

PART 2

Signs

MUTCD 2000

Manual on Uniform Traffic Control Devices

m i l l e n n i u m e d i t i o n

December 2000

Incorporating:
Proposed Revision No. 2
Errata No. 1 dated June 14, 2001



U.S. Department
of Transportation

**Federal Highway
Administration**

PART 2. SIGNS

TABLE OF CONTENTS

	<u>Page</u>
CHAPTER 2A. GENERAL	
Section 2A.01 Function and Purpose of Signs	2A-1
Section 2A.02 Definitions	2A-1
Section 2A.03 Standardization of Application	2A-2
Section 2A.04 Excessive Use of Signs	2A-2
Section 2A.05 Classification of Signs	2A-3
Section 2A.06 Design of Signs	2A-3
Section 2A.07 Changeable Message Signs	2A-4
Section 2A.08 Retroreflectivity and Illumination	2A-5
Section 2A.09 Minimum Retroreflectivity Levels	2A-6
Section 2A.10 Shapes	2A-6
Section 2A.11 Sign Colors	2A-9
Section 2A.12 Dimensions	2A-9
Section 2A.13 Symbols	2A-11
Section 2A.14 Word Messages	2A-12
Section 2A.15 Sign Borders	2A-12
Section 2A.16 Standardization of Location	2A-13
Section 2A.17 Overhead Sign Installations	2A-17
Section 2A.18 Mounting Height	2A-18
Section 2A.19 Lateral Offset	2A-19
Section 2A.20 Position of Signs	2A-20
Section 2A.21 Orientation	2A-20
Section 2A.22 Posts and Mountings	2A-21
Section 2A.23 Maintenance	2A-21
Section 2A.24 Median Opening Treatments for Divided Highways with Wide Medians	2A-22
CHAPTER 2B. REGULATORY SIGNS	
Section 2B.01 Application of Regulatory Signs	2B-1
Section 2B.02 Design of Regulatory Signs	2B-1
Section 2B.03 Size of Regulatory Signs	2B-2
Section 2B.04 STOP Sign (R1-1)	2B-2
Section 2B.05 STOP Sign Applications	2B-9
Section 2B.06 STOP Sign Placement	2B-10
Section 2B.07 Multiway Stop Applications	2B-11
Section 2B.08 YIELD Sign (R1-2)	2B-13
Section 2B.09 YIELD Sign Applications	2B-13
Section 2B.10 YIELD Sign Placement	2B-14
Section 2B.11 Speed Limit Sign (R2-1)	2B-15
Section 2B.12 Truck Speed Limit Sign (R2-2)	2B-16
Section 2B.13 Night Speed Limit Sign (R2-3)	2B-16

Section 2B.14 Minimum Speed Limit Sign (R2-4)2B-16

Section 2B.15 FINES HIGHER Sign (R2-6).....2B-18

Section 2B.16 Location of Speed Limit Signs2B-19

Section 2B.17 Turn Prohibition Signs (R3-1 through R3-4, and R3-18)2B-19

Section 2B.18 Intersection Lane Control Signs (R3-5 through R3-8).....2B-21

Section 2B.19 Mandatory Movement Lane Control Signs (R3-5, R3-5a, and R3-7)2B-23

Section 2B.20 Optional Movement Lane Control Sign (R3-6)2B-24

Section 2B.21 Advance Intersection Lane Control Signs (R3-8 Series)2B-24

Section 2B.22 Two-Way Left Turn Only Signs (R3-9a, R3-9b).....2B-26

Section 2B.23 Reversible Lane Control Signs (R3-9d, R3-9f through R3-9i)2B-26

Section 2B.24 DO NOT PASS Sign (R4-1).....2B-30

Section 2B.25 PASS WITH CARE Sign (R4-2).....2B-32

Section 2B.26 SLOWER TRAFFIC KEEP RIGHT Sign (R4-3).....2B-32

Section 2B.27 Slow Moving Traffic Lane Signs (R4-5, R4-6)2B-32

Section 2B.28 Keep Right and Keep Left Signs (R4-7, R4-8).....2B-33

Section 2B.29 DO NOT ENTER Sign (R5-1)2B-36

Section 2B.30 WRONG WAY Sign (R5-1a).....2B-36

Section 2B.31 Selective Exclusion Signs.....2B-37

Section 2B.32 ONE WAY Signs (R6-1, R6-2).....2B-38

Section 2B.33 Divided Highway Crossing Signs (R6-3, R6-3a).....2B-44

Section 2B.34 Parking, Standing, and Stopping Signs (R7 and R8 Series)2B-47

Section 2B.35 Design of Parking, Standing, and Stopping Signs2B-47

Section 2B.36 Placement of Parking, Stopping, and Standing Signs2B-49

Section 2B.37 Emergency Restriction Signs (R8-4, R8-7, R8-8).....2B-50

Section 2B.38 WALK ON LEFT FACING TRAFFIC and No Hitchhiking Signs (R9-1, R9-4, R9-4a).....2B-50

Section 2B.39 Pedestrian Crossing Signs (R9-2, R9-3)2B-52

Section 2B.40 Traffic Signal Signs (R10-1 through R10-21).....2B-53

Section 2B.41 KEEP OFF MEDIAN Sign (R11-1).....2B-57

Section 2B.42 ROAD CLOSED Sign (R11-2) and LOCAL TRAFFIC ONLY Signs (R11-3 Series, R11-4).....2B-58

