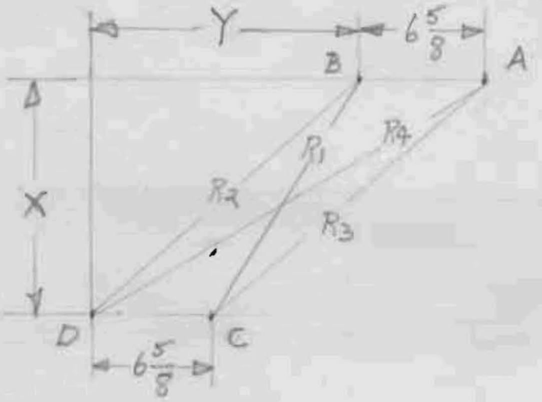
19 March 61



$M = 2\cdot10^{-7} \log_e \frac{R_1 R_4}{R_2 R_3}$ henries per meter Y = 14 for given X

	Vertical	Horizontal	Vertical	Diagonal			
	$X = 24\frac{1}{4}$ $Y = 0$	$X = 0$ $Y = 28$	$X = 26\frac{1}{2}$ $Y = 0$	$X = 12\frac{1}{8}$	$X = 14$	$X = 12\frac{1}{2}$	$X = 13\frac{1}{4}$
R_1	25.16	21.38	27.32	14.19	15.83	14.52	15.16
$R_2 = R_3$	24.25	28.00	26.50	18.52	19.80	18.78	19.27
R_4	25.16	34.63	27.32	23.92	24.93	24.11	24.51
$\left(\frac{R_1 R_4}{R_2 R_3}\right)$	1.076	.944	1.061	0.990	1.006	.994	1.001
$\log_{10}(-)$	.032	-.025	.026	-.0045	.0028	-.0028	0
$M\cdot10^{-7}$	.147	-.115	.120	-.0207			

apparently zero coupling exists when $X = 13\frac{1}{4}$

Pairs are spaced $24\frac{1}{4}$" vertical, 28" horizontal

Wires are spaced $6\frac{5}{8}$" apart and $4\frac{3}{4}$" above crossarm

23 March 61

Let $D = 6\frac{5}{8}''$, $d = 0{,}080''$

$$Z = 276 \log_{10} \frac{13{,}25}{.080} = 276 \log_{10} 165{,}6 = 276 \cdot 2{,}219$$

$= 612$ ohms.

$L = 0{,}921 \cdot 10^{-6} \cdot 2{,}219 = 2{,}043 \cdot 10^{-6}$ henries per meter

Position	Vertical	Horizontal	Diagonal
M	$.147 \cdot 10^{-7}$	$-.115 \cdot 10^{-7}$	$-.0207 \cdot 10^{-7}$
K in percent	0,72	-0.56	-0.1

13 June 61

Let

$x = 17,\ y = 18,$ spacing $= 6\frac{5}{8}$

$R_1 = (17^2 + 11\frac{3}{8}^2)^{1/2} = 289 + 129 = 418 = 20.43$

$R_2 = R_3 = (17^2 + 18^2)^{1/2} = 289 + 324 = 613 \quad 24.75$

$R_4 = (17^2 + 24\frac{5}{8}^2)^{1/2} = 289 + 606 = 895 \quad 29.90$

$\frac{20.43 \cdot 29.90}{613} = .997 \quad -.001$

Let $x = 0$, ~~x~~ $y = 36$

$R_1 =$ ~~$11\frac{3}{8}$~~ $= 29\frac{3}{8}$

$R_2 = R_3 =$ ~~18~~ $= 36$

$R_4 =$ ~~$24\frac{5}{8}$~~ $= 42\frac{5}{8}$

~~$\frac{11.375 \cdot 24.625}{324} = .864$~~ $\quad \frac{29.375 \cdot 42.625}{36^2} = .966$

~~$\log_{10} = -.064$~~ $= -.015$

$M = 2.3 \cdot 2 \cdot 10^{-7} \cdot .015 = -.069 \cdot 10^{-7}$

$K = \frac{M}{\mu_1 L_2} = \frac{-.069 \cdot 10^{-7}}{2.043 \cdot 10^{-6}} = -.034 \cdot 10^{-1} = -.0034 = -0.34\%$

Let $x = 17\frac{1}{4},\ y = 18$

$R_1 = (17\frac{1}{4}^2 + 11\frac{3}{8}^2)^{1/2} = 298 + 129 = 427^{1/2} = 20.69$

$R_2 = R_3 = (17\frac{1}{4}^2 + 18^2)^{1/2} = 298 + 324 = 622^{1/2} = 24.94$

$R_4 = (17\frac{1}{4}^2 + 24\frac{5}{8}^2)^{1/2} = 298 + 606 = 904^{1/2} = 30.05$

