

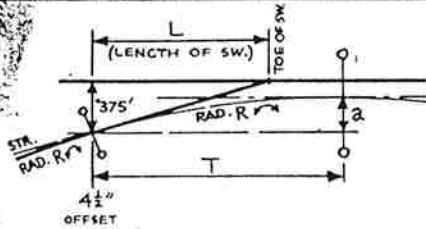
PERMANENT WAY NOTES.

DOUBLE JUNCTIONS (3)

STRAIGHT SWITCHES

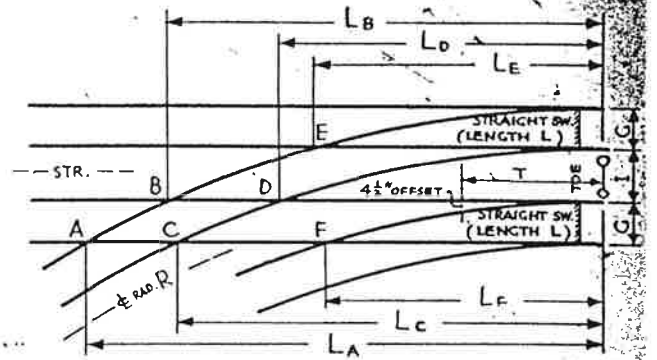
ACCURATE FORMULAE FOR LENGTHS & ANGLES.

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 DRAWING CIRCULARS ETC., WHICH SHOULD BE REFERRED TO IN ALL CASES.



$$T = \frac{R}{Z} \quad a = \frac{R}{2Z^2}$$

DETAILS OF SWITCH ALIGNMENT.
(FOR VALUES OF Z, SEE BELOW.)



LENGTHS OF LEGS

$$AB = \sqrt{(L_A - L_B)^2 + G^2} \quad CD = \sqrt{(L_C - L_D)^2 + G^2} \quad BE = \sqrt{(L_B - L_E)^2 + I^2}$$

$$AC = L_A - L_C \quad BD = L_B - L_D \quad CF = L_C - L_F$$

($G^2 = 22.1684$ $I^2 = 42.25$)

TANGENT LENGTHS

(FOR VALUES OF CONSTANTS V, Y, Z, SEE BELOW)

$$L_A = \frac{\sqrt{R(R+V)}}{Z}$$

$$L_B = \frac{\sqrt{(R+\frac{G}{2})(R+W)}}{Z}$$

$$L_C = \frac{\sqrt{(R-\frac{G}{2})(R+W)}}{Z}$$

$$L_D = \frac{\sqrt{R(R+X)}}{Z}$$

$$L_E = \frac{\sqrt{(R+\frac{I+G}{2})(R+Y)}}{Z}$$

$$L_F = \frac{\sqrt{(R-\frac{I+G}{2})(R+Y)}}{Z}$$

CROSSING ANGLES

(FOR VALUES OF CONSTANTS V, Y, Z, SEE BELOW)

$$N_A = Z \sqrt{\frac{R}{R+V}} \quad (= \frac{R}{L_A})$$

$$N_{B,C} = Z \sqrt{\frac{R}{R+W}} \quad (\text{APPROX.})$$

(ACCURATE FORMULAE FOR ELBOWS)

$$N_B = Z \sqrt{\frac{R+\frac{G}{2}}{R+W}} \quad N_C = Z \sqrt{\frac{R-\frac{G}{2}}{R+W}}$$

$$N_D = Z \sqrt{\frac{R}{R+X}} \quad (= \frac{R}{L_D})$$

$$N_E = Z \sqrt{\frac{R+\frac{I+G}{2}}{R+Y}} \quad (= \frac{R+I+G}{L_E})$$

$$N_F = Z \sqrt{\frac{R-\frac{I+G}{2}}{R+Y}}$$

VALUE OF CONSTANTS, ACCORDING TO SWITCH-LENGTH AND INTERVAL

CONSTANTS	18 FT. SWITCHES.			20 FT. SWITCHES.			30 FT. SWITCHES.		
	FOR 6'-6" INTERVAL.	ADD. FOR EA. ADDNL. FT. OF INTVL.	ADD. FOR EA. ADDNL. IN. OF INTVL.	FOR 6'-6" INTERVAL.	ADD. FOR EA. ADDNL. FT. OF INTVL.	ADD. FOR EA. ADDNL. IN. OF INTVL.	FOR 6'-6" INTERVAL.	ADD. FOR EA. ADDNL. FT. OF INTVL.	ADD. FOR EA. ADDNL. IN. OF INTVL.
V	$[= \frac{128}{9} L^2 (I+2G-375)]$	71616	4608 384	88415	5689 474	198933	12800		
W	$[= \frac{128}{9} L^2 (I+G-375)]$	49920	4608 384	61630	5689 474	138667	12800		
X	$[= \frac{128}{9} L^2 (I-375)]$	28224	4608 384	34844	5689 474	78400	12800		
Y	$[= \frac{128}{9} L^2 (G-375)]$	19968	0 0	24652	0 0	55467	0 0		
Z	$[= 2.6 L]$	48 (log = 1.6812412)		53.3 (log = 1.7269988)		80 (log = 1.90309)			
2Z ²	$[= \frac{128}{9} L^2]$	4608 (log = 3.665125)		5688.8 (log = 3.7550276)		12800 (log = 4.10721)			