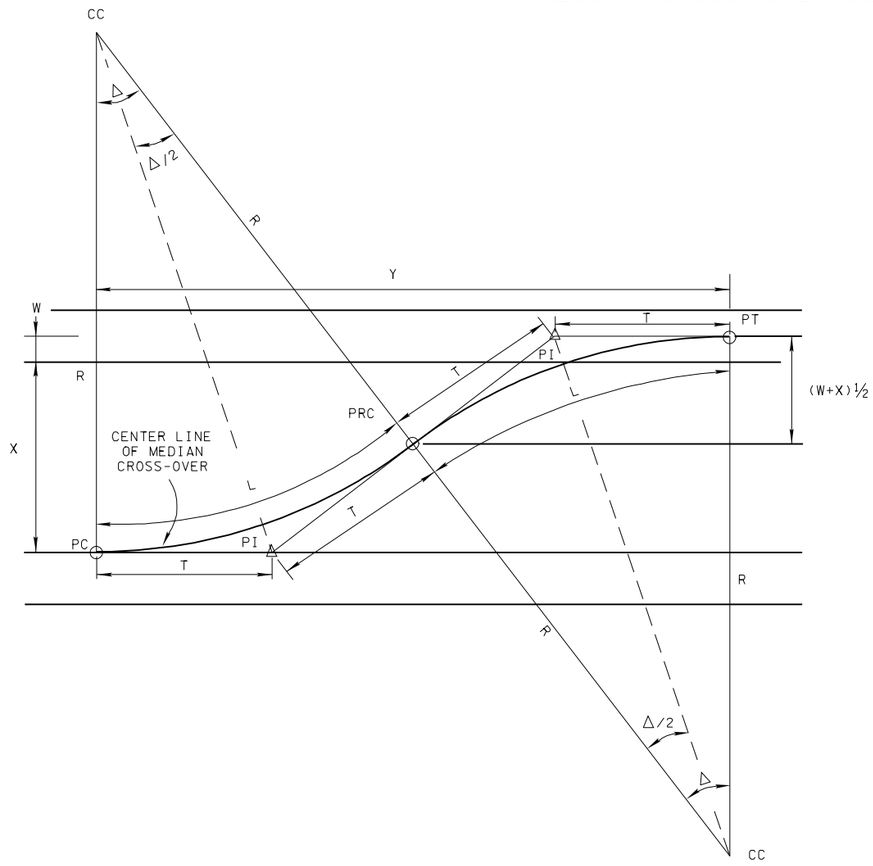
REV. 12-18-99: MODIFIED CURVE DATA HEADING.

MEDIAN CROSS-OVER DETAIL ON DIVIDED HIGHWAYS



GENERAL NOTE

(A) FORMULAS AND CURVE DATA SHOWN ON THIS DRAWING APPLY TO TANGENT SECTIONS OF DIVIDED HIGHWAYS. FOR CROSS-OVERS ON CURVED SECTIONS OF DIVIDED HIGHWAYS, SEE PLANS FOR CURVE DATA.

LEGEND

W = LANE WIDTH

X = MEDIAN WIDTH

Y = DISTANCE ALONG CENTERLINE OF DIVIDE HIGHWAY FROM PC OF 1ST CURVE TO PT OF SECOND CURVE

R = RADIUS OF CURVE

L = LENGTH OF EACH CURVE

L. C. = CHORD LENGTH OF EACH CURVE

T = TANGENT LENGTH OF CURVE

E = EXTERAL LENGTH OF EACH CURVE

Δ = DEFLECTION ANGLE OF EACH CURVE

PC = POINT OF CURVATURE

PRC = POINT OF REVERGE CURVATURE

PT = POINT OF TANGENT

PI = POINT OF INTERSECTION

CC = CENTER OF CURVE

S.E. = SUPERELEVATION RATE

EQUATION NOTES

GIVEN VALUES: W, X, DESIGN SPEED (V)

FORMULAS:

