

**GEOMETRIC DESIGN STANDARDS FOR INTERCHANGE RAMPS (GS-R)**

	RAMP DESIGN SPEED (MPH)	MINIMUM RADIUS	(6) MINIMUM STOPPING SIGHT DISTANCE	(1) MINIMUM RAMP PAVEMENT WIDTHS	MINIMUM WIDTH OF SHOULDER				(5) MINIMUM WIDTH OF DITCH FRONT SLOPE	NEW AND RECONSTRUCTED MINIMUM BRIDGE WIDTHS AND VERTICAL CLEARANCES	
					LEFT OF TRAFFIC		RIGHT OF TRAFFIC				
					GRADED WIDTH		(2) (3) PAVED WIDTH	(7) GRADED WIDTH			(2) (3) PAVED WIDTH
					FILL W/GR	CUT & FILL					
INTERCHANGE RAMPS	60	1204'	570'	16'	9'	6'	4'	10'	8'	10'	See Footnote (4)
	50	760'	425'								
	40	446'	305'								
	30	215'	200'	18'							
	25	135'	155'								
20	77'	125'									
AUXILIARY LANES										AUXILIARY LANE SHOULDER WIDTHS ARE TO BE THE SAME AS MAINLINE THROUGH LANES	

**GENERAL NOTES**

**FOOTNOTES**

The determination of the proper design speed for any particular ramp should be made using guidelines shown in [Table 10-1](#) of the AASHTO Green Book.

Standard TC-5.11R is to be used. Maximum ramp superelevation is to be 8%.

Clear Zone and Recoverable Area information can be found in Appendix A, Section A-2 of the [Road Design Manual](#).

RELATIONSHIP OF MAXIMUM GRADES TO DESIGN SPEED			
DESIGN SPEED (MPH)			
15 -20	25 - 30	35 - 40	45 - 50
GRADES (PERCENT)			
6 - 8	5 - 7	4 - 6	3 - 5

Where topographic conditions dictate, grades steeper than desirable may be used. One-way descending gradients on ramps should be held to the same general maximums, but in special cases they may be 2 percent greater. However, down grades with sharp horizontal curvature and significant heavy truck or bus traffic should be limited to 4 percent. See page [10-92](#) of the AASHTO Green Book.

See Chapter 10 of the AASHTO Green Book for further guidance on ramp design.

- (1) Interchange ramp widths shown are for one lane traffic. For two lane or other conditions see [Table 3-28b](#) in the AASHTO Green Book.
- (2) Shoulder widths on ramps with a design speed of 40 mph or less may be reduced to 6' right, or 3' left, when justifiable. However, the sum of the right and left shoulder shall not be less than 10'. See AASHTO "Green Book", page [10-102](#).
- (3) On ramps with a radius of less than 500', consider (depending on degree of curvature, percent of trucks) the extension of the full pavement structure (on the same slope as the pavement) through the inside paved shoulder area to eliminate raveling of the pavement edge.
- (4) See [Manual of the Structure and Bridge Division – Volume V – Part 2 Design Aids – Chapter 6 Geometrics](#).
- (5) Ditch slopes to be 6:1. A hydraulic analysis is necessary to determine actual depth requirement.
- (6) For additional information on sight distance requirements on grades of 3 percent or greater, see [Table 3-2](#) of the AASHTO Green Book.
- (7) Shoulder width to be increased additional 3' when guardrail is required.

**FIGURE A - 1 - 10\***

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