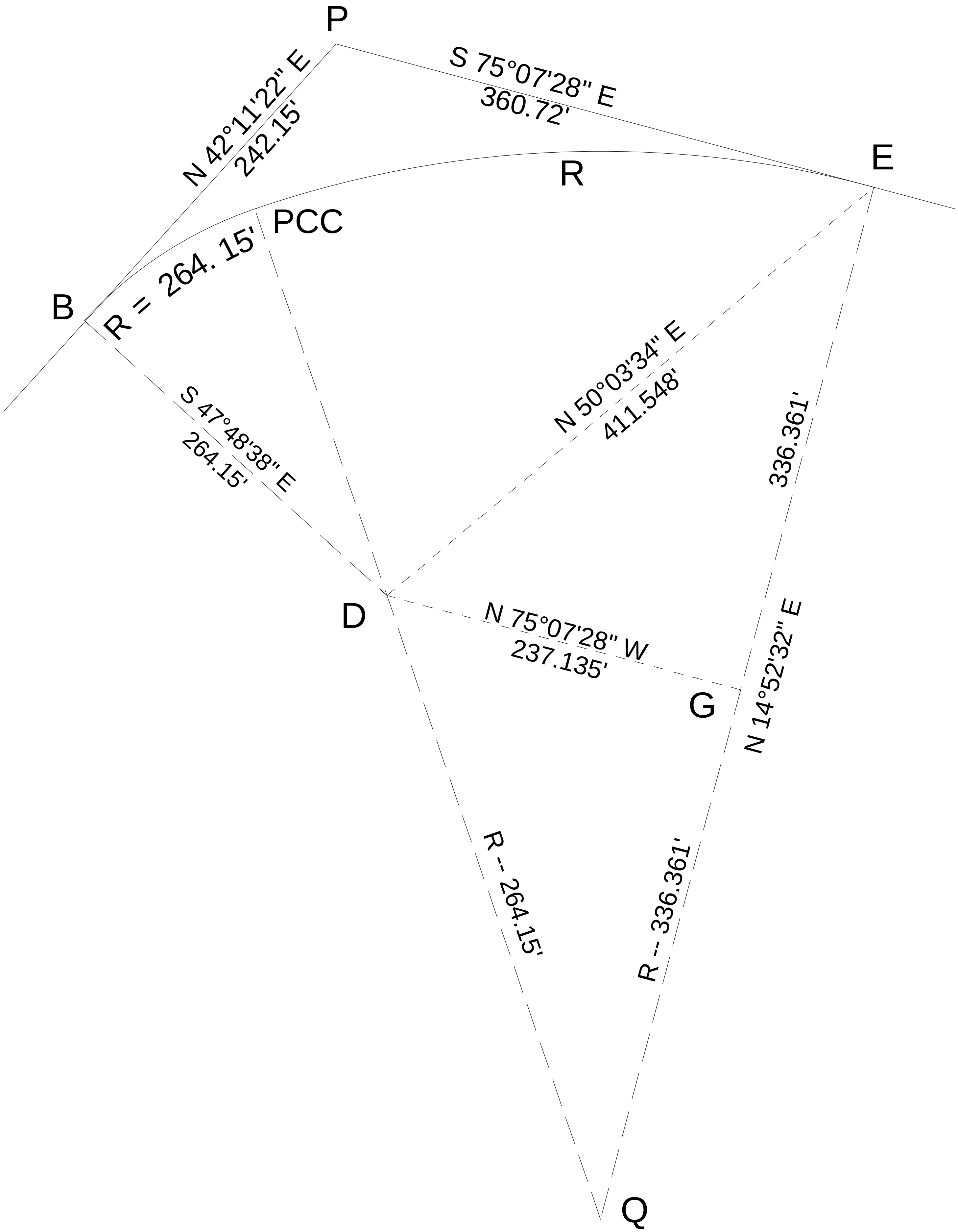
P
N 42°11'22" E
242.15'
S 75°07'28" E
360.72'
E
R
PCC
B
R = 264. 15'
S 47°48'38" E
264.15'
N 50°03'34" E
411.548'
336.361'
D
N 75°07'28" W
237.135'
G
N 14°52'32" E
R -- 264.15'
R -- 336.361'
Q

NEW46ANS

Draw line DE, the radius point of r=264.15' to the new EC.
Let Q be the new radius point.
Drop a perpendicular from D to QE at G.

By traverse or triangles[1], solve for the bearing and distance of DE.
By traverse: Let P be North 1000, East 1000. Then E is North 907.396, East 1348.631; B is North 820.584, East 837.376; D is North 643.185, East 1033.092. By inverse, DE is N 50°03'34" E 411.548.
With QE, perpendicular to PE, having a bearing of N 14°52'32" E, angle QED is 35°11'02" so that EG = (411.548)cos35°11'02" = 336.361 and DG = (411.548)sin35°11'02" = 237.135
Letting the unknown radius equal R, QG = R–336.361, QD = R–264.15 and
$(R--264.15)^2 = 237.135^2 + (R-336.361)^2$, expanding and rearranging
$R^2 - 528.30 \cdot R^2 + 264.15^2 = 237.135^2 + R^2 - 672.722 \cdot R + 336.361^2$
$144 \cdot R = 99{,}596.508$ and R = 689.62'

QD = 689.621 – 264.315 = 425.471, QG = 689.621 – 336.361 = 353.260
By the Law of Cosines, angle DQG = $\arccos\dfrac{475.471^2 + 353.26^2 - 237.135^2}{2 \cdot 475.471 \cdot 353.26}$ =33°52'21", which is also the central angle of the 689.62' radius.

QD is 33°52'21" counter clockwise from N 14°52'32" E, or N 18°59'49" W, making the central angle of the 264.15' radius N 47°48'38" – N 18°59'49" W = 28°48'49"

[1]To solve by triangles:
Draw line PD, making right triangle PBD with PD = 358.346 by the Pythagorean Theorem. Angle BDP = arctan 242.15/264.15 = 42°30'43" and the bearing of DP N 5°17'55" W and the angle DPE = S 75°07'28" E – S 5°17'55" = 69°49'33". Then, by Law of Cosines DE² = $358.346^2 + 360.72^2 - 2 \cdot 358.346 \cdot 360.72 \cdot \cos 69^\circ 49' 33'$ = 411.548
By the Law of Sines, $\dfrac{\sin 69^\circ 49' 33''}{411.548} = \dfrac{\sin PDE}{360.72} = \dfrac{\sin PED}{358.346}$ so angle PDE = 55°21'29" and angle PED = 54°48'58" and the bearing of DE = N 50°03'34" E