- ☐ REV. 11-1-95: CHANGED TO METRIC.
- ☐ REV. 12-18-97: CHANGED MINIMUM SHOULDER WIDTH TABLE AND GENERAL NOTE (14).
- ☐ REV. 3-20-02: ADDED SPECIAL NOTE.
- ☐ REV. 3-31-03: CHANGED EFFECTIVE DATE IN SPECIAL NOTE.

DESIGN LOADING: ALL NEW AND REHABILITATED BRIDGES SHALL BE DESIGNED FOR MS-18 LOADING.

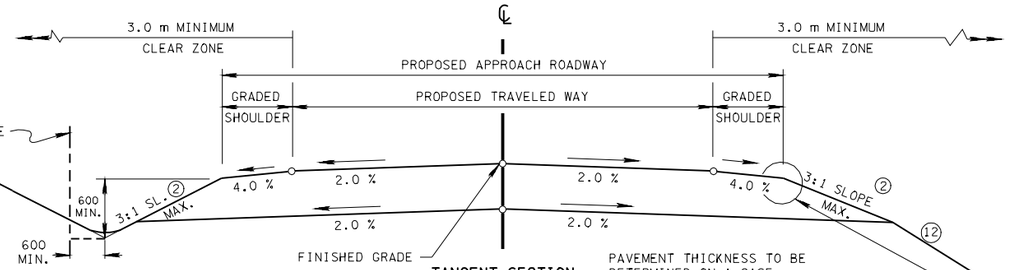
FOR NEW ROUTE CONSTRUCTION OR ROUTE RECONSTRUCTION PROJECTS:

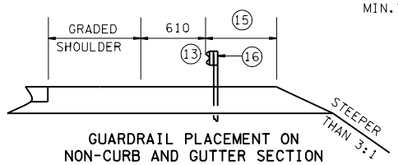
THE MINIMUM CLEAR WIDTH FOR NEW BRIDGES SHALL BE EQUAL TO THE FULL WIDTH OF THE APPROACH ROADWAY (CURB-TO-CURB OR FULL SHOULDER WIDTH AS APPLICABLE).

①CLEAR ROADWAY WIDTHS FOR BRIDGE REPLACEMENT AND REHABILITATION PROJECTS (PAGE 423, TABLE V-7)	
CURRENT ADT	MINIMUM CLEAR ROADWAY WIDTH OF BRIDGE
400 AND UNDER	TRAVELED WAY + 1.2 m (0.6 m EACH SIDE)
400 - 2000	TRAVELED WAY + 2.0 m. (1.0 m EACH SIDE)
OVER 2000	APPROACH ROADWAY WIDTH

③ MINIMUM STRUCTURAL CAPACITIES AND MINIMUM ROADWAY WIDTHS FOR EXISTING BRIDGES TO REMAIN IN PLACE (PAGE 424, TABLE V-8)		
CURRENT ADT	DESIGN LOADING (STRUCTURAL CAPACITY)	④ ROADWAY CLEAR WIDTH (m)
0-50	M9	6.0
50-250	M13.5	6.0
250-1500	M13.5	6.6
1500-2000	M13.5	7.2
OVER 2000	M13.5	8.5

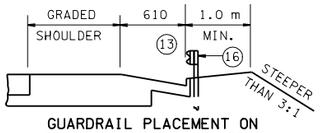
⑤ MINIMUM RURAL DESIGN SPEEDS	ADT UNDER 50	ADT 50-250	ADT 250-400	ADT 400-1500	ADT 1500-2000	ADT OVER 2000
LEVEL TOPO	50	50	60	80	80	80
ROLLING TOPO	⑥ 30	50	50	60	60	60
MOUNTAINOUS TOPO	⑥ 30	⑥ 30	⑥ 30	50	50	50





