GENERAL NOTES

(A) THIS STANDARD DRAWING IS INTENDED TO BE USED FOR THE DESIGN OF LOW-VOLUME (CURRENT ADT <= 400) ROADWAYS CLASSIFIED AS LOCAL ROADS. FOR ADDITIONAL GUIDANCE NOT COVERED ON THIS SHEET, REFERENCE SHOULD BE MADE TO AASHTO "GUIDELINES FOR GEOMETRIC DESIGN OF VERY LOW-VOLUME LOCAL ROADS (ADT <= 400)," 2001.

(B) PROJECT WITH DESIGN SPEEDS GREATER THAN 40 MPH SHALL USE STANDARD DRAWING RD01-TS-1.

(C) FOR INTERSECTION SIGHT DISTANCE, SEE PAGES 40 TO 47 OF THE AASHTO "GUIDELINES FOR GEOMETRIC DESIGN OF VERY LOW-VOLUME LOCAL ROADS (ADT <= 400)," 2001.

(D) IF NO ABOVE GROUND UTILITIES ARE INVOLVED, MINIMUM RIGHT-OF-WAY SHOULD BE TRAVELWAY PLUS CLEAR ZONE.

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

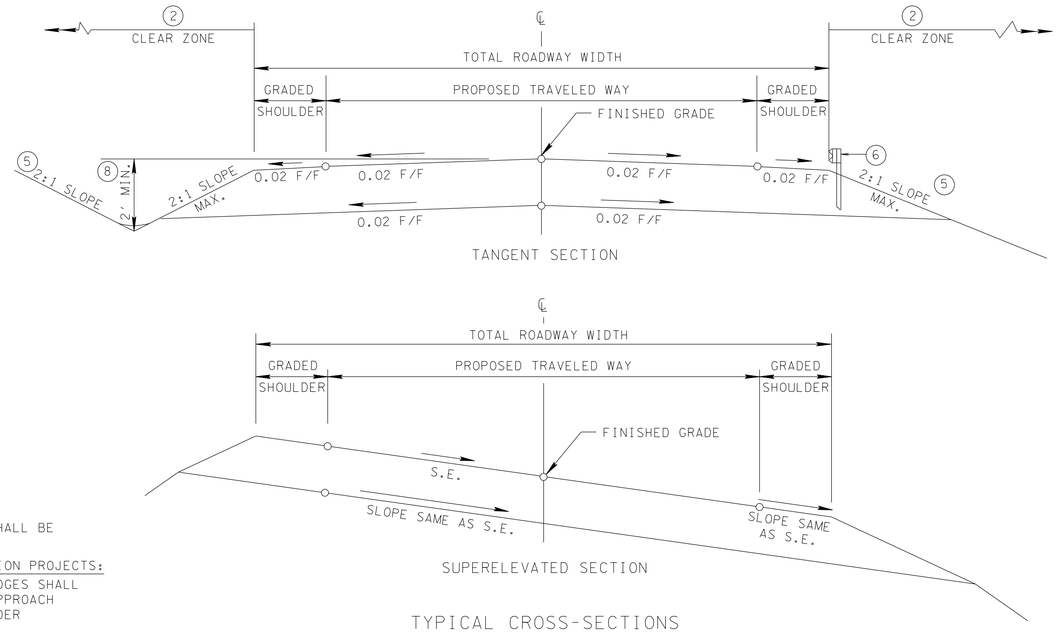
(F) DESIGNER SHOULD CONSIDER ANY KNOWN SITE-SPECIFIC SAFETY PROBLEMS AND TYPICAL DAILY USE OF THE ROADWAY WHEN DETERMINING ROADWAY GEOMETRICS ON A CASE-BY-CASE BASIS. SITE-SPECIFIC SAFETY PROBLEMS MAY BE INDICATED BY CRASH DATA, SKID MARKS, ROADSIDE DAMAGE, SPEED DATA, OR CONCERNS RAISED BY LOCAL OFFICIALS POLICE OR LOCAL RESIDENTS.

(G) FOR EXISTING ROADS, CROSS-SECTION WIDTHS NEED NOT BE MODIFIED, EXCEPT IN THOSE CASES WHERE THERE IS KNOWN EVIDENCE OF A SITE-SPECIFIC SAFETY PROBLEM AS LONG AS THE MINIMUM CRITERIA, AS SHOWN IN THE TABLE BELOW, IS MET.

