

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

TRAFFIC VOLUME	TERRAIN	DESIGN SPEED (MPH)	MINIMUM RADIUS	(8) MINIMUM STOPPING SIGHT DISTANCE	(2) MINIMUM WIDTH OF LANE	(3) (4) MINIMUM WIDTH OF GRADED SHOULDERS CUT & FILL		(5) MINIMUM WIDTH OF DITCH FRONT SLOPE	(6) SLOPE	NEW AND RECONSTRUCTED MINIMUM BRIDGE WIDTHS AND VERTICAL CLEARANCES
						With GR	Without GR			
(1) ADT OVER 2000	LEVEL	60	1204'	570'	12'	12'	8'	10' @ 6:1	CS-4, CS-4A OR CS-4C	See Footnote (7)
	ROLLING	50	760'	425'				6' @ 4:1		
	MOUNTAINOUS	45	589'	360'					CS-3 / CS-3B	
		40	446'	305'						
(1) ADT 1500 TO 2000	LEVEL	50	760'	425'	11'	10'	6'	6' @ 4:1	CS-4, CS-4A OR CS-4C	
	ROLLING	45	589'	360'				4' @ 3:1		
		40	446'	305'						
	MOUNTAINOUS	35	316'	250'				CS-3/ CS-3B		
		30	215'	200'						
	(1) ADT 400 TO 1500	LEVEL	50	760'				425'	11'	
ROLLING		45	589'	360'	4' @ 3:1					
		40	446'	305'						
MOUNTAINOUS		35	316'	250'	CS-3/ CS-3B					
		30	215'	200'						
CURRENT ADT UNDER 400		LEVEL	45	589'	360'	10'	8'	2'		6' @ 4:1
	40		446'	305'						
	ROLLING	35	316'	250'	4' @ 3:1					
		30	215'	200'						
	MOUNTAINOUS	25	135'	155'						
		20	77'	125'						

GENERAL NOTES

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

Low design speeds (45 MPH and below) are generally applicable to highways with curvilinear alignment in rolling or mountainous terrain and where environmental conditions dictate.

High speed design (50 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-5.11R 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 AASHTO Green Book, Chapter 3, Section 3.2.4, page 3-8.

For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 6, Section 6.2.1, page 6., Table 6-2.

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) When the mainline is 2 lanes provide 4' wide paved shoulders (right and left) when design year ADT exceeds 2000 VPD, with 5% or more truck and bus usage. Provide 5' wide right paved shoulder when design year ADT exceeds 2000 VPD, with 5% or more truck and bus usage and the route is an AASHTO approved U.S. Bicycle Route (1, 76 or 176) or designated as a bicycle route on a locally adopted transportation plan. 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 AASHTO Green Book, Chapter 6, Section 6.2.2, page 6-6.
- (4) When the mainline is 4 lanes with ADT >2000, a minimum paved shoulder width of 6' right of traffic and 3' left of traffic shall be provided.
- (5) 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) See *Manual of the Structure and Bridge Division – Volume V – Part 2 Design Aids – Chapter 6 Geometrics*.
- (8) For additional information on sight distance requirements on grades of 3 percent or greater, see AASHTO Green Book, Chapter 3, Section 3.2.2, page 3-2, Table 3-2.
- (9) Shoulder width may be reduced to 4' (8' with guardrail) where appropriate as long as a minimum roadway width of 30' is maintained. See AASHTO Green Book, Chapter 6, Section 6.2.2, page 6-6, Table 6-5.

FIGURE A - 1 - 3*