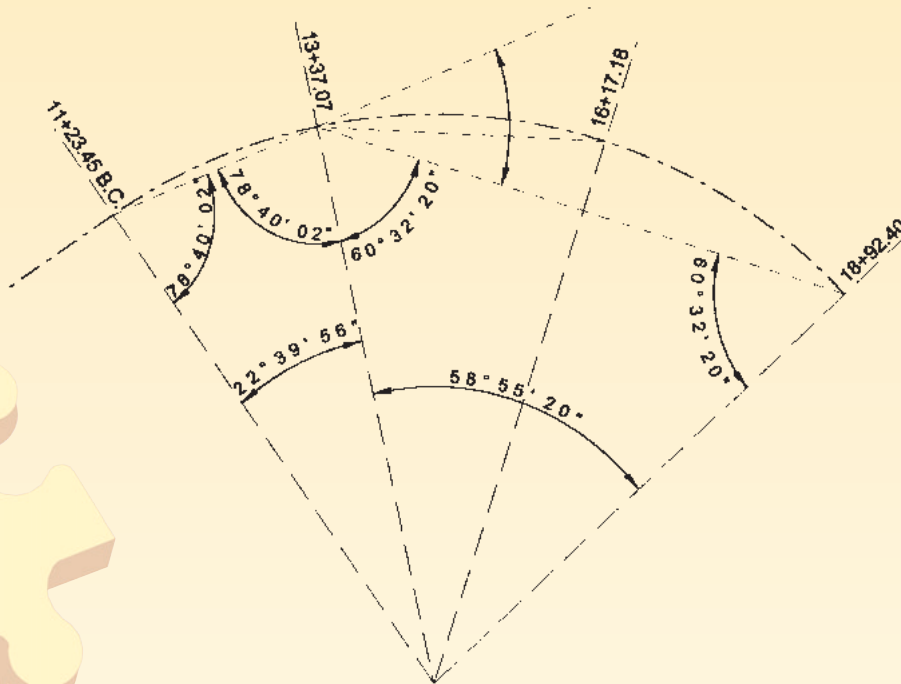




Solution to Problem 37



CALCULATE A TABLE OF DEFLECTIONS TO EACH STATION FROM THE B.C. BY DIVIDING THE ARC LENGTH (FOUND FROM THE DIFFERENCE OF STATIONS) BY THE RADIUS, 540', THEREBY GETTING THE CENTRAL ANGLE IN RADIAN, AND CONVERT THE RADIAN TO DEGREES / MINUTES / SECONDS. (I JUST MULTIPLY THE RADIAN BY 180 AND DIVIDE BY PI, GETTING DECIMAL DEGREES WHICH I CONVERT TO DD.MM.SS):

STATION	CENTRAL ANGLE	DEFLECTION (RIGHT)
11+23.45	0°00'00"	0°00'00"
13+37.07	22°39'56"	11°19'58"
16+17.18	52°23'10"	26°11'35"
18+92.40	81°35'17"	40°47'38"

YOU CAN SEE FROM THE DRAWING THAT THE DEFLECTION SHOWN IS 40°47'38", JUST AS IT WOULD BE FROM THE B.C. IN FACT, FROM ANY SET UP ON A CURVE THE DEFLECTION TO ANY OTHER POINT IS THE SAME AS IT WOULD BE FROM THE B.C. WHEN ZERO IS SET ON THE B.C. AS A BACKSIGHT. THIS FEATURE HELPS "WIGGLE IN" ON A CURVE.

IF YOU DRAW ALL THE PERTINENT ISOSCELES TRIANGLES FOR STATIONS 13+37.07 AND 16+17.18 YOU WILL SEE THE DEFLECTION IS 29°27'40" WHICH IS THE DIFFERENCE IN DEFLECTIONS FROM THE B.C. (40°47'38" - 11°19'58")

IF 11°19'58"(RIGHT) WAS SET ON STATION 13+37.07, OR 0°00'00" ON THE B.C., ALL OF THE DEFLECTIONS TO OTHER POINTS WOULD BE THE SAME AS IF FROM THE B.C. THIS WAY ONLY ONE CURVE TABLE NEEDS TO BE CALCULATED.