

Given:

$$\begin{aligned}\Delta &= 17^\circ 48' 52'' \\ R &= 1969.47' \\ PC &= 17+76.88\end{aligned}$$

Find:

Tangent distances and tangent offsets to layout this curve on half stations.  
Additionally, calculate deflection angles and sub-chords to check.

$$\begin{aligned}(1) \quad \Delta &= 17^\circ 48' 52'' \\ (2) \quad R &= 1969.47' \\ (3) \quad L &= \underline{612.35'} \\ (4) \quad C &= \underline{609.89'} \\ (5) \quad T &= \underline{308.67'} \\ (6) \quad M &= \underline{23.75'} \\ (7) \quad E &= \underline{24.04'} \\ (8) \quad D_A &= \underline{02^\circ 54' 33''} \\ (9) \quad D_C &= \underline{02^\circ 54' 34''} \\ (10) \quad df &= \underline{0.0145^\circ}\end{aligned}$$

STATION	$l$	$\alpha$	TD	TO	$\alpha/2$	SC
17+76.88	-0-	-0-	-0-	-0-	-0-	-0-
18+00	23.12	0-40-21	23.12	0.14	0-20-11	23.12
18+50	73.12	2-07-38	73.10	1.36	1-03-49	73.12
19+00	123.12	3-34-55	123.04	3.85	1-47-27	123.10
19+50	173.12	5-02-11	172.90	7.60	2-31-06	173.06
20+00	223.12	6-29-28	222.64	12.63	3-14-44	223.00
20+50	273.12	7-56-44	272.25	18.91	3-58-22	272.90
<b>20+83.05</b>	<b>306.17</b>	<b>8-54-26</b>	<b>304.94</b>	<b>23.75</b>	<b>4-27-13</b>	<b>305.87</b>
21+00	323.12	9-24-01	321.67	26.45	4-42-00	322.76
21+50	373.12	10-51-17	370.89	35.24	5-25-39	372.56
22+00	423.12	12-18-34	419.87	45.28	6-09-17	422.31
22+50	473.12	13-45-50	468.58	56.56	6-52-55	471.98
23+00	523.12	15-13-07	516.99	69.07	7-36-33	521.58
23+50	573.12	16-40-24	565.07	82.80	8-20-12	571.10
<b>23+89.23</b>	<b>612.35</b>	<b>17-48-52</b>	<b>602.53</b>	<b>94.43</b>	<b>8-54-26</b>	<b>609.89</b>