URBAN LOW SPEED DESIGN TABLE

DV/NC (MPH)	MAX. f	C	MIN. Lr (FEET)
45	0.161	2.75	125
40	0.178	3.00	115
35	0.197	3.25	100
30	0.221	3.50	90
25	0.252	3.75	80
20	0.300	4.00	75

FRICTION FACTORS (f) FOR ODD VELOCITIES NOT LISTED SHOULD BE DERIVED BY INTERPOLATION.

FOR Lr LENGTHS FOR INTERMEDIATE VELOCITIES NOT LISTED IN TABLE USE THE Lr FOR NEAREST VELOCITY IN TABLE.

LEGEND

C- RATE OF CHANGE OF SIDE FRICTION (f) IN $FT./SEC.^3$

e- SUPERELEVATION RATE.

f- FRICTION FACTOR.

Lr- LENGTH OF SUPERELEVATION RUNOFF SECTION.

Lt- LENGTH OF TANGENT RUNOUT SECTION.

R- RADIUS OF CURVE.

DV- DESIGN VELOCITY UTILIZING SUPERELEVATION.

NC- MAXIMUM VELOCITY WITH NO SUPERELEVATION (NORMAL CROWN).

GENERAL DESIGN CONSIDERATIONS

1. WHEN "URBAN LOW SPEED" DESIGNS UTILIZE SUPERELEVATION, THEY WILL BE SUPERELEVATED BY AN AMOUNT EQUAL TO THE NORMAL CROWN (TYPICALLY 2.0%) AND THE APPROXIMATE MAXIMUM SAFE SPEED (DV) AFFORDED THEREBY.

2. WHEN "URBAN LOW SPEED" DESIGNS UTILIZE NO SUPERELEVATION, THE APPROXIMATE MAXIMUM SAFE SPEED (NC) IS CALCULATED USING A NEGATIVE NORMAL CROWN (TYPICALLY -2.0 %).

3. WHEN THE CURVE IS SUPERELEVATED, THE Lr IS APPLIED IN THE SAME MANNER AS IN URBAN CONDITIONS WITH THE TANGENT RUNOUT (Lt) BEING EQUAL TO THE Lr VALUE. THE TANGENT RUNOUT (Lt) IS ALWAYS ACHIEVED OUTSIDE OF THE SUPERELEVATION RUNOFF SECTION(Lr).

4. PLEASE NOTE THAT THE RADIUS VALUES LISTED ON PAGE 802.24 HAVE BEEN ROUNDED UP TO THE NEAREST FOOT.

EXAMPLES

DV = 21 mph

e = $^+$2.0 %

f = MAX f $\pm$ INTERPOLATED DIFFERENCE BETWEEN LISTED FRICTION FACTORS

f = 0.300-[1/5(0.300-0.252)]=0.2904 (ROUND TO 0.29)

Lr = 47.2 f DV/C

Lr = 47.2(0.29)(21)/4=71.862 FT.

71.862 <90 THEREFORE Lr=90 FT.

Rmin. = $DV^2/15(e+f)$

Rmin. = $(21)^2/15(0.02 + 0.29)$=94.83870968 FT.

NC = 37 mph

e = -2.0 %

f = MAX f $\pm$ INTERPOLATED DIFFERENCE BETWEEN LISTED FRICTION FACTORS

f = 0.197-[2/5(0.197-0.178)]=0.1894 (ROUND TO 0.189)

Rmin. = $NC^2/15(-e + f)$

Rmin. = $(37)^2/15(-0.02 + 0.189)$=540.0394477 FT.

METHODOLOGIES FOR CALCULATING TC-5.01 VALUES FOR URBAN LOW-SPEED STREETS

VIRGINIA DEPARTMENT OF TRANSPORTATION