(H) FOR THIS STANDARD THE FOLLOWING ARE THE POSSIBLE ROADWAY USES:

A. RURAL LOCAL ROADS SERVE A DUAL FUNCTION OF PROVIDING ACCESS TO ABUTTING PROPERTIES AS WELL AS PROVIDING THROUGH OR CONNECTING SERVICE BETWEEN OTHER LOCAL ROADS.
B. RECREATIONAL AND SCENIC ROADS SERVE SPECIALIZED LAND USES, INCLUDING PARKS, TOURIST ATTRACTIONS, AND RECREATION FACILITIES, SUCH AS CAMPSITE OR BOAT-LAUNCH RAMPS. WHEN AVAILABLE, PEAK-SEASON ADT SHOULD BE USED FOR DESIGN.
C. INDUSTRIAL OR COMMERCIAL ACCESS ROADS SERVE DEVELOPMENTS THAT MAY GENERATE A SIGNIFICANT PROPORTION OF TRUCK OR OTHER HEAVY VEHICLE TRAFFIC.
D. URBAN LOCAL ROADWAYS SERVE A DUAL FUNCTION OF PROVIDING ACCESS TO ABUTTING PROPERTIES AS WELL AS PROVIDING THROUGH OR CONNECTING SERVICE BETWEEN OTHER LOCAL ROADS.

(I) ROADWAY SURFACE TYPE SHOULD MATCH EXISTING SURFACE OR SHALL BE DETERMINED BY LOCAL GUIDELINES. WHEN EXISTING SURFACE IS ASPHALT, SEE DESIGN GUIDELINES FOR PAVEMENT DESIGN GUIDANCE.



TYPICAL CROSS-SECTIONS

DESIGN LOADING:
ALL NEW AND REHABILITATED BRIDGES SHALL BE DESIGNED FOR HL-93 LOADING.

FOR NEW CONSTRUCTION OR 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 1

DESIGN STANDARDS FOR LOW-VOLUME LOCAL ROADS AND STREETS (ADT≤400)

DESIGN SPEED (MPH) (9)			15	20	25	30	35	40
MINIMUM TOTAL ROADWAY WIDTH BY USE (FEET)	RURAL LOCAL ROADS		18	18	18	18	18	18
	RECREATIONAL AND SCENIC ROADS		18	18	18	18	18	20
	INDUSTRIAL/COMMERCIAL ACCESS		20	20	21	23	23	23
	URBAN LOCAL ROADS LOW DEVELOPMENT DENSITY (2.0 OR LESS DWELLINGS/ACRE)		20	20	20	20	20	20
	URBAN LOCAL ROADS MEDIUM DEVELOPMENT DENSITY (2.1 TO 6 DWELLINGS/ACRE)		28	28	28	28	28	28
MINIMUM HORIZONTAL CURVE RADIUS (FEET)	RURAL LOCAL, RECREATIONAL AND SCENIC ACCESS ROADWAYS ADT 0 TO 400 (VEH/DAY)	SE DESIGN SPEED (MPH) (3)	15	15	20	20	30	35
		4% MAX. S.E.	70	70	125	125	300	420
		6% MAX. S.E.	65	65	115	115	275	380
		8% MAX. S.E.	60	60	105	105	250	350
	INDUSTRIAL/COMMERCIAL ACCESS ADT 0 TO 400 (VEH/DAY)	SE DESIGN SPEED (MPH) (3)	15	20	25	25	30	35
		4% MAX. S.E.	70	125	205	205	300	420
		6% MAX. S.E.	65	115	185	185	275	380
		8% MAX. S.E.	60	105	170	170	250	350
	URBAN LOCAL ROADWAYS	SE DESIGN SPEED (MPH) (3)	15	20	25	30	35	40
		4% MAX. S.E.	40	80	145	230	345	490
		6% MAX. S.E.	40	75	165	215	320	450
	UNPAVED ROADWAYS	NORMAL CROWN	50	70	105	150	205	270
MINIMUM STOPPING SIGHT DISTANCE (FEET)	ADT 0 TO 100 (VEH/DAY)		65	90	115	135	170	215
	ADT 101 TO 400 (VEH/DAY)		65	95	125	165	205	250
MINIMUM " K " VALUES	CREST VERTICAL CURVE	ADT 0 TO 100 (VEH/DAY)	2	4	7	9	14	22
		ADT 101 TO 400 (VEH/DAY)	2	5	8	13	20	29
	SAG VERTICAL CURVE		10	17	26	37	49	64
MAXIMUM GRADE (%)	TYPE OF TERRAIN	LEVEL	9	8	7	7	7	7
		ROLLING	12	11	11	10	10	9
		MOUNTAINOUS	17	16	15	14	13	12
SUPERELEVATION			SEE STANDARD DRAWING RD01-SE-2 AND RD01-SE-3 (3)					

TABLE 2

MINIMUM CLEAR WIDTHS AND DESIGN LOADINGS FOR NEW AND RECONSTRUCTED BRIDGES

DESIGN ADT (VEH/DAY)	DESIGN LOADING (STRUCTURAL CAPACITY)	MINIMUM CLEAR WIDTH (FEET) (1)
0 TO 100	HL-93	18
101 TO 400	HL-93	20

TABLE 3

MINIMUM CLEAR WIDTHS AND DESIGN LOADINGS (1) FOR EXISTING BRIDGES TO REMAIN IN PLACE (4)

