

Solving the quadric equation

0 or 1 root

No interception

2 roots

The two roots are not above the target point and within the limits of the crown part

Check that the beam does not intercept the crown part limits

Only one of the two root is above the target point and within the limits of the crown part

Search the second point: the target point or an interception with the crown part limits

The two roots are above the target point and within the limits of the crown part

Keep this two roots