

TAU VALUES FOR CHANNEL MASTER "K.O." ANTENNA

<u>DIPOLE NO.</u>	<u>DIPOLE LENGTH</u>	<u>τ_L</u>	<u>DIPOLE SPACING</u>	<u>τ_S</u>	<u>CELL DIMENSION</u>	<u>τ_C</u>
1	64 $\frac{3}{8}$ "	.90	22"	1.38	39.0"	.997
2	71 $\frac{3}{8}$ "		16"		39.1"	
3	79 $\frac{1}{8}$ "	.91	22 $\frac{1}{2}$ "	.71	45.5"	.86
4	87 $\frac{1}{8}$ "	.90	22 $\frac{1}{2}$ "	1.00	48.8"	.93
5	97"		20 $\frac{1}{8}$ "	1.11	52.5"	
6	103 $\frac{3}{8}$ "	.94				

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1	64-3/8")					
)	.90	22")		39.0")	
2	71-3/8"))	1.38)	.997
)	.90	16")		39.1")	
3	79-1/8"))	.71)	.86
)	.91	22-1/2")		45.5")	
4	87-1/8"))	1.00)	.93
)	.90	22-1/2")		48.8")	
5	97"))	1.11)	.93
)	.94	20-1/8")		52.5")	
6	103-3/8")					

DEFENDANT EX. NO. 4
DOROTHY L. BRACKENBURY
OFFICIAL COURT REPORTER

CHANNEL MASTER "K.O."-model 1023

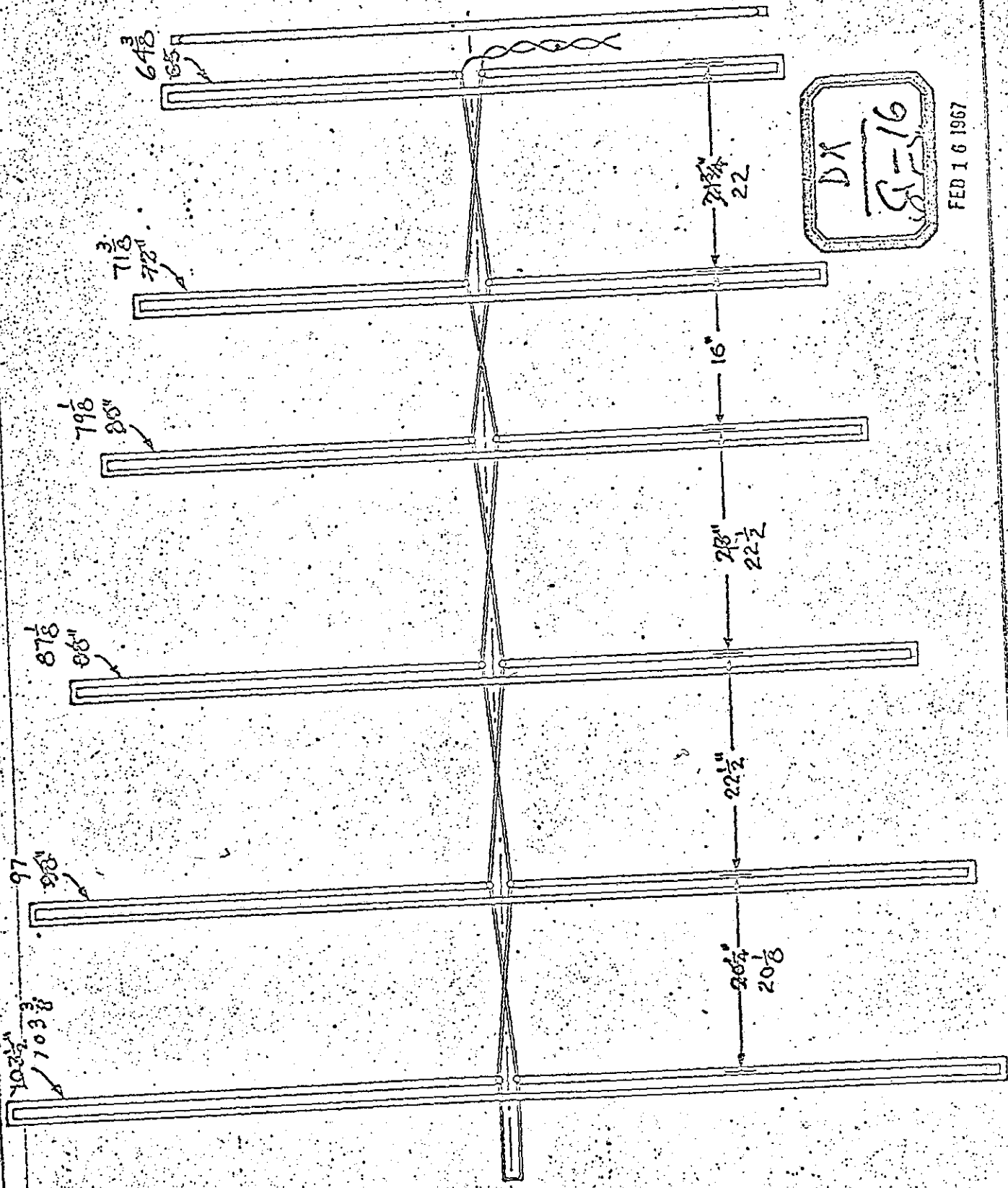
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CLERK, U. S. DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS

DX
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DIMENSIONS AND TAU VALUES FOR
 DIPOLES 2, 3, AND 4 OF
 CHANNEL MASTER "K.O." ANTENNA

<u>DIPOLE NO.</u>	<u>DIPOLE LENGTH</u>	<u>τ_L</u>	<u>DIPOLE SPACING</u>	<u>τ_S</u>
2	71 $\frac{3}{8}$ "	.90	16"	.71
3	79 $\frac{1}{8}$ "		22.5"	
4	87 $\frac{1}{8}$ "			

DIMENSIONS AND TAU VALUES FOR
FOR DIPOLES 2, 3, 4, 5, AND 6 OF
CHANNEL MASTER "K.O" ANTENNA

<u>DIPOLE NO.</u>	<u>DIPOLE LENGTH</u>	<u>τ_L</u>	<u>CELL DIMENSION</u>	<u>τ_c</u>
2	71 $\frac{3}{8}$ "	.90	39.1"	.86
3	79 $\frac{1}{8}$ "			
4	87 $\frac{1}{8}$ "			
5	97"			
6	103 $\frac{3}{8}$ "			
		.90	48.8"	.93
		.94	52.5"	

T_u Calculations

$$\begin{array}{r} .9019+ \quad \text{or } .902 \quad \text{or } .90 \\ 71.375 \overline{) 64.375.0000} \\ \underline{642375} \\ 137500 \\ \underline{71375} \\ 661250 \\ \underline{642375} \end{array}$$

$$\begin{array}{r} .9020+ \quad \text{or } .902 \quad \text{or } .90 \\ 79.125 \overline{) 71.375.0000} \\ \underline{712125} \\ 162500 \\ \underline{158250} \\ 42500 \end{array}$$

$$\begin{array}{r} .9081+ \quad \text{or } .908 \quad \text{or } .91 \\ 87.125 \overline{) 79.125.0000} \\ \underline{784125} \\ 712500 \\ \underline{697000} \\ 155000 \\ \underline{87125} \end{array}$$

$$\begin{array}{r} .8981+ \quad \text{or } .898 \quad \text{or } .90 \\ 97 \overline{) 87.1250} \\ \underline{776} \\ 952 \\ \underline{873} \\ 795 \\ \underline{776} \\ 190 \\ \underline{97} \end{array}$$

$$\begin{array}{r} .9383+ \quad \text{or } .938 \quad \text{or } .94 \\ 103.375 \overline{) 97.000.0000} \\ \underline{930375} \\ 396250 \\ \underline{310125} \\ 861250 \\ \underline{827000} \\ 342500 \end{array}$$

