

Table 3.1 – Road design standards – Urban (speed limit ≤ 70 km/h)

Class	Type	Area served	Traffic volumes vpd ⁽¹⁾	Design speed, (km/h)		Road reserve width, m	Minimum carriageway width (m)				Footpath (m)	Berm (m)	Max/min gradient	Normal camber	Max super-elevation	Notes
				Flat or rolling	Hilly		Parking ⁽²⁾	Traffic	Cycles ⁽³⁾	Total						
Local roads	Private way	1-3 lots 1-6 du ⁽¹⁾	NA	NA	NA	3.6 ⁽⁴⁾	–	1 x 2.75	–	2.75 ⁽⁴⁾	–	0.5+0.35	16 % max. 0.4 % min.	3 %	NA	Not public street ⁽⁴⁾
	Private way	4-6 lots 7-12 du	NA	NA	NA	6.0 ⁽⁴⁾	–	1 x 5.0	–	5.0 ⁽⁴⁾	–	2 x 0.5	16 % max. 0.4 % min.	3 %	NA	
	Cul de sac	up to 20 du	NA	NA	NA	11.0	1 x 2.5	1 x 3.5	–	6.0	1.4	0.5 + 3.1	12.5 % max. 0.4 % min.	3 %	6 %	No stopping on one side
	Residential	21-150 du	Up to 750	30	30	20	2 x 2.5	2 x 3.0	–	11.0	2 x 1.4	2 x 3.1	12.5 % max. 0.4 % min.	3 %	6 %	(5)
	Industrial	Up to 20 units	> 300	30	30	15.5	1 x 2.5	2 x 3.5	–	9.5	2 x 3.0	–	10 % max. 0.4 % min.	3 %	6 %	No stopping on one side
	Industrial/ Commercial service lane	–	NA	NA	NA	8.0	–	2 x 3.5	–	7.0	–	2 x 0.5	10 % max. 0.4 % min.	3 %	NA	(6)
	Commercial (Park precinct)	–	<2000	30	30	(7)	(7)	2 x 3.5	–	7.0	2 x 3.0	–	10 % max. 0.4 % min.	2 %	NA	(7)
Local distributor roads	Residential	<150 du	200 – 1000	40	40	21.0	2 x 2.5	2 x 3.5	–	12.0	2 x 1.4	2 x 3.1	12.5 % max. 0.4 % min.	3 %	8 %	
	Industrial/ Commercial	20 – 40 units	300 – 1000	40	40	18.0	2 x 2.5	2 x 3.5	–	12.0	2 x 3.0	–	10 % max. 0.4 % min.	3 %	6 %	(7)
Collector roads	Residential	150 – 450 du	1000 – 3000	50	40	23.0	2 x 2.5	2 x 3.5	2 x 1.0	14.0	2 x 1.4	2 x 3.1	10 % max. 0.4 % min.	3 %	8 %	
	Industrial/ Commercial	>40 units	>1000	50	40	20.0	2 x 2.5	2 x 3.5	2 x 1.0	14.0	2 x 3.0	–	10 % max. 0.4 % min.	3 %	6 %	(7)
Secondary (District) arterial		>450 du	3000 – 7000	50	50	24	2 x 2.5	2 x 3.5	2 x 1.5	15.0	2 x 1.4	2 x 3.1	10 % max. 0.4 % min.	3 %	8 %	
Primary (Regional) arterial		–	>7000	70	60	27	2 x 3.0	2 x 3.5 1 x 2.0	2 x 1.5	18.0	2 x 1.4	2 x 3.1	10 % max. 0.4 % min.	3 %	8 %	Painted median occupies 2 m traffic lane

NOTE –

(1) du = dwelling units, vpd = vehicles per day

(2) Parking lane width allows for limited cycle space.

(3) Where the TA gives approval to remove cycle lanes each traffic lane shall be increased to 4.0 m.

(4) Where a private way adjoins a local distributor road or higher, it shall have a 5 m traffic width and 6 m road reserve width for a minimum of 6 m from road boundary.

(5) Parking bays set into berm footpath zones.

(6) No parking both sides.

(7) Width dictated by parking provisions. Parking (including angle parking) shall be provided on both sides of street and maximized taking into account traffic considerations.

