

GEOMETRIC DESIGN STANDARDS FOR RURAL LOCAL ROAD SYSTEM (GS-4M)

TRAFFIC VOLUME	TERRAIN	DESIGN SPEED (km/h)	MINIMUM RADIUS (METERS)	(9) STOPPING SIGHT DISTANCE	(2) MIN. WIDTH OF SURFACING OR PAVEMENT	(3) (4) (5) MIN. WIDTH OF GRADED SHOULDERS		(6) MINIMUM WIDTH OF DITCH FRONT SLOPE	(7) RECOMMENDED SLOPE	(8) NEW AND RECONSTRUCTED MINIMUM BRIDGE WIDTHS AND VERTICAL CLEARANCE
				MIN.		FILL W/GR	CUT & FILL			
(1) ADT OVER 2000	LEVEL	80	230	130	7.2 m	3.3 m	2.4 m	1.8 m	CS-4, 4A OR 4C	APPROACH ROADWAY WIDTH
	ROLLING	60	124	85				1.2 m		
	MOUNTAINOUS	50	83	65					CS-3, 3A OR 3B	
(1) ADT 1500 TO 2000	LEVEL	80	230	130	6.6 m	2.7 m	1.8 m	1.8 m	CS-4, 4A OR 4C	10 m PLUS PAVEMENT WIDTH PLUS 10 m
	ROLLING	60	124	85				1.2 m		
	MOUNTAINOUS	50	83	65					CS-3, 3A OR 3B	
(1) ADT 400 TO 1500	LEVEL	80	230	130	6.6 m	2.4 m	1.5 m	1.8 m	CS-4, 4A OR 4C	10 m PLUS PAVEMENT WIDTH PLUS 10 m
	ROLLING	60	124	85				1.2 m		
	MOUNTAINOUS	50	83	65	6.0 m				CS-3, 3A OR 3B	
CURRENT ADT 400 TO 250	LEVEL	60	124	85	5.4 m	2.1 m	0.6 m	1.8 m	CS-1	0.6 m PLUS PAVEMENT WIDTH PLUS 0.6 m
	ROLLING	50	83	65				1.2 m		
	MOUNTAINOUS	30	29	35						
CURRENT ADT 250 TO 50	LEVEL	50	83	65	5.4 m	2.1 m	0.6 m	1.2 m	CS-1	0.6 m PLUS PAVEMENT WIDTH PLUS 0.6 m
	ROLLING	50	83	65						
	MOUNTAINOUS	30	29	35						
CURRENT ADT UNDER 50	LEVEL	50	83	65	5.4 m	2.1 m	0.6 m	1.2 m	CS-1	0.6 m PLUS PAVEMENT WIDTH PLUS 0.6 m
	ROLLING	30	29	35						
	MOUNTAINOUS	30	29	35						

GENERAL NOTES

Low design speeds are generally applicable to roads with winding alignment in rolling or mountainous terrain where environmental conditions dictate.

High design speeds are generally applicable to roads in level terrain or where other environmental conditions are favorable.

Intermediate design speeds would be appropriate where terrain and other environmental conditions are a combination of those described for low and high speed.

Standard TC-5.01R(M) (2001 AASHTO Green Book) superelevation based on 8% maximum is to be used.

In incorporated towns or other built-up areas, Urban Standard GS-8(M) may be used. "Built-up" is where there is sufficient development along the roadway that justifies a need to channelize traffic into and out of properties utilizing curb and gutter.

For Passing Sight Distance Criteria See Current AASHTO Green Book.

For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 5, Exhibit 5-4.

FOOTNOTES

(1) Use Design Year ADT for new construction and reconstruction projects (not applicable to R.R.R. projects or roads with ADT < 400) in accordance with Road Design Manual, Chapter 2A, "REQUEST FOR TRAFFIC DATA" and Form LD-104.

- (2) Lane width to be 3.6 m at all interchange locations.
- (3) In mountainous terrain or sections with heavy earthwork, the graded width of shoulder in cuts may be decreased by 0.6 m, but in no case shall the shoulder width be less than 0.6 m.
- (4) Minimum shoulder slope shall be 8% on low side and same slope as pavement on high side (See St'd. GS-12).
- (5) Provide 1.2 m wide paved shoulders when design year ADT exceeds 2000 VPD, with 5% or more truck and bus usage. All shoulders not being paved will have the mainline pavement structure extended 0.3 m on the same slope into the shoulder to eliminate raveling at the pavement edge. For additional guidance on shoulder widths, see the AASHTO Green Book, Chapter 5.
- (6) Ditch slopes to be 4:1 - 1.8 m width, 3:1 - 1.2 m width. A hydraulic analysis is necessary to determine actual depth requirement.
- (7) Additional or modified slope criteria to be applied where shown on typical sections.
- (8) Vertical clearance at roadway underpasses for new and reconstructed bridges is 5.05 m desirable and 4.45 m minimum (0.3 m additional clearance required for non-vehicular overpasses).
- (9) For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book.

FIGURE A - 1 - 4M*

* Rev. 1/10