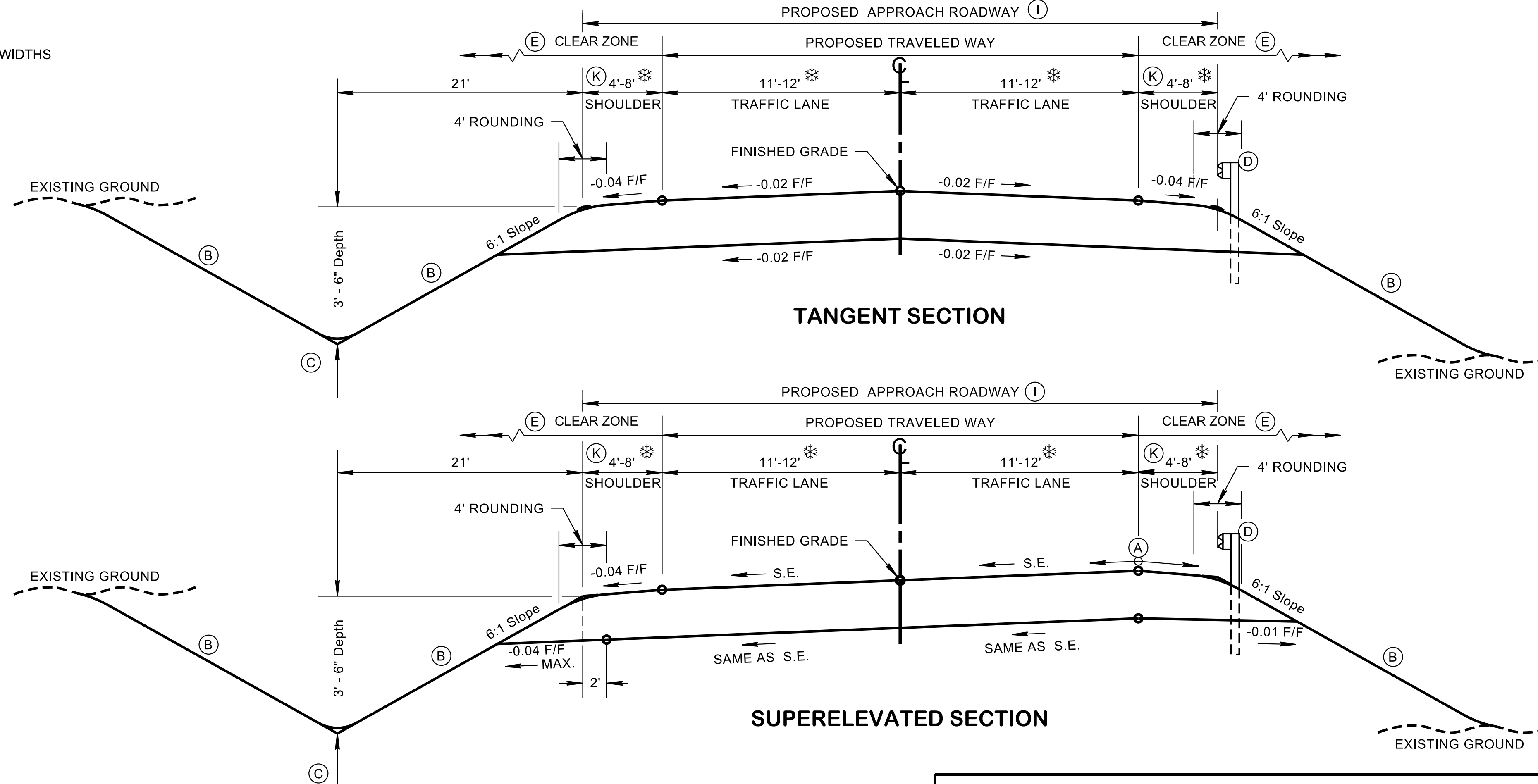


**LEGEND**  
 \* SEE TABLE II FOR WIDTHS



**TABLE I  
 DESIGN SPEEDS FOR RURAL  
 ARTERIAL ROADS (SEE PAGE 7-2)** <sup>(H)</sup>

TYPE OF TERRAIN	DESIGN SPEED (MPH) <sup>(J)</sup>
LEVEL	60 - 75
ROLLING	50 - 60
MOUNTAINOUS	40 - 50

**TABLE II 2-LANE ARTERIAL - DESIGN STANDARDS** <sup>(G)</sup>

DESIGN STANDARDS (FOR GIVEN DESIGN SPEED)		DESIGN SPEEDS (MPH)									MINIMUM WIDTH OF SHOULDERS FOR ALL SPEEDS (FEET) (SEE PAGE 7-5)
		30	35	40	45	50	55	60	65	70	
MINIMUM WIDTH OF TRAVELED WAY IN RURAL AREAS (FT.) (SEE PAGE 7-5)	DESIGN ADT UNDER 400	22	22	22	22	22	22	24	24	24	4 <sup>(F)</sup>
	DESIGN ADT 400 - 1,500	22	22	22	22	22	22	24	24	24	6
	DESIGN ADT 1,500 - 2,000	22	22	22	22	24	24	24	24	24	6
	DESIGN ADT OVER 2,000	24	24	24	24	24	24	24	24	24	8
MINIMUM RADIUS (FT.) 0.04 MAX. S.E.		250	371	533	711	926	1190	1500			SEE PAGE 3-32
MINIMUM RADIUS (FT.) 0.06 MAX. S.E.		231	340	485	643	833	1060	1330			
MINIMUM RADIUS (FT.) 0.08 MAX. S.E.		214	314	444	587	758	960	1200	1485	1820	
MAXIMUM RURAL GRADES %	LEVEL TERRAIN			5	5	4	4	3	3	3	SEE PAGE 7-4
	ROLLING TERRAIN			6	6	5	5	4	4	4	
	MOUNTAINOUS TERRAIN			8	7	7	6	6	5	5	
MAXIMUM URBAN GRADES %	LEVEL TERRAIN	8	7	7	6	6	5	5			SEE PAGE 7-29
	ROLLING TERRAIN	9	8	8	7	7	6	6			
	MOUNTAINOUS TERRAIN	11	10	10	9	9	8	8			
MINIMUM STOPPING SIGHT DISTANCE (FT.)		200	250	305	360	425	495	570	645	730	SEE PAGE 7-3
MINIMUM "K" VALUE	CREST VERTICAL CURVE	19	29	44	61	84	114	151	193	247	SEE PAGE 3-155
	SAG VERTICAL CURVE	37	49	64	79	96	115	136	157	181	SEE PAGE 3-161
MINIMUM PASSING SIGHT DISTANCE (FT.)		500	550	600	700	800	900	1000	1100	1200	SEE PAGE 3-157
MINIMUM "K" VALUE	PASSING SIGHT DISTANCE FOR CREST VERTICAL CURVE	89	108	129	175	229	289	357	432	514	SEE PAGE 3-157

FOR SUPERELEVATION SEE STANDARD DRAWINGS RD11-SE SERIES

