of the business sign or separated from the other legend or logo by a divider bar.*

- 09 *State or local agencies that elect to allow supplemental messages on logo sign panels should develop a statewide policy for such messages.*

Support:

- 10 Typical supplemental messages might include DIESEL, 24 HOURS, CLOSED and the day of the week when the facility is closed, ALTERNATIVE FUELS (see Section 2I.03), and RV ACCESS.

Option:

- 11 The RV ACCESS supplemental message may be circular.

Standard:

- 12 **If the RV ACCESS supplemental message is circular, it shall be the abbreviation RV in black letters inside a yellow circle with a black border and it shall be displayed within the logo sign panel near the lower right-hand corner (see Figure 2J-4).**

Guidance:

- 13 *If the circular RV ACCESS supplemental message is used, the circle should have a diameter of 10 inches and the letters should have a height of 6 inches.*

- 14 *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 or the RV Access circular 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:

- 15 If a business designated as an Interstate Oasis (see Section 2I.04) has a business logo sign panel on the Food and/or Gas Specific Service signs, the word OASIS may be displayed on the bottom portion of the logo sign panel for that business.

Standard:

- 16 **A logo sign panel shall not display the symbol/trademark or name of more than one business.**

Figure 2J-3. Examples of Supplemental Messages on Logo Sign Panels

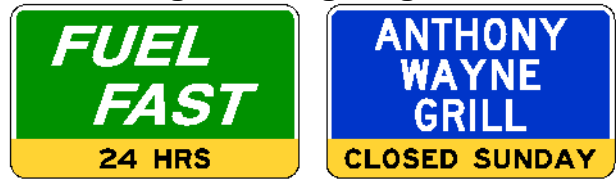
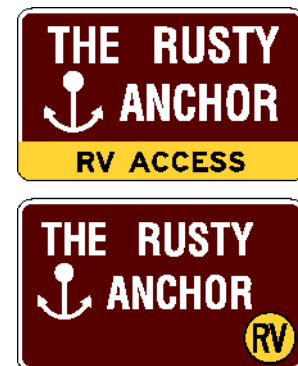


Table 2J-1. Minimum Letter and Numeral Sizes for Specific Service Signs According to Sign Type

Type of Sign	Freeway or Expressway	Conventional Road or Ramp
A. Specific Service Signs		
Service Categories	10	6
Exit Number Words	10	—
Exit Number Numerals and Letters	10	—
Action Message Words	10	6
Distance Numerals	—	6
Distance Fraction Numerals	—	4
B. Logo Sign Panels		
Logo Sign Panels	60 x 36	30 x 18
Words and Numerals (Non-Trademark/Graphic Logo)	8	4
Trademark/Graphic Logo	Proportional	Proportional
Supplemental Message Words and Numerals	5	2.5

Note: Sizes are shown in inches and where applicable are shown as width x height

Figure 2J-4. Examples of RV Access Supplemental Messages on Logo Sign Panels



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

Guidance:

- 01 *Sign sizes should be determined by the amount and height of legend and the number and size of logo sign panels attached to the sign. All logo 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 logo sign panels.**

Option:

- 03 Where more than six businesses of a specific service type are eligible for logo sign panels at the same interchange, additional logo sign panels of that same specific service type may also be displayed in accordance with the provisions of Paragraph 4. The additional logo sign panels may be displayed either by placing more than one specific service type on the same sign (see Paragraph 3 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 6 of Section 2J.02).

Standard:

- 04 **Where logo 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 logo 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 logo 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.

Standard:

- 06 **Each logo sign panel attached to a Specific Service sign shall have a rectangular shape with a width longer than the height. A logo sign panel on signs for freeways and expressways shall not exceed 60 inches in width and 36 inches in height. A logo sign panel on signs for conventional roads and freeway and expressway ramps shall not exceed 30 inches in width and 18 inches in height. The vertical and horizontal spacing between logo sign panels shall not exceed 8 inches and 12 inches, respectively.**

Support:

- 07 Sections 2A.14, 2E.15, and 2E.16 contain information regarding borders, interline spacing, and edge spacing.

Section 2J.05 Size of Lettering

Standard:

- 01 **All Specific Service signs and logo sign panels shall have letter and numeral sizes that comply with the minimum requirements of Table 2J-1.**

Guidance:

- 02 *Any legend on a symbol/trademark should be proportional to the size of the symbol/trademark.*

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).**

Guidance:

- 02 *When spacing permits, all Specific Service signs should be installed before the Exit One (1) Mile Advance Guide sign. There should be at least an 800-foot spacing between the Specific Service signs, except for Specific Service ramp signs. However, excessive spacing is not desirable. Specific Service ramp signs should be spaced at least 100 feet from the Exit Gore sign, from each other, and from the ramp terminal.*

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 logo sign panels. At unnumbered interchanges, the directional legend NEXT RIGHT (LEFT) shall be used.**
- 02 **At single-exit interchanges, Specific Service ramp signs shall be installed along the ramp or at the ramp terminal for facilities that have logo 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. Logo sign panels on Specific Service ramp signs shall be duplicates of those displayed on the Specific**

Table 2M-1. Category Chart for Recreational and Cultural Interest Area Symbols

General	
Bear Viewing Area	RS-012
Bus Stop	RS-031
Campfires *	RS-042
Cans or Bottles *	RS-1 01
Cultural Interest Area	RS-142
Dam	RS-009
Deer Viewing Area	RS-011
Falling Rocks *	RS-008
Fire Extinguisher *	RS-090
Lighthouse	RS-007
Lookout Tower	RS-006
Nature Study Area	RS-141
Pets on Leash *	RS-017
Pick-Up Trucks	RS-140
Point of Interest	RS-080
Radios *	RS-103
Rattlesnakes *	RS-099
Recycling *	RS-200
Sea Plane	RS-115
Smoking *	RS-002
Snack Bar *	RS-102
Stay on Trail *	RS-123
Strollers *	RS-111
Tunnel	RS-005
Viewing Area	RS-036
Walk on Boardwalk *	RS-122
Wood Gathering *	RS-120

Accommodations	
Baby Changing Station (Men's Room)	RS-137
Baby Changing Station (Women's Room)	RS-138
Men's Restroom	RS-021
Parking	RS-034
Recreational Vehicle Site	RS-104
Restrooms	RS-022
Sleeping Shelter *	RS-037
Trailer Site	RS-040
Walk-In Camp	RS-148
Women's Restroom	RS-023

Services	
Drinking Water	RS-013
Electrical Hook-Up	RS-150
Firewood Cutting *	RS-112
First Aid	RS-024
Grocery Store	RS-020
Kennel	RS-045
Laundromat	RS-085
Litter Receptacle	RS-086
Lockers/Storage *	RS-030
Mechanic	RS-027
Picnic Shelter	RS-039
Picnic Site	RS-044
Post Office	RS-026
Radiator Water	RS-124
Ranger Station	RS-015
Sanitary Station	RS-041
Showers *	RS-035
Stable	RS-073
Theater	RS-109
Trail Shelter *	RS-043
Tramway	RS-071
Trash Dumpster	RS-091

Land Recreation	
All-Terrain Trail	RS-095
Amphitheater	RS-070
Archery	RS-116
Baseball *	RS-096
Climbing *	RS-082
Corral	RS-149
Driving Tour	RS-113
Exercise/Fitness	RS-097
Golfing *	RS-128
Hang Gliding	RS-126
Hiking Trail	RS-068
Horse Trail	RS-064
In-Line Skating	RS-125
Interpretive Trail	RS-114
Off-Road Vehicle Trail	RS-067
Rock Collecting *	RS-083
Skateboarding *	RS-098
Spelunking/Caves	RS-084
Technical Rock Climbing	RS-081
Tennis	RS-129
Wildlife Viewing	RS-076

Water Recreation	
Beach	RS-145
Boat Motor	RS-147
Boat Ramp	RS-054
Canoeing	RS-079
Diving	RS-062
Fish Cleaning *	RS-093
Fish Hatchery	RS-010
Fish Ladder *	RS-089
Fishing Area	RS-063
Fishing Pier	RS-119
Hand Launch/Small Boat Launch	RS-117
Jet Ski/Personal Watercraft	RS-121
Kayaking	RS-118
Lifejackets *	RS-094
Marina	RS-053
Motorboating	RS-055
Rafting	RS-146
Rowboating	RS-057
Sailing	RS-056
Scuba Diving	RS-060
Seal Viewing	RS-106
Surfing	RS-059
Swimming	RS-061
Tour Boat	RS-087
Wading	RS-088
Waterskiing	RS-058
Whale Viewing	RS-1 07
Wind Surfing	RS-1 08

Winter Recreation	
Chair Lift/Ski Lift	RS-105
Cross Country Skiing	RS-046
Dog Sledding	RS-143
Downhill Skiing	RS-047
Ice Fishing	RS-092
Ice Skating	RS-050
Ski Jumping	RS-048
Sledding	RS-049
Snow Tubing	RS-144
Snowboarding	RS-127
Snowmobiling	RS-052
Snowshoeing	RS-078
Winter Recreational Area	RS-077

* For non-road use only

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.

Section 2M.06 Use of Educational Plaques

Guidance:

- 01 *Educational plaques should accompany all initial installations of recreational and cultural interest area symbol signs. The educational plaque should remain in place for at least 3 years after the initial installation. 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.

Section 2M.07 Use of Prohibitive Circle and Diagonal Slash 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 red diagonal slash. 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 and the diagonal slash shall be oriented from the upper left to the lower right portions of the circle as shown in Figure 2M-1.**
- 02 **Requirements for retroreflection of the red circle and red diagonal slash shall be the same as those requirements for backgrounds, legends, symbols, arrows, and borders.**

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 **Except as provided in Paragraph 3, 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 When the legend Wildlife Viewing Area is displayed with the RS-076 symbol on a destination guide sign, the symbol may be placed to the left or right of the legend and the arrow may be placed below the symbol (see Figure 2M-2).
- 04 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.
- 05 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:

- 06 **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:

- 07 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.

**Figure 2M-5. Recreational and Cultural Interest Area Symbol Signs
for General Applications**



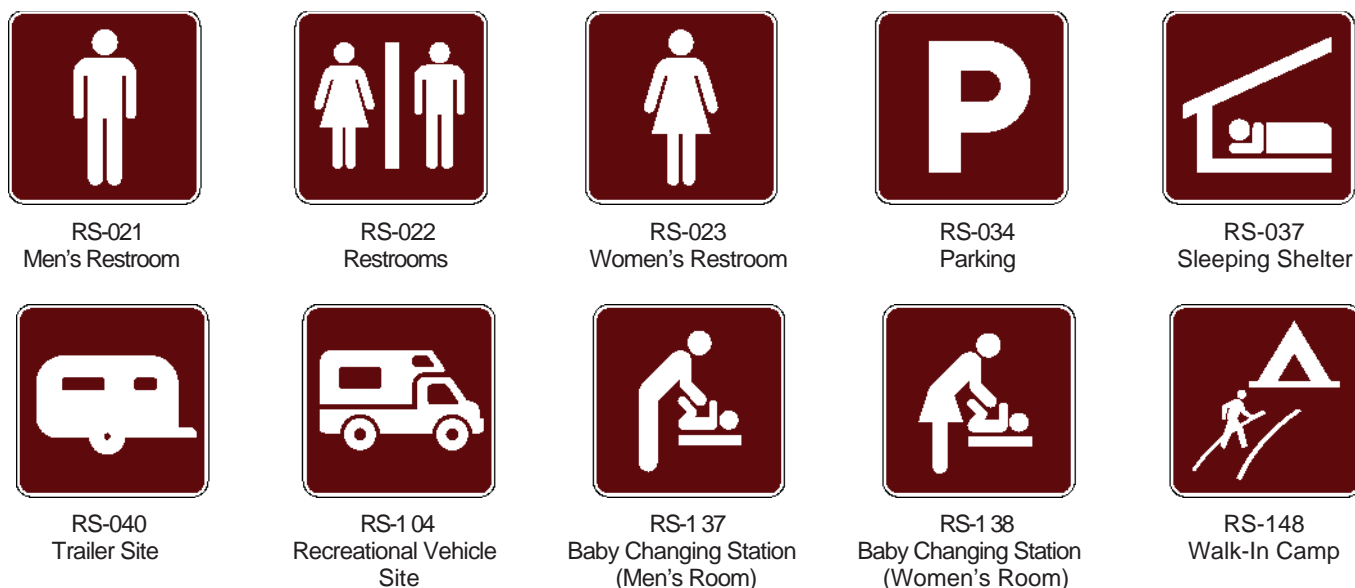
Figure 2M-6. Recreational and Cultural Interest Area Symbol Signs for Accommodations**Figure 2M-7. Recreational and Cultural Interest Area Symbol Signs for Services**

Figure 3B-8. Examples of Dotted Line and Channelizing Line Applications for Exit Ramp Markings (Sheet 2 of 2)

C – Parallel deceleration lane at a multi-lane exit ramp having an optional exit lane that also carries the through route

