

SECTION 300 GEOMETRIC CROSS SECTION

301 TRAVELLED WAY STANDARDS

301.01 TRAVELLED WAY WIDTH

Travelled way width is one of the most important safety factors in design. A wide two-lane two-way pavements provides higher capacity, higher driver comfort levels, consistent operation and lower accident rates.

Minimum travelled way widths of 7.30 m shall be provided on all design classes of roadways. Traffic lane widths shall be 3.65 m, and the number of lanes required shall be based on the projected traffic volume and roadway classifications. Loop ramp lanes shall be 5.0 m.

See Section 302 for general shoulder widths and see Section 305 for specific roadway cross section widths.

301.02 TRAVELLED WAY CROSS SLOPES

Tangent cross slope is balanced between steep cross slopes, desirable for drainage and the fact that vehicles drift toward the lower pavement edge on steep cross slopes. Generally, cross slopes below 1.5 percent have little effect on vehicle steering. Cross slope values for the various roadway classifications are provided in the following sections.

Unpaved travelled ways shall have a cross slope of 3.0 percent.

See Section 305 for specific roadway cross slope rates.

Pavement superelevation on curves shall be as determined in Section 202.

302 SHOULDER STANDARDS

Shoulders provide pavement structural support, improve sight distance, provide emergency stopping areas, and help provide required side clearance. However, shoulders are unnecessary on

most urban roads because curbs provide pavement structural support, and disabled vehicles can park in parking lanes, side streets, or driveways.

302.01 SHOULDER WIDTH STANDARDS

Table 300.01 summarizes the minimum continuous usable width of paved shoulder for various roadway classifications.

Table 300.01 Paved Shoulder Width Standards		
Roadway Class	Inside Shoulder / verge (m)	Outside Shoulder / verge (m)
RURAL		
Freeway	3.0	4.0/2.0
Expressway	3.0	4.0/2.0
Collector	-	2.4
Local Access		2.0
URBAN		
Freeway	3.0	4.0/2.0
Expressway	3.0	4.0/2.0
Arterial (Main Rd)	-	4.0/2.0
Frontage Road	1.2	1.2
Sector Road	-	-
2-LANE RAMP	2.4/2.0	3.0/2.0
LOOP RAMP	2.0/1.0	3.0/1.0
<i>The verge is the area outside the paved shoulder, usually rounded, at the top of embankment slopes.</i>		

302.02 SHOULDER CROSS SLOPES

In normal tangent sections, inside shoulder slope shall match the travel lanes and outside shoulders shall slope on a 3% grade away from the travelled way.

303 SIDE SLOPE STANDARDS

Properly designed side slopes insure roadway stability and provide a safe recovery area for errant vehicles.

Where feasible, slopes should be flattened to be consistent with the roadway classification and topography. The tops and ends of all slopes