Table 3.2 – Road design standards Rural (speed limit up to 100 km/h)

Typical cross section

(a) Road standards – Rural										
Classification	Traffic volumes vehicles per day	Lane width (m) A ⁽¹⁾	Shoulder width ⁽²⁾ (m)		Minimum total seal width (m) C	Design speed ⁽³⁾ (km/h)		Maximum/minimum gradient ⁽⁴⁾	Minimum road reserve ⁽⁵⁾ (m)	Normal camber
			Total width B	Sealed part		Flat or rolling	Hilly			
Minor local	0 – 300	2.5	0.5	0.5	6.0	Up to 70	50	12.5 % 0.4 %	15.0	3 %
Sub-collector	300 – 700	3.0	1.0	0.5	7.0	70	50	12.5 % 0.4 %	15.0	3 %
Minor collector	700 – 1000	3.5	1.0	0.5	8.0	70	50	10 % 0.4 %	15.0	3 %
Major collector	1000 – 2500	3.5	1.0	0.5	8.0	Up to 100	70	10 % 0.4 %	20.0	3 %
Arterial ⁽⁶⁾	> 2500	3.5	1.5	1.0	9.0	100	70	10 % 0.4 %	20.0	3 %

(b) Recommended values for curve widening for two traffic lanes				
Curve radius (m)	Total amount of widening in metres where normal width of two traffic lanes is:			
	6.0 m	6.5 m	7.0 m	7.5 m
30 – 50	2.0	1.5	1.5	1.0
50 – 100	1.5	1.0	1.0	0.5
100 – 250	1.0	1.0	0.5	–
250 – 750	1.0	0.5	–	–
over 750	0.5	–	–	–

NOTE –

(1) **Lane widths**
Curve widening on rural roads should be as outlined in table 3.2 (b).

(2) **Shoulder width**
The shoulder width needs to be assessed for each project based on the speed environment of the area and the terrain. For high speed environments or where high cycle use is expected, shoulder widths may need to be increased to optimize overall road safety.

(3) **Design speed**
The design speed indicated generally assumes a "Rural/residential" level of frontage onto the road. Where frontage access is minimal and terrain reasonable, higher design speeds may be appropriate. This may also impact on shoulder widths. (Refer to Note (2)).

(4) **Maximum/minimum grades**
Gradients of 10 % are generally considered suitable for trucks and public transport. Steeper gradients may be acceptable for shorter lengths of road in hilly country with low overall speed environments.

(5) **Road reserve**
In some circumstances a reduced road reserve width may be acceptable (not less than 12.5 m).

(6) **Arterial**
The TNZ State Highway Geometric Design Manual may be used as an acceptable solution for any rural road design provided road reserve widths are of adequate width to serve the purposes required by NZS 4404.