Section 2B.43 Weight Limit Signs (R12-1 through R12-5)2B-58

Section 2B.44 Weigh Station Signs (R13 Series)2B-60

Section 2B.45 Truck Route Sign (R14-1)2B-60

Section 2B.46 Hazardous Material Signs (R14-2, R14-3).....2B-61

Section 2B.47 National Network Signs (R14-4, R14-5).....2B-61

Section 2B.48 Preferential Lane Signs (R3-10 through R3-15)2B-61

Section 2B.49 High-Occupancy Vehicle (HOV) Lanes2B-65

Section 2B.50 High-Occupancy Vehicle Sign Applications and Placement.....2B-67

Section 2B.51 Photo Enforced Signs (R10-18, R10-19)2B-68

Section 2B.52 Yield Here To Pedestrians Signs (R1-5, R1-5a).....2B-70

Section 2B.53 In-Street Pedestrian Crossing Signs (R1-6, R1-6a).....2B-70

Section 2B.54 Other Regulatory Signs2B-71

CHAPTER 2C. WARNING SIGNS

Section 2C.01 Function of Warning Signs2C-1

Section 2C.02 Application of Warning Signs2C-1

Section 2C.03	Design of Warning Signs.....	2C-1
Section 2C.04	Size of Warning Signs	2C-3
Section 2C.05	Placement of Warning Signs.....	2C-5
Section 2C.06	Horizontal Alignment Signs (W1-1 through W1-5, W1-10, W1-11, W1-15).....	2C-8
Section 2C.07	Combination Horizontal Alignment/Advisory Speed Signs	2C-10
Section 2C.08	Combination Horizontal Alignment/Intersection Sign (W1-10)	2C-11
Section 2C.09	One-Direction Large Arrow Sign (W1-6)	2C-13
Section 2C.10	Chevron Alignment Sign (W1-8)	2C-13
Section 2C.11	Hill Signs (W7-1, W7-1a, W7-1b)	2C-14
Section 2C.12	Truck Escape Ramp Signs (W7-4 Series)	2C-16
Section 2C.13	ROAD NARROWS Signs (W5-1, W5-1a)	2C-16
Section 2C.14	NARROW BRIDGE Sign (W5-2)	2C-18
Section 2C.15	ONE LANE BRIDGE Sign (W5-3).....	2C-18
Section 2C.16	Divided Highway (Road) Sign (W6-1)	2C-18
Section 2C.17	Divided Highway (Road) Ends Sign (W6-2)	2C-19
Section 2C.18	Double Arrow Sign (W12-1).....	2C-19
Section 2C.19	DEAD END/NO OUTLET Signs (W14-1, W14-2)	2C-20
Section 2C.20	Low Clearance Signs (W12-2 and W12-2P).....	2C-20
Section 2C.21	BUMP and DIP Signs (W8-1, W8-2).....	2C-21
Section 2C.22	SPEED HUMP Sign (W17-1)	2C-21
Section 2C.23	PAVEMENT ENDS Sign (W8-3).....	2C-23
Section 2C.24	Shoulder and UNEVEN LANES Signs (W8-4, W8-9, W8-9a, and W8-11)	2C-23
Section 2C.25	Slippery When Wet Sign (W8-5).....	2C-24
Section 2C.26	Advance Traffic Control Signs (W3-1a, W3-2a, W3-3, W3-4)	2C-24
Section 2C.27	CROSS TRAFFIC DOES NOT STOP Plaque (W4-4).....	2C-25
Section 2C.28	Merge Signs (W4-1, W4-1a)	2C-26
Section 2C.29	Added Lane Signs (W4-3, W4-3a).....	2C-26
Section 2C.30	Lane Ends Signs (W4-2, W9-1, W9-2)	2C-27
Section 2C.31	Two-Way Traffic Sign (W6-3)	2C-28
Section 2C.32	NO PASSING ZONE Sign (W14-3).....	2C-28
Section 2C.33	Advisory Exit, Ramp, and Curve Speed Signs (W13-2, W13-3, W13-5)	2C-29
Section 2C.34	Intersection Warning Signs (W2-1 through W2-6)	2C-29
Section 2C.35	Two-Direction Large Arrow Sign (W1-7).....	2C-33
Section 2C.36	Motorized Traffic Signs (W8-6, W11-5, W11-5a, W11-8, W11-10, W11-10a, W11-12)	2C-33
Section 2C.37	Nonvehicular Signs (W11-1, W11-2, W11-3, W11-4, W11-11, W11-14, W11-14a, W11-15)	2C-35
Section 2C.38	Playground Sign (W15-1).....	2C-36
Section 2C.39	Use of Supplemental Plaques	2C-37
Section 2C.40	Design of Supplemental Plaques	2C-37
Section 2C.41	Distance Plaques (W16-2 Series, W16-3 Series, W16-4, W7-3a)	2C-37
Section 2C.42	Advisory Speed Plaque (W13-1).....	2C-37
Section 2C.43	Supplemental Arrow Plaques (W16-5, W16-6, W16-7)	2C-39
Section 2C.44	Hill-Related Plaques (W7-2 Series, W7-3 Series)	2C-39
Section 2C.45	Advance Street Name Plaque (W16-8)	2C-40
Section 2C.46	DEAD END/NO OUTLET Plaques (W14-1P, W14-2P).....	2C-40

Section 2C.47	SHARE THE ROAD Plaque (W16-1)	2C-40
Section 2C.48	High-Occupancy Vehicle (HOV) Plaque (W16-11).....	2C-40
Section 2C.49	PHOTO ENFORCED Plaque (W16-10).....	2C-41
Section 2C.50	HILL BLOCKS VIEW Sign (W7-6).....	2C-41
Section 2C.51	Speed Reduction Signs (W3-5, W3-5a)	2C-41
Section 2C.52	BRIDGE ICES BEFORE ROAD Sign (W8-13)	2C-42
Section 2C.53	Traffic Signal Signs (W25-1, W25-2)	2C-42
Section 2C.54	Truck Rollover Warning Signs (W1-13, W1-13a)	2C-42

CHAPTER 2D. GUIDE SIGNS—CONVENTIONAL ROADS

Section 2D.01	Scope of Conventional Road Guide Sign Standards.....	2D-1
Section 2D.02	Application	2D-1
Section 2D.03	Color, Retroreflection, and Illumination	2D-1
Section 2D.04	Size of Signs.....	2D-2
Section 2D.05	Lettering Style	2D-3
Section 2D.06	Size of Lettering	2D-3
Section 2D.07	Amount of Legend	2D-4
Section 2D.08	Arrows	2D-5
Section 2D.09	Numbered Highway Systems	2D-6
Section 2D.10	Route Signs and Auxiliary Signs	2D-7
Section 2D.11	Design of Route Signs.....	2D-7
Section 2D.12	Design of Route Sign Auxiliaries.....	2D-11
Section 2D.13	Junction Auxiliary Sign (M2-1)	2D-11
Section 2D.14	Combination Junction Sign (M2-2).....	2D-11
Section 2D.15	Cardinal Direction Auxiliary Signs (M3-1 through M3-4).....	2D-13
Section 2D.16	Auxiliary Signs for Alternative Routes (M4 Series).....	2D-13
Section 2D.17	ALTERNATE Auxiliary Signs (M4-1, M4-1a).....	2D-14
Section 2D.18	BY-PASS Auxiliary Sign (M4-2)	2D-14
Section 2D.19	BUSINESS Auxiliary Sign (M4-3).....	2D-14
Section 2D.20	TRUCK Auxiliary Sign (M4-4)	2D-15
Section 2D.21	TO Auxiliary Sign (M4-5).....	2D-15
Section 2D.22	END Auxiliary Sign (M4-6).....	2D-15
Section 2D.23	TEMPORARY Auxiliary Signs (M4-7, M4-7a)	2D-15
Section 2D.24	Temporary Detour and Auxiliary Signs	2D-16
Section 2D.25	Advance Turn Arrow Auxiliary Signs (M5-1, M5-2)	2D-16
Section 2D.26	Directional Arrow Auxiliary Signs (M6 Series)	2D-16
Section 2D.27	Route Sign Assemblies.....	2D-16
Section 2D.28	Junction Assembly.....	2D-18
Section 2D.29	Advance Route Turn Assembly.....	2D-22
Section 2D.30	Directional Assembly	2D-23
Section 2D.31	Confirming or Reassurance Assemblies.....	2D-24
Section 2D.32	Trailblazer Assembly	2D-25
Section 2D.33	Destination and Distance Signs.....	2D-25
Section 2D.34	Destination Signs (D1 Series)	2D-27
Section 2D.35	Location of Destination Signs	2D-29
Section 2D.36	Distance Signs (D2 Series).....	2D-29
Section 2D.37	Location of Distance Signs	2D-30
Section 2D.38	Street Name Sign (D3-1).....	2D-32

Section 2D.39	Advance Street Name Signs (D3-2).....	2D-33
Section 2D.40	Parking Area Sign (D4-1).....	2D-35
Section 2D.41	PARK & RIDE Sign (D4-2).....	2D-35
Section 2D.42	Rest Area Signs (D5 Series).....	2D-36
Section 2D.43	Scenic Area Signs (D6 Series).....	2D-38
Section 2D.44	Weigh Station Signing (D8 Series).....	2D-38
Section 2D.45	General Service Signs (D9 Series).....	2D-40
Section 2D.46	Reference Location Signs (D10-1 through D10-8).....	2D-44
Section 2D.47	Traffic Signal Speed Sign (I1-1).....	2D-47
Section 2D.48	General Information Signs (I Series).....	2D-48
Section 2D.49	Signing of Named Highways.....	2D-51
Section 2D.50	Trail Signs.....	2D-52
Section 2D.51	Crossover Signs (D13 Series).....	2D-53
Section 2D.52	National Scenic Byways Marker (D6-4).....	2D-53

