MINIMUM CLEAR ROADWAY WIDTHS AND DESIGN LOADINGS FOR NEW AND RECONSTRUCTED BRIDGES (SEE PAGE 6-7)

DESIGN ADT (VEH/DAY)	DESIGN LOADING	MINIMUM CLEAR ROADWAY WIDTH OF BRIDGE (F)
UNDER 400	HL-93	TRAVELED WAY + 4 FT. (2 FT. EACH SIDE)
400 TO 1,500	HL-93	TRAVELED WAY + 6 FT. (3 FT. EACH SIDE)
1,500 TO 2,000	HL-93	TRAVELED WAY + 8 FT. (4 FT. EACH SIDE)
OVER 2,000	HL-93	APPROACH ROADWAY WIDTH

MINIMUM STRUCTURAL CAPACITIES AND MINIMUM ROADWAY WIDTHS FOR BRIDGES TO REMAIN IN PLACE (SEE PAGE 6-8) (G)

DESIGN ADT (VEH/DAY)	DESIGN LOADING (STRUCTURAL CAPACITY)	MINIMUM CLEAR ROADWAY WIDTH (FT) (H)
UNDER 400	H-15	22
400 TO 1,500	H-15	22
1,500 TO 2,000	H-15	24
OVER 2,000	H-15	28

TABLE I MINIMUM DESIGN SPEEDS FOR RURAL COLLECTOR ROADS (SEE PAGE 6-2)

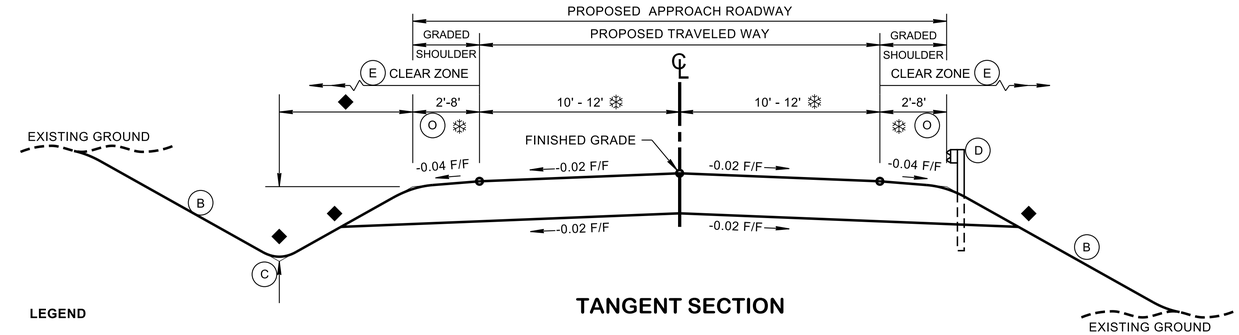
TYPE OF TERRAIN	DESIGN SPEED (MPH) FOR SPECIFIED DESIGN ADT (VEH/DAY)		
	0 TO 400	400 TO 2,000	OVER 2,000
LEVEL	40	50	60
ROLLING	30	40	50
MOUNTAINOUS	20 (I)	30	40

TABLE II COLLECTOR ROADS AND STREETS - DESIGN STANDARDS (M)

DESIGN STANDARDS (FOR GIVEN DESIGN SPEED)		DESIGN SPEEDS (MPH) 20	25	30	35	40	45	50	55	MINIMUM WIDTH OF SHOULDERS FOR ALL SPEEDS (FEET) (SEE PAGE 6-6)
MINIMUM WIDTH OF TRAVELED WAY IN RURAL AREAS (FT.) (J) (SEE PAGE 6-6) (N)	DESIGN ADT UNDER 400	20 (P)	20 (P)	20 (P)	20 (P)	20 (P)	20	20	22	2
	DESIGN ADT 400 - 1,500	20 (K)	20 (K)	20 (K)	20 (K)	20 (K)	22	22	22	4
	DESIGN ADT 1,500 - 2,000	20	22	22	22	22	22	22	24	6
	DESIGN ADT OVER 2,000	22	24	24	24	24	24	24	24	8
MINIMUM RADIUS (FT.) 0.04 MAX. S.E.		86	154	250	371	533	711	926	1190	SEE PAGE 3-32
MINIMUM RADIUS (FT.) 0.06 MAX. S.E.		81	144	231	340	485	643	833	1060	
MINIMUM RADIUS (FT.) 0.08 MAX. S.E.		76	134	214	314	444	587	758	960	
MAXIMUM RURAL GRADES % (L)	LEVEL TERRAIN	7	7	7	7	7	7	6	6	SEE PAGE 6-3
	ROLLING TERRAIN	10	10	9	9	8	8	7	7	
	MOUNTAINOUS TERRAIN	12	11	10	10	10	10	9	9	
MAXIMUM URBAN GRADES % (L)	LEVEL TERRAIN	9	9	9	9	9	8	7	7	SEE PAGE 6-12
	ROLLING TERRAIN	12	12	11	10	10	9	8	8	
	MOUNTAINOUS TERRAIN	14	13	12	12	12	11	10	10	
MINIMUM STOPPING SIGHT DISTANCE (FT.)		115	155	200	250	305	360	425	495	SEE PAGE 6-4
MINIMUM "K" VALUE	CREST VERTICAL CURVE	7	12	19	29	44	61	84	114	
	SAG VERTICAL CURVE	17	26	37	49	64	79	96	115	
DESIGN PASSING SIGHT DISTANCE (FT.)		400	450	500	550	600	700	800	900	SEE PAGE 6-5
MINIMUM "K" VALUE	PASSING SIGHT DISTANCE FOR CREST VERTICAL CURVE	57	72	89	108	129	175	229	289	
FOR SUPERELEVATION SEE STANDARD DRAWINGS RD11-SE SERIES										