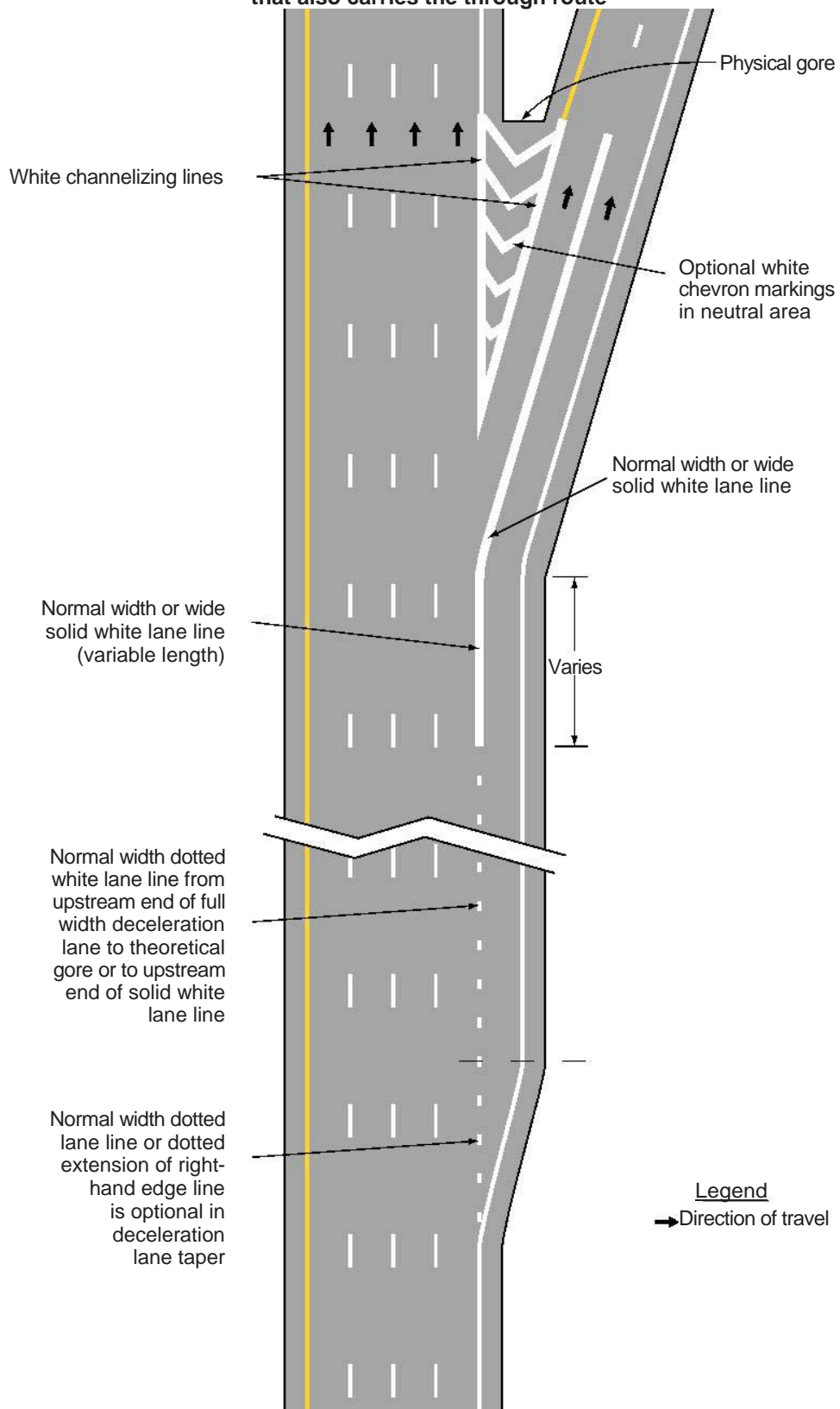
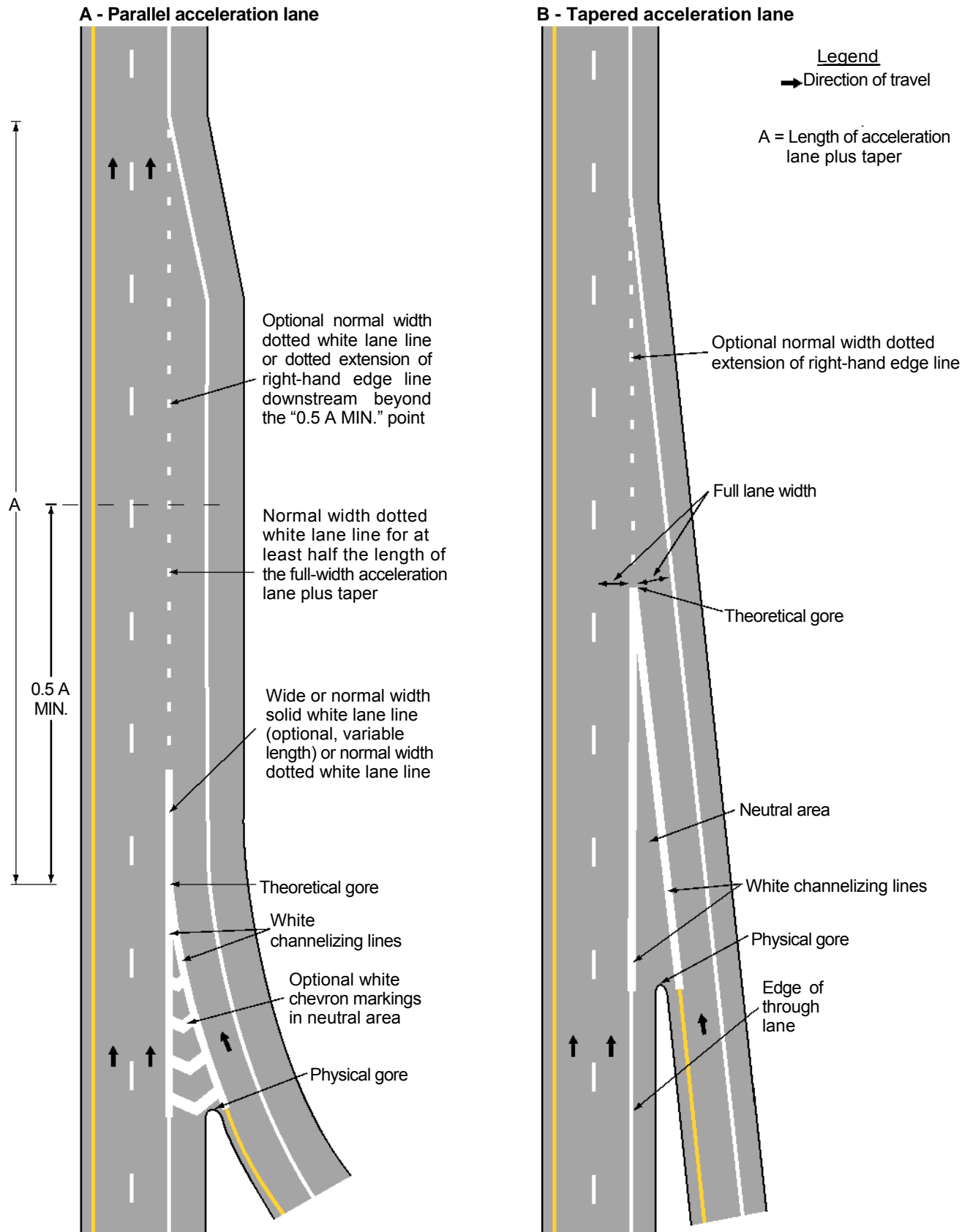


Figure 3B-9. Examples of Dotted Line and Channelizing Line Applications for Entrance Ramp Markings (Sheet 1 of 2)



CHAPTER 3C. ROUNDABOUT MARKINGS

Section 3C.01 General

Support:

- 01 A roundabout (see definition in Section 1A.13) is a specific type of circular intersection designed to control speeds and having specific traffic control features.

Guidance:

- 02 *Pavement markings and signing for a roundabout should be integrally designed to correspond to the geometric design and intended lane use of a roundabout.*
- 03 *Markings on the approaches to a roundabout and on the circular roadway should be compatible with each other to provide a consistent message to road users and should facilitate movement through the roundabout such that vehicles do not have to change lanes within the circulatory roadway in order to exit the roundabout in a given direction.*

Support:

- 04 Figure 3C-1 provides an example of the pavement markings for approach and circulatory roadways at a roundabout. Figure 3C-2 shows the options that are available for lane-use pavement marking arrows on approaches to roundabouts. Figures 3C-3 through 3C-14 illustrate examples of markings for roundabouts of various geometric and lane-use configurations.
- 05 Traffic control signals or pedestrian hybrid beacons (see Part 4) are sometimes used at roundabouts to facilitate the crossing of pedestrians or to meter traffic.
- 06 Section 8C.12 contains information about roundabouts that contain or are in close proximity to grade crossings.

Figure 3C-1. Example of Markings for Approach and Circulatory Roadways at a Roundabout

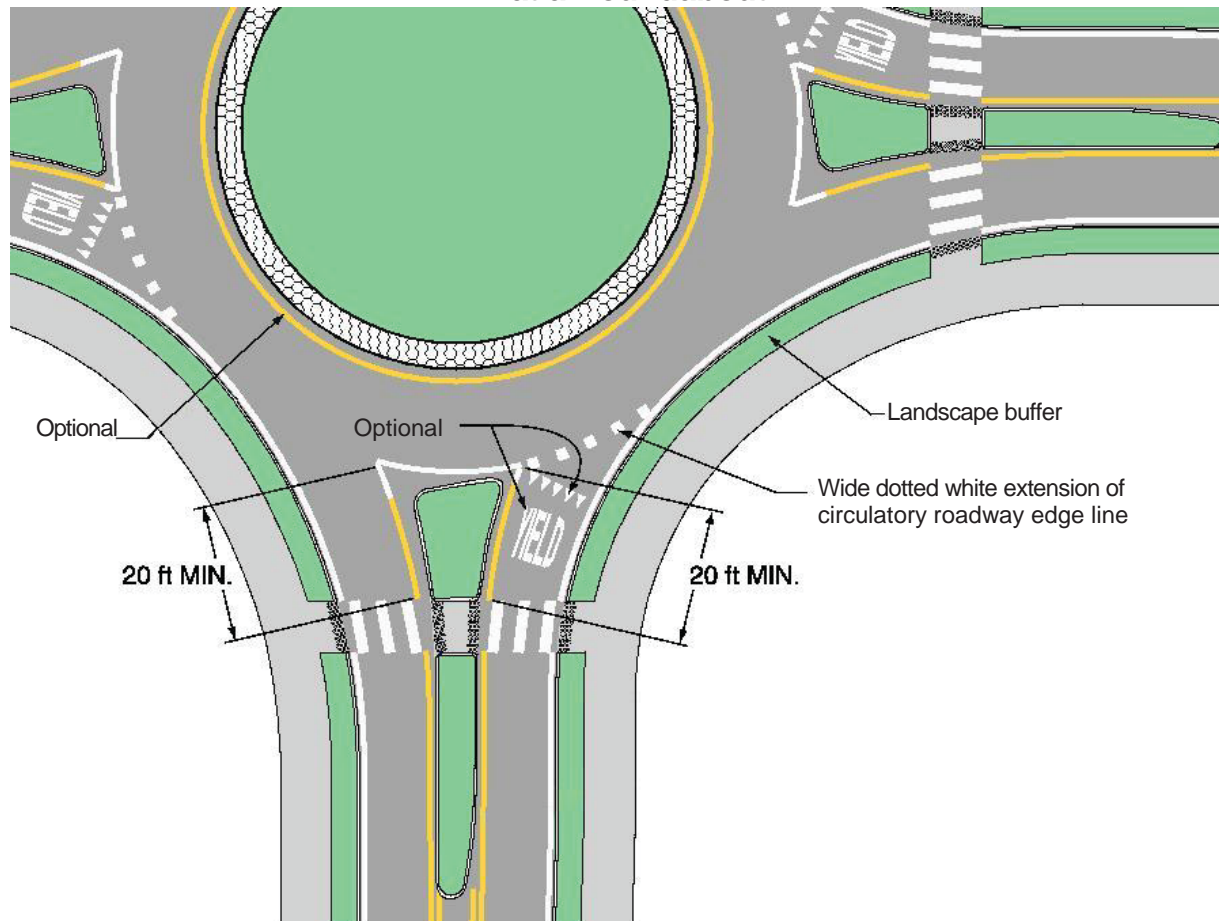


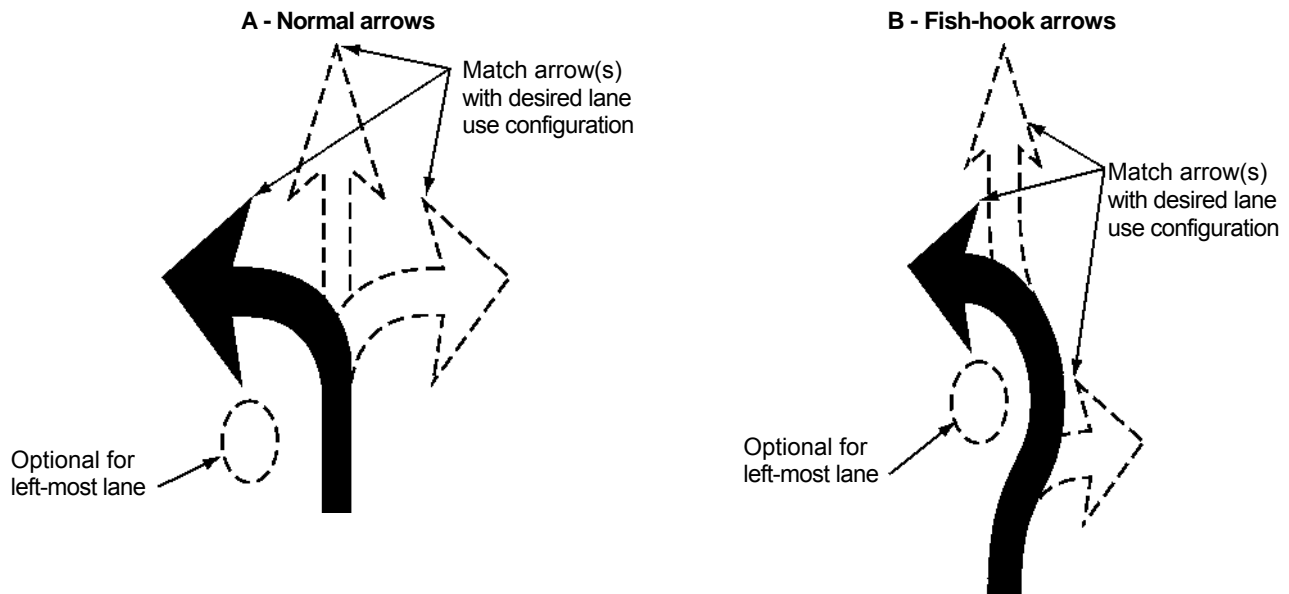
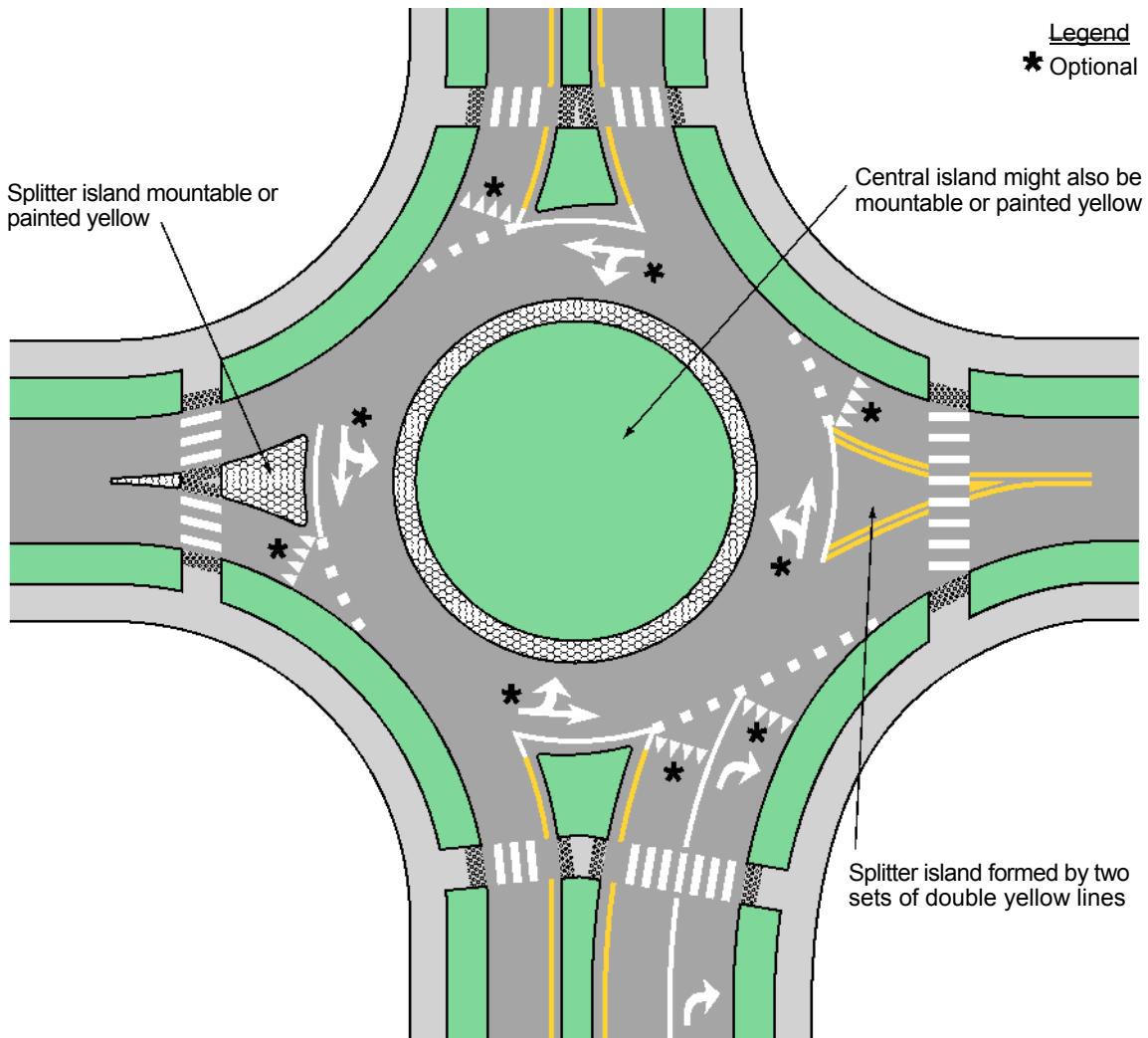
Figure 3C-2. Lane-Use Arrow Pavement Marking Options for Roundabout Approaches**Figure 3C-3. Example of Markings for a One-Lane Roundabout**