CHAPTER 2E. GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS

Section 2E.01	Scope of Freeway and Expressway Guide Sign Standards.....	2E-1
Section 2E.02	Freeway and Expressway Signing Principles.....	2E-1
Section 2E.03	General.....	2E-2
Section 2E.04	Color of Guide Signs.....	2E-2
Section 2E.05	Retroreflection or Illumination.....	2E-3
Section 2E.06	Characteristics of Urban Signing.....	2E-3
Section 2E.07	Characteristics of Rural Signing.....	2E-4
Section 2E.08	Memorial Highway Signing.....	2E-5
Section 2E.09	Amount of Legend on Guide Signs.....	2E-5
Section 2E.10	Number of Signs at an Overhead Installation and Sign Spreading.....	2E-6
Section 2E.11	Pull-Through Signs.....	2E-6
Section 2E.12	Designation of Destinations.....	2E-8
Section 2E.13	Size and Style of Letters and Signs.....	2E-9
Section 2E.14	Interline and Edge Spacing.....	2E-17
Section 2E.15	Sign Borders.....	2E-18
Section 2E.16	Abbreviations.....	2E-18
Section 2E.17	Symbols.....	2E-19
Section 2E.18	Arrows for Interchange Guide Signs.....	2E-19
Section 2E.19	Diagrammatic Signs.....	2E-19
Section 2E.20	Signing for Interchange Lane Drops.....	2E-22
Section 2E.21	Changeable Message Signs.....	2E-30
Section 2E.22	Overhead Sign Installations.....	2E-31
Section 2E.23	Lateral Clearance.....	2E-31
Section 2E.24	Guide Sign Classification.....	2E-32
Section 2E.25	Route Signs and Trailblazer Assemblies.....	2E-33
Section 2E.26	Signs for Intersections at Grade.....	2E-35
Section 2E.27	Interchange Guide Signs.....	2E-35
Section 2E.28	Interchange Exit Numbering.....	2E-36
Section 2E.29	Interchange Classification.....	2E-41
Section 2E.30	Advance Guide Signs.....	2E-41
Section 2E.31	Next Exit Supplemental Signs.....	2E-43

Section 2E.32 Other Supplemental Guide Signs2E-44

Section 2E.33 Exit Direction Signs.....2E-45

Section 2E.34 Exit Gore Signs.....2E-49

Section 2E.35 Post-Interchange Signs2E-49

Section 2E.36 Distance Signs.....2E-51

Section 2E.37 Interchange Sequence Signs2E-52

Section 2E.38 Community Interchanges Identification Signs2E-55

Section 2E.39 NEXT X EXITS Sign2E-56

Section 2E.40 Signing by Type of Interchange.....2E-56

Section 2E.41 Freeway-to-Freeway Interchange2E-57

Section 2E.42 Cloverleaf Interchange.....2E-59

Section 2E.43 Cloverleaf Interchange with Collector-Distributor Roadways2E-59

Section 2E.44 Partial Cloverleaf Interchange2E-61

Section 2E.45 Diamond Interchange.....2E-61

Section 2E.46 Urban Diamond Interchange.....2E-64

Section 2E.47 Closely Spaced Interchanges2E-66

Section 2E.48 Minor Interchange.....2E-66

Section 2E.49 Signing of Approaches and Connecting Roadways.....2E-68

Section 2E.50 Wrong-Way Traffic Control at Interchange Ramps.....2E-71

Section 2E.51 General Service Signs.....2E-77

Section 2E.52 Rest and Scenic Area Signs2E-82

Section 2E.53 Tourist Information and Welcome Center Signs2E-83

Section 2E.54 Reference Location Signs2E-85

Section 2E.55 Miscellaneous Guide Signs.....2E-86

Section 2E.56 Radio Information Signing2E-86

Section 2E.57 Carpool Information Signing.....2E-88

Section 2E.58 Weigh Station Signing2E-89

Section 2E.59 High-Occupancy Vehicle (HOV) Signs.....2E-89

CHAPTER 2F. SPECIFIC SERVICE SIGNS

Section 2F.01 Eligibility.....2F-1

Section 2F.02 Application.....2F-3

Section 2F.03 Logos and Logo Panels.....2F-6

Section 2F.04 Number and Size of Logos and Signs2F-6

Section 2F.05 Size of Lettering.....2F-7

Section 2F.06 Signs at Interchanges2F-7

Section 2F.07 Single-Exit Interchanges2F-8

Section 2F.08 Double-Exit Interchanges2F-8

Section 2F.09 Signs at Intersections2F-9

Section 2F.10 Signing Policy2F-10

CHAPTER 2G. TOURIST-ORIENTED DIRECTIONAL SIGNS

Section 2G.01 Purpose and Application.....2G-1

Section 2G.02 Design.....2G-2

Section 2G.03 Style and Size of Lettering.....2G-3

Section 2G.04 Arrangement and Size of Signs.....2G-3

Section 2G.05	Advance Signs	2G-6
Section 2G.06	Sign Locations	2G-7
Section 2G.07	State Policy	2G-7

CHAPTER 2H. RECREATIONAL AND CULTURAL INTEREST AREA SIGNS

Section 2H.01	Scope	2H-1
Section 2H.02	Application of Recreational and Cultural Interest Area Signs.....	2H-1
Section 2H.03	Regulatory and Warning Signs.....	2H-2
Section 2H.04	General Design Requirements for Recreational and Cultural Interest Area Symbol Signs	2H-2
Section 2H.05	Symbol Sign Sizes.....	2H-4
Section 2H.06	Use of Educational Plaques.....	2H-4
Section 2H.07	Use of Prohibitive Slash.....	2H-4
Section 2H.08	Placement of Recreational and Cultural Interest Area Symbol Signs.....	2H-6
Section 2H.09	Destination Guide Signs.....	2H-12

CHAPTER 2I. EMERGENCY MANAGEMENT SIGNING

Section 2I.01	Emergency Management.....	2I-1
Section 2I.02	Design of Emergency Management Signs.....	2I-1
Section 2I.03	EVACUATION ROUTE Sign (EM-1)	2I-2
Section 2I.04	AREA CLOSED Sign (EM-2).....	2I-4
Section 2I.05	TRAFFIC CONTROL POINT Sign (EM-3)	2I-4
Section 2I.06	MAINTAIN TOP SAFE SPEED Sign (EM-4).....	2I-5
Section 2I.07	ROAD (AREA) USE PERMIT REQUIRED FOR THRU TRAFFIC Sign (EM-5).....	2I-6
Section 2I.08	Emergency Aid Center Signs (EM-6 Series).....	2I-6
Section 2I.09	Shelter Directional Signs (EM-7 Series)	2I-7

FIGURES

CHAPTER 2A. GENERAL

Figure 2A-1	Examples of Heights and Lateral Locations of Signs for Typical Installations.....	2A-14
Figure 2A-2	Examples of Locations for Signs at Intersections.....	2A-15

CHAPTER 2B. REGULATORY SIGNS

Figure 2B-1	STOP, YIELD, Speed Limit, FINES HIGHER, and Photo Enforcement Signs	2B-8
Figure 2B-2	Speed Limit and Turn Prohibition Signs	2B-17
Figure 2B-3	Intersection Lane Control Signs	2B-22
Figure 2B-4	Center and Reversible Lane Control Signs	2B-25
Figure 2B-5	Location of Reversible Two-Way Left-Turn Signs	2B-27

Figure 2B-6	Passing and Keep Right Signs.....	2B-31
Figure 2B-7	Traffic Prohibition Signs	2B-34
Figure 2B-8	Example of Wrong-Way Signing for a Divided Highway with a Median Width of 9 m (30 ft) or Greater.....	2B-35
Figure 2B-9	ONE WAY and Divided Highway Crossing Signs.....	2B-38
Figure 2B-10	Examples of Locations of ONE WAY Signs.....	2A-39
Figure 2B-11	Examples of Locations of ONE WAY Signs.....	2A-40
Figure 2B-12	Examples of ONE WAY Signing for Divided Highways with Medians of 9 m (30 ft) or Greater.....	2A-41
Figure 2B-13	Examples of ONE WAY Signing for Divided Highways with Medians Less Than 9 m (30 ft)	2A-42
Figure 2B-14	Examples of ONE WAY Signing for Divided Highways with Medians Less Than 9 m (30 ft) and Separated Left-Turn Lanes	2B-43
Figure 2B-15	No Parking Signs (R7 Series).....	2B-45
Figure 2B-16	No Parking Signs (R8 Series).....	2B-46
Figure 2B-17	Pedestrian Crossing Signs	2B-51
Figure 2B-18	Traffic Signal Signs	2B-54
Figure 2B-19	Road Closed and Weight Limit Signs	2B-56
Figure 2B-20	Truck Signs	2B-59
Figure 2B-21	Preferential Lane Signs.....	2B-62
Figure 2B-22	Unsignalized Pedestrian Crosswalk Signs	2B-69

