

Design Element				Manual Section	Rural	Urban
Design Controls	Design Forecast Year			9.6.2	20 Years	20 Years
	*Design Speed	Minimum		9.5.2	70 mph (1)	50 mph
	Access Control			9.8	Full Control	Full Control
	Level of Service	Desirable		9.6.4	B	C
		Minimum			C	D
Cross Section Elements	*Travel Lane Width			13.2.3	12'	12'
	*Shoulder Width	Right	Total Width	13.2.4	12'	12'
			Paved		10' (2)	10' (2)
		Left	Total Width		10'	10'
			Paved		4' (3)	4' (3)
	Auxiliary Lanes	Lane Width		13.2.5	12'	12'
		Shoulder Width	Total Width		12'	12'
			Paved		10'	10'
	Cross Slope	*Travel Lane		13.2.3.3	2.08% (4)	2.08% (4)
		Auxiliary Lane		13.2.5	2.08% (5)	2.08% (5)
		*Shoulder	Paved	13.2.4.3	4.17%	4.17%
			Unpaved		8.33%	8.33%
	Median Width	Depressed		13.4.2.3	Min.: 48'	48' (6)
		Flush (CMB)		13.4.2.1	Min.: 22.5'	Min.: 22.5' (7)
Roadway Slopes	Side Slopes	Cut Section	Foreslope	13.3.1	6H:1V	6H:1V
			Ditch Type		V-Ditch	V-Ditch
			Back Slope		6H:1V to 2H:1V	6H:1V to 2H:1V
			Rock Cut		0.25H:1V (8)	0.25H:1V (8)
		Fill Section			0' – 5': 6H:1V; 5' – 10': 4H:1V; > 10': 2H:1V	
	Median Slopes			13.4.2	6H:1V	6H:1V
Clear Zone			14.3	(9)	(9)	
Bridges	New and Reconstructed Bridges	*Structural Capacity			HL-93	HL-93
		*Clear Roadway Width		13.5.1.1	(10)	(10)
	Existing Bridges to Remain in Place	*Structural Capacity			HS-20	HS-20
		*Clear Roadway Width		13.5.1.1	(11)	(11)
	*Vertical Clearance (Freeway Under) (12a)	New/Replaced Overpassing Bridges (12b)		12.6	17'-0"	17'-0"
		Existing Overpassing Bridges			16'-0"	16'-0"
		Pedestrian Bridges			18'-0"	18'-0"
		Overhead Signs			17'-6"	17'-6"
	Clearance (Freeway Over)	*Railroads		12.6	23'-0"	23'-0"
Underpass Width		13.5.2	Traveled Way plus Clear Zone	Traveled Way plus Clear Zone		

*Controlling design criteria (see Section 9.2)

GEOMETRIC DESIGN CRITERIA FOR FREEWAYS (New Construction/Reconstruction)

Figure 19.3A