

TAPER LENGTH CRITERIA FOR WORK ZONES

SPEED LIMIT M.P.H.	"L" FORMULA	"L" TAPER LENGTH (MINIMUM) (FT)			NUMBER OF CHANNELIZING DEVICES REQUIRED (MINIMUM)			SPACING CHANNELIZING DEVICES (MAXIMUM)		MAXIMUM HORIZONTAL ALIGNMENT THRU DETOUR (DEGREE) (S=0)	SPEED LIMIT M.P.H.
		10' OFFSET	11' OFFSET	12' OFFSET	10' OFFSET	11' OFFSET	12' OFFSET	① THRU TAPER SECTION (FT.)	② THRU TANGENT SECTION (FT.)		
20	$L = \frac{W \times S^2}{60}$	70	75	80	5	5	5	20	40	—	20
25		105	115	125	6	6	6	25	50	—	25
30		150	165	180	6	7	7	30	60	15	30
35	$L = W \times S$	205	225	245	7	8	8	35	70	11	35
40		265	295	320	8	9	9	40	80	8	40
45		450	495	540	11	12	13	45	90	6	45
50		500	550	600	11	12	13	50	100	5	50
55		550	605	660	12	14	15	50	100	4	55
60	600	660	720	13	15	16	50	100	3	60	
65	650	715	780	14	16	17	50	100	2.5	65	
70	700	770	840	15	17	18	50	100	2	70	
75	750	825	900	16	18	19	50	100	1.8	75	

NOTES:  
 ① RECOMMENDED SIGNING TO BE USED THRU LANE TAPER IS (1) CW1-8 ON EVERY OTHER DRUM.  
 ② RECOMMENDED SIGNING TO BE USED THRU TANGENT LANES IS (1) R4-7A(R) OR (1) R4-7A(L) (AS APPLIES) ON EVERY OTHER DRUM.  
 L = TAPER LENGTH IN FEET  
 W = WIDTH OF OFFSET IN FEET  
 S = POSTED SPEED OR OFF-PEAK 85 PERCENTILE SPEED IN MPH

TYPE OF TAPER  
 UPSTREAM TAPERS  
 MERGING TAPER  
 SHIFTING TAPER  
 SHOULDER TAPER  
 TWO-WAY TRAFFIC TAPER

TAPER LENGTH  
 L MINIMUM  
 1/2 L MINIMUM  
 1/3 L MINIMUM  
 100 FEET MAXIMUM

DOWNSTREAM TAPERS  
 (USE IS OPTIONAL)  
 100 FEET PER LANE

FLARE RATES FOR CONCRETE MEDIAN BARRIER IN TEMPORARY TRAFFIC CONTROL ZONES

SPEED *	FLARE RATE (MINIMUM)
40 M.P.H.	9 TO 1
45 M.P.H.	10 TO 1
50 M.P.H.	11 TO 1
55 M.P.H.	12 TO 1
60 M.P.H.	13 TO 1
65 M.P.H.	14 TO 1
70 M.P.H.	15 TO 1
75 M.P.H.	16 TO 1

\* POSTED SPEED LIMIT PRIOR TO CONSTRUCTION

PAVEMENT MARKINGS THROUGH TEMPORARY TRAFFIC CONTROL ZONE

	DRIVING SURFACE	FLEX TAB MARKERS	TAPE (REMOVABLE)	TAPE (NON-REMOVABLE)	PAINT	CONSTRUCTION ZONE PAVEMENT MARKERS
ASPHALT	EXISTING PAVEMENT TO BE REMOVED OR OVERLAYED IN THE NEXT PHASE	X	X	X	X	X
	EXISTING PAVEMENT TO BE LEFT IN PLACE THRU THE NEXT PHASE	X	X			X
	INTERMEDIATE LIFT	X	X	X	X	X
	MILLED SURFACE	X	X	X	X	X
	FINAL LIFT	X	X			
CONCRETE	EXISTING PAVEMENT TO BE REMOVED OR OVERLAYED IN THE NEXT PHASE	X	X	X	X	X
	EXISTING PAVEMENT TO BE LEFT IN PLACE THRU THE NEXT PHASE	X	X			X
	FINAL SURFACE	X	X		X	X

NOTE:  
 USE OF NON-REMOVABLE TAPE (FOILBACK) SHALL BE LIMITED TO THOSE CONDITIONS SHOWN IN THE TABLE.

