

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

TRAFFIC VOLUME	TERRAIN	DESIGN SPEED (MPH)	MINIMUM RADIUS	(9)	(2)	(3)(4)		(5)	(6)	(7)(8)
				STOPPING SIGHT DISTANCE		MIN. WIDTH OF GRADED SHOULDERS	MIN. WIDTH OF LANE			
				Min.						
(1) ADT OVER 2000	LEVEL	60	1204'	570'	12'	11'	8'	10'	CS-4, CS-4A OR CS-4C	APPROACH ROADWAY WIDTH
	ROLLING	50	760'	425'				6'		
	MOUNTAINOUS	40	465'	305'						
(1) ADT 1500 TO 2000	LEVEL	50	760'	425'	11'	9'	6'	6'	CS-4, CS-4A OR CS-4C	4' PLUS PAVEMENT WIDTH PLUS 4'
	ROLLING	40	465'	305'				4'		
	MOUNTAINOUS	30	251'	200'						
(1) ADT 400 TO 1500	LEVEL	50	760'	425'	11'	8'	5'	6'	CS-4, CS-4A OR CS-4C	3' PLUS PAVEMENT WIDTH PLUS 3'
	ROLLING	40	465'	305'	10'	(10)	(10)	4'		
	MOUNTAINOUS	30	251'	200'						
CURRENT ADT UNDER 400	LEVEL	40	465'	305'	10'	7'	2'	6'	CS-1	2' PLUS PAVEMENT WIDTH PLUS 2'
	ROLLING	30	251'	200'				4'		
	MOUNTAINOUS	20	108'	125'						

### GENERAL NOTES

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

Low design speeds (40 MPH and below) are generally applicable to highways with curvilinear alignment in rolling or mountainous terrain and where environmental conditions dictate.

High speed design (45 MPH 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 design 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-7 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 (2001 AASHTO Green Book) superelevation based on 8% maximum is to be used for Rural Collectors.

Clear zone and Recoverable Area information can be found in Appendix A, Section A-2 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 12' at all interchange locations.
- (3) Provide 4' 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 1' 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 6' right of traffic and 3' left of traffic will be provided.
- (5) Ditch slopes to be 6:1 - 10' width, 4:1 - 6' width, 3:1 - 4' 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 16'-6" desirable and 14'-6" minimum (1' 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 4' (7' with guardrail) where appropriate as long as a minimum roadway width of 30' is maintained. See AASHTO Green Book, Exhibit 6-5.

**FIGURE A - 1 - 3\***