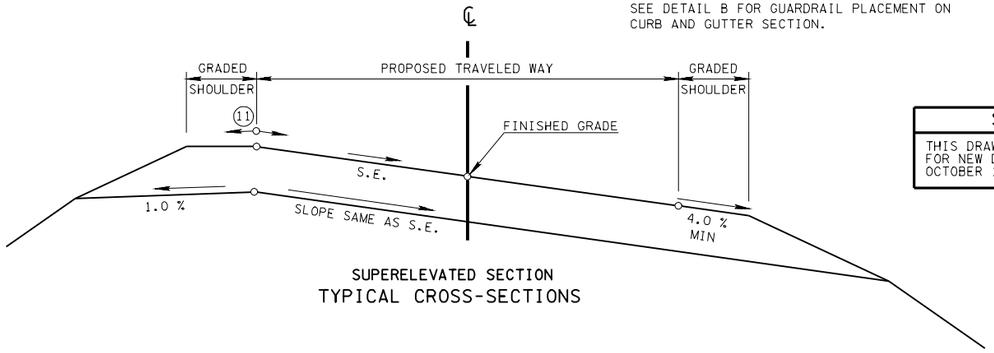
GUARDRAIL PLACEMENT ON NON-CURB AND GUTTER SECTION

DETAIL A



GUARDRAIL PLACEMENT ON CURB AND GUTTER SECTION

DETAIL B



SUPERELEVATED SECTION

TYPICAL CROSS-SECTIONS

SPECIAL NOTE

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

DESIGN STANDARDS (FOR GIVEN DESIGN SPEED)			DESIGN SPEEDS (km/h) 30	40	50	60	70	80	90	100	⑦ MINIMUM WIDTH OF GRADED SHOULDERS FOR ALL SPEEDS (m)
⑦ MINIMUM AND DESIRABLE WIDTH OF TRAVELED WAY IN RURAL AREAS (m)	ADT UNDER 400	MINIMUM	5.4	5.4	5.4	5.4	6.0	6.0	6.6	6.6	0.6
		DESIRABLE	6.6	6.6	6.6	6.6	6.6	6.6	6.6	7.2	
	ADT 400-1500	MINIMUM	⑭ 6.0	⑭ 6.0	6.0	6.0	6.6	6.6	6.6	6.6	⑭ 1.2
		DESIRABLE	6.6	6.6	6.6	6.6	6.6	6.6	7.2	7.2	
	ADT 1500-2000	MINIMUM	6.6	6.6	6.6	6.6	6.6	6.6	7.2	7.2	1.8
		DESIRABLE	6.6	6.6	6.6	6.6	7.2	7.2	7.2	7.2	
	ADT OVER 2000	MINIMUM	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	2.4
		DESIRABLE	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	
MINIMUM RADIUS (m) 4.0 % MAX. S.E.			35	60	100	150	215	280	375	490	
MINIMUM RADIUS (m) 6.0 % MAX. S.E.			30	55	90	135	195	250	335	435	
MINIMUM RADIUS (m) 8.0 % MAX. S.E.			30	50	80	125	175	230	305	395	
MINIMUM RADIUS (m) 10.0 % MAX. S.E.			25	45	75	115	160	210	275	360	
⑧ MAXIMUM RURAL GRADES %		LEVEL TOPO	8	7	7	7	7	6	6	5	
		ROLLING TOPO	11	11	10	10	9	8	7	6	
		MOUNTAINOUS TOPO	16	15	14	13	12	10	10	-	
⑩ MINIMUM STOPPING SIGHT DISTANCE (m)			29.6	44.4	57.4-62.8	74.3-84.6	94.1-110.8	112.8-139.4	131.2-168.7	157.0-205.0	
⑨ MINIMUM "K" VALUE (PAGE 419; TABLE V-2)		CREST VERTICAL CURVE	3	5	9-10	14-18	22-31	32-49	43-71	62-105	
		SAG VERTICAL CURVE	4	8	11-12	15-18	20-25	25-32	30-40	37-51	
PASSING SIGHT DISTANCE (m) (PAGE 420, TABLE V-3)			217	285	345	407	482	541	605	670	
⑨ MINIMUM "K" VALUE FOR CREST VERTICAL CURVE			50	90	130	180	250	310	390	480	
SUPERELEVATION			SEE STANDARD DRAWINGS RDM-SE-2 & RDM-SE-3								

FOOTNOTES

① 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.