RECOMMENDED CLEAR ZONE DISTANCE (FT) (CONSTRUCTION WORK ZONES)

DESIGN SPEED	DESIGN ADT	FILL SLOPES			CUT SLOPES		
		6:1 OR FLATTER	5:1 OR 4:1	3:1	3:1	4:1 OR 5:1	6:1 OR FLATTER
40 MPH OR LESS	UNDER 750	4	4	SEE NOTE 3	4	4	4
	750-1500	5	6		5	5	5
	1500-6000	6	7		6	6	6
	OVER 6000	7	8		7	7	7
45-50 MPH	UNDER 750	5	6		4	4	5
	750-1500	7	8		5	6	7
	1500-6000	8	10		6	7	8
	OVER 6000	10	12		7	9	10
55 MPH	UNDER 750	6	7		4	5	5
	750-1500	8	10		5	7	8
	1500-6000	10	12		7	8	10
	OVER 6000	11	13		8	10	11
60 MPH	UNDER 750	8	10	5	6	7	
	750-1500	10	13	6	8	10	
	1500-6000	13	16 *	7	9	12	
	OVER 6000	15	18 *	10	12	13	
65-70 MPH	UNDER 750	9	10	5	7	7	
	750-1500	12	14	6	9	10	
	1500-6000	14	17 *	8	11	13	
	OVER 6000	15	19 *	11	13	14	

NOTES:  
 \* THE CLEAR ZONE MAY BE LIMITED TO 15 FEET FOR PRACTICALITY AND TO PROVIDE A CONSISTENT ROADWAY TEMPLATE.  
 (1) ALL DISTANCES ARE MEASURED FROM EDGE OF THE TRAVEL LANE.  
 (2) FOR CLEAR ZONES, THE "DESIGN ADT" WILL BE THE TOTAL ADT ON TWO-WAY ROADWAYS AND DIRECTIONAL ADT ON ONE-WAY ROADWAYS (E.G., RAMPS AND ONE ROADWAY OF A DIVIDED HIGHWAY).  
 (3) FILL SLOPES WHICH ARE 3:1 OR STEEPER ARE CRITICAL AND MAY REQUIRE A BARRIER. THEREFORE THERE IS NOT A CLEAR ZONE APPLICATION.

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED * (MPH)	LENGTH (FEET)
20 M.P.H.	115
25 M.P.H.	155
30 M.P.H.	200
35 M.P.H.	250
40 M.P.H.	305
45 M.P.H.	360
50 M.P.H.	425
55 M.P.H.	495
60 M.P.H.	570
65 M.P.H.	645
70 M.P.H.	730
75 M.P.H.	820

\* POSTED SPEED, OFF-PEAK 85th PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED.

RECOMMENDED DISTANCE BETWEEN SIGNS (MIN.)

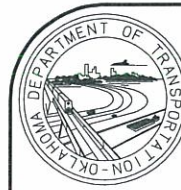
ROAD TYPE	A (FT)	B (FT)	C (FT)
URBAN (LOW SPEED)	100	100	100
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1,000	1,500	2,640

CROSSOVER CRITERIA FOR WORK ZONES

WIDTH OF MEDIAN (W) (FT)	LATERAL SHIFT - (P) (FT)	LENGTH OF CROSSOVER - LC * (FT)											
		V. M.P.H.											
		30	35	40	45	50	55	60	65	70	75		
20	32	D. 15°	11°	8°	6°	5°	4°	3°	2.5°	2°	1.8°		
		R. 382	521	716	955	1146	1433	1910	2292	2865	3183		
30	42	219	256	301	348	382	427	493	541	605	637		
40	52	250	293	344	398	437	489	565	619	692	730		
50	62	277	325	382	443	485	543	628	688	770	812		
60	72	301	354	417	483	529	593	685	751	841	886		
70	82	324	381	448	519	570	638	738	809	905	955		
80	92	344	405	478	554	608	681	787	863	966	1,018		
90	102	363	428	505	586	643	720	833	914	1,023	1,078		
100	112	381	450	531	616	676	758	877	962	1,076	1,135		
110	122	398	470	555	644	708	793	918	1,007	1,127	1,189		
120	132	414	489	578	672	738	827	958	1,050	1,176	1,240		
		429	508	601	698	767	860	995	1,092	1,223	1,290		

\* CROSSOVER = REVERSE CURVE CONNECTION TYING TWO (2) PARALLEL ROADWAYS.

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APPROVED BY *David Smart* DATE: 6/23/10  
 TRAFFIC ENGINEER

TRAFFIC STANDARD  
 TRAFFIC CONTROL STANDARD  
 TRAFFIC CONTROL TABLES AND CHARTS