$\frac{20.69 \cdot 30.05}{622} = .998$

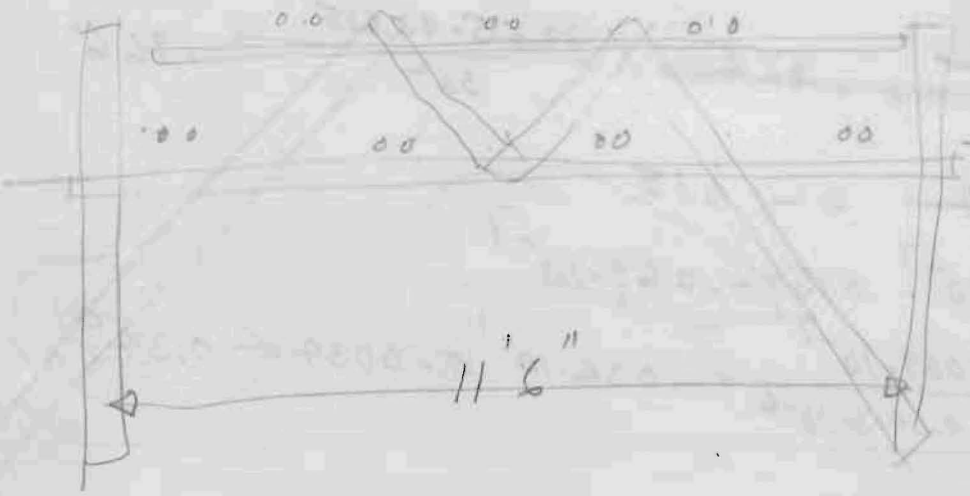
Let $x = 17\frac{1}{2}$, $y = 18$

$R_1 = 306 + 129 \quad 435^{1/2} = 20.86$

$R_2 = R_3 = 306 + 324 \quad 630 = 25.10$

$R_4 = 306 + 606 \quad 912 \quad 30.20$

$\log \frac{R_1 R_4}{R_2 R_3} = 1.00$, $M = 0$



11' 6"
9' 6 5/8"

1' 5 3/8" 2) 17 3/8"

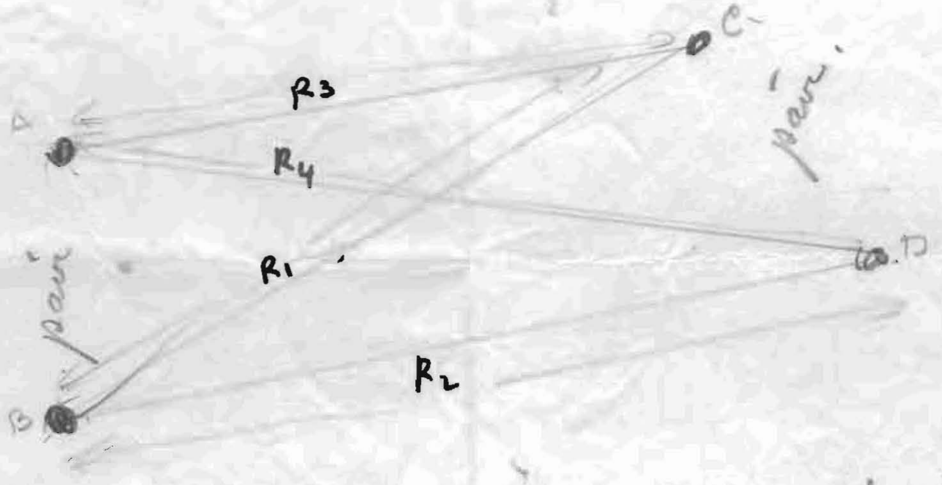
12' = 2) 7" 8 3/4"

11' 6" 3 1/2" to end.

9' 9"

1' 9" = 2) 21"
10 1/2"

From Newstead



$$M = 2\,10^{-7} \log_e \frac{R_1 R_4}{R_3 R_2}$$ henries/meter

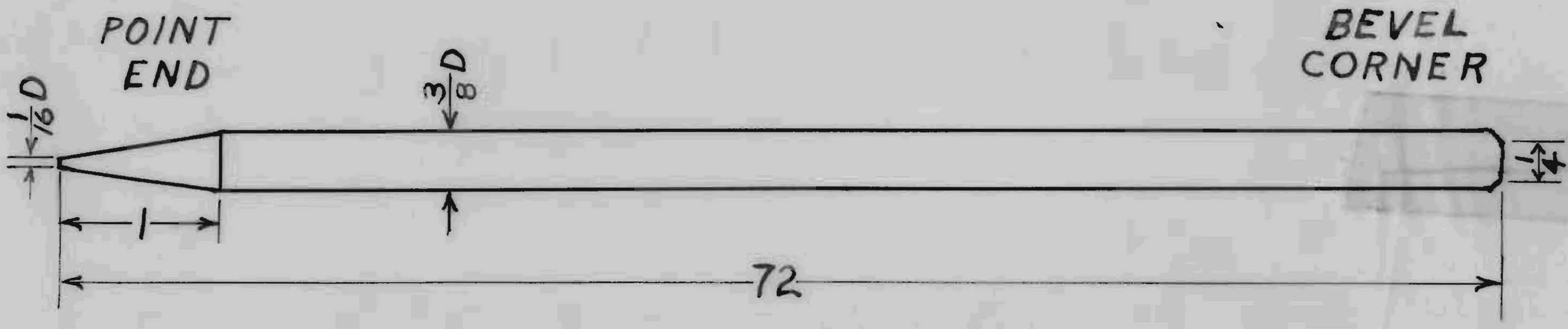
if -ve no matter.

$$M = 2\,10^{-7} \log \frac{b\,(a+b)}{(a+b)(a+2b)}$$

$$= 2\,10^{-7}$$

$$e_2 = M \frac{di_1}{dt} =$$

EARTH ROD



FORM ON GRINDER

1/3/62

Test of single strands of Guy Wire to be used as weak links

Sample	Yeild	Break
1	260	315
2	290	355
3	270	325
4	270	320
5	285	335
6	310	375
7	250	305 (center strand)

ee