γs Calculations

$$16 \overline{) 22.000} = 1.375 \text{ or } 1.38$$

16
16
60
48
120
112
80
80

$$22.5 \overline{) 16.0000} = .7111 + \text{ or } .711 \text{ or } 0.71$$

22.5
1575
250
225
250
225
250
225

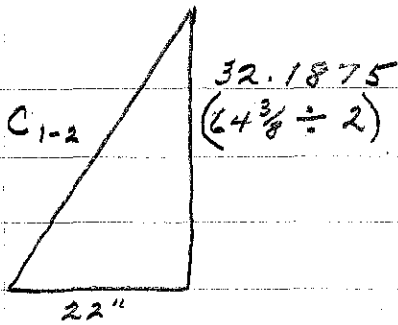
$$22.5 \overline{) 22.5000} = 1.000 \text{ or } 1.00$$

22.5
225000

$$20.125 \overline{) 22.500.000} = 1.115 + \text{ or } 1.113 \text{ or } 1.11$$

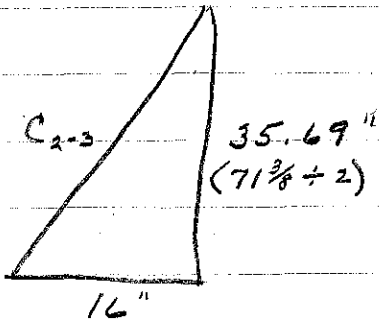
20.125
20125
23750
20125
36250
20125
61250
60375

Cell Dimension and T_c Calculations



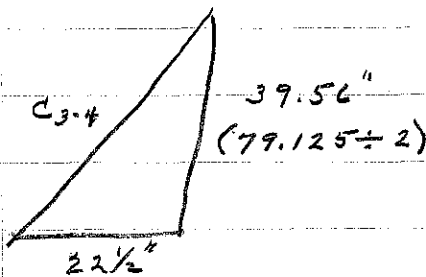
$$\begin{aligned} C_{1-2} &= \sqrt{22^2 + 32.2^2} \\ &= \sqrt{484 + 1036.8} \\ &= \sqrt{1520.8} \\ &= 39.0" \end{aligned}$$

$$(T_c)_2 = \frac{39}{39.1} = \underline{\underline{.997}}$$



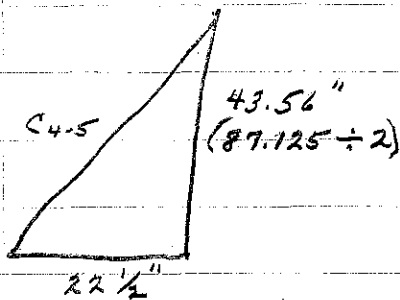
$$\begin{aligned} C_{2-3} &= \sqrt{16^2 + 35.69^2} \\ &= \sqrt{256 + 1273.8} \\ &= \sqrt{1529.8} \\ &= 39.1" \end{aligned}$$

$$(T_c)_3 = \frac{39.1}{45.5} = \underline{\underline{.857}}$$



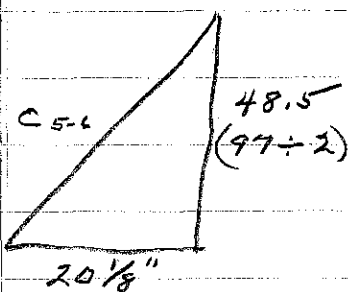
$$\begin{aligned} C_{3-4} &= \sqrt{22.5^2 + 39.56^2} \\ &= \sqrt{506.3 + 1565.0} \\ &= \sqrt{2071.3} \\ &= 45.5" \end{aligned}$$

$$(T_c)_4 = \frac{45.5}{48.8} = \underline{\underline{.932}}$$



$$\begin{aligned} C_{4-5} &= \sqrt{22.5^2 + 43.56^2} \\ &= \sqrt{506.3 + 1887.5} \\ &= \sqrt{2393.8} \\ &= 48.8" \end{aligned}$$

$$(T_c)_5 = \frac{48.8}{52.5} = \underline{\underline{.930}}$$



$$\begin{aligned} C_{5-6} &= \sqrt{20.125^2 + 48.5^2} \\ &= \sqrt{405.0 + 2352.3} \\ &= \sqrt{2757.3} \\ &= 52.5" \end{aligned}$$

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