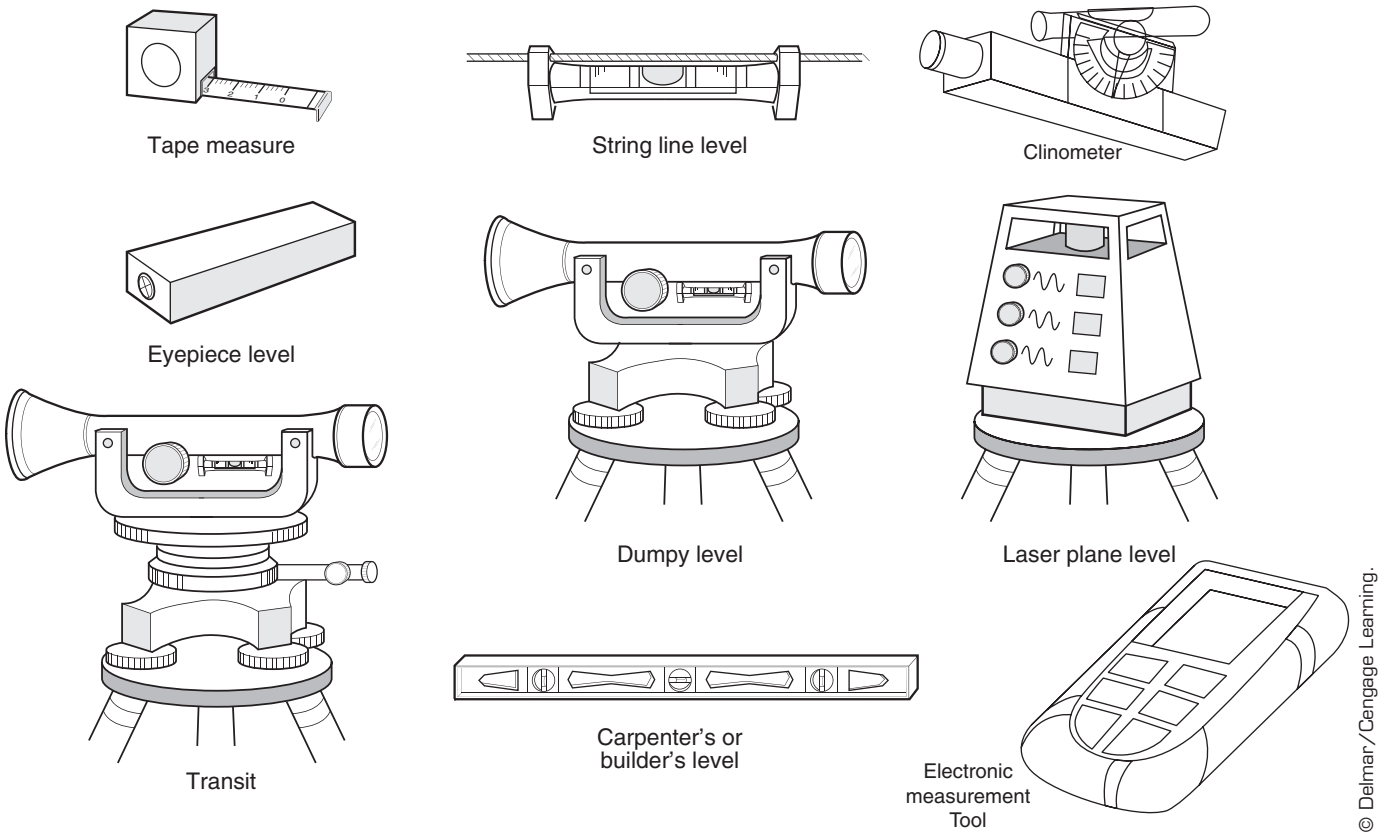


Figure 8-1 Layout equipment and tools.

Figure 8-2 Determining slope by holding a level board from the high point and measuring from the bottom of the board to the low point.

Figure 8-3 Using a clinometer to measure the angle of a slope.

