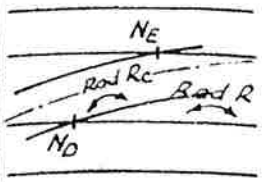
PERMANENT WAY

NOTES

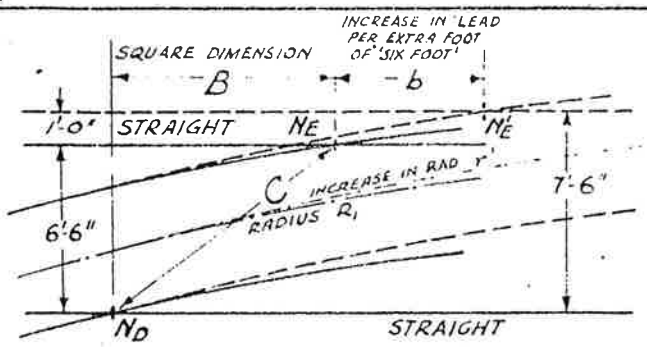
CURVED TRACK ACROSS STRAIGHT PARALLEL SIX-FOOT. (SHEET 1.)

THESE NOTES ARE INTENDED FOR THE GUIDANCE AND ASSISTANCE OF STAFF ENGAGED UPON PERMANENT WAY WORK. THEY DO NOT IN ANY WAY MODIFY, SUPPLEMENT OR AMEND THE INSTRUCTIONS LAID DOWN IN E.D.I., STANDARD DRAWINGS, CIRCULARS ETC., WHICH SHOULD BE REFERRED TO IN ALL CASES.

MAIN TRACKS CURVED : SIMILAR FLEXURE

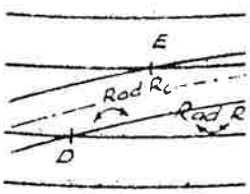


$R_c = \frac{R.R_1}{R+R_1}$ (APPROX)



FOR ACCURATE FORMULAE TO DETERMINE 'B', 'C' & 'R1' WITH GIVEN ANGLES ND & NE SEE P.W. NOTE SHEET R.4297A

MAIN TRACKS CURVED : CONTRARY FLEXURE



$R_c = \frac{R.R_1}{R-R_1}$ (APPRO

USE OF TABLES* (FOR UNEQUAL ANGLES ACROSS PARALLEL TRACKS ONLY)

* TO SERVE AS A USEFUL CHECK ON CALCULATIONS.... C.C.E. 5.1.55 41/4095

6'-6" INTERVAL

FOR GIVEN ANGLES NE & ND OBTAIN VALUES 'B', 'C' & R1 DIRECT FROM TABLES BELOW.

FOR RELATIVELY FLAT CURVATURE OF THE PARALLEL TRACKS, THE DIMENSION 'B' AS TABULATED WILL BE SUFFICIENTLY ACCURATE FOR ALL PRACTICAL PURPOSES BUT 'B' MUST BE SPECIALLY CALCULATED FOR RELATIVELY SHARP PARALLEL TRACK CURVATURE.

INTERVALS OTHER THAN 6'-6"

EXAMPLE:- GIVEN NE = 1 IN 8 & ND = 1 IN 7
FIND VALUES 'B', 'C' & R WHEN INTERVAL = 7'-0"

FOR 6'-6" INTERVAL : R_1 = 774'	FOR 6'-6" INTERVAL : B = 13'-0"
ADD FOR EXTRA 1'-0" 422' (r)	ADD FOR EXTRA 1'-0" 7'-5 3/4" (b)
" " " 6" 211'	" " " 6" 3'-8 5/8"
∴ FOR 7'-0" INTERVAL: R_1 = 985'	∴ FOR 7'-0" INTERVAL 'B' = 16'-8 5/8"

& FOR 7'-0" INTERVAL $C = \sqrt{(16'-8\frac{5}{8}")^2 + (7'-0")^2}$ = 18'-1 1/2"

N.B. ALL DIMENSIONS ARE TO THE XING INTERSECTIONS AND ARE GIVEN TO THE NEAREST 1/8 INCH.
THE (CENTRE-LINE) RADIUS IS GIVEN TO NEAREST FOOT

APPROX VALUE OF 'B' FOR 'FRACTIONAL' ANGLES

FOR 'FRACTIONAL' ANGLES PRODUCED BY A GIVEN RADIUS R_1 VALUE 'B' CAN BE APPROXIMATED BY PROPORTION FROM THE TABL

EXAMPLE:- FOR INTERVAL 6'-6" WITH RAD R_1 = 603' MAKING NE 1 IN 8 & ND 1 IN 6·808, FIND 'B'

FOR NE/ND = 8/7	B =	13'-0"
" " " 8/6¾	B =	12'-8 7/8" = 12'-8 7/8"
DIFF. FOR 0·25 IN ANGLE =		3/8"
" " 0·058 " =		0 3/4" = 0 3/4"
∴ FOR NE/ND = 8/6·808 'B' =		12'-9 5/8"