② 4:1 FOR 60 km/h OR GREATER WITH A DHV OF 100 OR GREATER.

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 LESS, MINIMUM CLEAR WIDTHS UP TO 0.6 m 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 RURAL PAGE 419, TABLE V-1. FOR URBAN DESIGN SEE PAGE 429.

⑥ USE OF 30 km/h DESIGN SPEED ON RURAL ROADS IS NOT DESIRABLE AND EFFORTS SHOULD BE MADE TO AVOID ITS USE.

⑦ RURAL PAGE 422, TABLE V-6. FOR URBAN DESIGN SEE PAGE 431-432.

⑧ RURAL PAGE 421, TABLE V-4. FOR URBAN DESIGN SEE PAGE 430.

⑨ "K" VALUE IS A COEFFICIENT BY WHICH THE ALGEBRAIC DIFFERENCE IN GRADE MAY BE MULTIPLIED TO DETERMINE THE LENGTH IN METERS OF THE VERTICAL CURVE.

⑩ ANY LENGTH OF STOPPING SIGHT DISTANCE WITHIN THE RANGE OF VALUES ESTABLISHED ON PAGE 419, TABLE V-2, 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.

⑪ THE SLOPES OF THE SHOULDER AND ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 7.0 %.

⑫ SEE STANDARD DRAWING RDM-S-11 (CASE II) FOR DESIRABLE SLOPES & NOTE REGARDING GEOLOGICAL RECOMMENDATIONS.

⑬ FOR LESS THAN CURRENT 400 ADT OR ON BRIDGE REPLACEMENT AND REHABILITATION PROJECTS 610 mm OFFSET TO FACE OF GUARDRAIL AND/OR FACE OF CURB MAY BE ELIMINATED.

⑭ IN MOUNTAINOUS TERRAIN OR SECTIONS WITH HEAVY EARTHWORK WHEN THE ADT IS BETWEEN 400 AND 600 THE GRADED WIDTH OF SHOULDER IN CUTS MAY BE DECREASED TO 0.6 m, BUT IN NO CASE SHOULDER THE TRAVELIED WAY WIDTH BE LESS THAN 5.4 m.

⑮ USE 1.0 m MINIMUM WHEN SLOPE FROM OUTSIDE EDGE OF SHOULDER TO SUBGRADE IS 3:1. 1.0 m MINIMUM IS NOT REQUIRED WHEN USING SLOPES OF 4:1 WITH COMBINATION OF PAVEMENT AND BASE 300 mm OR GREATER IN DEPTH.

⑯ 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" 1994.

Ⓑ PAGE NUMBERS REFERRED TO ON THIS DRAWING ARE FROM THE ABOVE REFERENCE.

Ⓒ REFERENCE SHOULD ALSO BE MADE TO THE AASHTO "ROADSIDE DESIGN GUIDE".

Ⓓ THE DESIGN YEAR ADT SHOULD BE USED FOR THE DESIGN SPEED.

Ⓔ FOR CORNER SIGHT DISTANCE AT RURAL INTERSECTIONS SEE PAGE 427, TABLE V-9.

Ⓕ IF NO ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHALL BE TRAVELED WAY PLUS CLEAR ZONE (3.0 m EACH SIDE). FOR URBAN DESIGN SEE PAGE 438-439.

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

Ⓗ DESIRABLE RIGHT-OF-WAY IS SLOPE LINES PLUS 3.0 m.

TENNESSEE METRIC D.O.T.

ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS FOR LOCAL ROADS AND STREETS

11-1-95 RDM-TS-1