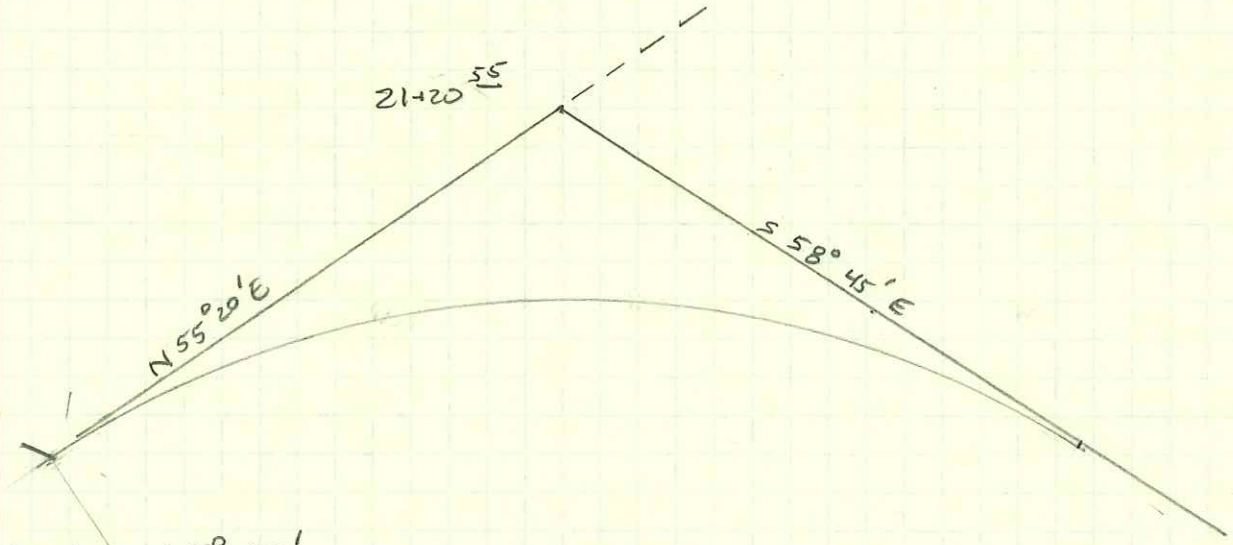
R = 300'