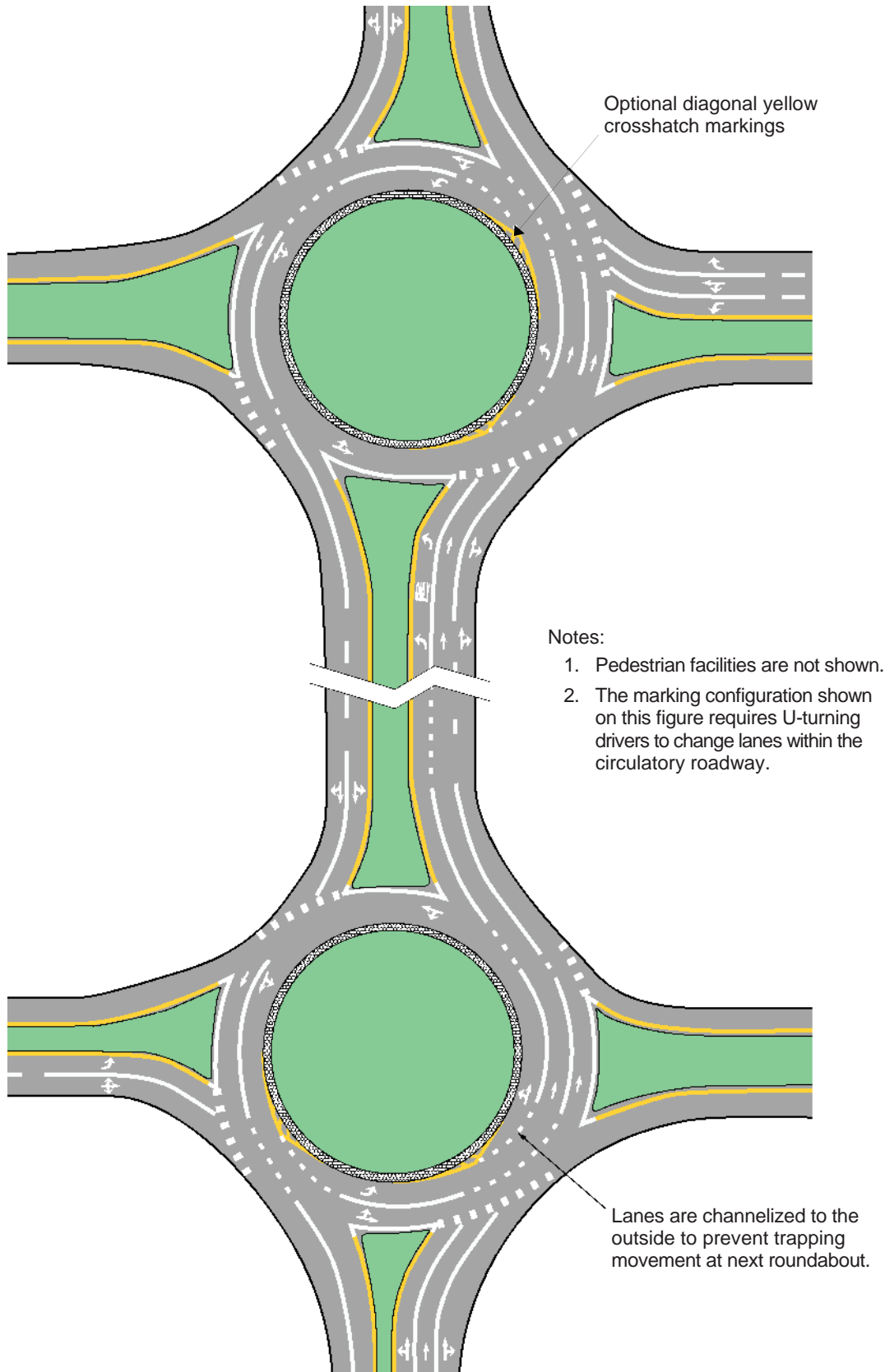
Figure 3C-13. Example of Markings for Two Linked Roundabouts

Figure 3C-14. Example of Markings for a Diamond Interchange with Two Circular-Shaped Roundabout Ramp Terminals

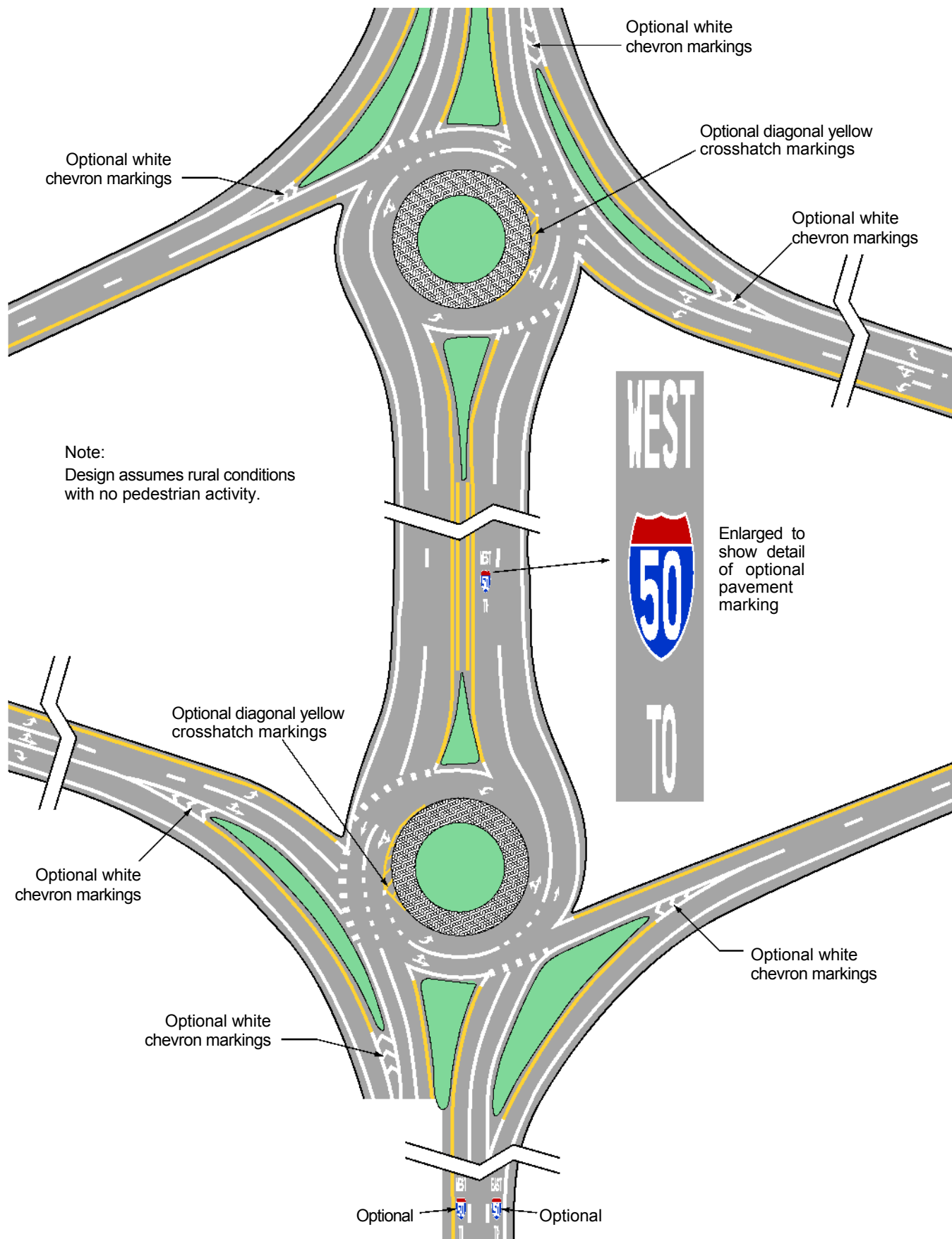
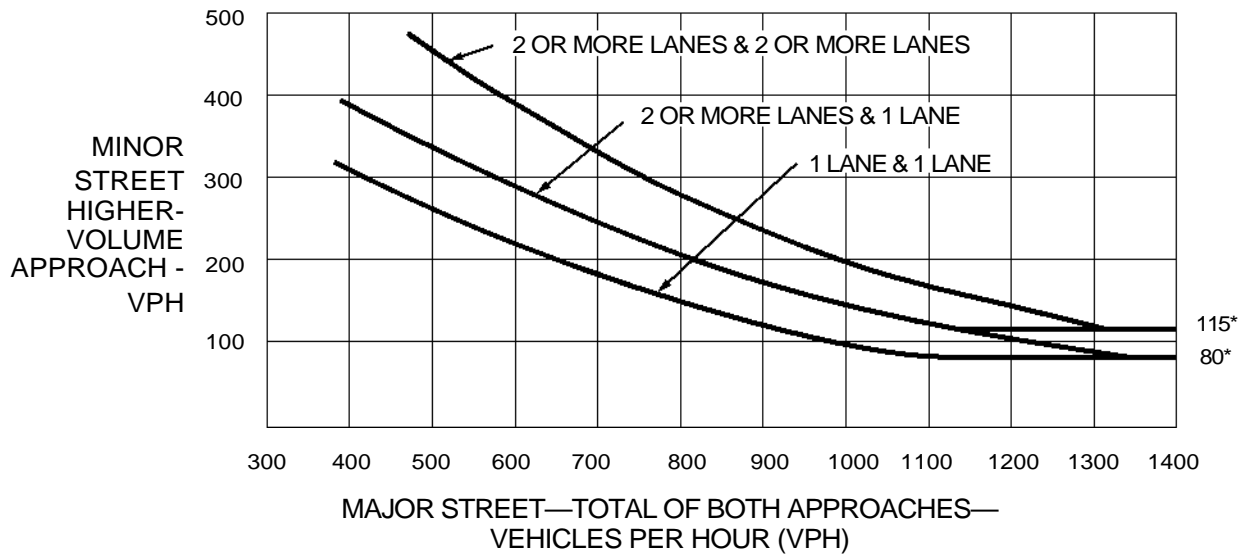
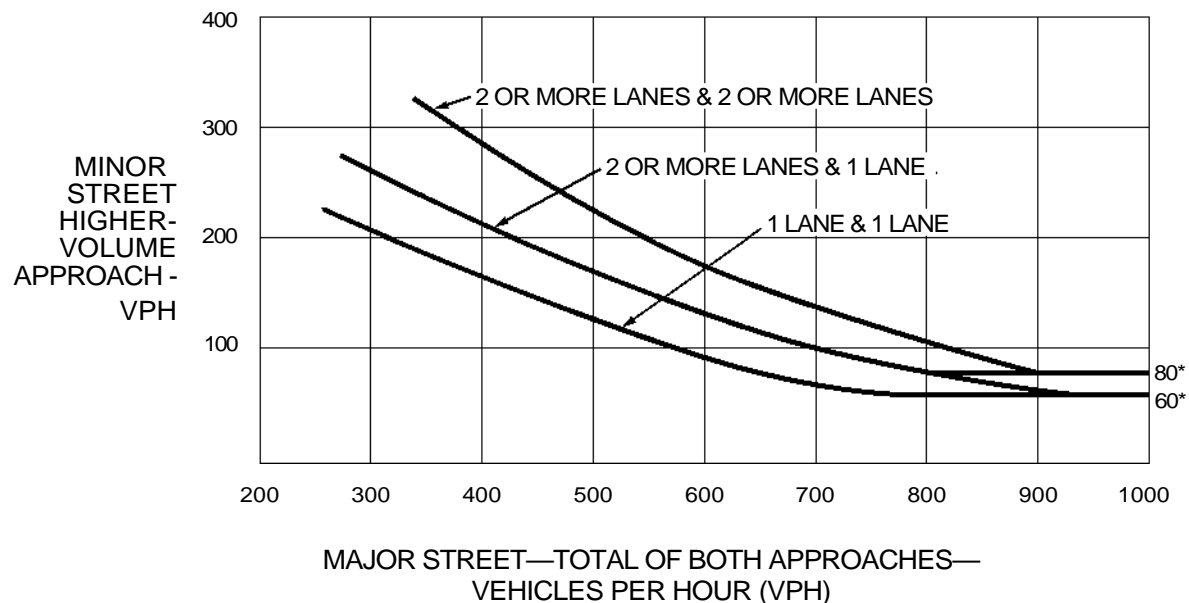


Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

*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)