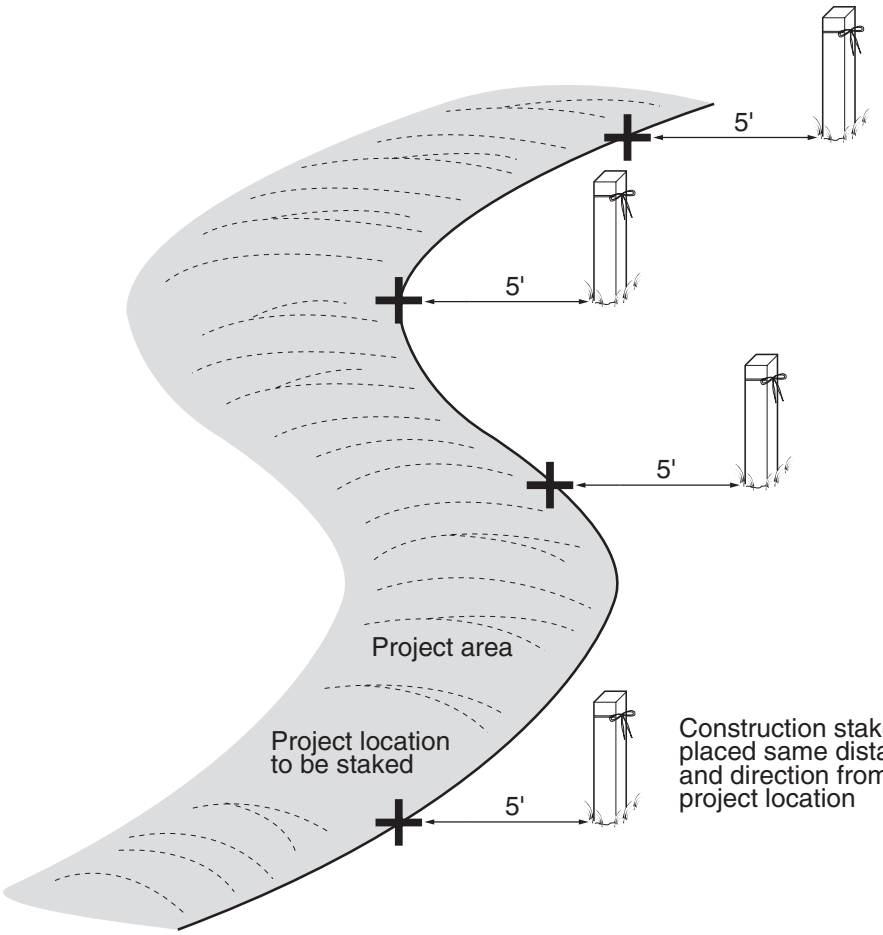


Figure 8-4 Staking with offsets to reduce restaking time.

A. Measure the distance to unknown point from known Points A and B.
B. Draw arcs for both distance A and B. Unknown point is where arcs intersect.

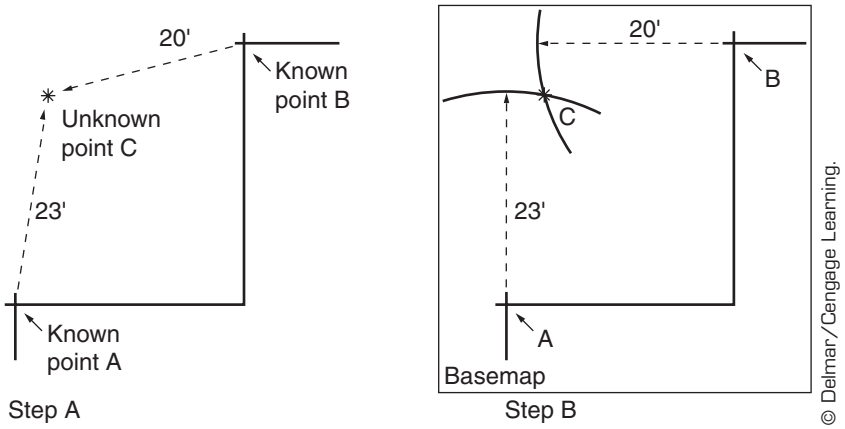


Figure 8-5 Locating objects using triangulation.