CHAPTER 2C. WARNING SIGNS

Figure 2C-1	Horizontal Alignment Signs	2C-9
Figure 2C-2	Example of Advisory Speed Signing for a Turn or Curve.....	2C-12
Figure 2C-3	Vertical Grade Signs	2C-15
Figure 2C-4	Miscellaneous Warning Signs.....	2C-17
Figure 2C-5	Roadway Condition and Advance Traffic Control Signs.....	2C-22
Figure 2C-6	Merging and Passing Signs	2C-27
Figure 2C-7	Advisory Speed and Speed Reduction Signs	2C-30
Figure 2C-8	Example of Advisory Speed Signing for an Exit Ramp	2C-31
Figure 2C-9	Intersection Warning Signs.....	2C-32
Figure 2C-10	Motorized Traffic and Nonvehicular Signs	2C-34
Figure 2C-11	Supplemental Warning Plaques	2C-38

CHAPTER 2D. GUIDE SIGNS—CONVENTIONAL ROADS

Figure 2D-1	Examples of Color-Coded Destination Guide Signs.....	2D-3
Figure 2D-2	Arrows for Use on Guide Signs	2D-6
Figure 2D-3	Route Signs and Markers	2D-8
Figure 2D-4	Route Sign Auxiliaries	2D-12
Figure 2D-5	Directional Arrow Auxiliary Signs.....	2D-17
Figure 2D-6	Illustration of Directional Assemblies and Other Route Signs (For One Direction of Travel Only)	2D-19
Figure 2D-7	Destination and Distance Signs.....	2D-26
Figure 2D-8	Street Name and Parking Signs.....	2D-31
Figure 2D-9	Rest Area and Scenic Overlook Signs.....	2D-37
Figure 2D-10	Example of Weigh Station Signing	2D-39

Figure 2D-11	General Service Signs	2D-41
Figure 2D-12	Reference Location Signs.....	2D-45
Figure 2D-13	General Information Signs	2D-49
Figure 2D-14	Examples of Use of the National Scenic Byways Marker.....	2D-55

CHAPTER 2E. GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS

Figure 2E-1	Example of Guide Sign Spreading	2E-7
Figure 2E-2	Pull-Through Signs	2E-7
Figure 2E-3	Diagrammatic Sign for a Single-Lane Left Exit	2E-21
Figure 2E-4	Diagrammatic Signs for Split with Dedicated Lanes	2E-23
Figure 2E-5	Diagrammatic Signs for Split with Optional Lane.....	2E-24
Figure 2E-6	Diagrammatic Signs for Two-Lane Exit with Optional Lane	2E-25
Figure 2E-7	Diagrammatic Signs for Two-Lane Exit with Optional Lane	2E-26
Figure 2E-8	EXIT ONLY on Left with Diagrammatic Sign for Left Lane Dropped at an Interchange.....	2E-27
Figure 2E-9	EXIT ONLY Panels	2E-28
Figure 2E-10	EXIT ONLY Panels for Right Lane Dropped at an Interchange.....	2E-29
Figure 2E-11	Interstate and U.S. Route Signs	2E-34
Figure 2E-12	Example of Interchange Numbering for Mainline and Circumferential Routes	2E-38
Figure 2E-13	Example of Interchange Numbering for Mainline, Loop, and Spur Routes.....	2E-39
Figure 2E-14	Example of Interchange Numbering If Routes Overlap.....	2E-40
Figure 2E-15	Examples of Interchange Advance Guide Signs	2E-42
Figure 2E-16	Next Exit Supplemental Advance Guide Signs	2E-44
Figure 2E-17	Supplemental Guide Signs for Multiexit Interchanges	2E-46
Figure 2E-18	Supplemental Guide Sign for a Park and Ride Facility (Route without Exit Numbering).....	2E-46
Figure 2E-19	Supplemental Guide Sign for a Park and Ride Facility (Route with Exit Numbering).....	2E-47
Figure 2E-20	Interchange Exit Direction Sign	2E-47
Figure 2E-21	Exit Gore Signs.....	2E-50
Figure 2E-22	Post-Interchange Distance Sign.....	2E-51
Figure 2E-23	Signing of Closely Spaced Interchanges Using Interchange Sequence Signs	2E-53
Figure 2E-24	Interchange Sequence Sign.....	2E-54
Figure 2E-25	Community Interchanges Identification Sign.....	2E-54
Figure 2E-26	NEXT EXITS Sign	2E-54
Figure 2E-27	Examples of Freeway-to-Freeway Interchange Guide Signs	2E-58
Figure 2E-28	Examples of Guide Signs for Full Cloverleaf Interchange	2E-60
Figure 2E-29	Examples of Partial Cloverleaf Interchange Guide Signs	2E-62
Figure 2E-30	Examples of Diamond Interchange Guide Signs.....	2E-63
Figure 2E-31	Examples of Urban Diamond Interchange Guide Signs	2E-65
Figure 2E-32	Examples of Minor Interchange Guide Signs	2E-67
Figure 2E-33	Example of Signing for Single-Lane Approach	2E-69
Figure 2E-34	Example of Minor Interchange Signing	2E-70
Figure 2E-35	Examples of Multilane Crossroad Signing for Diamond Interchange.....	2E-72

Figure 2E-36	Examples of Multilane Crossroad Signing for Partial Cloverleaf Interchange.....	2E-73
Figure 2E-37	Examples of Multilane Crossroad Signing for Cloverleaf Interchange.....	2E-74
Figure 2E-38	Examples of Regulatory Signing and Pavement Markings at Exit Ramp Termination to Deter Wrong-Way Entry	2E-75
Figure 2E-39	Examples of Regulatory Signing and Pavement Markings at Entrance Ramp Terminal Where Design Does Not Clearly Indicate the Direction of Flow	2E-77
Figure 2E-40	Examples of General Service Signs (without Exit Numbering)	2E-78
Figure 2E-41	Examples of General Service Signs (with Exit Numbering).....	2E-78
Figure 2E-42	Example of Next Services Sign	2E-78
Figure 2E-43	Example of Rest Area Gore Sign.....	2E-78
Figure 2E-44	Example of Signing for the Entrance to Barrier-Separated HOV Lanes	2E-91
Figure 2E-45	Example of Signing for Intermediate Entry and Exit to Barrier- or Buffer-Separated HOV Lanes.....	2E-92
Figure 2E-46	Example of Signing for Concurrent Flow HOV Lanes.....	2E-94
Figure 2E-47	Example of Signing for a Direct Entrance to an HOV Lane	2E-95
Figure 2E-48	Example of Signing for a Direct Exit from an HOV Lane	2E-96

CHAPTER 2F. SPECIFIC SERVICE SIGNS

Figure 2F-1	Examples of Specific Service Signs	2F-4
Figure 2F-2	Examples of Specific Service Sign Locations	2F-5

CHAPTER 2G. TOURIST-ORIENTED DIRECTIONAL SIGNS

Figure 2G-1	Examples of Tourist-Oriented Directional Signs	2G-4
Figure 2G-2	Examples of Intersection Approach Signs and Advance Signs for Tourist-Oriented Directional Signs	2G-5

