REV. 10-15-02: NEW SHEET. REPLACES RD-TS-1.

REV. 2-5-16: REMOVE DETAIL A AND DETAIL B.

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).

TABLE I.
MINIMUM CLEAR ROADWAY WIDTHS AND DESIGN LOADINGS FOR NEW AND RECONSTRUCTED BRIDGES (SEE PAGE 390)

DESIGN ADT (VEH/DAY)	DESIGN LOADING	MINIMUM CLEAR ROADWAY WIDTH OF BRIDGE (1)
UNDER 400	HS-20	TRAVELED WAY + 4 FT. (2 FT. EACH SIDE)
400 TO 2,000	HS-20	TRAVELED WAY + 6 FT. (3 FT. EACH SIDE)
OVER 2,000	HS-20	APPROACH ROADWAY WIDTH

TABLE II.
MINIMUM STRUCTURAL CAPACITIES AND MINIMUM ROADWAY WIDTHS FOR EXISTING BRIDGES TO REMAIN IN PLACE (SEE PAGE 390) (3)

DESIGN ADT (VEH/DAY)	DESIGN LOADING (STRUCTURAL CAPACITY)	MINIMUM CLEAR ROADWAY WIDTH (FT) (4)
0 TO 50	H-15	20
50 TO 250	H-15	20
250 TO 1,500	H-15	22
1,500 TO 2,000	H-15	24
OVER 2,000	H-15	28

TABLE III. MINIMUM DESIGN SPEEDS FOR LOCAL RURAL ROADS

TYPE OF TERRAIN	DESIGN SPEED (MPH) FOR SPECIFIED DESIGN ADT (VEH/DAY)					
	UNDER 50	50-250	250-400	400 TO 1,500	1,500 TO 2,000	2,000 AND OVER
LEVEL	30	30	40	50	50	50
ROLLING	20 (6)	30	30	40	40	40
MOUNTAINOUS	20 (6)	20 (6)	20 (6)	30	30	30

TABLE IV. LOCAL ROADS AND STREETS - DESIGN STANDARDS (8)

DESIGN STANDARDS (FOR GIVEN DESIGN SPEED)		DESIGN SPEEDS (MPH)										MINIMUM WIDTH OF SHOULDERS FOR ALL SPEEDS (FEET) (SEE PAGE 388)
		15	20	25	30	35	40	45	50	55	60	
MINIMUM WIDTH OF TRAVELED WAY IN RURAL AREAS (FEET) (SEE PAGE 388)	DESIGN ADT UNDER 400	18	18	18	18	18	18	20	20	22	22	4 (7)
	DESIGN ADT 400 - 1,500	20 (7)	20 (7)	20 (7)	20 (7)	20 (7)	20 (7)	22	22	22	22	5 (7) (9)
	DESIGN ADT 1,500 - 2,000	20	22	22	22	22	22	22	22	24 (10)	24 (10)	6
	DESIGN ADT OVER 2,000	22	24 (10)	24 (10)	24 (10)	24 (10)	24 (10)	24 (10)	24 (10)	24 (10)	24 (10)	8
MINIMUM RADIUS (FEET) 0.04 MAX. S.E.		70	125	205	300	420	565	730	930	1190	1505	SEE PAGE 145
MINIMUM RADIUS (FEET) 0.06 MAX. S.E.		65	115	185	275	380	510	660	835	1065	1340	
MINIMUM RADIUS (FEET) 0.08 MAX. S.E.		60	105	170	250	350	465	600	760	965	1205	
MAXIMUM RURAL GRADES %	LEVEL TERRAIN	9	8	7	7	7	7	7	6	6	5	SEE PAGE 386
	ROLLING TERRAIN	12	11	11	10	10	10	9	8	7	6	
	MOUNTAINOUS TERRAIN	17	16	15	14	14	13	12	10	10	X	
MINIMUM STOPPING SIGHT DISTANCE (FEET)		80	115	155	200	250	305	360	425	495	570	SEE PAGE 385
MINIMUM "K" VALUE	CREST VERTICAL CURVE	3	7	12	19	29	44	61	84	114	151	
	SAG VERTICAL CURVE	10	17	26	37	49	64	79	96	115	136	
MINIMUM PASSING SIGHT DISTANCE (FEET)		X	710	900	1090	1280	1470	1625	1835	1985	2135	SEE PAGE 386
MINIMUM "K" VALUE FOR CREST VERTICAL CURVE		X	180	289	424	585	772	943	1203	1407	1628	
SUPERELEVATION		SEE STANDARD DRAWINGS RD01-SE-2 AND RD01-SE-3										

GENERAL NOTES

(A) FOR SPECIFIC CONDITIONS NOT COVERED ON THIS SHEET, REFERENCE SHOULD BE MADE TO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS," AASHTO 2001.

(B) FOR URBAN DESIGN GUIDANCE AND CRITERIA, REFERENCE IS MADE TO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS," AASHTO, 2001, PAGES 393 TO 408.

(C) PAGE NUMBERS REFERRED TO ON THIS DRAWING ARE FROM "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS," AASHTO, 2001.