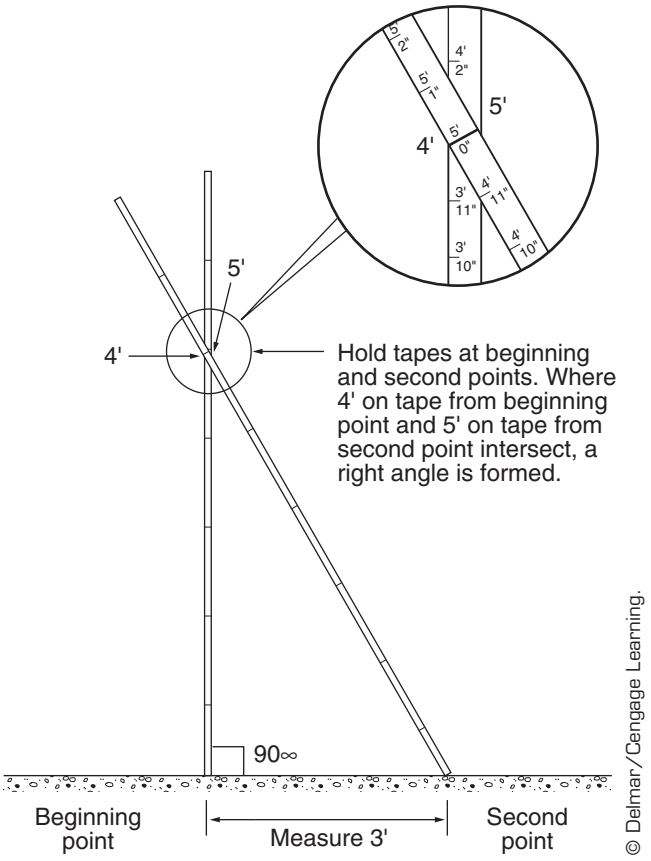


Figure 8-6 Using a 3,4,5 triangle to turn right angles.

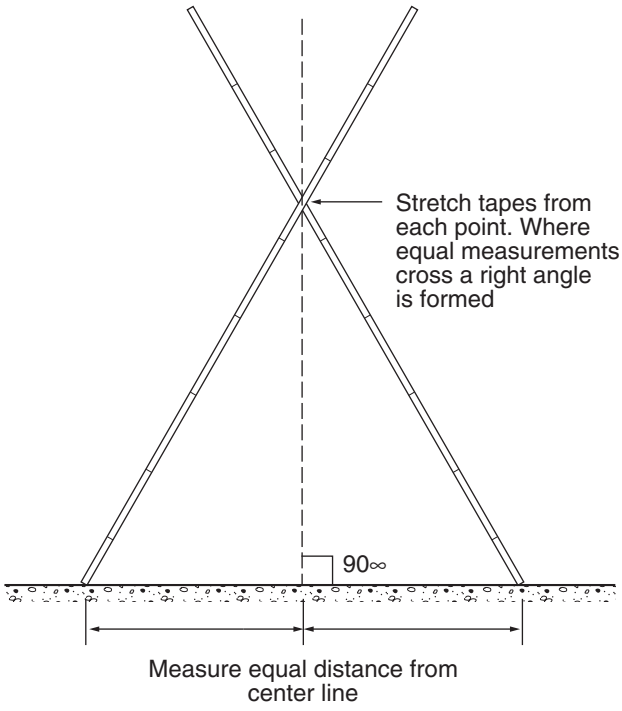


Figure 8-7 Layout of a perpendicular line using the triangler method.

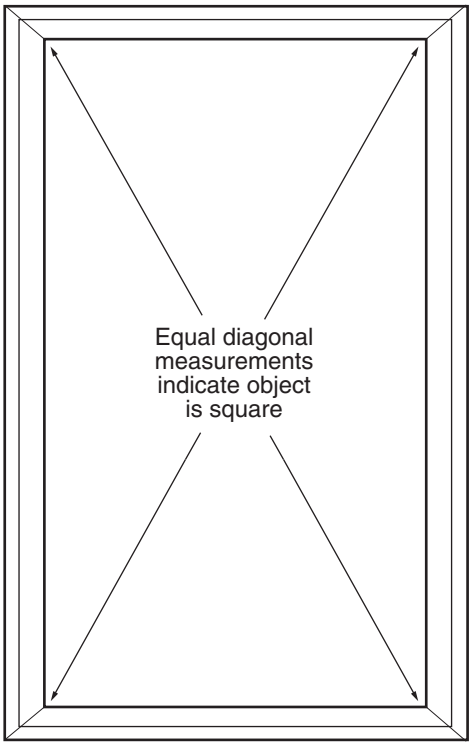


Figure 8-8 Checking for square using diagonal measurements.