CHAPTER 2H. RECREATIONAL AND CULTURAL INTEREST AREA SIGNS

Figure 2H-1	Examples of Use of Educational Plaques, Prohibitory Slashes, and Arrows	2H-5
Figure 2H-2	Examples of General Directional Guide Signs for Conventional Roads	2H-7
Figure 2H-3	Height and Lateral Position of Signs Located Within Recreational and Cultural Interest Areas.....	2H-8
Figure 2H-4	Examples of Symbol Signing Layout	2H-9
Figure 2H-5	Modifications to Existing Symbols.....	2H-10
Figure 2H-6	New Recreational and Cultural Interest Area Symbols	2H-11

CHAPTER 2I. EMERGENCY MANAGEMENT SIGNING

Figure 2I-1	Emergency Management Signs.....	2I-3
-------------	---------------------------------	------

TABLES**CHAPTER 2A. GENERAL**

Table 2A-1	Illumination of Sign Elements	2A-7
Table 2A-2	Retroreflection of Sign Elements	2A-7
Table 2A-3	Use of Sign Shapes.....	2A-8
Table 2A-4	Common Uses of Sign Colors.....	2A-10

CHAPTER 2B. REGULATORY SIGNS

Table 2B-1	Regulatory Sign Sizes.....	2B-3
Table 2B-2	Meanings of Symbols and Legends on Reversible Lane Control Signs.....	2B-28

CHAPTER 2C. WARNING SIGNS

Table 2C-1	Categories of Warning Signs	2C-2
Table 2C-2	Warning Sign Sizes.....	2C-4
Table 2C-3	Minimum Size of Supplemental Warning Plaques.....	2C-5
Table 2C-4	Guidelines for Advance Placement of Warning Signs	2C-6
Table 2C-5	Horizontal Alignment Sign Usage.....	2C-10

CHAPTER 2E. GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS

Table 2E-1	Minimum Letter and Numeral Sizes for Expressway Guide Signs According to Interchange Classification	2E-10
Table 2E-2	Minimum Letter and Numeral Sizes for Expressway Guide Signs According to Sign Type	2E-12
Table 2E-3	Minimum Letter and Numeral Sizes for Freeway Guide Signs According to Interchange Classification	2E-14
Table 2E-4	Minimum Letter and Numeral Sizes for Freeway Guide Signs According to Sign Type	2E-16

**CHAPTER 2H. RECREATIONAL AND CULTURAL INTEREST
AREA SIGNS**

Table 2H-1	Category Chart for Symbols.....	2H-3
------------	---------------------------------	------

CHAPTER 2A. GENERAL

Section 2A.01 Function and Purpose of Signs

Support:

This Manual contains Standards, Guidance, and Options for the signing within the right-of-way of all types of highways open to public travel. The functions of signs are to provide regulations, warnings, and guidance information for road users. Both words and symbols are used to convey the messages. Signs are not typically used to confirm rules of the road.

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

- Chapter 2B—Regulatory Signs
- Chapter 2C—Warning Signs
- Chapter 2D—Guide Signs (Conventional Roads)
- Chapter 2E—Guide Signs (Freeways and Expressways)
- Chapter 2F—Specific Service (Logo) Signs
- Chapter 2G—Tourist-Oriented Direction Signs
- Chapter 2H—Recreational and Cultural Interest Area Signs
- Chapter 2I—Emergency Management Signs

Standard:

Because the requirements and standards for signs depend on the particular type of highway upon which they are to be used, the following definitions shall apply:

- A. Freeway—a divided highway with full control of access;**
- B. Expressway—a divided highway with partial control of access;**
- C. Conventional Road—a street or highway other than a low-volume road (as defined in Section 5A.01), a freeway, or an expressway; and**
- D. Special Purpose Road—a low-volume, low-speed road that serves recreational areas or resource development activities, or that provides local access.**

Section 2A.02 Definitions

Support:

Definitions that are applicable to signs are given in Sections 1A.13 and 2A.01.

Section 2A.03 Standardization of Application

Support:

It is recognized that urban traffic conditions differ from those in rural environments, and in many instances signs are applied and located differently. Where pertinent and practical, this Manual sets forth separate recommendations for urban and rural conditions.

Guidance:

Signs should be used only where justified by engineering judgment or studies, as noted in Section 1A.09.

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

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

Standard:

Each standard sign shall be displayed only for the specific purpose as prescribed in this Manual. Determination of the particular signs to be applied to a specific condition shall be made in accordance with the criteria set forth in Part 2. Before any new highway, detour, or temporary route is opened to traffic, all necessary signs shall be in place. Signs required by road conditions or restrictions shall be removed when those conditions cease to exist or the restrictions are withdrawn.

Section 2A.04 Excessive Use of Signs

Guidance:

Regulatory and warning signs should be used conservatively because these signs, if used to excess, tend to lose their effectiveness. If used, route signs and directional signs should be used frequently because they promote safe and efficient operations by keeping road users informed of their location.

Section 2A.05 Classification of Signs

Standard:

Signs shall be defined by their function as follows:

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

Section 2A.06 Design of Signs

Support:

This Manual shows many typical standard signs approved for use on streets, highways, bikeways, and pedestrian crossings.

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

Detailed drawings of standard signs and alphabets are shown in the "Standard Highway Signs" book, and in the "Standard Alphabets for Highway Signs and Pavement Markings." Section 1A.11 contains information regarding how to obtain these publications.

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

- A. High visibility by day and night; and**
- B. High legibility (adequately sized letters or symbols, and a short legend for quick comprehension by a road user approaching a sign).**

Standardized colors and shapes are specified so that the several classes of traffic signs can be promptly recognized. Simplicity and uniformity in design, position, and application are important.

Standard:

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

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

Where a word message is applicable, the wording shall be as herein provided. Standardization of these designs does not preclude further improvement by minor changes in the proportion or orientation of symbols, width of borders, or layout of word messages, but all shapes and colors shall be as indicated.

In situations where word messages are required other than those herein provided, the signs shall be of the same shape and color as standard signs of the same functional type.

Unless otherwise stated in this Manual for a specific sign, phone numbers or Internet addresses shall not be shown on any sign, supplemental plaque, sign panel (including logo panels on specific service signs), or changeable message sign.

Option:

State and local highway agencies may develop special word message signs in situations where roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information.

Section 2A.07 Changeable Message Signs

Standard:

To the extent practical, changeable message signs, which are traffic control devices designed to display variable messages, shall conform to the principles established in this Manual, and with the design and applications prescribed in Sections 2E.21, 6F.02, and 6F.52.

Guidance:

Except for safety messages, changeable message signs should not be used to display information other than regulatory, warning, and guidance information related to traffic control.

Support:

Changeable message signs, with more sophisticated technologies, are gaining widespread use to inform road users of variable situations, particularly along congested traffic corridors. Highway and transportation organizations are encouraged to develop and experiment (see Section 1A.10) with changeable message signs and to carefully evaluate such installations so that experience is gained toward adoption of future standards.

Information regarding the design and application of portable changeable message signs in temporary traffic control zones is contained in Section 6F.52. Section 1A.14 contains information regarding the use of abbreviations on traffic control devices, including changeable message signs.

Option:

Changeable message signs, both permanent and portable, may be used by State and local highway agencies to display safety or transportation-related messages.

Support:

Examples of safety messages include SEAT BELTS BUCKLED? and DON'T DRINK AND DRIVE. Examples of transportation-related messages include CARPOOL INFO 1-800-XXX-XXXX and OZONE ALERT CODE RED—USE TRANSIT.

Guidance:

When a changeable message sign is used to display a safety or transportation-related message, the requirements of Section 6F.52 should be followed. The message should be simple, brief, legible, and clear. A changeable message sign should not be used to display a safety or transportation-related message if doing so would adversely affect the respect for the sign. "Congestion Ahead" or other overly simplistic or vague messages should not be displayed alone. These messages should be supplemented with a message on the location or distance to the congestion or incident, how much delay is expected, alternative route, etc.