ACCURATE FORMULA

$B = \frac{4N_EN_D(1-6)-(1+}{2(N_E+N_D)}$

CROSSING ANGLE NE	CROSSING ANGLE ND	FOR 6'-6" INTERVAL ONLY: SQUARE DIMENSION B	XING to XING DIMENSION C	℄ RADIUS R1	PER FOOT OF INCREASED 'SIX FOOT': INCREASE IN LEAD b	INCREASE IN RADIUS r
1 IN	1 IN	FT INS.	FT. INS.	FT.	FT. INS.	FT.
6¼	6	10 - 6 1/8	12 - 4 3/8	1726	6 - 1	931
6½	6	10 - 8 3/4	12 - 6 5/8	913	6 - 2 3/8	493
"	6¼	10 - 11 3/4	12 - 9¼	1939	6 - 4	1048
6¾	6	10 - 11 3/8	12 - 8 7/8	643	6 - 3 3/4	347
"	6¼	11 - 2 3/8	12 - 11½	1024	6 - 5 3/8	554
"	6½	11 - 5¼	13 - 2	2169	6 - 7	1176
7	6	11 - 1 3/4	12 - 10 7/8	508	6 - 5 1/8	275
"	6¼	11 - 4 7/8	13 - 1 5/8	719	6 - 6 3/4	390
"	6½	11 - 7 7/8	13 - 4¼	1143	6 - 8½	620
"	6¾	11 - 10 7/8	13 - 6 3/4	2417	6 - 10	1313
7¼	6	11 - 4	13 - 0 3/4	427	6 - 6 3/8	231
"	6¼	11 - 7¼	13 - 3 5/8	567	6 - 8 1/8	308
"	6½	11 - 10 3/8	13 - 6 3/8	802	6 - 9 7/8	435
"	6¾	12 - 1 3/8	13 - 9	1272	6 - 11½	691
"	7	12 - 4 3/8	13 - 11 5/8	2684	7 - 1	1460
7½	6¼	11 - 9 5/8	13 - 5 3/4	476	6 - 9 3/8	259
"	6½	12 - 0 7/8	13 - 8½	630	6 - 11 1/8	343
"	6¾	12 - 4	13 - 11¼	890	7 - 0 7/8	484
"	7	12 - 7	14 - 2	1410	7 - 2½	768
"	7¼	12 - 10	14 - 4 3/4	2969	7 - 4 1/8	1618

CROSSING ANGLE NE	CROSSING ANGLE ND	FOR 6'-6" INTERVAL ONLY: SQUARE DIMENSION B	XING to XING DIMENSION C	℄ RADIUS R1	PER FOOT OF INCREASED 'SIX FOOT': INCREASE IN LEAD b	INCREASE IN RADIUS r
1 IN	1 IN	FT INS	FT. INS.	FT.	FT. INS.	FT.
7¾	6¼	12'-0	13 - 7¾	416	6 - 10 5/8	22
"	6½	12 - 3¼	13 - 10 5/8	529	7 - 0 3/8	28
"	6¾	12 - 6½	14 - 1½	700	7 - 2 1/8	38
"	7	12 - 9 5/8	14 - 4¼	985	7 - 3 7/8	53
"	7¼	13 - 0 5/8	14 - 7	1557	7 - 5½	84
"	7½	13 - 3½	14 - 9½	3275	7 - 7 1/8	178
8	6½	12 - 5 5/8	14 - 0 3/4	461	7 - 1 5/8	25
"	6¾	12 - 8 7/8	14 - 3 5/8	586	7 - 3½	31
"	7	13 - 0	14 - 6½	774	7 - 5¼	42
"	7¼	13 - 3 1/8	14 - 9¼	1087	7 - 6 7/8	59
"	7½	13 - 6 1/8	14 - 11 7/8	1715	7 - 8½	93
"	7¾	13 - 9	15 - 2½	3601	7 - 10 1/8	196
8¼	6½	12 - 7¾	14 - 2¾	413	7 - 2 7/8	22
"	6¾	12 - 11 1/8	14 - 5¾	510	7 - 4¾	27
"	7	13 - 2 3/8	14 - 8 5/8	647	7 - 6½	35
"	7¼	13 - 5 5/8	14 - 11 3/8	852	7 - 8¼	46
"	7½	13 - 8¾	15 - 2 1/8	1196	7 - 9 7/8	65
"	7¾	13 - 11 3/4	15 - 4 7/8	1883	7 - 11½	103
"	8	14 - 2 5/8	15 - 7 5/8	3948	8 - 1 1/8	21
8½	6¾	13 - 1 3/8	14 - 7 5/8	456	7 - 5 7/8	2
"	7	13 - 4¾	14 - 10 5/8	563	7 - 7¾	30
"	7¼	13 - 8	15 - 1½	712	7 - 9½	38
"	7½	13 - 11 1/8	15 - 4 3/8	936	7 - 11¼	51
"	7¾	14 - 2¼	15 - 7¼	1311	8 - 0 7/8	71
"	8	14 - 5¼	15 - 10	2062	8 - 2½	11
"	8¼	14 - 8 1/8	16 - 0 5/8	4317	8 - 4 1/8	23

FOR DATA RELATING TO FLATTER ANGLES SEE P.W. NOTE SHEET R.4367

FOR DATA FOR EQUAL ANGLES ACROSS SIX FOOT SEE P.W. NOTE SHEET R.1754

N.B. FOR PROPER THROUGH TIMBERING FOR 'BLOCKED' F.B. CROSSINGS, IT IS ESSENTIAL TO CHOOSE A COMBINATION OF STANDARD ANGLES GIVING A "SQUARE" DISTANCE BETWEEN THE CROSSING-NOSE 'A' BASEPLATES WHICH CLOSELY APPROXIMATES TO A MULTIPLE OF 2'-6" WHEREVER PRACTICABLE.