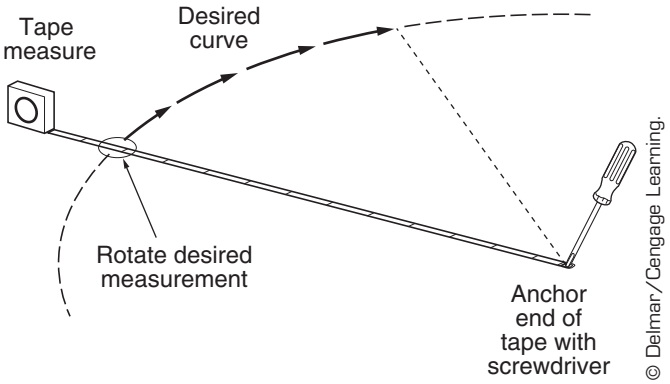


Figure 8-9 Layout of curves using a large screwdriver anchored at the center point and swinging a tape measure to mark the correct radius. Mark the radius as the tape is moved.

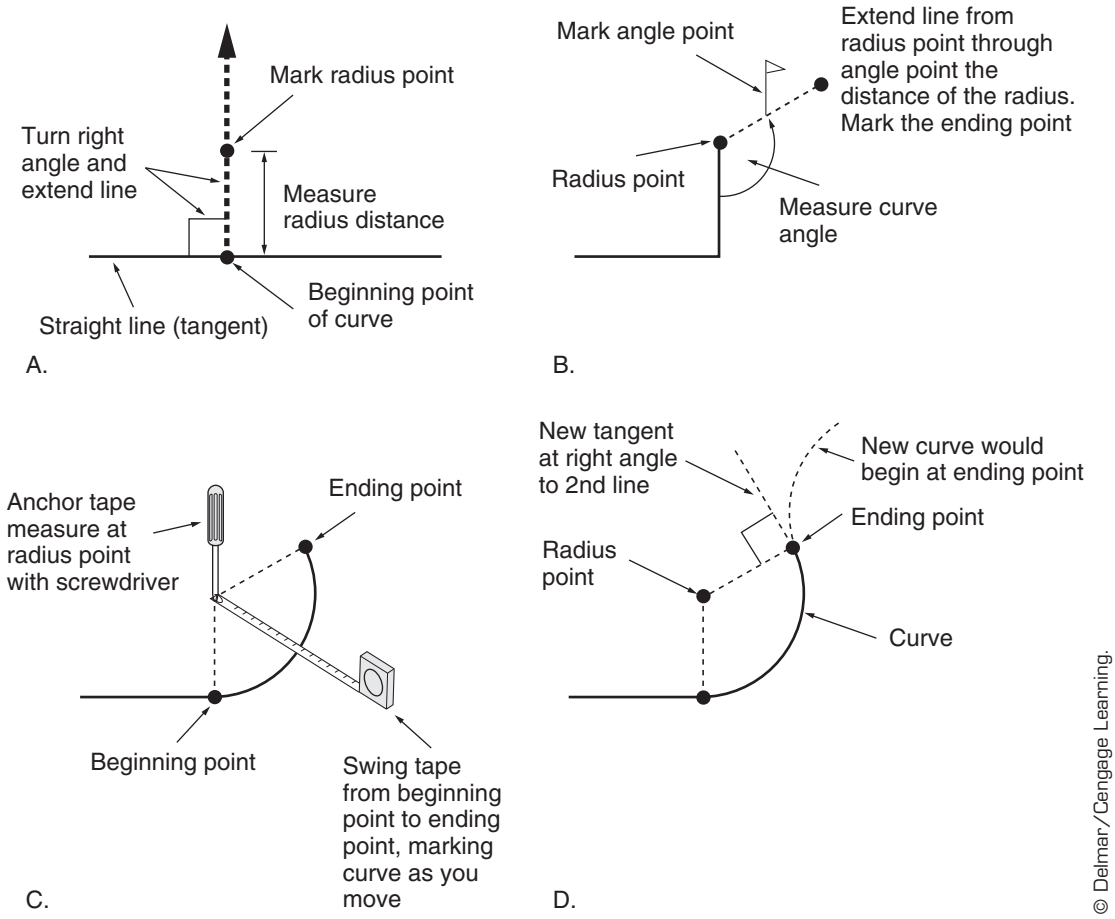


Figure 8-10 Locating radius points and marking a radius for curves.

