

GEOMETRIC DESIGN STANDARDS FOR RURAL COLLECTOR ROAD SYSTEM (GS-3M)

TRAFFIC VOLUME	TERRAIN	DESIGN SPEED (km/h)	MINIMUM RADIUS (METERS)	(9) STOPPING SIGHT DISTANCE (METERS)	(2) MIN. WIDTH OF LANE	(3) (4) MIN. WIDTH OF GRADED SHOULDERS		(5) MINIMUM WIDTH OF DITCH FRONT SLOPE	(6) RECOMMENDED SLOPE	(7) (8) NEW AND RECONSTRUCTED MINIMUM BRIDGE WIDTHS AND VERTICAL CLEARANCES
				MIN.		FILL W/GR	CUT & FILL			
(1) ADT OVER 2000	LEVEL	100	394	185	3.6 m	3.3 m	2.4 m	3.0 m	CS-4, CS-4A, OR CS-4C	2.4 m PLUS PAVEMENT WIDTH PLUS 2.4m
	ROLLING	80	230	130				1.8 m		
	MOUNTAINOUS	60	124	85						
(1) ADT 1500 TO 2000	LEVEL	80	230	130	3.3 m	2.7 m	1.8 m	1.8 m	CS-4, CS-4A, OR CS-4C	1.2 m PLUS PAVEMENT WIDTH PLUS 1.2 m
	ROLLING	60	124	85				1.2 m		
	MOUNTAINOUS	50	83	65						
(1) ADT 400 TO 1500	LEVEL	80	230	130	3.3 m	2.4 m (10)	1.5 m (10)	1.8 m	CS-4, CS-4A, OR CS-4C	1.0 m PLUS PAVEMENT WIDTH PLUS 1.0 m
	ROLLING	60	124	85	3.0 m			1.2 m		
	MOUNTAINOUS	50	83	65						
CURRENT ADT UNDER 400	LEVEL	60	124	85	3.0 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						

GENERAL NOTES

Geometric design features should be consistent with a design speed appropriate for the conditions.

Low design speeds (60 km/h and below) are generally applicable to highways with curvilinear alignment in rolling or mountainous terrain and where environmental conditions dictate.

High speed design (70 km/h and above) are generally applicable to highways 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.

The designer should strive for higher values than the minimum where conditions of safety dictate and costs can be supported.

In incorporated towns or other built-up areas, Urban Standard GS-7M 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.

Standard TC-5.01R(M) (2001 AASHTO Green Book) superelevation based on 8% Maximum to be used for Rural Collectors.

Maximum grades of short length (less than 150 m), on one-way downgrades and on low-volume Rural Collectors may be 2 percent steeper.

Clear zone and Recoverable Area information can be found in Appendix A(M), Section A-2(M) of the Road Design Manual.

For Passing Sight Distance Criteria See Current AASHTO Green Book

For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 6, Exhibit 6-4.

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) 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 6.
- (4) When the mainline is four lanes with ADT >2000, a minimum paved shoulder width of 1.8 m right of traffic and 0.9 m left of traffic will be provided.
- (5) Ditch slopes to be 6:1 - 3.0 m width, 4:1 - 1.8 m width, 3:1 - 1.2 m width. A hydraulic analysis is necessary to determine actual depth requirement.
- (6) Additional or modified slope criteria to be applied where shown on typical sections.
- (7) Where the approach roadway width (traveled way plus shoulder) is surfaced, that surfaced width shall be carried across all structures if that width exceeds the width shown in this table.
- (8) Vertical clearance at roadway underpasses for new and reconstructed bridges is to be 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.
- (10) Shoulder width may be reduced to 1.2m (2.1m with guardrail) where appropriate as long as a minimum roadway width of 9.1m is maintained. See AASHTO Green Book, Exhibit 6-5.

FIGURE A - 1 - 3M*