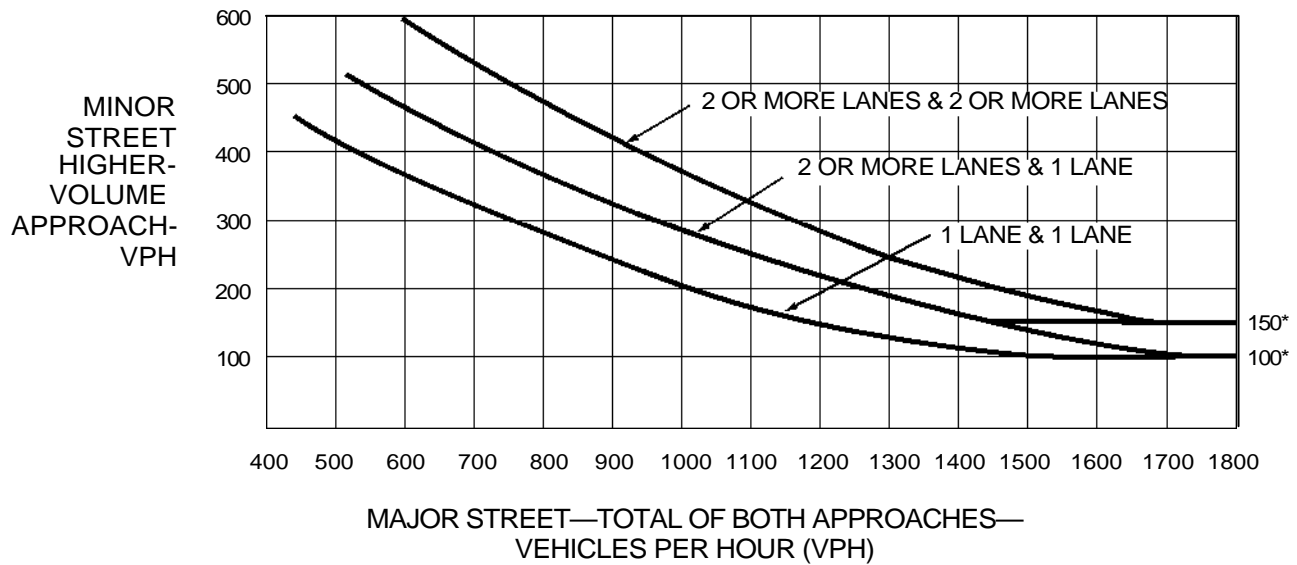
*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane

**Table 4C-3, Warrant 2, Four Hour Volume
Mathematical Equation Equivalency to Figure 4C-1**

X = sum of both major street approach volumes		
Y = volume of a) single minor street approach or b) minor street high volume approach		
Number of lanes for moving traffic on each approach		Equation
Minor Street	Major Street	
2 or more	2 or more	If $X \Rightarrow 1295$, $Y = 115$ or $Y = 879.232228 - 1.011380233X + 0.0003253082X^2$
2 or more	1	If $X \Rightarrow 1118$, $Y = 115$ or $Y = 651.50622395 - 0.7483745392X + 0.000240228X^2$
1	2 or more	If $X \Rightarrow 1340$, $Y = 80$ or $Y = 651.50622395 - 0.7483745392X + 0.000240228X^2$
1	1	If $X \Rightarrow 1092$, $Y = 80$ or $Y = 550.22697349 - 0.6996410769X + 0.0002462697X^2$

**Table 4C-4, Warrant 2, Four Hour Volume (70% Factor)
Mathematical Equation Equivalency to Figure 4C-2**

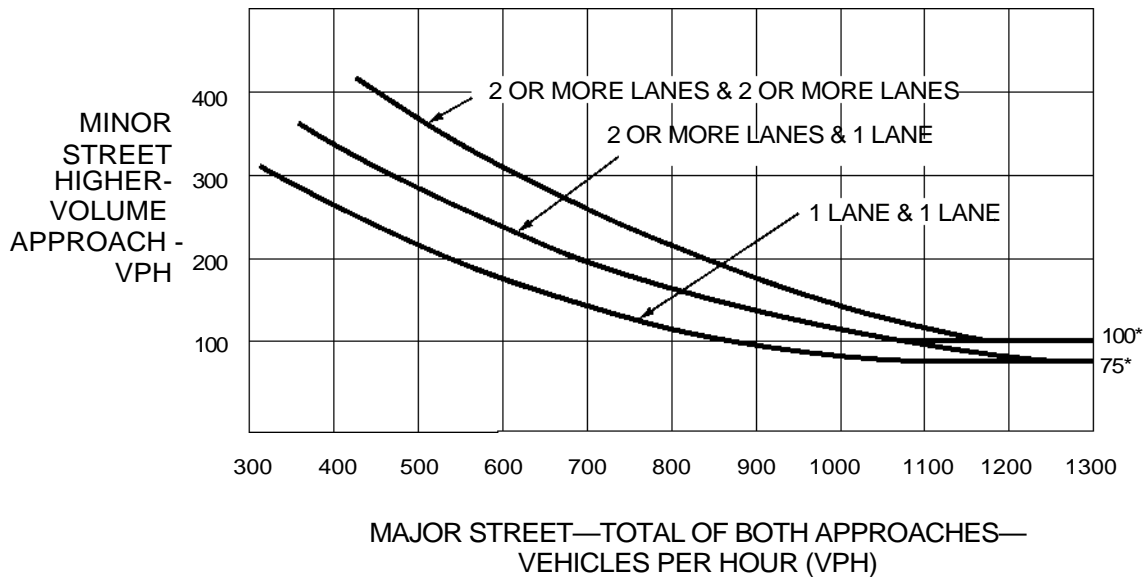
X = sum of both major street approach volumes		
Y = volume of a) single minor street approach or b) minor street high volume approach		
Number of lanes for moving traffic on each approach		Equation
Minor Street	Major Street	
2 or more	2 or more	If $X \Rightarrow 890$, $Y = 80$ or $Y = 613.77772474 - 0.9893678281X + 0.0004377428X^2$
2 or more	1	If $X \Rightarrow 797$, $Y = 80$ or $Y = 460.53837044 - 0.7635806818X + 0.0003591016X^2$
1	2 or more	If $X \Rightarrow 940$, $Y = 60$ or $Y = 460.53837044 - 0.7635806818X + 0.0003591016X^2$
1	1	If $X \Rightarrow 782$, $Y = 60$ or $Y = 377.22710663 - 0.6793503652X + 0.0003501046X^2$

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 OR ABOVE 40 MPH ON MAJOR STREET)



*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

**Table 4C-5, Warrant 3, Peak Hour Volume
Mathematical Equation Equivalency to Figure 4C-3**

X = sum of both major street approach volumes		
Y = volume of a) single minor street approach or b) minor street high volume approach		
Number of lanes for moving traffic on each approach		Equation
Minor Street	Major Street	
2 or more	2 or more	If $X \Rightarrow 1672$, $Y = 150$ or $Y = 1060.5405451 - 0.889969286X + 0.0002059999X^2$
2 or more	1	If $X \Rightarrow 1461$, $Y = 150$ or $Y = 837.59424427 - 0.7219511908X + 0.0001720248X^2$
1	2 or more	If $X \Rightarrow 1759$, $Y = 100$ or $Y = 837.59424427 - 0.7219511908X + 0.0001720248X^2$
1	1	If $X \Rightarrow 1516$, $Y = 100$ or $Y = 745.652000052 - 0.7548866636X + 0.00021703X^2$

**Table 4C-6, Warrant 3, Peak Hour Volume (70% Factor)
Mathematical Equation Equivalency to Figure 4C-4**

X = sum of both major street approach volumes		
Y = volume of a) single minor street approach or b) minor street high volume approach		
Number of lanes for moving traffic on each approach		Equation
Minor Street	Major Street	
2 or more	2 or more	If $X \Rightarrow 1183$, $Y = 100$ or $Y = 771.842673 - 0.9817221615X + 0.0003498922X^2$
2 or more	1	If $X \Rightarrow 1040$, $Y = 100$ or $Y = 593.38729059 - 0.7471500045X + 0.000262383X^2$
1	2 or more	If $X \Rightarrow 1196$, $Y = 75$ or $Y = 593.38729059 - 0.7471500045X + 0.000262383X^2$
1	1	If $X \Rightarrow 1054$, $Y = 75$ or $Y = 520.01155026 - 0.7647561999X + 0.0003250549X^2$

**Table 4C-7, Warrant 4, Pedestrian Volume
Mathematical Equation Equivalency to Figures 4C-5 thru 4C-8**

X = sum of (both) major street approach volume (MSAV)		
Y = volume of pedestrians crossing the major street		
Figure	Min. Ped Value	Equations (Required Peds with MSAV)
Fig 4C-5	$X \Rightarrow 1100$, $Y \Rightarrow 107$	$Y = 760.62 - 1.02098 X + 0.0003875 X^2$
Fig 4C-6	$X \Rightarrow 780$, $Y \Rightarrow 75$	$Y = 491.334 - 0.86656 X + 0.0004214 X^2$
Fig 4C-7	$X \Rightarrow 1500$, $Y \Rightarrow 133$	$Y = 1005.61 - 1.0188 X + 0.0002889 X^2$
Fig 4C-8	$X \Rightarrow 1044$, $Y \Rightarrow 93$	$Y = 669.187 - 0.96162 X + 0.0003915 X^2$

**Table 4C-8; Warrant 5, School Crossing
Vehicular Volume Equivalency Gaps In Vehicular Flow**

Average Number of Children Per Minute	Width of Street Vehicular Volume (v.p.h.)			
	30'	40'	50'	60'
1 - 5	645	610	570	530
6 - 10	620	580	545	505
11 - 15	590	555	515	480
16 - 20	565	530	490	450
21 - 25	540	500	465	425
26 - 30	510	475	435	400
31 - 35	485	450	410	370

Standard:

- 13 **At accessible pedestrian signal locations where pedestrian pushbuttons are used, each pushbutton shall activate both the walk interval and the accessible pedestrian signals.**

Section 4E.10 Accessible Pedestrian Signals and Detectors – 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 *Pushbuttons for accessible pedestrian signals should be located in accordance with the provisions of Section 4E.08 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:

- 03 **If two accessible pedestrian pushbuttons are placed less than 10 feet apart or on the same pole, each accessible pedestrian pushbutton shall be provided with the following features (see Sections 4E.11 through 4E.13):**
- A. A pushbutton locator tone,
 - B. A tactile arrow,
 - C. A speech walk message for the WALKING PERSON (symbolizing WALK) indication, and
 - D. A speech pushbutton information message.
- 04 **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 accessible pedestrian detectors are used, an additional accessible pedestrian detector shall be provided in the median.**

Section 4E.11 Accessible Pedestrian Signals and Detectors – 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 tick tone for each crossing coming from accessible pedestrian signal devices on separated poles located close to each crosswalk provides unambiguous information to pedestrians who are blind or visually impaired. 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 tactile arrow on the pushbutton (see Section 4E.12) that vibrates during the walk interval.**
- 04 **Accessible pedestrian signals shall have an audible walk indication during the walk interval only. The audible walk indication shall be audible from the beginning of the associated crosswalk.**
- 05 **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 greater than the pedestrian change interval.*

Standard:

- 07 **Where two accessible pedestrian signals are separated by a distance of at least 10 feet, the audible walk indication shall be a percussive tone. Where two accessible pedestrian signals on one corner are not separated by a distance of at least 10 feet, the audible walk indication shall be a speech walk message.**
- 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 pushbutton locator tones (see Section 4E.12) 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 pushbutton press.*

Standard:

- 10 **Automatic volume adjustment in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA.**

Guidance:

- 11 *The sound level of audible walk indications and pushbutton locator tones should be adjusted to be low enough to avoid misleading pedestrians who have visual 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. Speech messages might be either directly audible or transmitted, requiring a personal receiver to hear the message. 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 visual 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 pushbutton. This can be done by means of a speech pushbutton information message (see Section 4E.13) during the flashing or steady UPRaised HAND intervals, or by raised print and Braille labels on the pushbutton housing.
- 16 By combining the information from the pushbutton message or Braille label, the tactile arrow aligned in the direction of travel on the relevant crosswalk, and the speech walk message, pedestrians with visual disabilities are able to correctly respond to speech walk messages even if there are two pushbuttons on the same pole.

Standard:

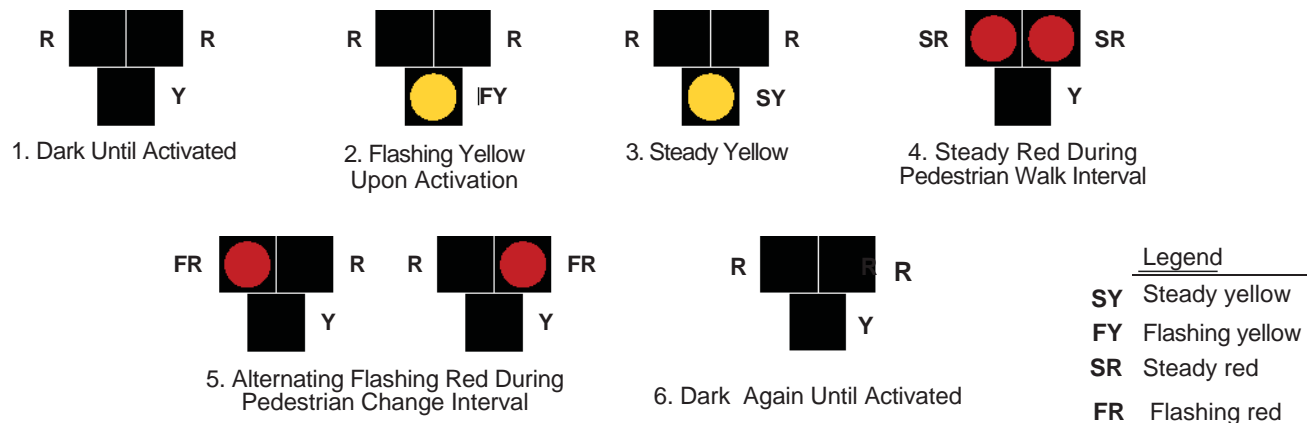
- 17 **If speech walk messages are used to communicate the walk interval, they shall provide a clear message that the walk interval is in effect, as well as to which crossing it applies. Speech walk messages shall be used only at intersections where it is technically infeasible to install two accessible pedestrian signals at one corner separated by a distance of at least 10 feet.**
- 18 **Speech walk messages that are used at intersections having pedestrian phasing that is concurrent with vehicular phasing 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 shall be patterned after the model: “Walk sign is on for all crossings.”**
- 20 **Speech walk messages shall not contain any additional information, except they shall include designations such as “Street” or “Avenue” where this information is necessary to avoid ambiguity at a particular location.**

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 4E.08) is used at an accessible pedestrian signal location, each actuation shall be accompanied by the speech message “wait.”**