GENERAL NOTES

1. FOR SPECIFIC CONDITIONS NOT COVERED ON THIS SHEET, REFERENCE SHOULD BE MADE TO "A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AASHTO, 2011 (GREEN BOOK).
2. PAGE NUMBERS REFERRED TO ON THIS DRAWING ARE FROM "A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AASHTO, 2011 (GREEN BOOK), UNLESS OTHERWISE NOTED.
3. REFERENCE SHOULD ALSO BE MADE TO THE "ROADSIDE DESIGN GUIDE," AASHTO, 2011.
4. FOR URBAN DESIGN GUIDANCE AND CRITERIA, SEE PAGES 6-11 THROUGH 6-20.
5. DESIRABLE RIGHT-OF-WAY IS SLOPE LINES PLUS FIFTEEN FEET.
6. FOR RURAL INTERSECTION DESIGN, SEE PAGE 6-9.
7. IF NO ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHALL BE TRAVELED WAY PLUS CLEAR ZONE.
8. IF ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHALL BE SUFFICIENT TO ACCOMMODATE THE UTILITIES OUTSIDE THE CLEAR ZONE.
9. FOR URBAN INTERSECTION DESIGN, SEE PAGE 6-18.
10. ALL NEW AND REHABILITATED BRIDGES SHALL BE DESIGNED FOR HL-93 LIVE LOADS. THE MINIMUM CLEAR WIDTH FOR NEW AND REHABILITATED BRIDGES SHALL BE EQUAL TO THE FULL WIDTH OF THE APPROACH ROADWAY, CURB-TO-CURB OR FULL SHOULDER WIDTH AS APPLICABLE.
11. IF A BIKE ROUTE IS TO BE INCLUDED AS PART OF THE PROPOSED ROADWAY, THE PAVED APPROACH ROADWAY WIDTH SHALL BE A MINIMUM OF 28 FT.

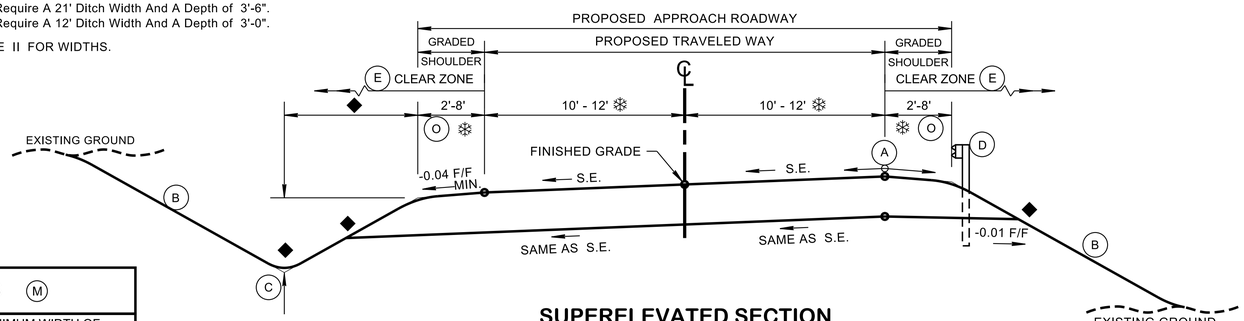


TANGENT SECTION

LEGEND

◆ ADTS OVER 400 AND DESIGN SPEEDS OF 50 MILES PER HOUR AND GREATER SHALL REQUIRE 6:1 SLOPES.
6:1 Slope Require A 21' Ditch Width And A Depth of 3'-6".
4:1 Slope Require A 12' Ditch Width And A Depth of 3'-0".

