

Double Meridian Distance (D.M.D)

To find the area of closed traverse by using the information of Departure and Latitude of sides, this way is called (D.M.D).

Example/ The values of latitude and departure of each side in closed traverse are illustrated in table below. Compute the area of the traverse.

side	Lat.	Dep.	D.M.D	Lat. * D.M.D	Double area = lat. * D.M.D
				+	-
AB	220.5	120.0	120	26460	
BC	-240.2	200.5	440.5		105808.1
CD	-160.0	-100.5	540.5		8640.0
DA	179.7	-220.0	220.0	39534	
				$\Sigma = 65994$	$\Sigma = 192288.1$

$$D.M.D \text{ AB} = 120$$

$$D.M.D \text{ BC} = D.M.D_{AB} + Dep. AB + Dep. BC = 440.5$$

$$D.M.D \text{ CD} = D.M.D_{BC} + Dep. BC + Dep. CD = 540.5$$

$$D.M.D \text{ DA} = D.M.D_{CD} + Dep. CD + Dep. DA = 220.0$$

$$\text{Double area} = |65994 - 192288.1| = 126294.1$$

$$\therefore \text{Area of closed traverse} = \frac{126294.1}{2} = 63147.05 \text{ m}^2$$

Setting-out works

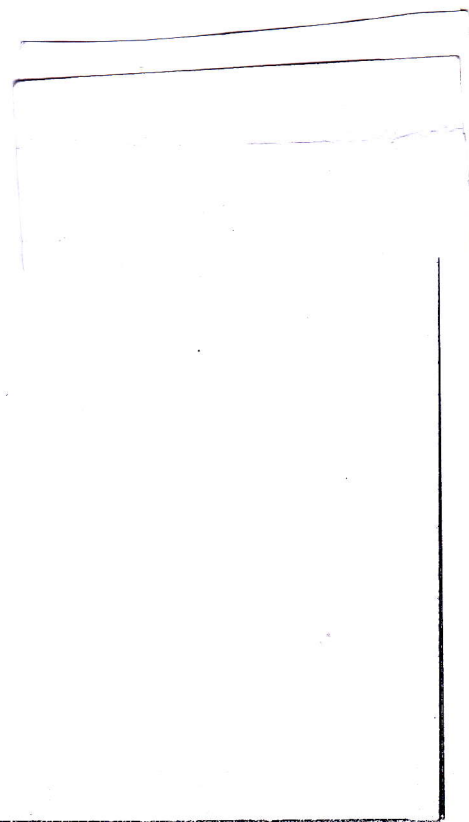
①

In many kinds of construction, such as roads and railway two straights will normally be connected by a curve wherever there is a change in direction.

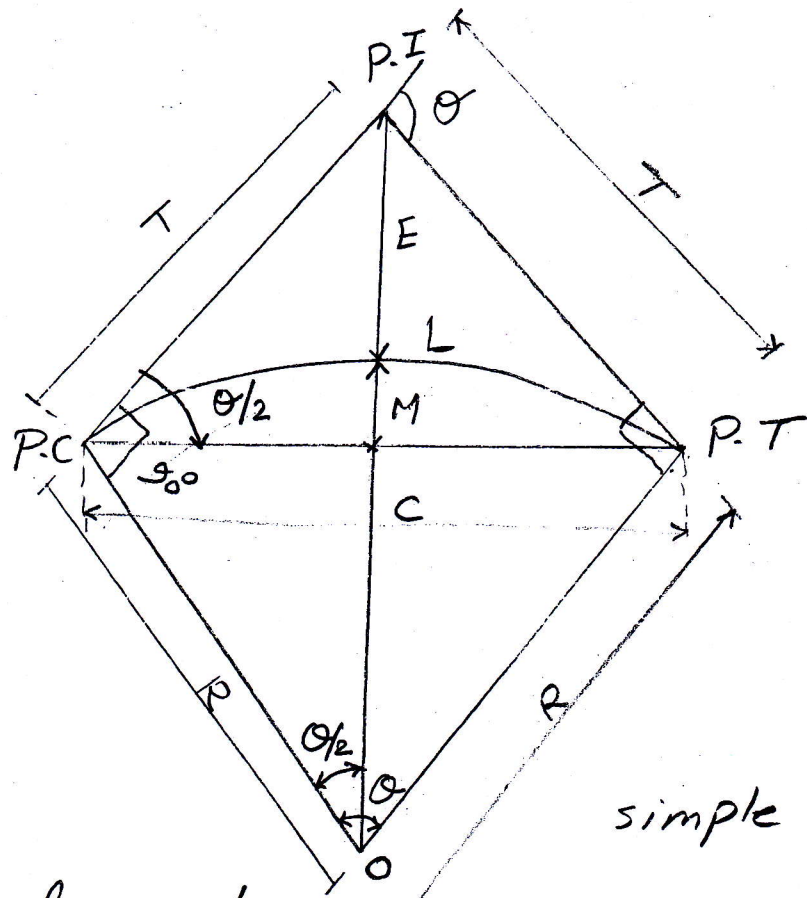
There are two kinds of curve

1. Horizontal curve.
2. Vertical curve.

Horizontal curve :- is a simple circular curve as shown in figure below, two straights meet at the point of intersection P.I, and a circular arc of radius R runs between the straights, meeting tangentially at the tangent point P.C, P.T. The angle of total deflection angle θ of the the straight lines is also shown. This angle is sometimes referred to as the angle of deviation or as the angle of intersection.



(2)



simple circular curve

- P.C = point of curvature.
- P.I = point of intersection.
- P.T = point of tangency.
- L = length of the curve.
- θ = deflection angle or central angle.
- C = chord length.
- R = radius of curve.
- M = middle ordinate.
- E = external distance.
- T = tangent distance.
- O = center of the curve.