Figure 4F-3. Sequence for a Pedestrian Hybrid Beacon

- B. *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,*
- C. *The installation should include suitable standard signs and pavement markings, and*
- D. *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 a 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.11 through 4D.16.*

Standard:

- 08 **A CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign (see Section 2B.53) 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.**

Option:

- 09 *A Pedestrian (W11-2) warning sign (see Section 2C.50) 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 sign.*

Guidance:

- 10 *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:

- 11 **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 4L.01 and 4L.03.**

Section 4F.03 Operation of Pedestrian Hybrid Beacons**Standard:**

- 01 **Pedestrian hybrid beacon indications shall be dark (not illuminated) during periods between actuations.**
- 02 **Upon 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 4F-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 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 visual disabilities and an engineering study determines that pedestrians without visual 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.*

Standard:

05 **The duration of the steady yellow change interval shall be determined using engineering practices.**

Guidance:

07 *The steady yellow interval should have a minimum duration of 3 seconds and a maximum duration of 6 seconds (see Section 4D.26). The longer intervals should be reserved for use on approaches with higher speeds.*

- 12 **A WAIT ON STOP (R1-7) sign (see Figure 6E-1) shall be displayed to road users approaching the AFAD.**

Option:

- 13 **A GO ON SLOW (R1-8) sign (see Figure 6E-1) may also be displayed to road users approaching the AFAD.**
Standard:

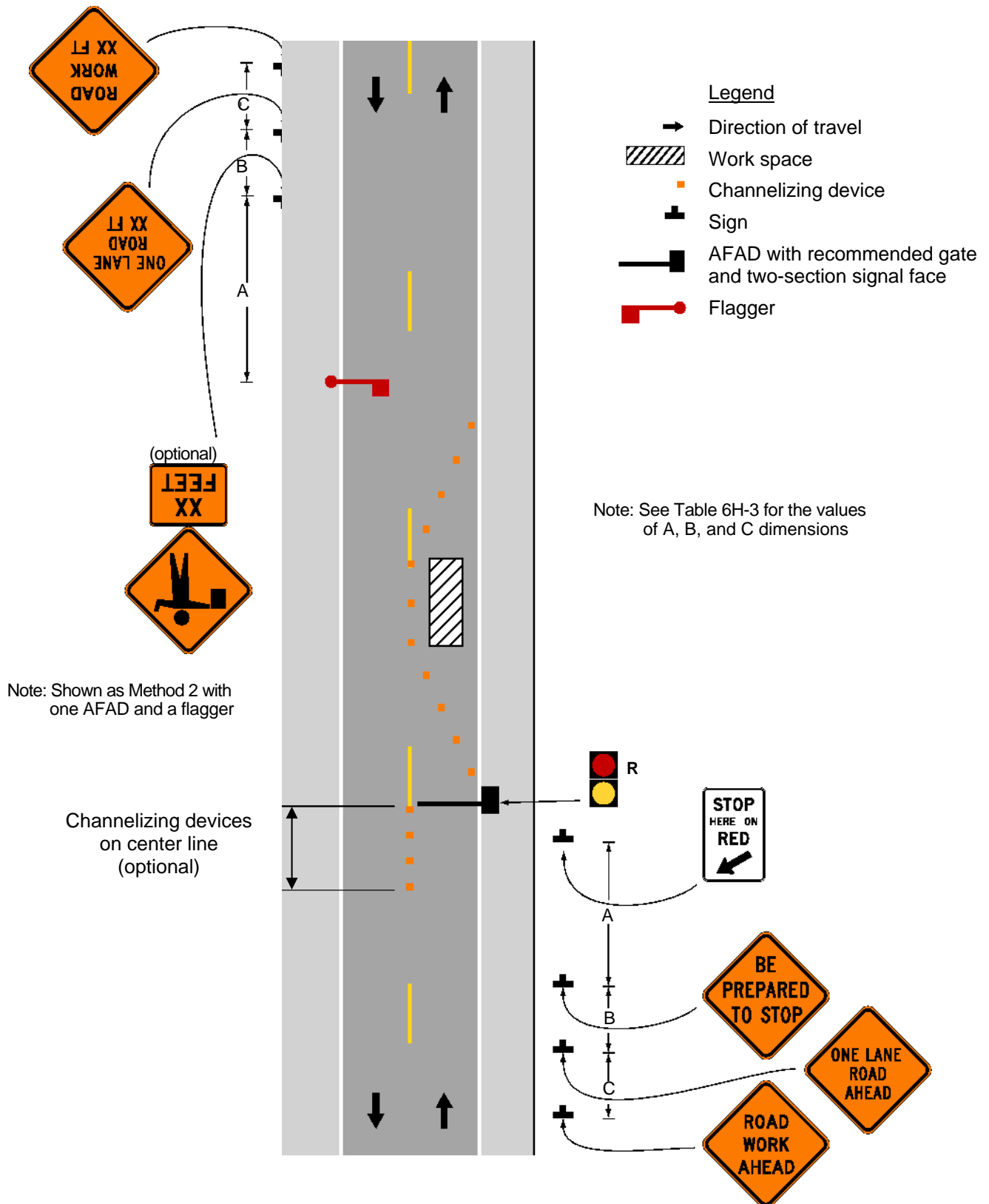
- 14 **The GO ON SLOW sign, if used, and the WAIT ON STOP sign shall be positioned on the same support structure as the AFAD or immediately adjacent to the AFAD such that they are in the same direct line of view of approaching traffic as the sign faces of the AFAD. Both signs shall have black legends and borders on white backgrounds. Each of these signs shall be rectangular in shape and each shall be at least 24 x 30 inches in size with letters at least 6 inches high.**
- 15 **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.**
- 16 **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.**

Section 6E.06 Red/Yellow Lens Automated Flagger Assistance Devices

Standard:

- 01 **Until such time as Red/Yellow Lens AFAD's are permitted this section is void.**
~~**A Red/Yellow Lens Automated Flagger Assistance Device (AFAD) (see Section 6E.04) 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 6E-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 8C-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.**~~
- 06 ~~**A Stop Here On Red (R10-6 or R10-6a) sign (see Section 2B.53) 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 6E-2).**~~
- 07 ~~**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.**~~
- 08 ~~**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.**~~

Figure 6E-2. Example of the Use of a Red/Yellow Lens Automated Flagger Assistance Device (AFAD)



- ~~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 4D.26, is justified by engineering judgment.~~

Section 6E.07 Flagger Procedures

Support:

- 01 The use of paddles and flags by flaggers is illustrated in Figure 6E-3.

Standard:

- 02 **Flaggers shall use a STOP/SLOW paddle, a flag, or an Automated Flagger Assistance Device (AFAD) 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 except for law enforcement personnel or emergency responders at incident scenes as described in Section 6I.01.**
- 03 **The following methods of signaling with paddles shall be used:**
- A. **To stop road users, the flagger shall 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 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 for road users to proceed.**
 - C. **To alert or slow traffic, the flagger shall 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.**

Option:

- 04 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.

Standard:

- 05 **The following methods of signaling with a flag shall be used:**
- A. **To stop road users, the flagger shall 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 face road users with the flag and arm lowered from the view of the road users, and shall motion with the free hand 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 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.**

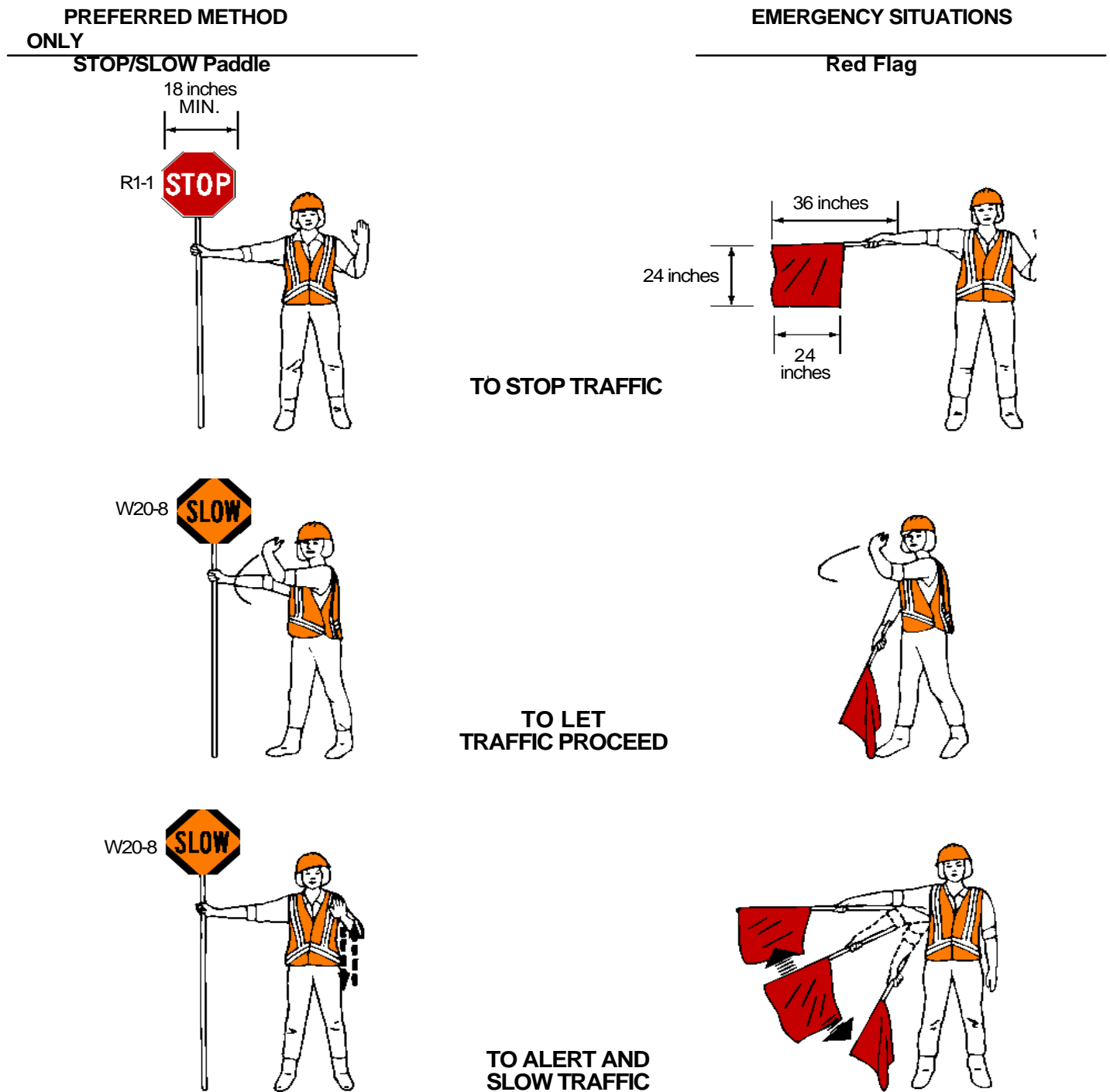
Guidance:

- 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. 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.*

Option:

- 07 At spot lane closures where adequate sight distance is available for the reasonably safe handling of traffic, the use of one flagger may be sufficient.

Figure 6E-3. Use of Hand-Signaling Devices by Flaggers



Standard:

08 **When standard orange flags or flashing warning lights are used in conjunction with signs, they shall not block the sign face.**

09 **Except as provided in Section 2A.11, the sizes for TTC signs and plaques shall be as shown in Table 6F-1. The sizes in the minimum column shall only be used on local streets or roadways where the 85th-percentile speed or posted speed limit is less than 35 mph.**

Option:

10 The dimensions of signs and plaques shown in Table 6F-1 may be increased wherever necessary for greater legibility or emphasis.

Standard:

11 **Deviations from standard sizes as prescribed in this Manual shall be in 6-inch increments.**

Support:

12 Sign design details are contained in the “Standard Highway Signs and Markings” book (see Section 1A.11).

13 Section 2A.06 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.

Standard:

14 **All signs used at night shall be either retroreflective with a material that has a smooth, sealed outer surface or illuminated to show the same shape and similar color both day and night.**

15 **The requirement for sign illumination shall not be considered to be satisfied by street, highway, or strobe lighting.**

Option:

16 Sign illumination may be either internal or external.

17 Signs may be made of rigid or flexible material.

Section 6F.03 Sign Placement*Guidance:*

01 *Signs should be located on the right-hand side of the roadway unless otherwise provided in this Manual.*

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.

Support:

03 The provisions of this Section regarding mounting height apply unless otherwise provided for a particular sign elsewhere in this Manual.

Standard:

04 **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 in rural areas shall be 5 feet (see Figure 6F-1).**

05 **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 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).**

06 **The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet.**

Option:

07 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.