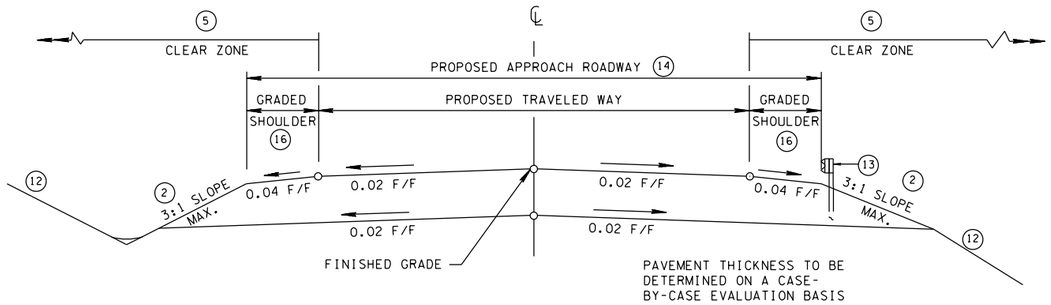
(D) REFERENCE IS ALSO MADE TO THE "ROADSIDE DESIGN GUIDE," AASHTO, 2011.

(E) FOR CORNER SIGHT DISTANCE AT RURAL INTERSECTIONS SEE PAGES 654 THROUGH 681. ALSO STANDARD DRAWING SD-SERIES.

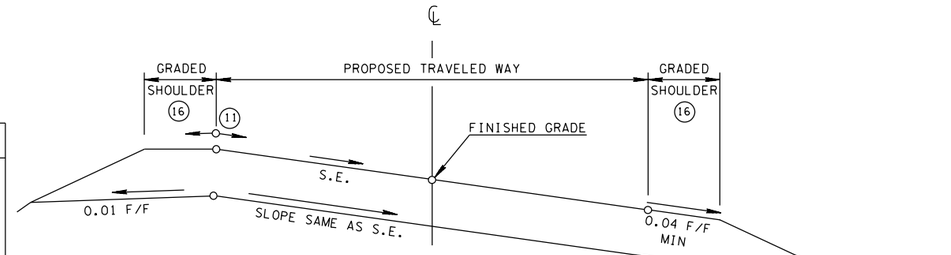
(F) IF NO ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHALL BE TRAVELED WAY PLUS CLEAR ZONE (MINIMUM OF 10 FEET EACH SIDE).

(G) IF ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHALL BE SUFFICIENT TO ACCOMMODATE THE UTILITIES OUTSIDE THE CLEAR ZONE.

(H) DESIRABLE RIGHT-OF-WAY IS SLOPE LINES PLUS TEN FEET.



TANGENT SECTION



SUPERELEVATED SECTION

TYPICAL CROSS-SECTIONS

FOOTNOTES

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

(2) 4:1 SLOPE FOR 40 MILES PER HOUR OR GREATER WITH A DESIGN ADT OF 1,000 OR GREATER OR ANY LOCATION GUARDRAIL IS USED.

(3) 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.

(4) CLEAR WIDTH BETWEEN CURBS OR RAILS, WHICHEVER IS THE LESSER. MINIMUM CLEAR WIDTHS THAT ARE TWO FEET NARROWER MAY BE USED ON ROADS WITH FEW TRUCKS. IN NO CASE SHALL THE MINIMUM CLEAR WIDTH BE LESS THAN THE APPROACH TRAVELED WAY WIDTH.

(5) THE CLEAR ZONE WIDTH SHALL BE DETERMINED FROM STANDARD DRAWING RD01-S-12. SEE THE "ROADSIDE DESIGN GUIDE," AASHTO, 2002, FOR FURTHER INFORMATION ON CLEAR ZONES.

(6) EFFORTS SHOULD BE MADE TO SELECT A DESIGN SPEED GREATER THAN 20 MILES PER HOUR. SEE PAGE 384 FOR FURTHER INFORMATION.

(7) FOR ROADS IN MOUNTAINOUS TERRAIN WITH A DESIGN YEAR ADT OF 0 TO 600 VEHICLES PER DAY AND THE DESIGN SPEED IS GREATER THAN OR EQUAL TO 15 MILES PER HOUR AND LESS THAN OR EQUAL TO 40 MPH, USE 18 FEET TRAVELED WAY WIDTH AND 2 FEET SHOULDER WIDTH.

(8) 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 69).

(9) MAY BE USED TO ACHIEVE A MINIMUM ROADWAY WIDTH OF 30 FEET FOR DESIGN SPEEDS GREATER THAN 40 MILES PER HOUR.

(10) WHERE THE WIDTH OF THE TRAVELED WAY IS SHOWN AS 24 FEET, THE WIDTH MAY REMAIN AT 22 FEET ON RECONSTRUCTED HIGHWAYS WHERE ALIGNMENT AND SAFETY RECORDS ARE SATISFACTORY.

(11) THE SLOPES OF THE SHOULDER AND ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07 FOOT PER FOOT.

(12) SEE STANDARD DRAWINGS RD01-S-11 (CASE II) AND RD01-S-11B FOR DESIRABLE SLOPES & NOTE REGARDING GEOLOGICAL RECOMMENDATIONS.

(13) SEE S-PL-6 FOR GUARDRAIL PLACEMENT.

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

(15) WHEN GUARDRAIL IS PLACED BEHIND CURB AND GUTTER, THE SLOPING CURB HEIGHT MUST BE 4 INCHES OR LESS.

(16) SHOULDER SURFACE TREATMENT TO BE SPECIFIED BY THE 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 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 WIDTH OF THE GRADED SHOULDER.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS FOR LOCAL ROADS AND STREETS

10-15-02 | RD01-TS-1