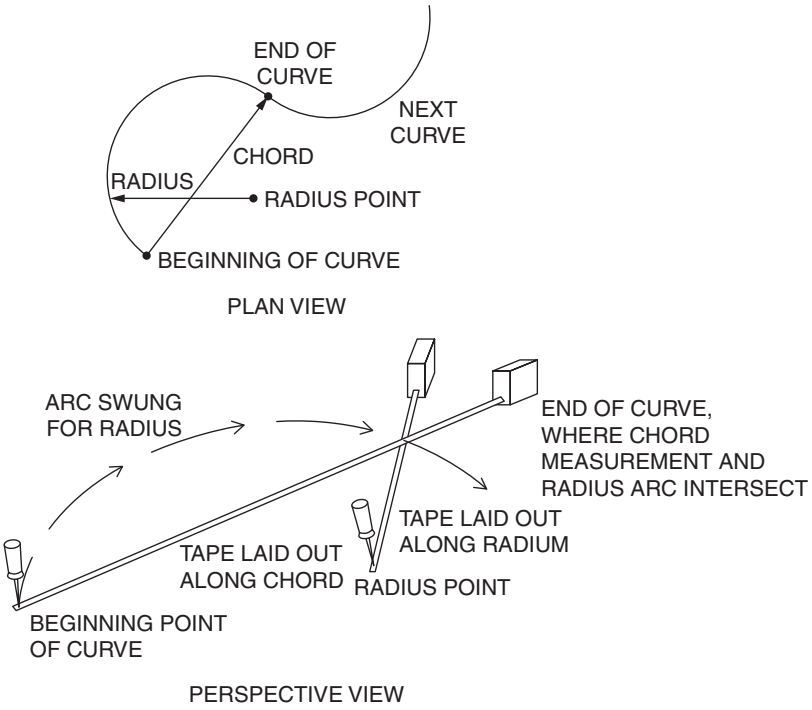


Figure 8-11 Using radii and chords to lay out circles.