Guidance:

08 *Neither portable nor permanent sign supports should be located on sidewalks, bicycle facilities, or areas designated for pedestrian or bicycle traffic. 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 6D.02), the secondary sign should not project more than 4 inches into the pedestrian facility.*

Table 6F-1. Temporary Traffic Control Zone Sign and Plaque Sizes (Sheet 1 of 3)

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway	Minimum
Stop	R1-1	6F.06	30 x 30*	—	—
Stop (on Stop/Slow Paddle)	R1-1	6E.03	18 x 18	—	—
Yield	R1-2	6F.06	36 x 36 x 36*	—	30 x 30 x 30
To Oncoming Traffic (plaque)	R1-2aP	6F.06	36 x 30	48 x 36	24 x 18
Wait on Stop	R1-7	6E.05	24 x 30	24 x 30	—
Go on Slow	R1-8	6E.05	24 x 30	24 x 30	—
Speed Limit	R2-1	6F.12	24 x 30*	36 x 48	—
Fines Higher (plaque)	R2-6P	6F.12	24 x 18	36 x 24	—
Fines Double (plaque)	R2-6aP	6F.12	24 x 18	36 x 24	—
\$XX Fine (plaque)	R2-6bP	6F.12	24 x 18	36 x 24	—
Begin Higher Fines Zone	R2-10	6F.12	24 x 30	36 x 48	—
End Higher Fines Zone	R2-11	6F.12	24 x 30	36 x 48	—
End Work Site Speed Limit	R2-Y12	6F.12	24 x 36	36 x 54	—
Movement Prohibition	R3-1,2,3,4,18,27	6F.06	24 x 24*	36 x 36	—
Mandatory Movement (1 lane)	R3-5	6F.06	30 x 36	—	—
Optional Movement (1 lane)	R3-6	6F.06	30 x 36	—	—
Right (Left) Lane Must Turn Right (Left)	R3-7	6F.06	30 x 30*	—	—
Advance Intersection Lane Control	R3-8	6F.06	Varies x 30	—	—
Do Not Pass	R4-1	6F.06	24 x 30	36 x 48	—
Pass With Care	R4-2	6F.06	24 x 30	36 x 48	—
Keep Right	R4-7	6F.06	24 x 30	36 x 48	—
Narrow Keep Right	R4-7c	6F.06	18 x 30	—	—
Stay in Lane	R4-9	6F.11	24 x 30	36 x 48	—
Do Not Enter	R5-1	6F.06	30 x 30*	36 x 36	—
Wrong Way	R5-1a	6F.06	36 x 24*	42 x 30	—
One Way	R6-1	6F.06	36 x 12*	54 x 18	—
One Way	R6-2	6F.06	24 x 30*	36 x 48	—
No Parking (symbol)	R8-3	6F.06	24 x 24	36 x 36	—
Pedestrian Crosswalk	R9-8	6F.13	36 x 18	—	—
Sidewalk Closed	R9-9	6F.14	24 x 12	—	—
Sidewalk Closed, Use Other Side	R9-10	6F.14	24 x 12	—	—
Sidewalk Closed Ahead, Cross Here	R9-11	6F.14	24 x 18	—	—
Sidewalk Closed, Cross Here	R9-11a	6F.14	24 x 12	—	—
Road Closed	R11-2	6F.08	48 x 30	—	—
Road Closed - Local Traffic Only	R11-3a,3b,4	6F.09	60 x 30	—	—
Weight Limit	R12-1,2	6F.10	24 x 30	36 x 48	—
Weight Limit (with symbols)	R12-5	6F.10	24 x 36	36 x 48	—
Turn and Curve Signs	W1-1,2,3,4	6F.16	36 x 36	48 x 48	30 x 30
Reverse Curve (2 or more lanes)	W1-4b,4c	6F.48	36 x 36	48 x 48	30 x 30
One-Direction Large Arrow	W1-6	6F.16	48 x 24	60 x 30	—
Chevron Alignment	W1-8	6F.16	18 x 24	30 x 36	—
Stop Ahead	W3-1	6F.16	36 x 36	48 x 48	30 x 30
Yield Ahead	W3-2	6F.16	36 x 36	48 x 48	30 x 30
Signal Ahead	W3-3	6F.16	36 x 36	48 x 48	30 x 30
Be Prepared to Stop	W3-4	6F.16	36 x 36	48 x 48	30 x 30
Reduced Speed Limit Ahead	W3-5	6F.16	36 x 36	48 x 48	30 x 30

Table 6F-1. Temporary Traffic Control Zone Sign and Plaque Sizes (Sheet 2 of 3)

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway	Minimum
XX MPH Speed Zone Ahead	W3-5a	6F.16	36 x 36	48 x 48	30 x 30
Merging Traffic	W4-1,5	6F.16	36 x 36	48 x 48	36 x 36
Lane Ends	W4-2	6F.24	36 x 36	48 x 48	30 x 30
Added Lane	W4-3,6	6F.16	36 x 36	48 x 48	30 x 30
No Merge Area (plaque)	W4-5P	6F.16	18 x 24	24 x 30	—
Road Narrows	W5-1	6F.16	36 x 36	48 x 48	30 x 30
Narrow Bridge	W5-2	6F.16	36 x 36	48 x 48	30 x 30
One Lane Bridge	W5-3	6F.16	36 x 36	48 x 48	30 x 30
Ramp Narrows	W5-4	6F.26	36 x 36	48 x 48	30 x 30
Divided Highway	W6-1	6F.16	36 x 36	48 x 48	30 x 30
Divided Highway Ends	W6-2	6F.16	36 x 36	48 x 48	30 x 30
Two-Way Traffic	W6-3	6F.32	36 x 36	48 x 48	30 x 30
Two-Way Traffic	W6-4	6F.76	12 x 18	12 x 18	—
Hill (symbol)	W7-1	6F.16	36 x 36	48 x 48	30 x 30
Next XX Miles (plaque)	W7-3aP	6F.53	24 x 18	36 x 30	—
Bump	W8-1	6F.16	36 x 36	48 x 48	30 x 30
Dip	W8-2	6F.16	36 x 36	48 x 48	30 x 30
Pavement Ends	W8-3	6F.16	36 x 36	48 x 48	30 x 30
Soft Shoulder	W8-4	6F.44	36 x 36	48 x 48	30 x 30
Slippery When Wet	W8-5	6F.16	36 x 36	48 x 48	30 x 30
Truck Crossing	W8-6	6F.36	36 x 36	48 x 48	30 x 30
Loose Gravel	W8-7	6F.16	36 x 36	48 x 48	30 x 30
Rough Road	W8-8	6F.16	36 x 36	48 x 48	30 x 30
Low Shoulder	W8-9	6F.44	36 x 36	48 x 48	30 x 30
Uneven Lanes	W8-11	6F.45	36 x 36	48 x 48	30 x 30
No Center Line	W8-12	6F.47	36 x 36	48 x 48	30 x 30
Fallen Rocks	W8-14	6F.16	36 x 36	48 x 48	30 x 30
Grooved Pavement	W8-15	6F.16	36 x 36	48 x 48	30 x 30
Motorcycle (plaque)	W8-15P	6F.54	24 x 18	30 x 24	—
Shoulder Drop Off (symbol)	W8-17	6F.44	36 x 36	48 x 48	30 x 30
Shoulder Drop-Off (plaque)	W8-17P	6F.44	24 x 18	30 x 24	—
Road May Flood	W8-18	6F.16	36 x 36	48 x 48	24 x 24
No Shoulder	W8-23	6F.16	36 x 36	48 x 48	30 x 30
Steel Plate Ahead	W8-24	6F.46	36 x 36	48 x 48	30 x 30
Shoulder Ends	W8-25	6F.16	36 x 36	48 x 48	30 x 30
Lane Ends	W9-1,2	6F.16	36 x 36	48 x 48	30 x 30
Center Lane Closed Ahead	W9-3	6F.23	36 x 36	48 x 48	30 x 30
Grade Crossing Advance Warning	W10-1	6F.16	36 dia.	—	—
Truck	W11-10	6F.36	36 x 36	48 x 48	30 x 30
Double Arrow	W12-1	6F.16	30 x 30	—	—
Low Clearance	W12-2	6F.16	36 x 36	48 x 48	30 x 30
Advisory Speed (plaque)	W13-1 P	6F.52	24 x 24	30 x 30	18 x 18
On Ramp (plaque)	W13-4P	6F.25	36 x 36	36 x 36	—
No Passing Zone (pennant)	W14-3	6F.16	48 x 48 x 36	64 x 64 x 48	40 x 40 x 30
XX Feet (plaque)	W16-2P	6F.16	24 x 18	30 x 24	—
Road Work (with distance)	W20-1	6F.18	36 x 36	48 x 48	30 x 30

Table 6F-1. Temporary Traffic Control Zone Sign and Plaque Sizes (Sheet 3 of 3)

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway	Minimum
Detour (with distance)	W20-2	6F.19	36 x 36	48 x 48	30 x 30
Road (Street) Closed (with distance)	W20-3	6F.20	36 x 36	48 x 48	30 x 30
One Lane Road (with distance)	W20-4	6F.21	36 x 36	48 x 48	30 x 30
Lane(s) Closed (with distance)	W20-5,5a	6F.22	36 x 36	48 x 48	30 x 30
Flagger (symbol)	W20-7	6F.31	36 x 36	48 x 48	30 x 30
Flagger	W20-7a	6F.31	36 x 36	48 x 48	30 x 30
Slow (on Stop/Slow Paddle)	W20-8	6E.03	18 x 18	—	—
Workers	W21-1,1a	6F.33	36 x 36	48 x 48	30 x 30
Fresh Oil (Tar)	W21-2	6F.34	36 x 36	48 x 48	30 x 30
Road Machinery Ahead	W21-3	6F.35	36 x 36	48 x 48	30 x 30
Slow Moving Vehicle	W21-4	6G.06	36 x 18	—	—
Shoulder Work	W21-5	6F.37	36 x 36	48 x 48	30 x 30
Shoulder Closed	W21-5a	6F.37	36 x 36	48 x 48	30 x 30
Shoulder Closed (with distance)	W21-5b	6F.37	36 x 36	48 x 48	30 x 30
Survey Crew	W21-6	6F.38	36 x 36	48 x 48	30 x 30
Utility Work Ahead	W21-7	6F.39	36 x 36	48 x 48	30 x 30
Mowing Ahead	W21-8	6G.06	36 x 36	48 x 48	30 x 30
Blasting Zone Ahead	W22-1	6F.41	36 x 36	48 x 48	30 x 30
Turn Off 2-Way Radio and Cell Phone	W22-2	6F.42	42 x 36	42 x 36	—
End Blasting Zone	W22-3	6F.43	42 x 36	42 x 36	36 x 30
Slow Traffic Ahead	W23-1	6F.27	48 x 24	48 x 24	—
New Traffic Pattern Ahead	W23-2	6F.30	36 x 36	48 x 48	30 x 30
Double Reverse Curve (1 lane)	W24-1	6F.49	36 x 36	48 x 48	30 x 30
Double Reverse Curve (2 lanes)	W24-1a	6F.49	36 x 36	48 x 48	30 x 30
Double Reverse Curve (3 lanes)	W24-1b	6F.49	36 x 36	48 x 48	30 x 30
All Lanes	W24-1cP	6F.49	24 x 24	30 x 30	—
Road Work Next XX Miles	G20-1	6F.56	36 x 18	48 x 24	—
End Road Work	G20-2	6F.57	36 x 18	48 x 24	—
Pilot Car Follow Me	G20-4	6F.58	36 x 18	—	—
Work Site (plaque)	XG20-5P	6F.12	24 x 18	36 x 24	—
Exit Open	E5-2	6F.28	48 x 36	48 x 36	—
Exit Closed	E5-2a	6F.28	48 x 36	48 x 36	—
Exit Only	E5-3	6F.29	48 x 36	48 x 36	—
Detour	M4-8	6F.59	24 x 12	30 x 15	—
End Detour	M4-8a	6F.59	24 x 18	24 x 18	—
End	M4-8b	6F.59	24 x 12	24 x 12	—
Detour	M4-9	6F.59	30 x 24	48 x 36	—
Bike/Pedestrian Detour	M4-9a	6F.59	30 x 24	—	—
Pedestrian Detour	M4-9b	6F.59	30 x 24	—	—
Bike Detour	M4-9c	6F.59	30 x 24	—	—
Detour	M4-10	6F.59	48 x 18	—	—
Speeding Max \$1000 Reckless Driving Max 8 yrs	XW2-6	6F.12	78 x 42	78 x 42	60 x 36
Speeding Max \$1000	XW2-6a	6F.12	36 x 36	48 x 48	30 x 30
Reckless Driving Max 8 Yrs	XW2-6b	6F.12	36 x 36	48 x 48	30 x 30
Watch For Stopped Traffic	XW3-4a	6F.16	36 x 36	48 x 48	30 x 30
Overhead Sign Installation	XW3-4s	6F.16	60 x 24	60 x 24	60 x 24
Road Construction Ahead	XW20-1a	6F.18	36 x 36	48 x 48	30 x 30
Exit Open	XE5-2	6F.28	36 x 36	48 x 48	30 x 30
Exit Closed	XE5-2a	6F.28	36 x 36	48 x 48	30 x 30
Right Lane Exit Only	XE5-3	6F.29	36 x 36	48 x 48	30 x 30

*See Table 2B-1 for minimum size required for signs facing traffic on multi-lane conventional roads

Notes: 1. Larger signs may be used wherever necessary for greater legibility or emphasis

2. Dimensions are shown in inches and are shown as width x height

- 16 **The bottom of a sign mounted on a barricade, or other portable support, shall be at least 1 foot above the traveled way.**

Option:

- 17 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:

- 18 If alterations are made to specific traffic control device supports that have been successfully crash tested in accordance with NCHRP Report 350, the altered supports might not be considered to be crashworthy.

Section 6F.04 Sign Maintenance

Guidance:

- 01 *Signs should be properly maintained for cleanliness, visibility, and correct positioning.*
02 *Signs that have lost significant legibility should be promptly replaced.*

Support:

- 03 Section 2A.08 contains information regarding the retroreflectivity of signs, including the signs that are used in TTC zones.

Section 6F.05 Regulatory Sign Authority

Support:

- 01 Regulatory signs such as those shown in Figure 6F-3 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 6F.06 Regulatory Sign Design

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 and Markings" book (see Section 1A.11).**

Support:

- 02 Regulatory signs are generally rectangular with a black legend and border on a white background. Exceptions include the STOP, YIELD, DO NOT ENTER, WRONG WAY, and ONE WAY signs.

Option:

- 03 The ONE WAY sign may be either a horizontal or vertical rectangular sign.

Section 6F.07 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 6F.08 ROAD (STREET) CLOSED Sign (R11-2)

Guidance:

- 01 *The ROAD (STREET) CLOSED (R11-2) sign (see Figure 6F-3) should be used when the roadway is closed to all road users except contractors' equipment or officially authorized vehicles. The R11-2 sign should be accompanied by appropriate warning and detour signing.*

Option:

- 02 The words BRIDGE OUT (or BRIDGE CLOSED) may be substituted for ROAD (STREET) CLOSED where applicable.