Standard:

When a changeable message sign is used to display a safety or transportation-related message, the display format shall not be of a type that could be considered similar to advertising displays. The display format shall not include animation, rapid flashing, or other dynamic elements that are characteristic of sports scoreboards or advertising displays.

Section 2A.08 Retroreflectivity and Illumination

Support:

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

Standard:

Regulatory, warning, and guide signs shall be retroreflective or illuminated to show the same shape and similar color by both day and night, unless specifically stated otherwise in the text discussion in this Manual of a particular sign or group of signs.

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

Guidance:

All overhead sign installations should be illuminated unless an engineering study shows that retroreflection will perform effectively without illumination.

Option:

Sign elements may be illuminated by the means shown in Table 2A-1.

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

Support:

Information regarding the use of retroreflective material on the sign support is contained in Section 2A.22.

Section 2A.09 Minimum Retroreflectivity Levels

Support:

(This section is reserved for future text based on FHWA rulemaking.)

Section 2A.10 Shapes**Standard:**

Particular shapes, as shown in Table 2A-3, shall be used exclusively for specific signs or series of signs, unless specifically stated otherwise in the text discussion in this Manual for a particular sign or class of signs.

Table 2A-1. Illumination of Sign Elements

Means of Illumination	Sign Element To Be Illuminated
Light behind the sign face	<ul style="list-style-type: none"> • Symbol or message • Background • Symbol, message, and background (through a translucent material)
Attached or independently mounted light source designed to direct essentially uniform illumination onto the sign face	<ul style="list-style-type: none"> • Entire sign face
Other devices, or treatments that highlight the sign shape, color, or message: Luminous tubing Fiber optics Light emitting diodes (LEDs) Incandescent light bulbs Luminescent panels	<ul style="list-style-type: none"> • Symbol or message • Entire sign face

Table 2A-2. Retroreflection of Sign Elements

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

Table 2A-3. Use of Sign Shapes

Shape	Signs
Octagon	* Stop
Equilateral Triangle (1 point down)	* Yield
Circle	Highway-Rail Grade Crossing (Advance Warning)
Pennant Shape / Isosceles Triangle (longer axis horizontal)	* No Passing
Pentagon (pointed up)	* School Crossing Series * County Route Sign
Crossbuck (two rectangles in an "X" configuration)	* Highway-Rail Grade Crossing
Diamond	Warning Series
Rectangle (including square)	Regulatory Series ** Guide Series Warning Series
Trapezoid	Recreational and Cultural Interest Area Series National Forest Route Sign

* This sign shall be exclusively the shape shown.

** Guide series includes general service, specific service, recreation, and emergency management signs.

Section 2A.11 Sign Colors

Standard:

The colors to be used on standard signs and their specific use on these signs shall be as indicated in the applicable Sections of this Manual. The color coordinates and values shall be as described in 23 CFR, Part 655, Subpart F, Appendix.

Support:

As a quick reference, common uses of sign colors are shown in Table 2A-4. Color schemes on specific signs are shown in the illustrations located in each appropriate Section.

Whenever white is specified herein as a color, it is understood to include silver-colored retroreflective coatings or elements that reflect white light.

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

Information regarding color coding of destinations on guide signs is contained in Section 2D.03.

Section 2A.12 Dimensions

Support:

Sign sizes for use on the different classes of highways are shown in Sections 2B.03 and 2C.04 and in the "Standard Highway Signs" book.

The "Standard Highway Signs" book prescribes design details for up to five different sizes depending on the type of traffic facility, including bikeways. Smaller sizes are designed to be used on bikeways and some other off-road applications. Larger sizes are designed for use on freeways and expressways, and can also be used to enhance road user safety and convenience on other facilities, especially on multilane divided highways and on undivided highways having five or more lanes of traffic and/or high speeds. The intermediate sizes are designed to be used on two-lane, three-lane, and four-lane highways that have low speeds and volumes.

Standard:

The standard sign dimensions prescribed in this Manual and in the "Standard Highway Signs" book shall be used unless engineering judgment determines that other sizes are appropriate. Where engineering judgment determines that sizes smaller than the standard dimensions are appropriate for use, the sign dimensions shall not be less than the minimum dimensions specified in this Manual and in the "Standard Highway Signs" book. Where engineering judgment determines that

Table 2A-4. Common Uses of Sign Colors

Type of Sign	Legend					Background									
	Black	Green	Red	White	Yellow	Black	Blue	Brown	Green	Orange	Red	White	Yellow	FYG*	Coral
Regulatory	X		X	X		X					X	X			
Prohibitive			X	X							X	X			
Permissive		X										X			
Warning	X												X		
Pedestrian	X												X	X	
Bicycle	X												X	X	
Guide				X					X						
Interstate Route				X			X			X					
State Route	X										X				
US Route	X										X				
County Route					X		X								
Forest Route				X				X							
Evacuation Route				X			X								
Information				X			X		X						
Milepost Signs				X					X						
Road User Service				X			X								
Recreational				X				X	X						
Street Name				X					X						
Destination				X					X						
Temporary Traffic Control	X									X					
Incident Management	X														X
Changeable Message Signs **				X	X	X									
School	X												X	X	

*FYG is fluorescent yellow-green
 ** For changeable message signs:
 • FYG pixels may also be used
 • Reverse colors may also be used

sizes larger than the standard dimensions are appropriate for use, standard shapes and colors shall be used and standard proportions shall be retained as much as practical.

Guidance:

Increases above standard sizes should be used where greater legibility or emphasis is needed. Wherever practical, the overall sign dimensions should be increased in 150 mm (6 in) increments.

Section 2A.13 Symbols

Support:

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

Standard:

Symbol designs shall in all cases be unmistakably similar to those shown in this Manual and the "Standard Highway Signs" book. New symbol designs shall be adopted by the Federal Highway Administration based on research evaluations to determine road user comprehension, sign conspicuity, and sign legibility.

Guidance:

New warning or regulatory symbol signs not readily recognizable by the public should be accompanied by an educational plaque.

Option:

State and/or local highway agencies may conduct research studies to determine road user comprehension, sign conspicuity, and sign legibility.

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

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

Section 2A.14 Word Messages

Standard:

Except as noted in Section 2A.06, all word messages shall use standard wording and letters as shown in this Manual, the "Standard Highway Signs" book, and the "Standard Alphabets for Highway Signs and Pavement Markings."

Guidance:

Word messages should be as brief as possible and the lettering should be large enough to provide the necessary legibility distance. A minimum specific ratio, such as 25 mm (1 in) of letter height per 12 m (40 ft) of legibility distance, should be used.

Support:

Some research indicates that a ratio of 25 mm (1 in) of letter height per 10 m (33 ft) of legibility distance could be beneficial.

Guidance:

Abbreviations (see Section 1A.14) should be kept to a minimum, and should include only those that are commonly recognized and understood, such as AVE (for Avenue), BLVD (for Boulevard), N (for North), or JCT (for Junction).

Standard:

All sign lettering shall be in capital letters as provided in the "Standard Alphabets for Highway Signs and Pavement Markings," except as indicated in the Option below.

Option:

Word messages on street name signs and destinations on guide signs may be composed of a combination of lower-case letters with initial upper-case letters.

Section 2A.15 Sign Borders

Standard:

Unless specifically stated otherwise, each sign illustrated herein shall have a border of the same color as the legend, at or just inside the edge.

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

Guidance:

A dark border on a light background should be set in from the edge, while a light border on a dark background should extend to the edge of the panel. A border for 750 mm (30 in) signs with a light background should be from 13 to 19 mm (0.5 to 0.75 in) in width, 13 mm (0.5 in) from the edge. For similar signs with a light border, a width of 25 mm (1 in) should be used. For other sizes, the border width should be of similar proportions, but should not exceed the stroke-width of the major lettering of the sign. On signs exceeding 1800 x 3000 mm (72 x 120 in) in size, the border should be 50 mm (2 in) wide, or on larger signs, 75 mm (3 in) wide. Where practical, the corners of the sign should be rounded to fit the border, except for STOP signs.

