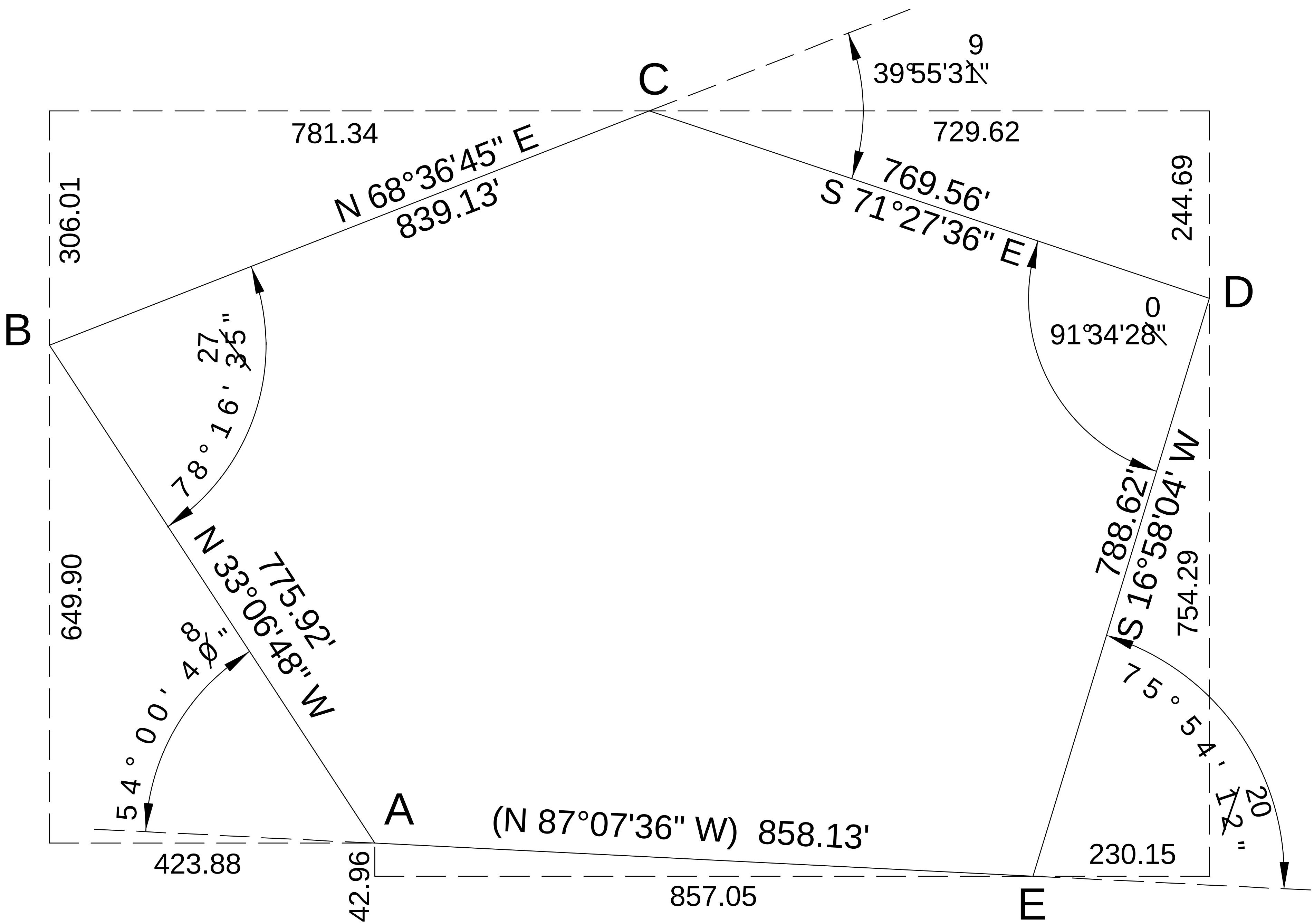

C
9
39°55'31"
781.34
729.62
N 68°36'45" E
839.13'
769.56'
S 71°27'36" E
306.01
244.69
B
D
27
78°16'35"
0
91°34'28"
N 33°06'48" W
775.92'
788.62'
S 16°58'04' W
649.90
754.29
8
54°00'40"
75°54'12"
20
A
(N 87°07'36" W) 858.13'
423.88
42.96
857.05
230.15
E

First, check the angles by converting to interior angles:

125°59'20"
78°16'35"
140°04'29"
91°34'28"
104°05'48"

Σ = 540°00'40", or 8" per angle if distributed equally as is usual.

Next, calculate bearings for all the lines with the adjusted angles:

AB= N 33°06'48" W
BC= N 68°36'45" E
CD= S 71°27'36" E
DE= S 16°58'04" W
EA= N 87°07'36" W (given and used as a check)

(Note: This step may be skipped if you can keep track of the angles in the right triangles delineating the side, the latitude and the departure)

Converting the bearing to radians, calculating the sine by the infinite series and the cosine by $1-\sin^2 x = \cos^2 x$:

$$x \quad - \frac{x^3}{3!} \quad + \frac{x^5}{5!} \quad - \frac{x^7}{7!} \quad + \frac{x^9}{9!} \quad = \quad \sin, \quad \cos$$

AB: 0.577937 – 0.032173 + 0.000537 – 0.000004 + = 0.546297, 0.837592
BC: 1.197514 – 0.286214 + 0.020522 – 0.000701 + 0.000014= 0.931135, 0.364675
CD: 1.247212 – 0.323348 + 0.025149 – 0.000931 + 0.000020= 0.948102, 0.317966
DE: 0.296144 – 0.004329 + 0.000019 – 0.000000 = 0.291834, 0.956469
EA: 1.520647 – 0.586049 + 0.067758 – 0.003730 + 0.000120 = 0.998746, 0.050064

Now the latitudes and departures may be calculated. Coordinates are not necessary.

Line	latitude	departure
AB	649.90	–423.88
BC	306.01	781.34
CD	–244.69	729.62
DE	–754.29	–230.15
EA	–857.05	42.96

Sum –0.11 0.12, for a closure of $\sqrt{-0.11^2 + 0.12^2} = 0.16$

And a precision of (775.92+839.13+769.56+788.62+858.13)/0.16 = 1:25,000±

You can go back to the office now.