1) $\Delta = 65^\circ 55'$

2) $D = 5729.58 / 300' = 19^\circ 06'$

3) $T = 300' \tan 65^\circ 55'/2 = 194\ 51'$

4) $PC = 21+20\ 55 - 194\ 51' = 19+26\ 04$

5) $L = \frac{100'}{19.1} = \frac{L}{65.92} = 345\ 19'$

6) $PT = 1926\ 04 + 345\ 19 = 22+71\ 23$

INTERSECTION IS AT 21+30 50 ON THE L-LINE

7) ARC LENGTH TO 21+30 50 = 2130 50 − 1926 04 = 204 46

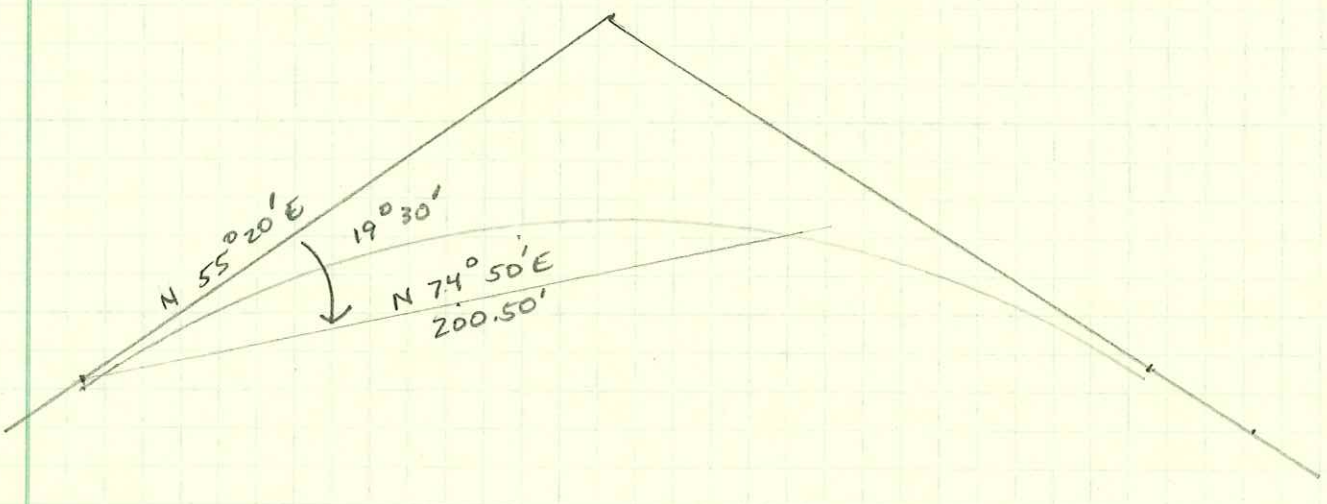
8) NEED $d_{204.46}$

$$\frac{100}{19.1} = \frac{204\ 46}{d} = 39.052 \quad 39^\circ 03'$$

OR

$$\frac{345.19}{65.917} = \frac{204\ 46}{d}$$

9) defl $\frac{\Delta}{2}$ = 1/2 39.03 = 19° 31'




10) CHORD LENGTH

$C_{204.46} = 2R \sin d/2$

$= 2(300) \sin 39°03'/2$

$= 200.50'$

STAKING BY WAGON WHEEL

PC = 19+26.04

$d_a$ FOR 23.96 = 23.96/100 (19°06') = 4.576°

= 4°34'