Section 2A.16 Standardization of Location**Support:**

Standardization of position cannot always be attained in practice. Locations for a number of typical signs are illustrated in Figures 2A-1 and 2A-2.

Standard:

Signs requiring different decisions by the road user shall be spaced sufficiently far apart for the required decisions to be made safely. One of the factors considered when determining the appropriate spacing shall be the posted or 85th-percentile speed.

Guidance:

Signs should be located on the right side of the roadway where they are easily recognized and understood by road users. Signs in other locations should be considered only as supplementary to signs in the normal locations, except as otherwise indicated.

Signs should be individually installed on separate posts or mountings except where one sign supplements another or where route or directional signs must be grouped. Signs should be located so that they:

- A. Are outside the clear zone unless placed on a breakaway or yielding support (see Section 2A.19);
- B. Optimize nighttime visibility;
- C. Minimize the effects of mud splatter and debris;
- D. Do not obscure each other; and

Figure 2A-1. Examples of Heights and Lateral Locations of Signs for Typical Installations

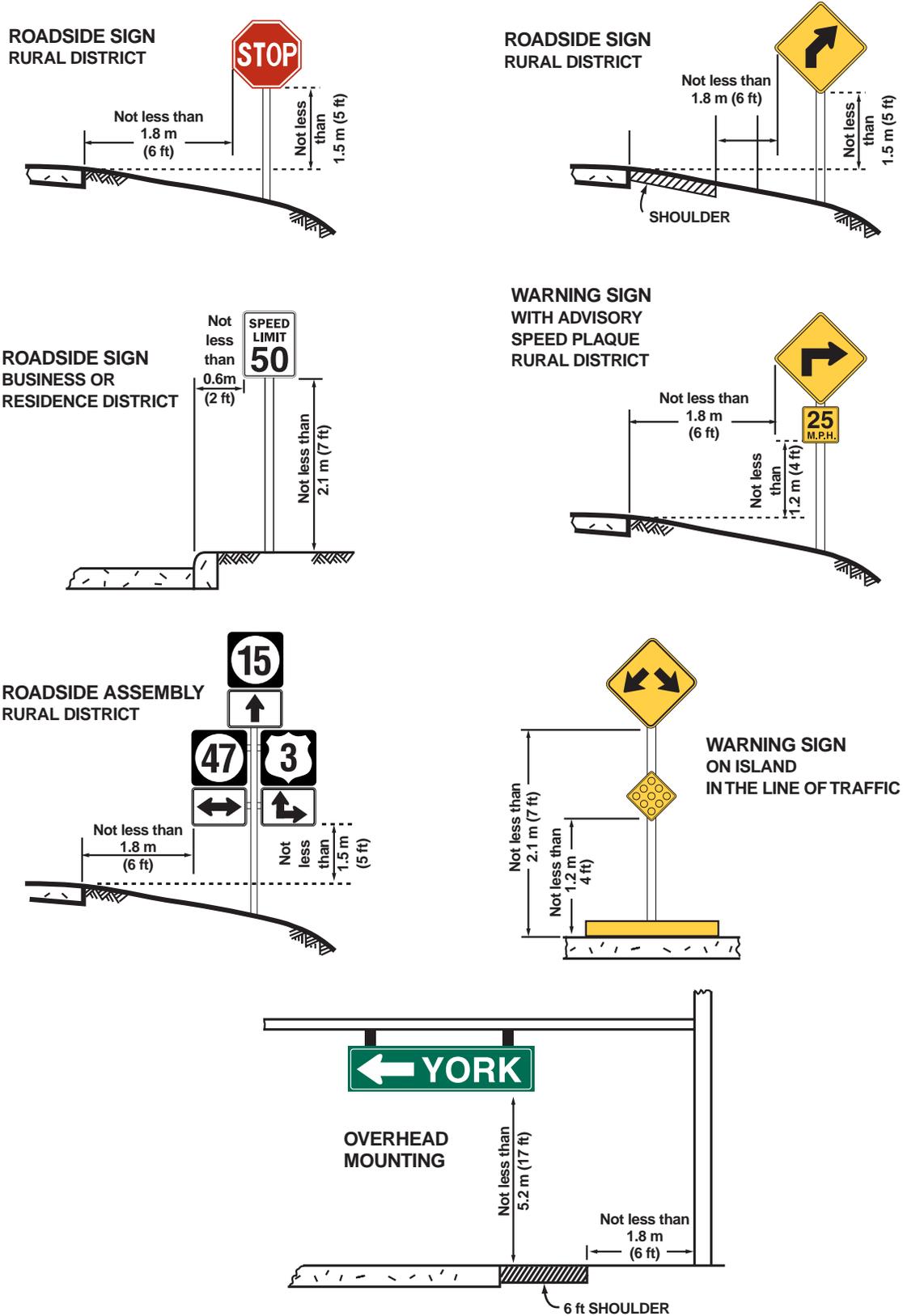
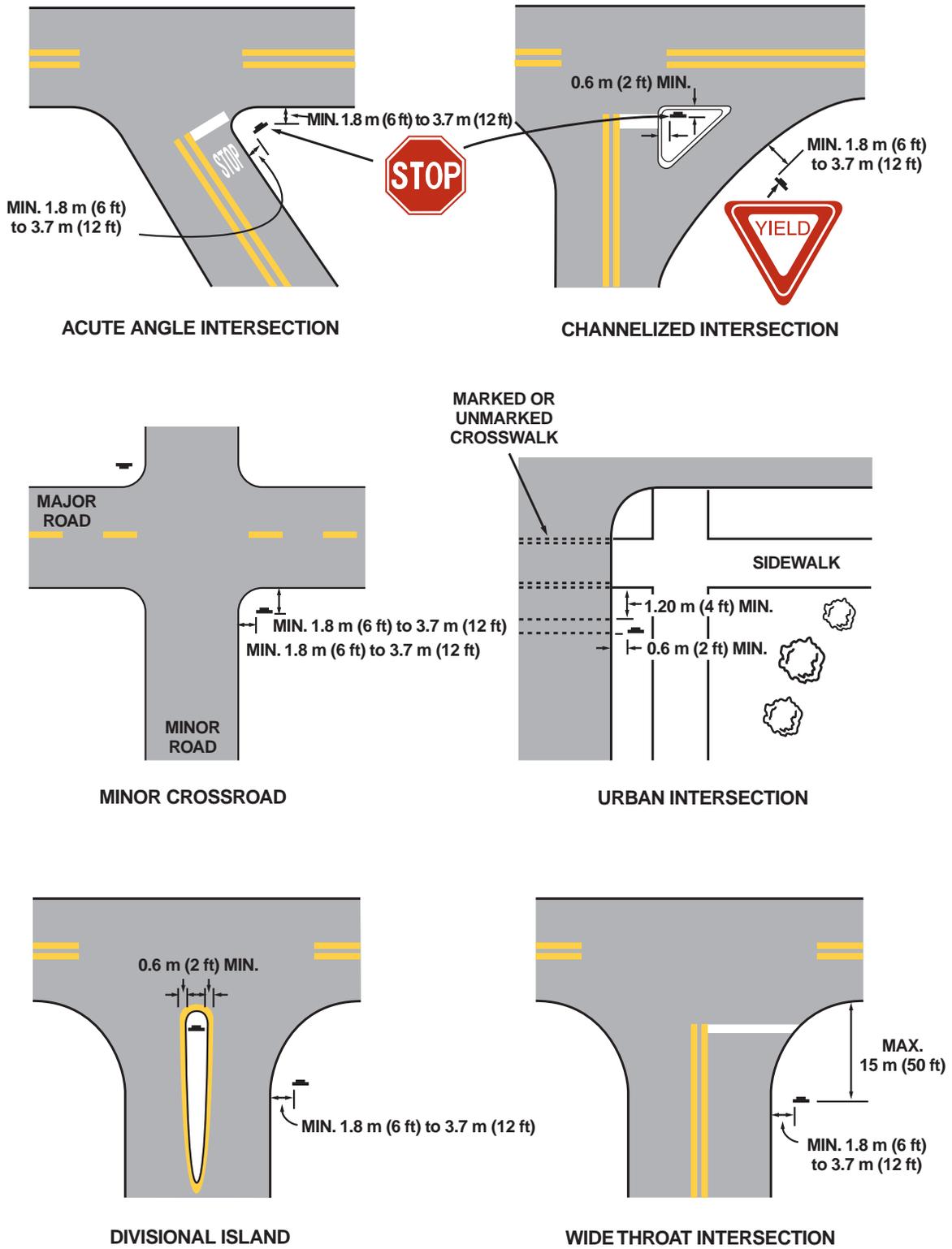


