

DESIGN LOADING: ALL NEW AND REHABILITATED BRIDGES SHALL BE DESIGNED FOR HS-20 LOADING.

FOR NEW ROUTE CONSTRUCTION OR ROUTE RECONSTRUCTION PROJECTS: THE MINIMUM CLEAR WIDTH FOR NEW BRIDGES SHALL BE EQUAL TO THE FULL WIDTH OF THE APPROACH ROADWAY CURB-TO-CURB OR FULL SHOULDER WIDTH AS APPLICABLE.

① CLEAR ROADWAY WIDTHS FOR BRIDGE REPLACEMENT AND REHABILITATION PROJECTS (PAGE 475; TABLE VI-5)

DHV	CURRENT ADT	MINIMUM CLEAR ROADWAY WIDTH OF BRIDGE
—	UNDER 400	TRAVELED WAY + 4 FT. (2 FT. EACH SIDE)
100-200	400 AND OVER	TRAVELED WAY + 6 FT. (3 FT. EACH SIDE)
200-400	—	TRAVELED WAY + 8 FT. (4 FT. EACH SIDE)
OVER 400	—	APPROACH ROADWAY WIDTH

② MINIMUM STRUCTURAL CAPACITIES AND MINIMUM WIDTHS FOR EXISTING BRIDGES TO REMAIN IN PLACE (PAGE 476; TABLE VI-6)

DHV	CURRENT ADT	DESIGN LOADING (STRUCTURAL CAPACITY)	⑤ ROADWAY CLEAR WIDTH (FEET)
—	UNDER 400	HS-15	22
—	400 & OVER	HS-15	22
100-200	—	HS-15	22
200-400	—	HS-15	24
OVER 400	—	HS-15	28

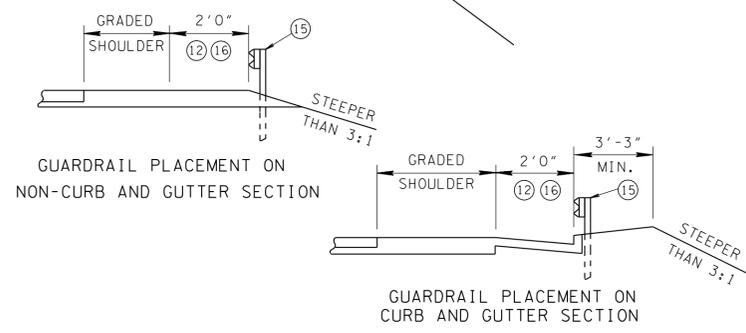
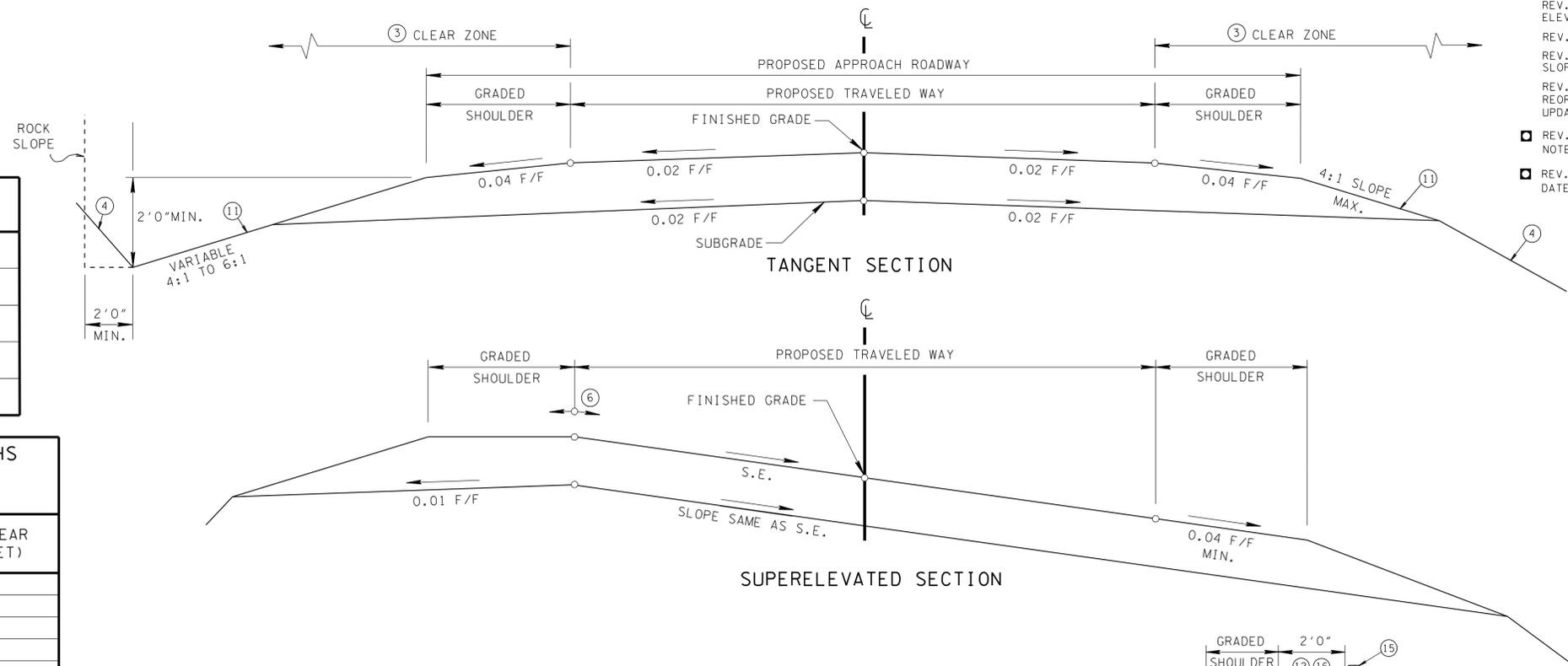
③ MINIMUM RURAL DESIGN SPEEDS