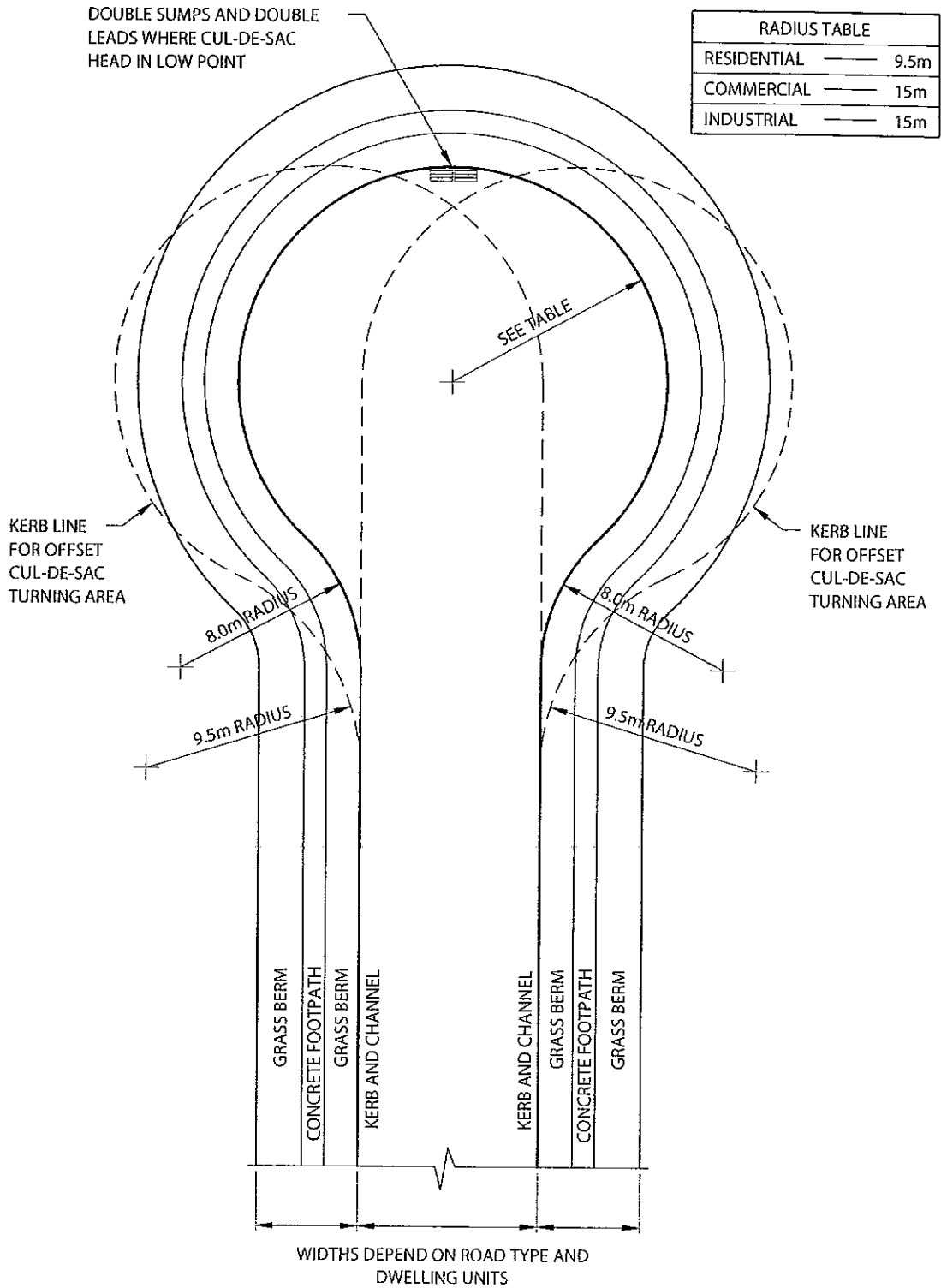
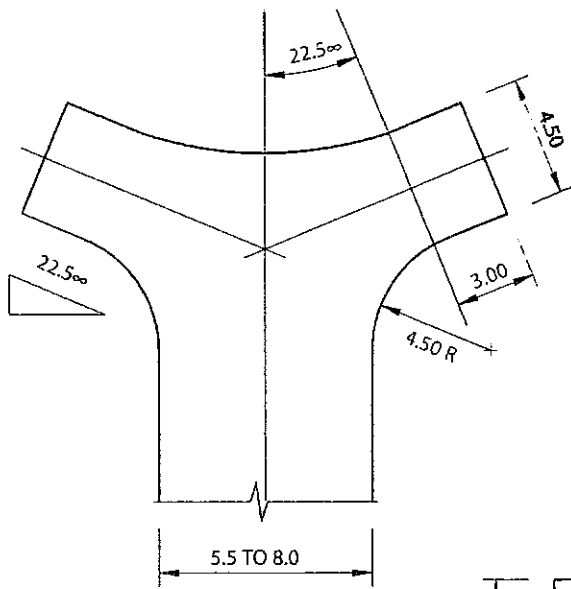
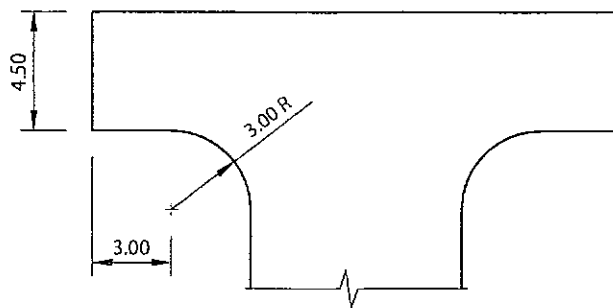


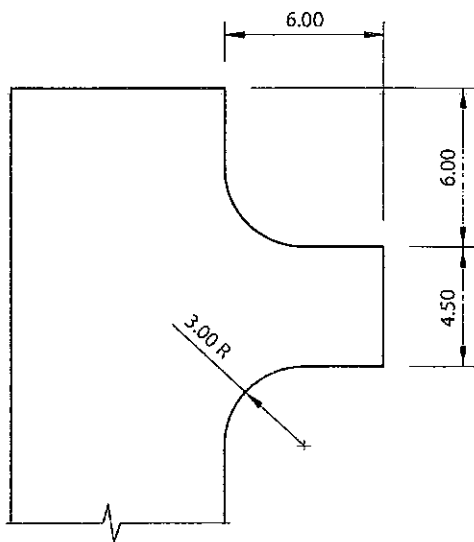
Figure 3.4 – Dimensions of cul-de-sac turning areas



Y TURNING



T TURNING



L TURNING

ONLY FOR USE WHERE THE
STANDARD CIRCULAR HEAD
IS UNSUITABLE

Figure 3.5 – Turning areas for cul-de-sacs