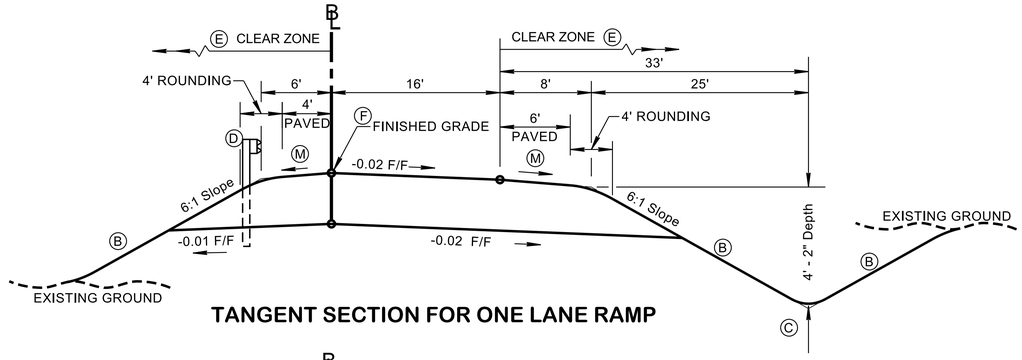
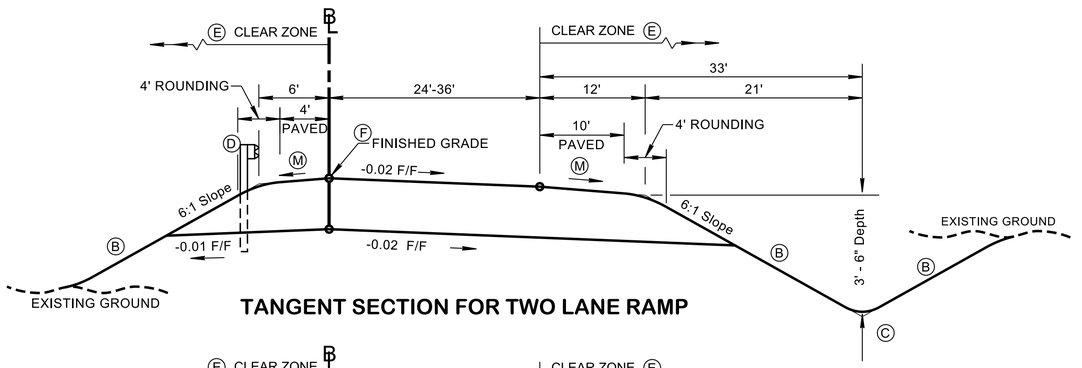
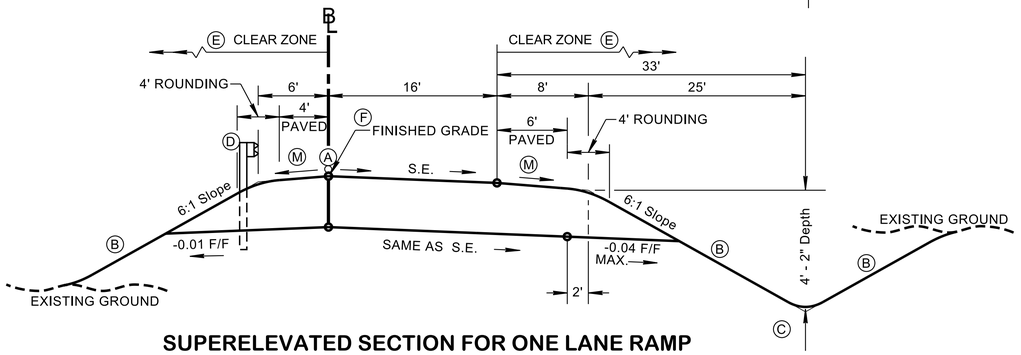


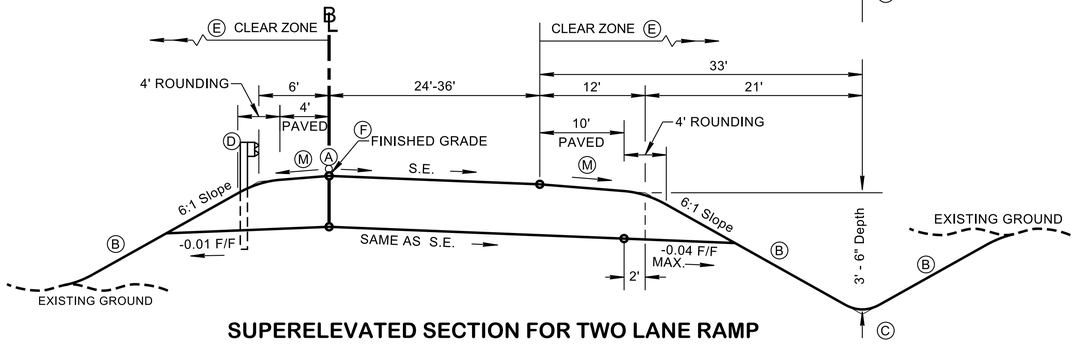
TANGENT SECTION FOR ONE LANE RAMP



TANGENT SECTION FOR TWO LANE RAMP



SUPERELEVATED SECTION FOR ONE LANE RAMP



SUPERELEVATED SECTION FOR TWO LANE RAMP

TABLE I GUIDE VALUES FOR RAMP DESIGN SPEED AS RELATED TO HIGHWAY DESIGN SPEED (SEE PAGE 10-89)