❄ SEE TABLE II FOR WIDTHS.



SUPERELEVATED SECTION

DESIGN NOTES

(A) THE SLOPE OF THE SHOULDER AND THE ROADWAY PAVEMENT SHOULD NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 7%.

(B) SEE STANDARD DRAWING RD11-S-11 FOR FILL AND CUT SLOPE TABLES, ROUNDING ON TOP OF CUT SLOPES, TOE OF FILL SLOPES AND SPECIAL ROCK TREATMENT.

(C) SEE STANDARD DRAWING RD11-S-11A FOR ROUNDING OF ROADSIDE DITCH SLOPES.

(D) SEE STANDARD DRAWING S-PL-6 FOR TYPICAL GUARDRAIL PLACEMENT.

(E) SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE CRITERIA. SEE THE "ROADSIDE DESIGN GUIDE", AASHTO, 2011, FOR FURTHER INFORMATION REGARDING CLEAR ZONE.

(F) WHERE THE APPROACH ROADWAY WIDTH (TRAVELED WAY PLUS SHOULDERS) IS SURFACED, THAT SURFACE WIDTH SHOULD BE CARRIED ACROSS THE STRUCTURE.

(G) 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.

(H) CLEAR WIDTH BETWEEN CURBS OR RAILS, WHICHEVER IS THE LESSER, SHOULD BE EQUAL TO OR GREATER THAN THE APPROACH TRAVELED WAY WIDTH.

(I) EFFORTS SHOULD BE MADE TO SELECT A DESIGN SPEED GREATER THAN 20 MILES PER HOUR. REFER TO PAGE 6-2 OF THE "POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS," AASHTO, 2011, FOR FURTHER INFORMATION.

(J) ON ROADWAYS TO BE RECONSTRUCTED, THE 22 FEET TRAVELED WAY MAY BE RETAINED WHERE THE ALIGNMENT AND SAFETY RECORDS ARE SATISFACTORY.

(K) FOR ROADS IN MOUNTAINOUS TERRAIN WITH VOLUME OF 400 TO 600 VEH/DAY USE 18 FT. TRAVEL WAY WIDTH AND 2 FT. SHOULDER WIDTH.

(L) SHORT LENGTHS OF GRADE IN RURAL AND URBAN AREAS, SUCH AS GRADES LESS THAN 500 FEET IN LENGTH, ONE-WAY DOWNGRADES, AND GRADES ON LOW-VOLUME RURAL OR URBAN COLLECTORS MAY BE UP TO 2 PERCENT STEEPER THAN THE GRADES SHOWN IN TABLE IV.

(M) ALTHOUGH THE SELECTED DESIGN SPEED ESTABLISHES THE LIMITING VALUES OF CURVE RADIUS AND MINIMUM SIGHT DISTANCE THAT SHOULD BE USED IN DESIGN, THERE SHOULD BE NO RESTRICTION ON THE USE OF FLATTER HORIZONTAL CURVES OR GREATER SIGHT DISTANCES WHERE SUCH IMPROVEMENTS CAN BE PROVIDED AS A PART OF AN ECONOMICAL DESIGN (SEE PAGE 2-55).

(N) PROPOSED APPROACH ROADWAY WIDTH WILL NOT BE LESS THAN EXISTING WIDTH.

(O) SHOULDER SURFACE TREATMENT TO BE SPECIFIED BY THE ROADWAY DESIGN DIVISION'S PAVEMENT DESIGN SECTION. DESIGNERS SHOULD REFER TO THE DESIGN GUIDELINES FOR PAVEMENT REQUEST PROCEDURES. WHEN SHOULDERS ARE PAVED AND GRADED SHOULDER WIDTH IS 6 FEET OR GREATER, THE SHOULDER SHOULD BE PAVED TO THE GRADED SHOULDER WIDTH MINUS TWO FEET. WHEN SHOULDERS ARE PAVED AND THE GRADED SHOULDER WIDTH IS LESS THAN 6 FEET, THE SHOULDER SHOULD BE PAVED THE FULL WIDTH.

(P) AN 18 FT. MINIMUM WIDTH MAY BE USED FOR ROADWAYS WITH DESIGN ADT UNDER 250 VEHICLES PER DAY.

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS FOR COLLECTORS, 2-LANE ROADS AND STREETS

01-01-2019 | RD11-TS-2

NOT TO SCALE