(V= 70 K/hr, R= 700 m; V= 80 K/hr, R= 900 m;
V= 90 K/hr, R= 1000 m; V= 100 K/hr, R=1300 m)

$$\Delta = \cos^{-1}\left[\frac{R-\frac{1}{2}(W+X)}{R}\right]$$

$$T = R\tan\frac{\Delta}{2}$$

$$L.C. = 2R\sin\frac{\Delta}{2}$$

$$L = 0.0175R\Delta$$

$$E = T\tan\frac{\Delta}{4}$$

$$Y = 2R\sin\Delta$$

CURVE DATA (W=3.6 m, S.E.= 4 %)

DESIGN SPEED	70 Km/h								80 Km/h							
R	700 m								900 m							
X	9.0 m	10.8 m	12.0 m	14.4 m	19.2 m	21.0 m	30.0 m	60.0 m	9.0 m	10.8 m	12.0 m	14.4 m	19.2 m	21.0 m	30.0 m	60.0 m
Δ	7°41′34″	8°13′29″	8°33′41″	9°11′51″	10°21′16″	10°45′24″	12°34′41″	17°20′11″	6°47′00″	7°15′08″	7°32′56″	8°06′35″	9°07′45″	9°29′00″	11°05′16″	15°16′35″
T	47.063	50.392	52.396	56.306	63.425	65.903	77.145	106.718	53.338	57.035	59.374	63.799	71.852	74.653	87.357	120.695
L.C.	93.915	100.399	104.499	112.250	126.333	131.255	153.362	210.998	106.489	113.842	118.491	127.279	143.248	148.795	173.897	239.249
L	93.985	100.485	104.596	112.370	126.505	131.418	153.671	211.805	106.552	113.918	118.576	127.386	143.400	148.965	174.168	239.959
E	1.580	1.807	1.958	2.261	2.868	3.095	4.238	8.088	1.580	1.805	1.956	2.259	2.864	3.091	4.230	8.057
Y	187.407	200.281	208.415	223.777	251.635	261.295	304.879	417.175	212.606	227.228	236.467	253.921	285.587	296.572	346.166	474.252

NOTES: (1) RUNOFF LENGTHS SHOULD BE 45 m FOR V=70 K/hr OR V=80 K/hr, 48 m FOR V=90 K/hr, AND 53 m FOR V= 100 K/hr.

(2) FOR W OTHER THAN 3.6 m OR X DISTANCES NOT SHOWN IN TABLES OR BOTH, APPLY FORMULAS SHOWN ON THIS STANDARD DRAWING.

CURVE DATA (W=3.6 m, S.E.= 4 %)

DESIGN SPEED	90 Km/h								100 Km/h							
R	1000 m								1300 m							
X	9.0 m	10.8 m	12.0 m	14.4 m	19.2 m	21.0 m	30.0 m	60.0 m	9.0 m	10.8 m	12.0 m	14.4 m	19.2 m	21.0 m	30.0 m	60.0 m
Δ	6°26′05″	6°52′47″	7°09′39″	7°41′34″	8°39′35″	8°59′45″	10°31′02″	14°29′17″	5°38′35″	6°01′59″	6°16′46″	6°44′45″	7°35′36″	7°53′16″	9°13′16″	12°41′56″
T	56.214	60.108	62.572	67.234	75.714	78.664	92.039	121.110	64.070	68.505	71.311	76.618	86.271	89.672	104.838	144.658
L.C.	112.250	120.000	124.900	134.164	150.997	156.844	183.303	252.190	127.984	136.821	142.408	152.971	172.163	178.830	208.997	287.541
L	112.309	120.072	124.981	134.265	151.141	157.005	183.561	252.863	128.036	136.884	142.479	153.059	172.289	178.971	209.223	288.131
E	1.579	1.805	1.956	2.258	2.862	3.089	4.227	8.046	1.578	1.804	1.954	2.256	2.859	3.086	4.221	8.024
Y	224.146	239.568	249.312	267.724	301.132	312.722	365.063	500.355	255.658	273.263	284.388	305.411	343.570	356.812	416.643	571.555

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

GEOMETRIC MEDIAN CROSS-OVER DETAIL ON DIVIDED HIGHWAYS

10-26-98

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