SECTION 54 – LEVELLING AND VERTICAL CURVES

Levels

1163. Procedure for setting out levels. When the grade line has not previously been fixed by paper location, the procedure is:

a. Take levels along the centre line, at each chainage peg.

b. Plot the longitudinal section.

c. Decide the final grade line, after considering earthwork quantities and permissible gradients (see para 218).

d. Drive grade pegs, usually as side stakes, at a fixed distance from the centre line.

1164. Checking will be simplified and time saved by:

a. Setting grade pegs with the top of the peg at correct finished crown level.

b. Establishing proper bench marks. In deliberate work these should be sited not more than 4 miles apart, and at all bridge sites.

Vertical Curves

1165. Vertical and horizontal curves should not coincide.

1166. The most important requirement is the sight distance available to drivers (see Section 14).

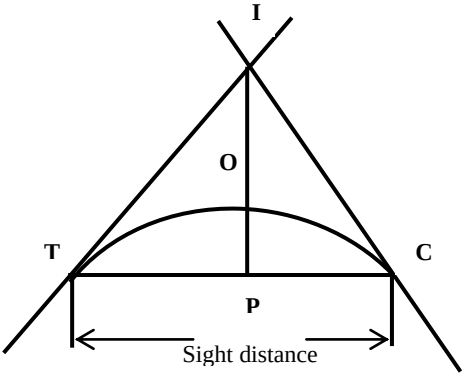

Figure 11-22 – Approximate Method of Setting Out a Vertical Curve.

1167. The following is a simple method of determining the approximate formation levels on a vertical curve (see Figure 11.22):

a. On a longitudinal section of the road length concerned fix the TC and CT so that the chord joining them is equal to the sight distance required. Draw in the chord.

b. From the TC and CT produce the tangents to intersect at I.

c. From I drop a perpendicular to cut the chord at P.

d. On the line IP fix a point Q, such that PQ is not more than 3 ft 9 ins.

e. Draw a curve through TC, Q and CT, so that no point on the curve is higher than PQ.

f. Scale off the formation levels at the required points on the curve.