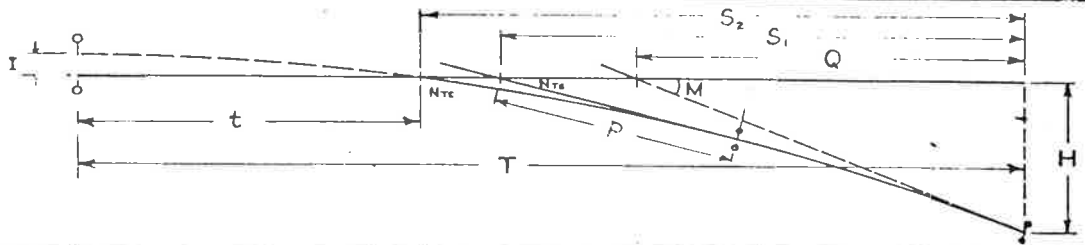


PERMANENT WAY  
NOTES

SWITCH CONSTANTS (3)

B.R. 109 FB./B.S. 110<sup>A</sup> FB. SWITCHES

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.



DEFINITIONS: NATURAL ANGLE - THE CROSSING ANGLE PRODUCED BY THE SWITCH RADIUS CONTINUED ACROSS 4' 8 1/2" GAUGE X, Y, Z - SEE FUNDAMENTAL LEAD DATA SHEET FOR USE OF THESE CONSTANTS

Sw. Rad. Type, Angle, P	A 7 -	B 8 7.3	C 10 9.16	Sw. Rad. Type, Angle, P
Sw. Rad.	477.0890336492	614.0896123500	958.0894352923	Sw. Rad.
$S_1$	-	27.0	29.9583	$S_1$
$S_2$	24.583	29.54136267988	33.14408127406	$S_2$
H	1.220503738498	1.159643493922	.9749832162221	H
Q	16.15521312953	18.29283892155	20.85643815616	Q
M	13.25537289022	15.79036919382	21.40326731892	M
$N_{ts}$	-	32.00781059358	40.00624902374	$N_{ts}$
$N_{tc}$	42.0	65.95770769845	82.62506104373	$N_{tc}$
I	.1352101554908	.07057415577213	.07016759081801	I
T	35.94098639456	38.85118175485	44.73928422332	T
t	11.35765306122	9.309819074967	11.59520294926	t
X	1227.401488109	1771.404896017	3422.360946725	X
Y	175.7049104588	249.3357592771	458.0998519251	Y
Z	.07533391853435	.06326630669776	.04669635482378	Z
$2\sqrt{Y}$	26.51074578044	31.58073838764	42.80653463784	$2\sqrt{Y}$
$\cos M$	.9971583629085	.9979966805741	.9989091302247	$\cos M$
C-H	3.487829594835	3.548689839411	3.733350117111	C-H
$\frac{C-H}{2}$	1.743914797417	1.774344919706	1.866675058556	$\frac{C-H}{2}$
Sw. Rad. Type, Angle, P	D 12 11.0	E 16 14.6	F 20 18.3	Sw. Rad. Type, Angle, P
Sw. Rad.	1378.533783531	2448.755910077	3824.755865786	Sw. Rad.
$S_1$	34.5416	46.625	59.125	$S_1$
$S_2$	38.37049030586	51.73798326239	65.52080324070	$S_2$
H	.9208903701070	.9372084527855	-.9566889740008	H
Q	24.27539515735	32.67075468544	41.28858842328	Q
M	26.37026765700	34.86681592066	43.16358880506	M
$N_{ts}$	48.00520776832	64.00390601161	80.00312487794	$N_{ts}$
$N_{tc}$	99.26694365661	132.5117027047	165.7301121843	$N_{tc}$
I	.06994667890714	.06972697901147	-.06962527476894	I
T	52.25727637395	70.21726468691	88.59881243733	T
t	13.88678606808	18.47928142652	23.07800919664	t
X	5269.401344248	9170.959772862	13981.21850778	X
Y	695.3910163018	1215.694852445	1863.095398532	Y
Z	.03790786776373	.02867466879813	.02316456671912	Z
$2\sqrt{Y}$	52.74053531400	69.73363184132	86.32717761012	$2\sqrt{Y}$
$\cos M$	.9992812384717	.9995887971408	.9997316654226	$\cos M$
C-H	3.787442963226	3.771124880548	3.751644359333	C-H
$\frac{C-H}{2}$	1.893721481613	1.885562440274	1.875822179666	$\frac{C-H}{2}$