

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

	RAMP DESIGN SPEED (MPH)	MINIMUM RADIUS	(6) STOPPING SIGHT DISTANCE	(1) MINIMUM RAMP PAVEMENT WIDTHS	MINIMUM WIDTH OF SHOULDER					(5) MINIMUM WIDTH OF DITCH FRONT SLOPE	(4) NEW AND RECONSTRUCTED MINIMUM BRIDGE WIDTHS AND VERTICAL CLEARANCES
					RIGHT OF TRAFFIC		LEFT OF TRAFFIC				
			GRADED WIDTH		(2) (3) PAVED WIDTH	GRADED WIDTH		(2) (3) PAVED WIDTH			
						FILL W/GR.	CUT & FILL				
INTERCHANGE RAMPS	60	1204'	570'	16'	11'	8'	9'	6'	4'	10'	6' PLUS PAVEMENT WIDTH PLUS 8'
	50	760'	425'								
	40	465'	305'								
	30	251'	200'								
	25	171'	155'	18'							
	20	108'	125'								
AUXILIARY LANES											AUXILIARY LANE SHOULDER WIDTHS ARE TO BE THE SAME AS MAINLINE THROUGH LANES

**GENERAL NOTES**

The determination of the proper design speed for any particular ramp should be made using guidelines shown in Exhibit 10-56 of the 2004 AASHTO "Green Book".

Standard TC-5.01R is to be used. Maximum ramp superelevation to be 8% (See 2001 AASHTO "Green Book").

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 829 of the 2004 AASHTO Green Book.

See Chapter 10 of the 2004 AASHTO Green Book for further guidance on ramp design.

**FOOTNOTES**

- (1) Interchange ramp widths shown are for one lane traffic. For two lane or other conditions see Exhibit 10-67 in the 2004 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 2004 AASHTO "Green Book", page 838.
- (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) 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).
- (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 Exhibit 3-2 of the 2004 AASHTO Green Book.

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

\* Rev. 1/10