



Roadway Geometric Design Criteria

US 380 Feasibility Study

Collin County



Last Updated: July 28, 2017

Description	TxDOT RDM Reference	Freeway				Arterial			
		70 mph Design Speed (Desirable)		65 mph Design Speed (Minimum)		55 mph Design Speed (Desirable)		45 mph Design Speed (Minimum)	
		Desirable	Minimum	Desirable	Minimum	Desirable	Minimum	Desirable	Minimum
Functional Classification		Urban Freeway		Urban Freeway		Urban Arterial (Principal)		Urban Arterial (Principal)	
Terrain		Level		Level		Level		Level	
Design Vehicle		WB-67		WB-67		WB-67		WB-67	
Horizontal Alignment									
Control Location		Centerline		Centerline		Centerline		Centerline	
Stopping Site Distance (SSD)	Table 2-1	730 ft		645 ft		495 ft		360 ft	
Minimum Radius (without superelevation)	AASHTO Table 3-9	14100 ft		12600 ft		9410 ft		1039 ft	
Minimum Radius (with superelevation)	Table 2-3	3390 ft	2040 ft	2740 ft	1660 ft	1635 ft	1060 ft	794 ft	711 ft
Max Superelevation		6.0%		6.0%		6.0%		4.0%	
Equivalent Max Relative Slope (Max Relative Gradient)	Table 2-8	1:250 (0.40%)		1:233 (0.43%)		1:213 (0.47%)		1:185 (0.54%)	
Vertical Alignment									
Maximum Grade	Table 2-11	3.0%		3.0%		5.0%		6.0%	
Minimum Grade	Pg 2-25	0.50%		0.50%		0.50%		0.50%	
Crest Curve K-Value		247		193		114		61	
Sag Curve K-Value		181		157		115		79	
Vertical Clearance									
Under Bridge Structure	Table 3-1 Pg 3-63	18.5 ft	16.5 ft	18.5 ft	16.5 ft	18.5 ft	16.5 ft	18.5 ft	16.5 ft
Over Railroad ⁽¹⁾		23.5 ft		23.5 ft		23.5 ft		23.5 ft	
Cross Sectional Elements									
Lanes (per direction)		2-4 (TBD)		2-4 (TBD)		3		3	
Lane Widths									
Thru Lanes	Table 3-1	12 ft		12 ft		12 ft	11 ft	12 ft	11 ft
Turning Lanes	Table 3-1	12 ft		12 ft		12 ft	11 ft	12 ft	11 ft
Usable Shoulder Widths									
Inside	Table 3-1	10 ft	4 ft (allowable for 4-lane freeways)	10 ft	4 ft (allowable for 4-lane freeways)	10 ft (uncurbed) N/A (curbed)	4 ft (uncurbed) N/A (curbed)	10 ft (uncurbed) N/A (curbed)	4 ft (uncurbed) N/A (curbed)
Outside	Table 3-1	10 ft		10 ft		10 ft (uncurbed) N/A (curbed)	4 ft (uncurbed) N/A (curbed)	10 ft (uncurbed) N/A (curbed)	4 ft (uncurbed) N/A (curbed)
Cross Slope									
Lanes	Pg 2-31	2.0% typical (2.5% outside lane, if 3 or more lanes/direction)		2.0% typical (2.5% outside lane, if 3 or more lanes/direction)		2.0% crowned (typ)		2.0% crowned (typ)	
Shoulder		match roadway cross slope		2.0% - 2.5%		2.0%		2.0%	
Curb		N/A for mainlanes		N/A for mainlanes		2' Curb & Gutter		2' Curb & Gutter	
Side Slopes									
Within Clear Zone		1V:6H		1V:6H		1V:6H		1V:6H	
Outside Clear Zone		1V:4H		1V:4H		1V:4H		1V:4H	
Clear Zone Width	Table 2-12	30 ft		30 ft		30 ft AADT dependent	20 ft AADT dependent	10 ft (uncurbed) 6ft (curbed)	

Notes:

1. Based on BNSF Railway - Union Pacific Railroad Guidelines for RR Grade Separation Projects