(H) HIGHWAY DESIGN (G) SPEEDS (MPH)	30	35	40	45	50	55	60	65	70	REMARKS
RAMP DESIGN SPEED (MPH) (J)										SEE PAGE 10-89
UPPER RANGE (85%)	25	30	35	40	45	48	50	55	60	
MIDDLE RANGE (70%)	20	25	30	33	35	40	45	45	50	
LOWER RANGE (50%)	15	18	20	23	25	28	30	30	35	

TABLE II STOPPING SIGHT DISTANCE FOR RAMPS (SEE PAGE 3-4) (I)

DESIGN SPEEDS (MPH)	15	20	25	30	35	40	45	50	55	60	65	70
MINIMUM, FEET	80	115	155	200	250	305	360	425	495	570	645	730

TABLE III LENGTHS OF CURVE FOR DIFFERENT COMPOUND CURVE RADII (SEE PAGE 3-58) (K)

RADIUS (FEET)	100	150	200	250	300	400	500 OR MORE
MINIMUM LENGTH OF HORIZONTAL CURVE							
ACCEPTABLE, FEET	40	50	60	80	100	120	140
DESIRABLE, FEET	60	70	90	120	140	180	200

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 AND TOE ROUNDING ON TOP OF CUT SLOPES AND TOE OF FILL SLOPES SPECIAL ROCK TREATMENT AND SUBGRADE ROUNDING IF APPLICABLE.

(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) WHEN THE RAMP PAVEMENT IS ADJACENT TO MAINLINE ROADWAY PAVEMENT, THE PROFILE GRADE WILL BE LOCATED ALONG THE MAINLINE EDGE OF PAVEMENT.

(G) DOES NOT PERTAIN TO THE RAMP TERMINALS WHICH SHOULD BE PROPERLY TRANSITIONED AND PROVIDED WITH SPEED CHANGE FACILITIES ADEQUATE FOR THE HIGHWAY SPEED INVOLVED.

(H) THE HIGHER HIGHWAY DESIGN SPEED SHOULD BE THE CONTROL.

(I) THE SIGHT DISTANCE ON A FREEWAY PRECEDING THE APPROACH NOSE OF AN EXIT RAMP SHOULD EXCEED THE MINIMUM FOR THE THROUGH TRAFFIC DESIGN SPEED DESIRABLY BY 25 PERCENT OR MORE.

(J) SEMI-DIRECT CONNECT AND DIRECT CONNECT AND 2-LANE RAMPS, USE MIDDLE RANGE AS MINIMUM. UPPER RANGE IS PREFERRED. LOWER RANGE MAY BE USED FOR RAMPS NOT CONNECTING TO FREEWAYS OR EXPRESSWAYS. LOOP DESIGN SPEED SHALL NOT BE LESS THAN 25 MILES PER HOUR.

(K) FOR RAMPS WITH COMPOUND CURVES, THE PREFERRED RATIO OF THE FLATTER RADIUS TO THE SHARPER RADIUS IS NOT TO EXCEED 1.75:1; HOWEVER, A 2:1 MINIMUM RATIO MAY BE USED (SEE PAGE 3-58).

(L) MAY BE 2% GREATER IN SPECIAL CASES OR WHERE TOPOGRAPHY LIMITS CONDITIONS. DOWN GRADES SHOULD DESIRABLY BE LIMITED TO 3 OR 4 PERCENT ON RAMPS WITH SHARP HORIZONTAL CURVATURE AND SIGNIFICANT HEAVY TRUCK OR BUS TRAFFIC.

(M) FOR CONCRETE RAMPS USE CONSTANT CROSS SLOPE FOR LANES AND SHOULDERS, FOR ASPHALT RAMPS USE .04 F/F FOR TANGENT SHOULDERS AND A CROSS SLOPE FOR SHOULDERS ON THE HIGH SIDE OF SUPERELEVATION SUCH THAT THE ALGEBRAIC DIFFERENCE BETWEEN CROSS SLOPE DOES NOT EXCEED 7%, THE CROSS SLOPE ON THE LOW SIDE SHALL BE THE MINIMUM OF 4% OR THE SUPERELEVATION RATE.

TABLE IV RECOMMENDED MAXIMUM DESIGN GRADES ON RAMPS (SEE PAGE 10-93)

DESIGN SPEED (MPH)	UPGRADE OR DOWNGRADE (L)
15-25	6-8%
25-30	5-7%
40	4-6%
45 OR GREATER	3-5%

GENERAL NOTES

(1) PAGE NUMBERS REFERRED TO ON THIS DRAWING, UNLESS OTHERWISE NOTED AND FOR SPECIFIC CONDITIONS NOT COVERED ON THIS DRAWING , REFEREE TO "A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AASHTO, 2011 (GREEN BOOK).

(2) REFERENCE SHOULD ALSO BE MADE TO THE AASHTO "ROADSIDE DESIGN GUIDE," AASHTO, 2011.

(3) SECTIONS DRAWN LOOKING IN DIRECTION OF TRAVEL.

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS FOR ARTERIAL AND FREEWAY RAMPS (1, 2 AND 3 LANE)

10-01-2019 RD11-TS-4

NOT TO SCALE