WEBSTER AND ASSOCIATES

LAND SURVEYORS AND ENGINEERS, P.C.

A Professional Design Firm

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DATE: 3/13/03

TO: Professional Surveyor - Problem Corner

FROM: Kevin L. Utz

RE: Problem 37

Attached is another way of looking at the solution to the problem.

If you have any questions or comments concerning this project, please contact our office at your convenience.

THANK YOU,

Kevin L. Utz, PLS, PE
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JOB NO.:	BY:
DATE:	SHEET OF
PROJECT: PROBLEM 37	

WORK SHEET

ANY CURVE OF KNOWN RADIUS WITH ARC LENGTHS KNOWN, CENTRAL ANGLES CAN BE EASILY FOUND

$\measuredangle A = L_1 \times \frac{360}{2\pi R}$ ETC.

AND $\measuredangle a = \frac{180° - \measuredangle A}{2}$ ETC

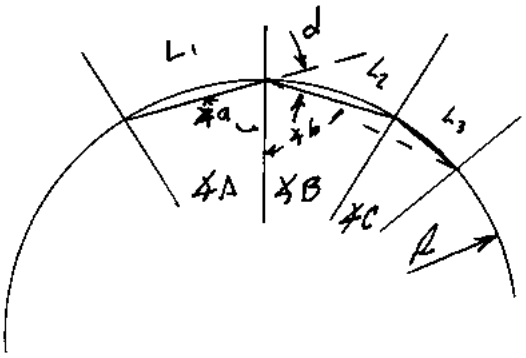
$\therefore\ d = 180° - (\measuredangle a + \measuredangle b)$

$d = 180° - \left[\frac{(180° - \measuredangle A)}{2} + \frac{(180° - \measuredangle B)}{2}\right]$

$d = 180° - \left(90° - \frac{\measuredangle A}{2}\right) - \left(90° - \frac{\measuredangle B}{2}\right)$

$d = \frac{\measuredangle A + \measuredangle B}{2}$

THE DEFLECTION IS THE AVERAGE OF THE CENTRAL ANGLES OF THE ARCS INVOLVED



IN PROBLEM 37

$\measuredangle A = 22°39'57"$

$\measuredangle B = 29°43'14"$

$\measuredangle C = 29°12'06"$

$d_1 = \frac{\measuredangle A + \measuredangle B}{2} = 26°11'36"$

$d_2 = \frac{\measuredangle A + (\measuredangle B + \measuredangle C)}{2} = 40°47'39"$

$d_3 = \frac{\measuredangle B + \measuredangle C}{2} = 29°27'40"$