DESIGN ADT (VEH/DAY)	DESIGN LOADING (STRUCTURAL CAPACITY)	MINIMUM CLEAR WIDTH (FEET) (7)
0 TO 100	H-15	18
101 TO 400	H-15	20

FOOTNOTES

(1) FOR BRIDGE PROJECTS WHERE THE TOTAL APPROACH ROADWAY WIDTH (TRAVELED WAY PLUS SHOULDERS) IS SURFACED, THAT SURFACE WIDTH SHOULD BE CARRIED ACROSS THE STRUCTURE. THE WIDTH OF THE BRIDGE CANNOT BE LESS THAN THE PROPOSED ROADWAY WIDTH SELECTED FROM TABLE 1. THE TOTAL APPROACH ROADWAY WIDTH CANNOT BE LESS THAN THE EXISTING ROADWAY WIDTH, AS DETERMINED ABOVE, HOWEVER, ON UN SURFACED RURAL ROADS, WITHOUT DEFINED TRAVELED WAY OR DEFINED SHOULDERS, THE WIDTH DETERMINED FROM TABLE 1 WILL SUFFICE.

(2) SITE-SPECIFIC CONDITIONS AND ENGINEERING JUDGMENT OF THE DESIGNER SHOULD BE THE TWO PRIMARY DETERMINANTS OF THE APPROPRIATE CLEAR ZONE WIDTH FOR LOW-VOLUME LOCAL ROADS. AT LOCATIONS WHERE A CLEAR ZONE OF 6 FEET OR MORE IN WIDTH CAN BE PROVIDED AT LOW COST AND WITH MINIMUM SOCIAL/ENVIRONMENTAL IMPACT, SUCH CLEAR ZONE SHOULD BE CONSIDERED. WHERE PROVISION OF A CLEAR ZONE IS NOT PRACTICAL, NONE IS REQUIRED.

(3) FOR THE DESIGN OF SUPER ELEVATION TRANSITIONS, USE THE SUPER ELEVATION DESIGN SPEED LISTED DIRECTLY ABOVE THE SELECTED MINIMUM HORIZONTAL CURVE RADIUS. FOR EXISTING ROADS WHERE SUPER ELEVATION IS NOT PRESENT AND NO SITE-SPECIFIC SAFETY PROBLEM IS KNOWN, SUPER ELEVATION MAY NOT BE NECESSARY. REMOVAL OF NORMAL CROWN BY SUPER ELEVATING THE ENTIRE ROADWAY AT THE NORMAL CROSS SLOPE MAY BE USED UNLESS SUPER ELEVATION IS NEEDED AS DETERMINED BY THE DESIGNER. THE DESIGNER SHOULD ASSESS THE PROJECT SITE AND USE ENGINEERING JUDGEMENT WHEN MAKING THIS DETERMINATION. FOR UNPAVED ROADS, REMOVAL OF NORMAL CROWN BY SUPER ELEVATING THE ENTIRE ROADWAY AT THE NORMAL CROSS SLOPE MAY BE USED OR SUPER ELEVATION MAY BE ELIMINATED.

(4) 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.

(5) MAXIMUM 2(H):1(V) OR AS RECOMMENDED BY THE GEOTECHNICAL OFFICE. WHEN A 2(H):1(V) SLOPE IS USED, AND THE FILL HEIGHT EXCEEDS SIX FEET, GUARDRAIL SHOULD BE CONSIDERED. WHERE RIGHT-OF-WAY IS NOT AN ISSUE, STANDARD DRAWING RD01-S-11 (CASE II) SLPOES MAY BE USED.

(6) SEE GUARDRAIL STANDARD DRAWINGS (S-GR-SERIES) FOR GUARDRAIL PLACEMENT. FOR LOW-VOLUME LOCAL ROAD BRIDGE REPLACEMENT PROJECTS, USE MINIMUM GUARDRAIL SHOWN ON STANDARD DRAWING S-GR-23A. FOR ALL OTHER PROJECT REFERENCE SHOULD BE MADE TO THE AASHTO "ROADSIDE DESIGN GUIDE", 2002.

(7) CURB-TO-CURB OR BETWEEN RAILS, WHICHEVER IS THE LESSER.

(8) MINIMUM DITCH OR SWALE SHALL BE 2 FOOT DEEP WITH 2(H):1(V) SIDE SLOPES. THIS V-DITCH OR SWALE SHALL BE USED UNLESS CONDITIONS NECESSITATE OTHERWISE (SUCH AS DISCHARGE IN DITCH OR UNDERMINING OF ROADWAY SURFACE).

(9) DESIGN SPEED SHOULD BE SELECTED BASED ON ACTUAL OR ANTICIPATED OPERATING SPEED AND CONDITIONS ON THE ROAD BEING DESIGNED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS FOR LOW-VOLUME LOCAL ROADS (ADT ≤ 400)

3-15-07 | RD01-TS-1A