

Setting Out by Coordinates

Civil Engineering

Design point onto the ground, then checked.

Set out once, check from somewhere else.

1

Take the design values

Easting, northing and level for the point you actually want.

2

Occupy a control station

Levelled, centred, with the instrument height measured.

3

Orient and verify

Backsight a known point, then check a third before starting.

4

Compute bearing and distance

From the occupied station to the point being set out.

5

Set out and mark

Turn to the bearing, measure the distance, mark and label it.

6

Check independently

Re-observe from a different station, never from the same one.

JOIN COMPUTATION

$$\Delta E = E_2 - E_1 \text{ and } \Delta N = N_2 - N_1$$

$$\text{Distance} = \sqrt{(\Delta E^2 + \Delta N^2)}$$

Bearing from ΔE and ΔN , in the right quadrant

Educational reference. Setting-out tolerances come from the specification, and the check observation is not optional.