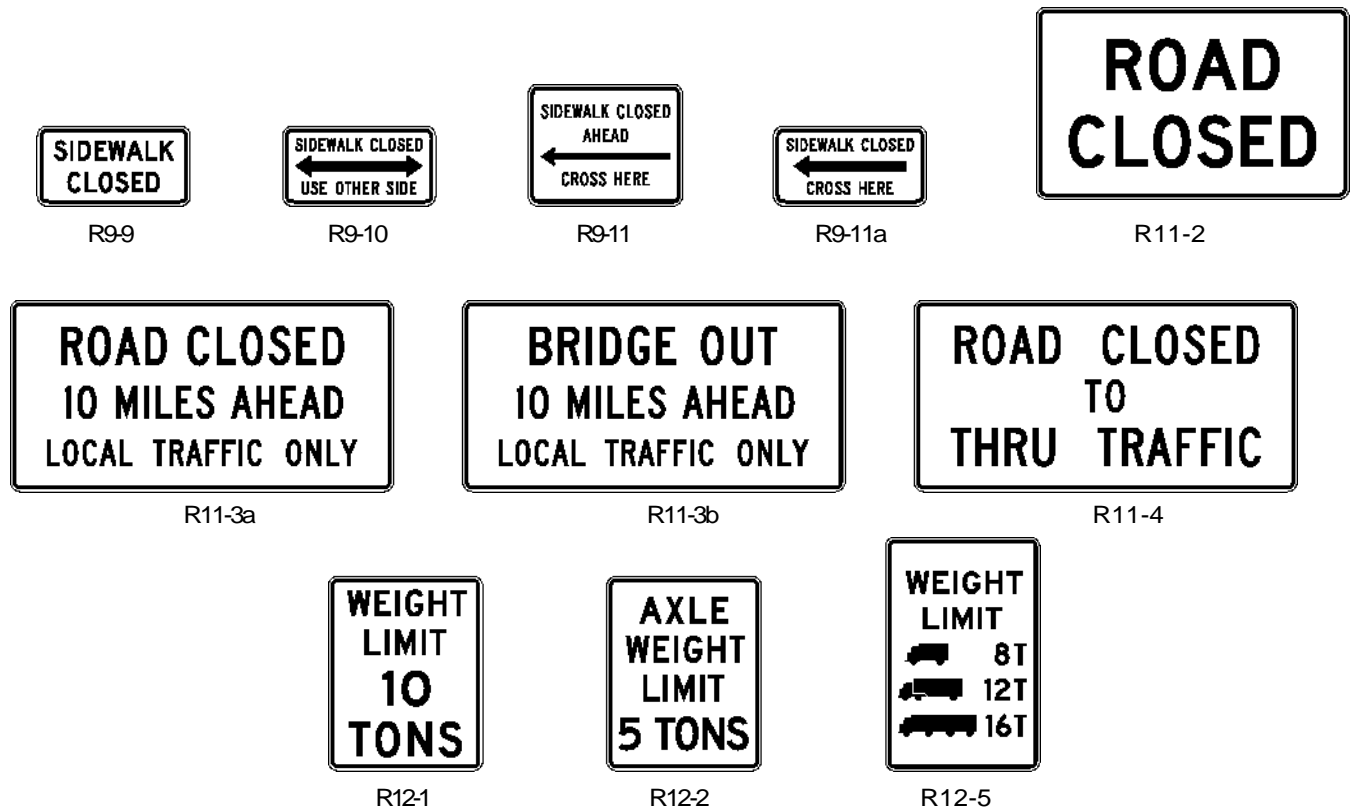
Guidance:

- 03 *The ROAD (STREET) CLOSED sign should be installed at or near the center of the roadway on or above a Type 3 Barricade that closes the roadway (see Section 6F.68).*

Figure 6F-3. Regulatory Signs and Plaques in Temporary Traffic Control Zones
(Sheet 1 of 2)



**Figure 6F-3. Regulatory Signs and Plaques in Temporary Traffic Control Zones
(Sheet 2 of 2)**



Standard:

- 04 The **ROAD (STREET) CLOSED** sign 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 6F.09 Local Traffic Only Signs (R11-3a, R11-4)

Guidance:

- 01 The *Local Traffic Only* signs (see Figure 6F-3) 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.
- 02 In rural applications, the *Local Traffic Only* sign should have the legend **ROAD CLOSED XX MILES AHEAD, LOCAL TRAFFIC ONLY** (R11-3a).

Option:

- 03 In urban areas, the legend **ROAD (STREET) CLOSED TO THRU TRAFFIC** (R11-4) or **ROAD CLOSED, LOCAL TRAFFIC ONLY** may 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 R11-3a sign where applicable.
- 05 The words **BRIDGE OUT** (or **BRIDGE CLOSED**) may be substituted for the words **ROAD (STREET) CLOSED** on the R11-3a or R11-4 sign where applicable.

Section 6F.10 Weight Limit Signs (R12-1, R12-2, R12-5)

Standard:

- 01 A **Weight Limit** sign (see Figure 6F-3), 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 6F.11 STAY IN LANE Sign (R4-9)

Option:

- 01 A STAY IN LANE (R4-9) sign (see Figure 6F-3) 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.

Section 6F.12 Work Zone and Higher Fines Signs and Plaques

Option:

- 01 A WORK SITE (XG20-5P) plaque (see Figure 6F-3) 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 SITE SPEED LIMIT (R2-Y12) sign (see Figure 6F-3) 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 6F-3) should be installed at the upstream end of a work zone where increased fines are imposed for traffic violations, and an END HIGHER FINES ZONE (R2-11) sign (see Figure 6F-3) should be installed at the downstream end of the work 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.17 and Figure 6F-3) 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.

Standard:

- 06 **Sign XW2-6, or signs XW2-6a and XW2-6b shall be posted on a highway work zone by:**
1. the Indiana Department of Transportation;
 2. a political subdivision; or
 3. a contractor of:
 - a. the Indiana Department of Transportation; or
 - b. a political subdivision;
- that is working at the highway work zone ahead of the first Road Work/Construction warning sign distance C (see Table 6H-3).
- 07 **Signs XW2-6a and XW2-6b are only for use in series where the right-of-way does not accommodate the larger signs or for moving operations where construction signs are set and removed daily for changing work locations.**

- 08 **Signs XW2-6, XW2-6a, and XW2-6b are not required for work zones of a short duration.**

Section 6F.13 PEDESTRIAN CROSSWALK Sign (R9-8)

Option:

- 01 The PEDESTRIAN CROSSWALK (R9-8) sign (see Figure 6F-3) 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 6D.02.**

Section 6F.14 SIDEWALK CLOSED Signs (R9-9, R9-10, R9-11, R9-11a)

Guidance:

- 01 *SIDEWALK CLOSED signs (see Figure 6F-3) should be used where pedestrian flow is restricted. Bicycle/Pedestrian Detour (M4-9a) signs or Pedestrian Detour (M4-9b) signs should be used where pedestrian flow is rerouted (see Section 6F.59).*
- 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.*

Figure 6F-4. Warning Signs and Plaques in Temporary Traffic Control Zones
(Sheet 2 of 3)

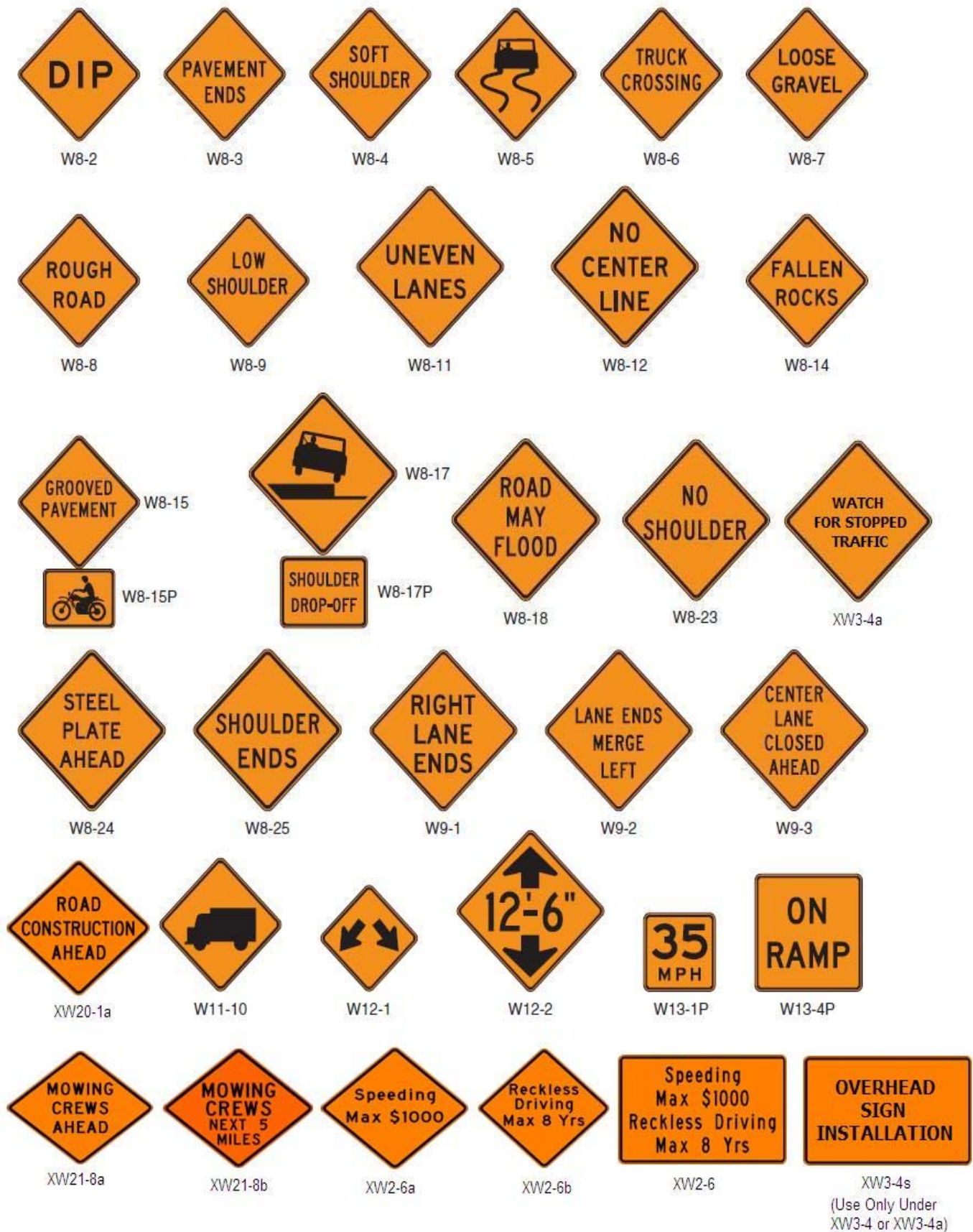
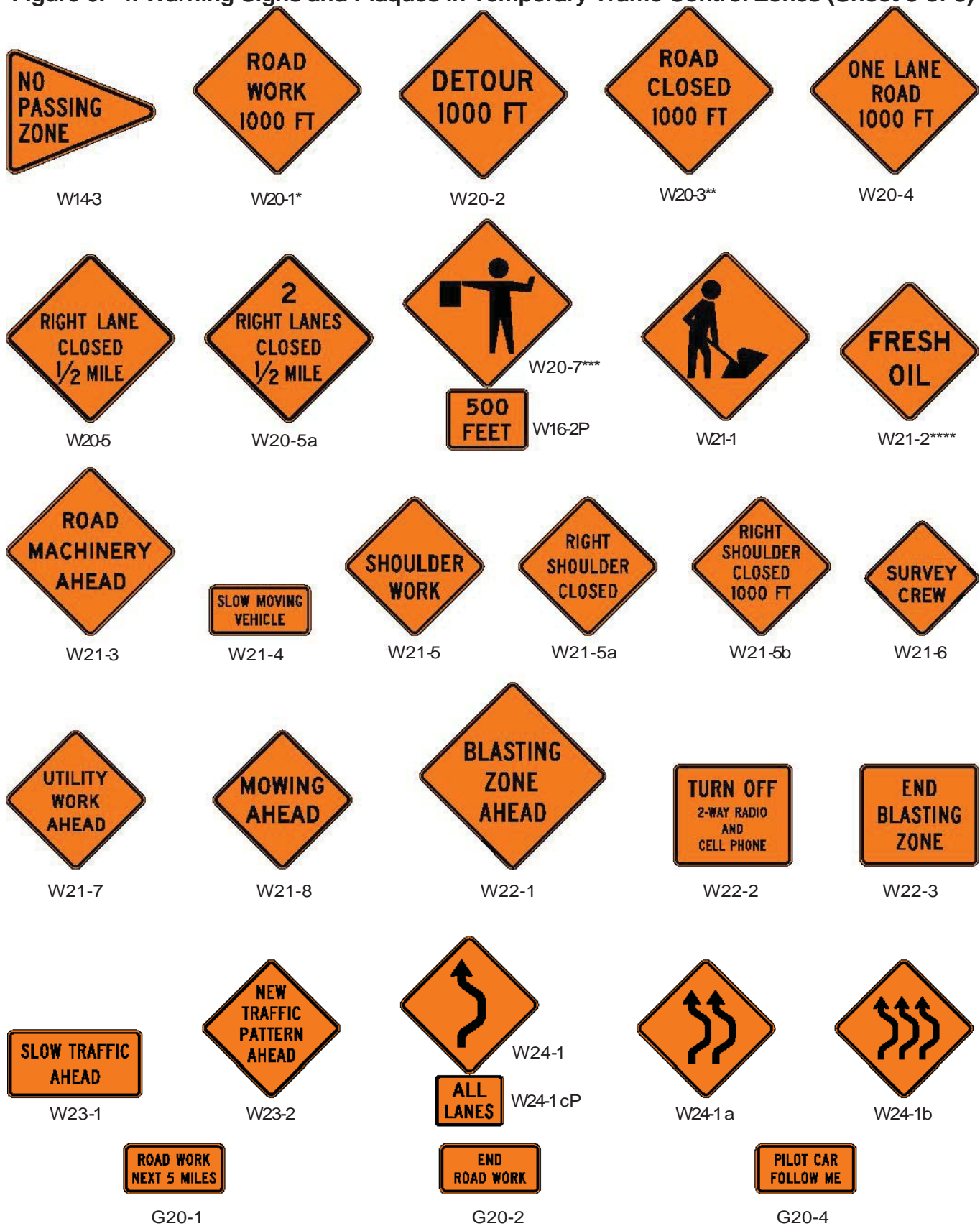


Figure 6F-4. Warning Signs and Plaques in Temporary Traffic Control Zones (Sheet 3 of 3)

* An optional STREET WORK word message sign is shown in the "Standard Highway Signs and Markings" book.

** An optional STREET CLOSED word message sign is shown in the "Standard Highway Signs and Markings" book.

*** An optional FLAGGER (W20-7a) word message sign is shown in the "Standard Highway Signs and Markings" book.

**** An optional FRESH TAR word message sign is shown in the "Standard Highway Signs and Markings" book.

CHAPTER 7B. SIGNS

Section 7B.01 Size of School Signs

Standard:

- 01 Except as provided in Section 2A.11, the sizes of signs and plaques to be used on conventional roadways in school areas shall be as shown in Table 7B-1.
- 02 The sizes in the Conventional Road column shall be used unless engineering judgment determines that a minimum or oversized sign size would be more appropriate.
- 03 The sizes in the Minimum column shall be used only where traffic volumes are low and speeds are 30 mph or lower, as determined by engineering judgment.
- 04 The sizes in the Oversized column shall be used on expressways.

Guidance:

- 05 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.

Option:

- 06 The sizes in the Oversized column may also be used at other locations that require increased emphasis, improved recognition, or increased legibility.
- 07 Signs and plaques larger than those shown in Table 7B-1 may be used (see Section 2A.11).