- 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 VOLUMES ARE LOW OR A NARROW SECTION IS NEEDED TO REDUCE CONSTRUCTION IMPACTS, THE SHOULDER WIDTH MAY BE A MINIMUM 2 FT. PROVIDED THAT BICYCLE USE IS NOT INTENDED TO BE ACCOMMODATED ON THE SHOULDER.
  - (G) 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).
  - (H) URBAN DESIGN SPEEDS ARE GENERALLY IN THE RANGE OF 30 TO 60 MILES PER HOUR (SEE PAGE 7-27).
  - (I) PROPOSED ROADWAY WIDTH WILL NOT BE LESS THAN EXISTING WIDTH.
  - (J) FOR ADDITIONAL INFORMATION REGARDING DESIGN SPEEDS FOR RURAL ARTERIALS, SEE PAGE 7-2.
  - (K) 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.

- 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 AASHTO "ROADSIDE DESIGN GUIDE," AASHTO, 2011.
  - (4) DESIRABLE RIGHT-OF-WAY IS SLOPE LINES PLUS FIFTEEN FEET TO TWENTY FEET.
  - (5) THE DESIGN OF BRIDGES, CULVERTS, WALLS, TUNNELS AND OTHER STRUCTURES SHALL BE IN ACCORDANCE WITH THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THE DESIGN LOADING SHOULD BE THE HL-93 CALIBRATED LIVE LOAD DESIGNATION.
  - (6) FOR EXISTING BRIDGES TO REMAIN IN PLACE, THEY SHOULD HAVE ADEQUATE STRUCTURAL STRENGTH AND A WIDTH AT LEAST EQUAL TO THE WIDTH OF THE TRAVELED WAY PLUS 2 FEET CLEARANCE ON EACH SIDE. BRIDGES SHOULD BE CONSIDERED FOR ULTIMATE WIDENING OR REPLACEMENT IF THEY DO NOT PROVIDE AT LEAST HL-93 LIVE LOADING CAPACITY. AS AN INTERIM MEASURE, FOR NARROW BRIDGES, SPECIAL SIGNING AND DELINEATION TREATMENTS MAY BE CONSIDERED.
  - (7) FOR ADDITIONAL URBAN DESIGN GUIDANCE AND CRITERIA, SEE PAGES 7-26 THROUGH 7-56.

STATE OF TENNESSEE  
 STANDARD  
 DRAWING  
 DEPARTMENT OF TRANSPORTATION

**DESIGN  
 STANDARDS  
 FOR ARTERIAL  
 HIGHWAYS  
 (2 LANE)**

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