	CURRENT ADT 0-400	CURRENT ADT OVER 400	DHV 100-200	DHV OVER 200
LEVEL TOPO	40	50	50	60
ROLLING TOPO	30	40	40	50
MOUNTAINOUS TOPO	⑭ 20	30	30	40

DESIGN STANDARDS (FOR GIVEN DESIGN SPEED)

		DESIGN SPEEDS (MPH)							⑬		
		20	30	40	50	60	70				
⑩ MINIMUM AND DESIRABLE WIDTH OF TRAVELED WAY IN RURAL AREAS (FEET)	CURRENT ADT UNDER 400	MINIMUM	20	20	20	20	22	22	2		
		DESIRABLE	22	22	22	22	22	24			
	CURRENT ADT 400 AND OVER	MINIMUM	20	20	22	22	22	22		4	
		DESIRABLE	22	22	22	22	24	24			
	DHV	100-200	MINIMUM	20	20	22	22	22		22	6
			DESIRABLE	22	22	22	22	24		24	
200-400		MINIMUM	22	22	22	24	24	24	8		
		DESIRABLE	22	22	22	24	24	24			
OVER 400	MINIMUM	24	24	24	24	24	24	8			
	DESIRABLE	24	24	24	24	24	24				
MAXIMUM CURVATURE (DEGREES) 0.04 MAX. S.E.			45°00'	19°00'	10°00'	6°00'	3°45'	—			
MAXIMUM CURVATURE (DEGREES) 0.06 MAX. S.E.			49°15'	21°00'	11°15'	6°45'	4°15'	2°45'			
MAXIMUM CURVATURE (DEGREES) 0.08 MAX. S.E.			53°30'	22°45'	12°15'	7°30'	4°45'	3°00'			
MAXIMUM CURVATURE (DEGREES) 0.10 MAX. S.E.			58°00'	24°45'	13°15'	8°15'	5°15'	3°30'			
MAXIMUM RURAL GRADES (%) (PAGE 472; TABLE VI-3)	LEVEL TOPO	7	7	7	6	5	4				
	ROLLING TOPO	10	9	8	7	6	5				
	MOUNTAINOUS TOPO	12	10	10	9	8	6				
MAXIMUM URBAN GRADES (%) (PAGE 472; TABLE VI-3)	LEVEL TOPO	9	9	9	7	6	5				
	ROLLING TOPO	12	11	10	8	7	6				
	MOUNTAINOUS TOPO	14	12	12	10	9	7				
⑧ MINIMUM STOPPING SIGHT DISTANCE (FEET)		125	200	275-325	400-475	525-650	625-850				
⑦ MINIMUM "K" VALUE (PAGE 470; TABLE VI-2A)	CREST VERTICAL CURVE	10	30	60-80	110-160	190-310	290-540				
	SAG VERTICAL CURVE	20	40	60-70	90-110	120-160	150-220				
MINIMUM PASSING SIGHT DISTANCE (FEET) (PAGE 471; TABLE VI-2B)		800	1100	1500	1800	2100	2500				
⑦ MINIMUM "K" VALUE FOR CREST VERTICAL CURVE		210	400	730	1050	1430	2030				
SUPERELEVATION		SEE STANDARD DRAWINGS RD-SE-2 & RD-SE-3									

⑩ MINIMUM WIDTH OF GRADED SHOULDERS FOR ALL SPEEDS (FEET)