Table 7B-1. School Area Sign and Plaque Sizes

Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
School	S1-1	7B.08	36 x 36	30 x 30	48 x 48
School Bus Stop Ahead	S3-1	7B.13	36 x 36	30 x 30	48 x 48
School Bus Turn Ahead	S3-2	7B.14	36 x 36	30 x 30	48 x 48
Reduced School Speed Limit Ahead	S4-5, S4-5a	7B.16	36 x 36	30 x 30	48 x 48
School Speed Limit XX When Flashing	S5-1	7B.15	24 x 48	—	36 x 72
End School Zone	S5-2	7B.09	24 x 30	—	36 x 48
End School Speed Limit	S5-3	7B.15	24 x 30	—	36 x 48
In-Street Ped Crossing	R1-6, R1-6a, R1-6b, R1-6c	7B.11, 7B.12	12 x 36	—	—
Speed Limit (School Use)	R2-1	7B.15	24 x 30	—	36 x 48
Begin Higher Fines Zone	R2-10	7B.10	24 x 30	—	36 x 48
End Higher Fines Zone	R2-11	7B.10	24 x 30	—	36 x 48
Watch for School Bus	S3-Y3	7B.13	36 x 36	30 x 30	48 x 48
Stop When School Bus Stops	SR5-Y1	7B.13	24 x 24	24 x 24	24 x 24
All Lanes Stop When School Bus Stops	SR5-Y2	7B.13	36 x 36	36 x 36	36 x 36

Plaque	Sign Designation	Section	Conventional Road	Minimum	Oversized
X:XX to X:XX AM X:XX to X:XX PM	S4-1P	7B.15	24 x 10	—	36 x 18
When Children Are Present	S4-2P	7B.15	24 x 10	—	36 x 18
School	S4-3P	7B.09, 7B.15	24 x 8	—	36 x 12
When Flashing	S4-4P	7B.15	24 x 10	—	36 x 18
Mon-Fri	S4-6P	7B.15	24 x 10	—	36 x 18
All Year	S4-7P	7B.09	24 x 12	—	30 x 18
School Days Only	S4-Y8P	7B.15	24 x 10	—	36 x 18
Fines Higher	R2-6P	7B.10	24 x 18	—	36 x 24
XX Feet	W16-2P	7B.08	24 x 18	—	30 x 24
XX Ft	W16-2aP	7B.08	24 x 12	—	30 x 18
Turn Arrow	W16-5P	7B.08, 7B.09, 7B.11	24 x 12	—	30 x 18
Advance Turn Arrow	W16-6P	7B.08, 7B.09, 7B.11	24 x 12	—	30 x 18
Diagonal Arrow	W16-7P	7B.12	24 x 12	—	30 x 18
Diagonal Arrow (optional size)	W16-7P	7B.12	21 x 15	—	—
Ahead	W16-9P	7B.11	24 x 12	—	30 x 18

- Note: 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 Illumination and Reflectorization**Standard:**

- 01 The signs used for school area traffic control shall be retroreflectorized or illuminated.

Section 7B.03 Position of Signs**Support:**

- 01 Sections 2A.16 and 2A.17 contain provisions regarding the placements and locations of signs.
 02 Section 2A.19 contains provisions regarding the lateral offsets of signs.

Option:

- 03 In-roadway signs for school traffic control areas may be used consistent with the requirements of Sections 2B.12, 7B.11, and 7B.12.

Section 7B.04 Height of Signs**Support:**

- 01 Section 2A.18 contains provisions regarding the mounting height of signs.

Section 7B.05 Installation of Signs**Support:**

- 01 Section 2A.16 contains provisions regarding the installation of signs.

Section 7B.06 Lettering**Support:**

- 01 The “Standard Highway Signs and Markings” book (see Section 1A.11) contains information regarding sign lettering.

Section 7B.07 Sign Color for School Warning Signs**Standard:**

- 01 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 for a specific sign.

Section 7B.08 School Sign (S1-1) 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. 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 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 (see Section 7B.09).
 - 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, 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.11).
 - D. School Crossing – if combined with a diagonal downward pointing arrow (W16-7P) plaque to comprise the School Crossing assembly, 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.12).

Option:

- 03 If a school area 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 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.

Table 9B-1. Bicycle Facility Sign and Plaque Minimum Sizes (Sheet 1 of 2)

Sign or Plaque	Sign Designation	Section	Shared-Use Path	Roadway
Stop	R1-1	2B.05, 9B.03	18 x 18	30 x 30
Yield	R1-2	2B.08, 9B.03	18 x 18 x 18	30 x 30 x 30
Bike Lane	R3-17	9B.04	—	24 x 18
Bike Lane (plaques)	R3-17aP, R3-17bP	9B.04	—	24 x 8
Movement Restriction	R4-1,2,3,7,16	2B.28,29,30,32; 9B.14	12 x 18	18 x 24
Begin Right Turn Lane Yield to Bikes	R4-4	9B.05	—	36 x 30
Bicycles May Use Full Lane	R4-1 1	9B.06	—	30 x 30
Bicycle Wrong Way	R5-1b	9B.07	12 x 18	12 x 18
No Motor Vehicles	R5-3	9B.08	24 x 24	24 x 24
No Bicycles	R5-6	9B.09	18 x 18	24 x 24
No Parking Bike Lane	R7-9,9a	9B.10	—	12 x 18
No Pedestrians	R9-3	9B.09	18 x 18	18 x 18
Ride With Traffic (plaque)	R9-3cP	9B.07	12 x 12	12 x 12
Bicycle Regulatory	R9-5,6	9B.11	12 x 18	12 x 18
Shared-Use Path Restriction	R9-7	9B.12	12 x 18	—
No Skaters	R9-13	9B.09	18 x 18	18 x 18
No Equestrians	R9-14	9B.09	18 x 18	18 x 18
Push Button for Green Light	R10-4	9B.11	9 x 12	9 x 12
To Request Green Wait on Symbol	R10-22	9B.13	12 x 18	12 x 18
Bike Push Button for Green Light	R10-24	9B.11	9 x 15	9 x 15
Push Button to Turn On Warning Lights	R10-25	9B.11	9 x 12	9 x 12
Bike Push Button for Green Light (arrow)	R10-26	9B.11	9 x 15	9 x 15
Grade Crossing (Crossbuck)	R15-1	8B.03, 9B.14	24 x 4.5	48 x 9
Number of Tracks (plaque)	R15-2P	8B.03, 9B.14	13.5 x 9	27 x 18
Look	R15-8	8B.17, 9B.14	18 x 9	36 x 18
Horizontal Alignment	W1-1,2,3,4,5	2C.04, 9B.15	18 x 18	24 x 24
Arrow Warning	W1-6,7	2C.12, 2C.47, 9B.15	24 x 12	36 x 18
Intersection Warning	W2-1,2,3,4,5	2C.46, 9B.16	18 x 18	24 x 24
Stop,Yield, Signal Ahead	W3-1,2,3	2C.36, 9B.19	18 x 18	30 x 30
Narrow Bridge	W5-2	2C.20, 9B.19	18 x 18	30 x 30
Path Narrows	W5-4a	9B.19	18 x 18	—
Hill	W7-5	9B.19	18 x 18	30 x 30
Bump or Dip	W8-1,2	2C.28, 9B.17	18 x 18	24 x 24
Pavement Ends	W8-3	2C.30, 9B.17	18 x 18	30 x 30
Bicycle Surface Condition	W8-10	9B.17	18 x 18	30 x 30
Slippery When Wet (plaque)	W8-10P	9B.17	12 x 9	12 x 9
Grade Crossing Advance Warning	W10-1	8B.06, 9B.19	24 Dia.	36 Dia.
No Train Horn (plaque)	W10-9P	8B.21, 9B.19	18 x 12	30 x 24
Skewed Crossing	W10-12	8B.25, 9B.19	18 x 18	36 x 36
Bicycle Warning	W11-1	9B.18	18 x 18	24 x 24
Pedestrian Crossing	W11-2	2C.50, 9B.19	18 x 18	24 x 24
Combination Bike and Ped Crossing	W11-15	9B.18	18 x 18	30 x 30
Trail Crossing (plaque)	W11-15P	9B.18	18 x 12	24 x 18
Low Clearance	W12-2	2C.27, 9B.19	18 x 18	30 x 30
Playground	W15-1	2C.51, 9B.19	18 x 18	24 x 24
Share the Road (plaque)	W16-1P	2C.60, 9B.19	—	18 x 24

Table 9B-1. Bicycle Facility Sign and Plaque Minimum Sizes (Sheet 2 of 2)

Sign or Plaque	Sign Designation	Section	Shared-Use Path	Roadway
XX Feet (plaque)	W16-2P	2C.55, 9B.18	18 x 12	24 x 18
XX Ft (plaque)	W16-2aP	2C.55, 9B.18	18 x 9	24 x 12
Diagonal Arrow (plaque)	W16-7P	9B.18	—	24 x 12
Ahead (plaque)	W16-9P	9B.18	—	24 x 12
Destination (1 line)	D1-1, D1-1a	2D.37, 9B.20	varies x 6	varies x 18
Bicycle Destination (1 line)	D1-1b, D1-1c	9B.20	varies x 6	varies x 6
Destination (2 lines)	D1-2, D1-2a	2D.37, 9B.20	varies x 12	varies x 30
Bicycle Destination (2 lines)	D1-2b, D1-2c	9B.20	varies x 12	varies x 12
Destination (3 lines)	D1-3, D1-3a	2D.37, 9B.20	varies x 18	varies x 42
Bicycle Destination (3 lines)	D1-3b, D1-3c	9B.20	varies x 18	varies x 18
Street Name	D3-1	2D.43, 9B.20	varies x 6	varies x 8
Bicycle Parking Area	D4-3	9B.23	12 x 18	12 x 18
Reference Location (1-digit)	D10-1	2H.02, 9B.24	6 x 12	10 x 18
Intermediate Reference Location (2-digit)	D10-1a	2H.02, 9B.24	6 x 18	10 x 27
Reference Location (2-digit)	D10-2	2H.02, 9B.24	6 x 18	10 x 27
Intermediate Reference Location (3-digit)	D10-2a	2H.02, 9B.24	6 x 24	10 x 36
Reference Location (3-digit)	D10-3	2H.02, 9B.24	6 x 24	10 x 36
Intermediate Reference Location (4-digit)	D10-3a	2H.02, 9B.24	6 x 30	10 x 48
Bike Route	D11-1, D11-1c	9B.20	24 x 18	24 x 18
Bicycles Permitted	D11-1a	9B.25	18 x 18	—
Bike Route (plaque)	D11-1bP	9B.25	18 x 6	—
Pedestrians Permitted	D11 -2	9B.25	18 x 18	—
Skaters Permitted	D11 -3	9B.25	18 x 18	—
Equestrians Permitted	D11-4	9B.25	18 x 18	—
Bicycle Route	M1-8, M1-8a	9B.21	12 x 18	18 x 24
U.S. Bicycle Route	M1-9	9B.21	12 x 18	18 x 24
Bicycle Route Auxiliary Signs	M2-1; M3-1,2,3,4; M4-1,1a,2,3,5,6,7,7a,8,14	9B.22	12 x 6	12 x 6
Bicycle Route Arrow Signs	M5-1,2; M6-1,2,3,4,5,6,7	9B.22	12 x 9	12 x 9
Type 3 Object Markers	OM3-L,C,R	2C.63, 9B.26	6 x 18	12 x 36

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

Guidance:

- 04 *Except for size, the design of signs and plaques for bicycle facilities should be identical to that provided in this Manual for signs and plaques for streets and highways.*

Support:

- 05 Uniformity in design of bicycle signs and plaques includes shape, color, symbols, arrows, wording, lettering, and illumination or retroreflectorization.

Section 9B.03 STOP and YIELD Signs (R1-1, R1-2)

Standard:

- 01 **STOP (R1-1) signs** (see Figure 9B-2) shall be installed on shared-use paths at points where bicyclists are required to stop.
- 02 **YIELD (R1-2) signs** (see Figure 9B-2) shall be installed on shared-use paths 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.

(3) **NONSAFETY HAZARDS** — The call boxes and their location, posts, foundations, and mountings shall be consistent with requirements of the Manual on Uniform Traffic Control Devices or any requirements deemed necessary by the Secretary to assure that the call boxes shall not be a safety hazard to motorists.

Section 353(a) SIGNS Traffic control signs referred to in the experimental project conducted in the State of Oregon in December 1991 shall be deemed to comply with the requirements of Section 2B-4 of the Manual on Uniform Traffic Control Devices of the Department of Transportation.

Section 353(b) STRIPES Notwithstanding any other provision of law, a red, white, and blue center line in the Main Street of Bristol, Rhode Island, shall be deemed to comply with the requirements of Section 3B-1 of the Manual on Uniform Traffic Control Devices of the Department of Transportation.

METRIC CONVERSIONS

Throughout this Manual all dimensions and distances are provided in English units. Tables A2-1 through A2-4 show the equivalent Metric (International System of Units) value for each of the English unit numerical values that are used in this Manual.

Table A2-1. Conversion of Inches to Millimeters

Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
0.25	6	3.5	87	12	300	36	900
0.4	10	4	100	15	375	42	1050
0.5	13	4.5	113	16	400	48	1200
0.75	19	5	125	18	450	54	1350
1	25	6	150	21	525	60	1500
1.25	31	8	200	24	600	72	1800
2	50	9	225	27	675	84	2100
2.25	56	10	250	28	700	120	3000
2.5	62	10.4	260	30	750		
3	75	10.6	265	32	800		

Note: 1 inch = 25.4 millimeters; 1 millimeter = 0.039 inches

Table A2-2. Conversion of Feet to Meters

Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters
1	0.3	11	3.4	40	12	200	60
2	0.6	12	3.7	50	15	250	75
2.5	0.75	12.75	3.9	53	16	300	90
3	0.9	14	4.3	60	18	330	100
3.25	1	15	4.6	70	21	400	120
3.5	1.1	16	4.9	72	22	500	150
4	1.2	17	5.2	75	23	530	160
4.5	1.4	18	5.5	80	24	600	180
4.75	1.45	19	5.8	90	27	650	200
5	1.5	20	6.1	95	29	700	210
5.67	1.7	22	6.7	100	30	750	230
6	1.8	23.5	7.2	110	34	800	245
7	2.1	25	7.6	120	37	1,000	300
8	2.4	25.6	7.8	125	38	1,500	450
9	2.7	30	9	130	675	2,000	600
9.25	2.8	32	9.8	140	700	2,300	700
9.5	2.9	33	10	150	750	3,000	900
10	3	36	11	180	800		

Note: 1 foot = 0.3048 meters; 1 meter = 3.28 feet

Table A2-3. Conversion of Miles to Kilometers

Miles	Kilometers	Miles	Kilometers	Miles	Kilometers	Miles	Kilometers
0.25	0.4	1	1.6	5	8	70	110
0.5	0.8	2	3.2	10	16		
0.6	1	3	4.8	15	25		

Note: 1 mile = 1.609 kilometers; 1 kilometer = 0.621 miles

Table A2-4. Conversion of Miles per Hour to Kilometers/Hour

mph	km/h	mph	km/h	mph	km/h	mph	km/h
3	5	25	40	45	70	65	105
10	16	30	50	50	80	70	115
15	20	35	60	55	90	80	130
20	30	40	60	60	100		

Note: 1 mile per hour = 1.609 kilometers/hour; 1 kilometer/hour = 0.621 miles per hour