$\frac{\Delta}{2} = 4.576/2 = 2.29°$

$d_{25} = 4.775°$

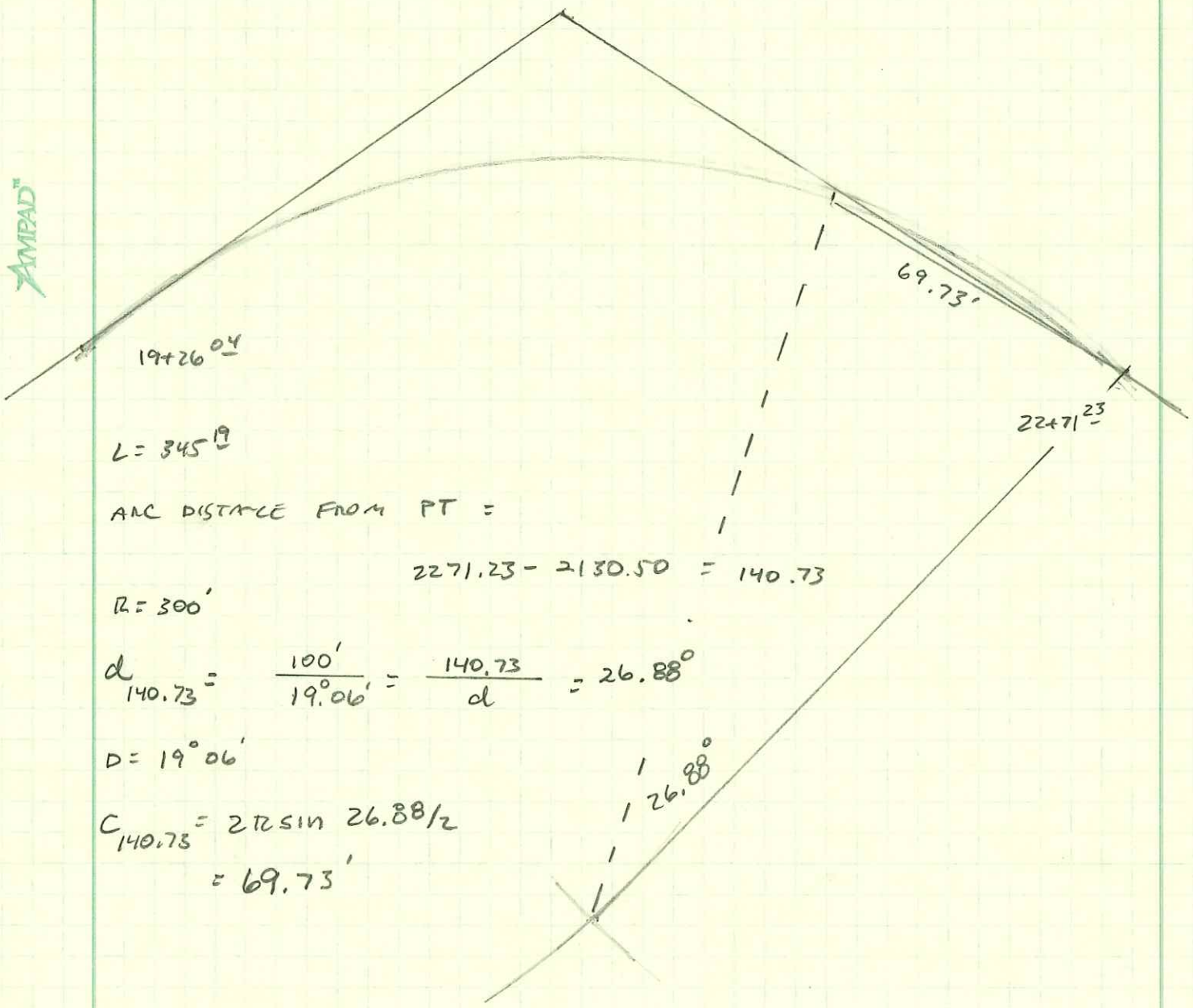
$d_b$ = FOR 5.5' = 0.5

| | | Δ | Δ | Δ/2 |
|---|---|---|---|---|
| STA | 19+26.04 | | | |
| | | ½ d | 2.29 | 2.29 |
| | 19+50 | | | |
| | | d | 41.775 | 2.39 |
| | 19+75 | | | |
| | | d | | |
| | 20+00 | | | |
| | | d | | |
| | 20+25 | | | |
| | | d | | |
| | 20+50 | | | |
| | | d | | |
| | 20+75 | | | |
| | | d | | |
| | 21+00 | | | |
| | | d | | |
| | 21+25 | | | |
| | 2+30.5 | d | 1.05 | 0.52 |
| | | | | 19.52° |

CHECK

MONDAY PROBLEM AT TANGENT OFFSET

DETERMINED PTE STATION AT $21+30.50$




$L = 345.19$

ARC DISTANCE FROM PT =

$2271.23 - 2130.50 = 140.73$

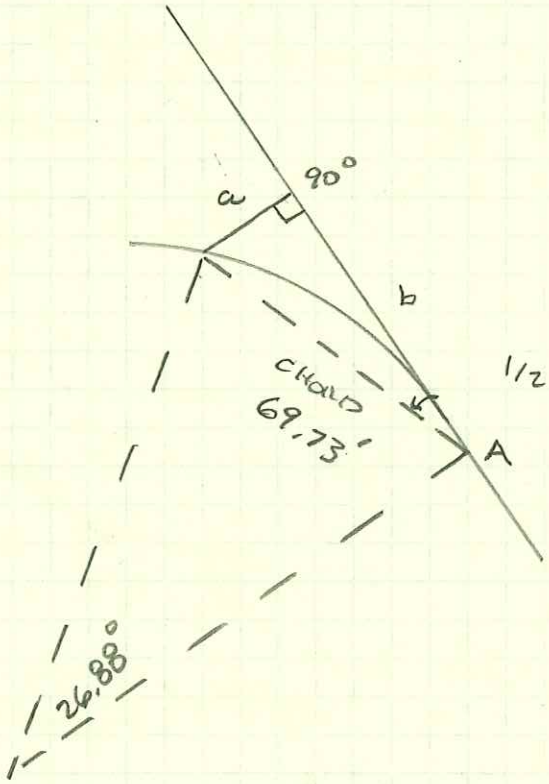
$R = 300'$

$d_{140.73} = \frac{100'}{19°06'} = \frac{140.73}{d} = 26.88°$

$D = 19°06'$

$C_{140.73} = 2R \sin 26.88/2$

$= 69.73'$




TO: a:

$$\frac{a}{\sin A} = \frac{c}{\sin C}$$

$C = 90°$ so

$$\frac{a}{\sin A} = c$$

$$a = c \sin A$$

$$a = 69.73 \sin 13.44°$$

$$= 16.2'$$

TO: b

$$a^2 + b^2 = c^2$$

so: $16.2^2 + b^2 = 69.73^2$

$$b^2 = 67.8^2{}'$$

FROM PC

$d = 39.052^\circ$

$C = 200.50'$

$$TD = C \sin d/2$$

$$= 200.50' \sin 39.052/2$$

$$= 67.0'$$

$$TD = (200.50^2 - 67.0^2)^{.5} = 188.97$$

OR $TD = (\cos d/2)\, C$

$$(\cos 39.052/2)\, 200.50 = 188.97$$

SINCE TD < T WE CAN USE THIS

BUT FROM PT IS MUCH EASIER