- FOOTNOTES**
- IF AN EXISTING APPROACH ROADWAY WIDTH IS GREATER THAN THE MINIMUM WIDTH DERIVED FROM THIS TABLE, THE NEW BRIDGE SHALL HAVE A CLEAR WIDTH EQUAL TO THE EXISTING APPROACH WIDTH OR THE WIDTH AS DETERMINED FROM THE DESIGN STANDARDS TABLE ON THIS SHEET, WHICHEVER IS LESS.
 - THESE STRUCTURES SHOULD BE ANALYZED INDIVIDUALLY, TAKING INTO CONSIDERATION THE CLEAR WIDTH PROVIDED, TRAFFIC VOLUMES, REMAINING LIFE OF THE STRUCTURE, PEDESTRIAN VOLUMES, SNOW STORAGE, DESIGN SPEED, ACCIDENT RECORD, AND OTHER PERTINENT FACTORS.
 - MINIMUM CLEAR ZONE IS 10 FEET FOR 40 MILES PER HOUR AND LESS. FOR 50 MILES PER HOUR DESIGN AND GREATER, THE CLEAR ZONE WIDTH SHALL BE DETERMINED FROM STANDARD DRAWING RD-S-11. FOR URBAN DESIGN SEE PAGE 486-487.
 - SEE STANDARD DRAWING RD-S-11 FOR DESIRABLE SLOPES AND NOTE REGARDING GEOLOGICAL RECOMMENDATIONS.
 - CLEAR WIDTH BETWEEN CURBS AND RAILS, WHICHEVER IS LESSER, IS CONSIDERED TO BE AT LEAST THE SAME AS THE APPROACH TRAVELED WAY WIDTH.
 - THE SLOPE OF THE SHOULDER AND THE ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07 FOOT PER FOOT.
 - "K" VALUE IS A COEFFICIENT BY WHICH THE ALGEBRAIC DIFFERENCE IN GRADE MAY BE MULTIPLIED TO DETERMINE THE LENGTH IN FEET OF THE VERTICAL CURVE.
 - ANY LENGTH OF STOPPING SIGHT DISTANCE WITHIN THE RANGE OF VALUES ESTABLISHED ON PAGE 470, TABLE VI-2A IS ACCEPTABLE FOR A SPECIFIC SPEED. HOWEVER, VALUES APPROACHING OR EXCEEDING THE UPPER LIMIT OF THE RANGE SHOULD BE USED AS THE BASIS FOR DESIGN WHEREVER CONDITIONS PERMIT.
 - RURAL PAGE 469, TABLE VI-1. FOR URBAN DESIGN SEE PAGE 480.
 - RURAL PAGE 474, TABLE VI-4. FOR URBAN DESIGN SEE PAGE 482.
 - CURRENT ADT'S OVER 400 AND DESIGN SPEEDS OF 50 MILES PER HOUR AND GREATER SHALL REQUIRE 6:1 SLOPES.
 - FOR LESS THAN 100 DHV OR ON BRIDGE REPLACEMENT AND REHABILITATION PROJECTS THE 2 FOOT OFFSET TO FACE OF GUARDRAIL AND/OR FACE OF CURB MAY BE ELIMINATED.
 - MINIMUM WIDTH IS 4 FEET IF ROADSIDE BARRIER IS UTILIZED.
 - USE OF 20 MILES PER HOUR DESIGN SPEED ON RURAL ROADS IS NOT DESIRABLE AND EFFORTS SHOULD BE MADE TO AVOID ITS USE.
 - SEE GUARDRAIL STANDARD DRAWINGS FOR TYPICAL GUARDRAIL PLACEMENT.

- GENERAL NOTES**
- FOR SPECIFIC CONDITIONS NOT COVERED ON THIS SHEET, REFERENCE SHOULD BE MADE TO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS", 1990.
 - PAGE NUMBERS REFERRED TO ON THIS DRAWING ARE FROM THE ABOVE REFERENCE.
 - REFERENCE SHOULD ALSO BE MADE TO THE AASHTO "ROADSIDE DESIGN GUIDE".
 - THE CURRENT ADT MAY BE USED FOR THE DESIGN IF THE DESIGN HOURLY VOLUME FOR THE DESIGN YEAR IS LESS THAN 100, OTHERWISE THE DHV SHOULD BE USED.
 - DESIRABLE RIGHT-OF-WAY IS SLOPE LINES PLUS TEN FEET.
 - FOR RURAL INTERSECTION DESIGN SEE PAGE 477-478.
 - IF NO ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHALL BE TRAVELED WAY PLUS CLEAR ZONE.
 - IF ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHALL BE SUFFICIENT TO ACCOMMODATE THE UTILITIES OUTSIDE THE CLEAR ZONE.
 - FOR URBAN INTERSECTION DESIGN SEE PAGE 488.

SPECIAL NOTE
THIS DRAWING IS NOT TO BE UTILIZED FOR NEW DESIGN PROJECTS BEGUN AFTER OCTOBER 1, 2002.

□ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

- REV. 5-28-87: CHANGED SUPER-ELEVATION DRAWING REFERENCE.
- REV. 2-2-88: REVISED FOOTNOTE ①.
- REV. 11-9-88: CHANGED SHOULDER SLOPE.
- REV. 9-10-90: REDREW SHEET, REORGANIZED SHEET AND UPDATED TO 1990 POLICY.
- REV. 3-20-02: ADDED SPECIAL NOTE.
- REV. 3-31-03: CHANGED EFFECTIVE DATE IN SPECIAL NOTE.