Figure 2A-2. Examples of Locations for Signs at Intersections



E. Are not hidden from view.

Support:

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 the "AASHTO Roadside Design Guide" (see Page i for AASHTO's address).

Guidance:

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:

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:

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. Information of a less critical nature should be moved to less critical locations or omitted.

Option:

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

Guidance:

In urban areas where crosswalks exist, signs should not be placed within 1.2 m (4 ft) in advance of the crosswalk.

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

Overhead signs should be used on freeways and expressways at locations where some degree of lane-use control is desirable or at locations where space is not available at the roadside.

Support:

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:

The following conditions (not in priority order) may be considered in an engineering study to determine if overhead signs should be used:

- 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. Multilane 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 ground-mounted signs;
- L. Junction of two freeways; and
- M. Left exit ramps.

Over-crossing structures may serve for the support of overhead signs, and under some circumstances, may be the only practical solution that will provide adequate viewing distance. Use of such structures as sign supports may eliminate the need for the foundations and sign supports along the roadside.

On freeways and expressways, signs may be placed on bridges, where feasible, to enhance safety and economy.

Section 2A.18 Mounting Height

Standard:

Signs installed at the side of the road in rural districts shall be at least 1.5 m (5 ft), measured from the bottom of the sign to the near edge of the pavement. Where parking or pedestrian movements occur, the clearance to the bottom of the sign shall be at least 2.1 m (7 ft).

Directional signs on expressways and freeways shall be installed with a minimum height of 2.1 m (7 ft). If a secondary sign is mounted below another sign, the major sign shall be installed at least 2.4 m (8 ft) and the secondary sign at least 1.5 m (5 ft) above the level of the pavement edge. All route signs, warning signs, and regulatory signs on expressways and freeways shall be at least 2.1 m (7 ft) above the level of the pavement edge.

Option:

The height to the bottom of a secondary sign mounted below another sign may be 0.3 m (1 ft) less than the height specified above.

Where signs are placed 9 m (30 ft) or more from the edge of the traveled way, the height to the bottom of such signs may be 1.5 m (5 ft) above the level of the pavement edge.

A route sign assembly consisting of a route sign and auxiliary signs (see Section 2D.27) may be treated as a single sign for the purposes of this Section.

The mounting height may be adjusted when supports are located near the edge of the right-of-way on a steep backslope.

Support:

Without this flexibility regarding steep backslopes, some agencies might decide to relocate the sign closer to the road, which might be less desirable.

Standard:

Overhead mounted signs shall provide a vertical clearance of not less than 5.1 m (17 ft) to the sign, light fixture, or sign bridge, over the entire width of the

pavement and shoulders except where a lesser vertical clearance is used for the design of other structures.

Option:

If the vertical clearance for the design of other structures is less than 4.9 m (16 ft), the vertical clearance to overhead sign structures or supports may be as low as 0.3 m (1 ft) higher than the vertical clearance for the design of the other structures.

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

Support:

Figure 2A-1 illustrates some of the mounting height requirements contained in this Section.

Section 2A.19 Lateral Offset

Standard:

For overhead sign supports, the minimum lateral offset from the edge of the shoulder (or if no shoulder exists, from the edge of the pavement) to the near edge of overhead sign supports (cantilever or sign bridges) shall be 1.8 m (6 ft). Overhead sign supports shall have a barrier or crash cushion to shield them if they are within the clear zone.

Roadside-mounted sign supports shall be breakaway, yielding, or shielded with a longitudinal barrier or crash cushion if within the clear zone.

Guidance:

For roadside-mounted signs, the minimum lateral offset should be 3.7 m (12 ft) from the edge of the traveled way. If a shoulder wider than 1.8 m (6 ft) exists, the minimum lateral offset for roadside-mounted signs should be 1.8 m (6 ft) from the edge of the shoulder.

Support:

The minimum lateral offset is intended to keep trucks and cars that use the shoulders from striking the signs or supports. The minimum lateral offset is only a small portion of the clear zone available for the use of errant vehicles.

Guidance:

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

Option:

Where permitted, signs may be placed on existing supports used for other purposes, such as traffic signal supports, highway lighting supports, and utility poles.

Standard:

If signs are placed on existing supports, they shall meet other placement criteria contained in this Manual.

Option:

Lesser lateral offsets may be used on connecting roadways or ramps at interchanges, but not less than 1.8 m (6 ft) from the edge of the traveled way.

In areas where lateral offsets are limited, a minimum lateral offset of 0.6 m (2 ft) may be used.

A minimum offset of 0.3 m (1 ft) from the face of the curb may be used in urban areas where sidewalk width is limited or where existing poles are close to the curb.

Support:

Figures 2A-1 and 2A-2 illustrate some of the lateral offset requirements contained in this Section.

Section 2A.20 Position of Signs

Support:

Detailed specifications for sign locations are given in other Sections of this Manual dealing with an individual sign or class of signs.

Section 2A.21 Orientation

Guidance:

Signs should be vertically mounted at right angles to the direction of, and facing, the traffic that they are intended to serve.

Where mirror reflection from the sign face is encountered to such a degree as to reduce legibility, the sign should be turned slightly away from the road. Signs that are placed 9 m (30 ft) or more from the pavement edge should be turned toward the road. On curved alignments, the angle of placement should be determined by the direction of approaching traffic rather than by the roadway edge at the point where the sign is located.

Option:

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

Section 2A.22 Posts and Mountings**Standard:**

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

Support:

The latest edition of AASHTO's "Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" contains additional information regarding posts and mounting (see Page i for AASHTO's address).

Option:

A strip of retroreflective material may be used on regulatory and warning sign supports to draw attention to the sign during nighttime conditions.

Standard:

If a strip of retroreflective material is used on the sign support, it shall be at least 50 mm (2 in) in width, it shall be placed for the full length of the support from the sign to within 0.3 m (1 ft) of the ground level, and it shall be the same color as the background of the sign (red for STOP, YIELD, DO NOT ENTER, and WRONG WAY; white for regulatory; yellow for warning).

Section 2A.23 Maintenance**Guidance:**

All traffic signs should be kept properly positioned, clean, and legible, and should have adequate retroreflectivity. Damaged or deteriorated signs should be replaced.

To assure adequate maintenance, a schedule for inspecting (both day and night), cleaning, and replacing signs should be established. Employees of highway agencies, police, and other public agencies whose duties require that they travel on the roadways should be encouraged to report any damaged, deteriorated, or obscured signs at the first opportunity.

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

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

Section 2A.24 Median Opening Treatments for Divided Highways with Wide Medians

Guidance:

Where divided highways are separated by median widths at the median opening itself of 9 m (30 ft) or more, median openings should be signed as two separate intersections.