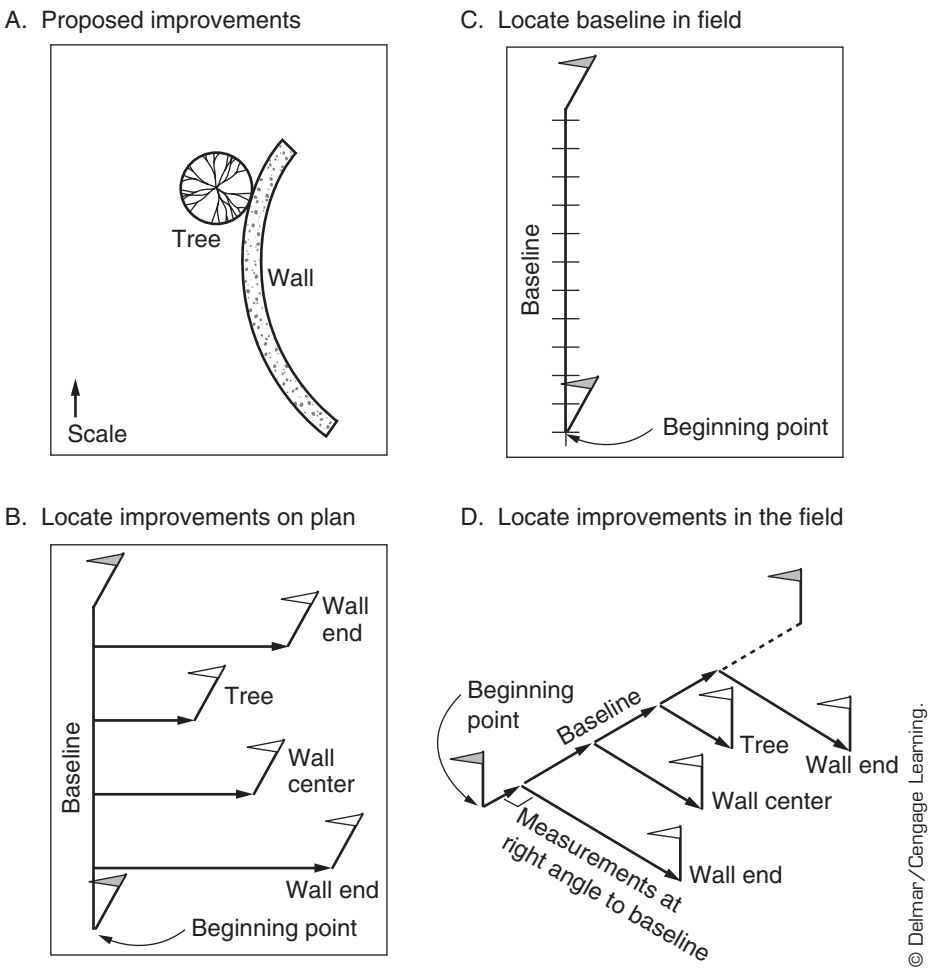


Figure 8-12 Using a baseline to locate improvements in the field.

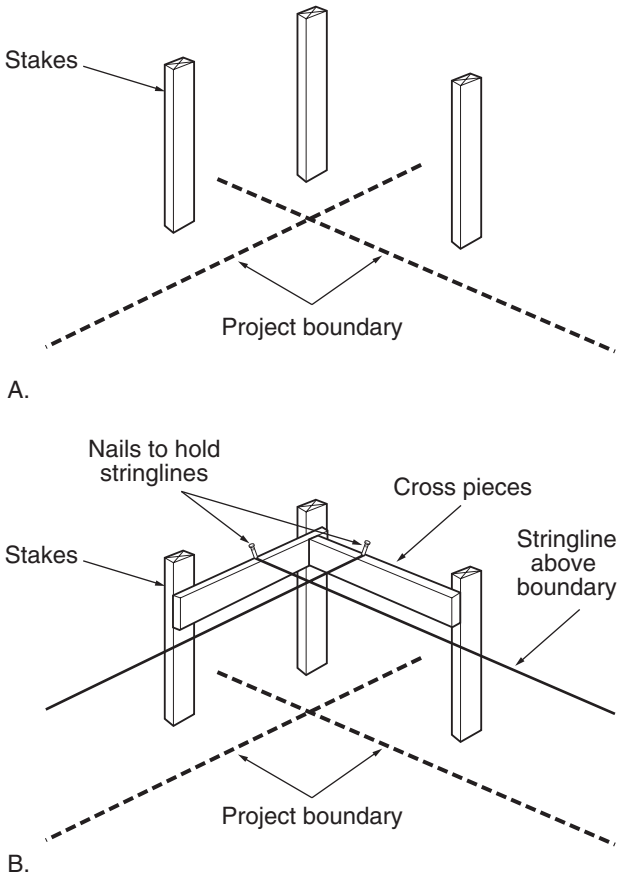
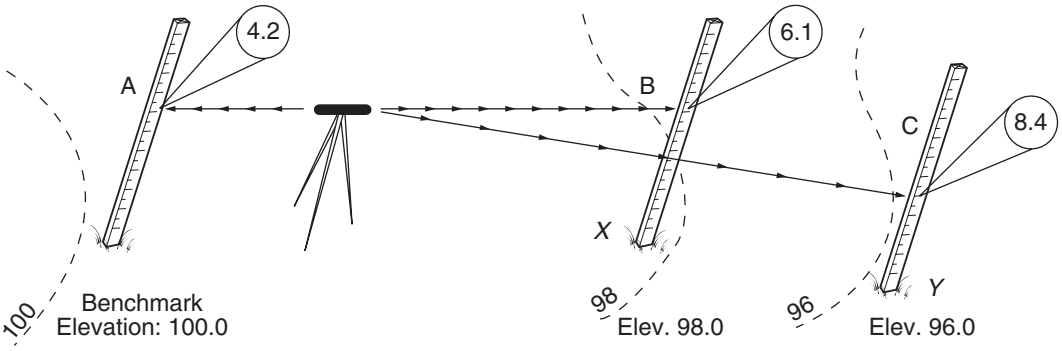


Figure 8-13 Constructing batterboards. (A) Install posts outside the project edges and straddling the boundaries. (B) Attach cross pieces and lines marking project boundaries. Height of the cross pieces can be set to project elevations if you want to locate boundaries and elevations with the same batterboards.

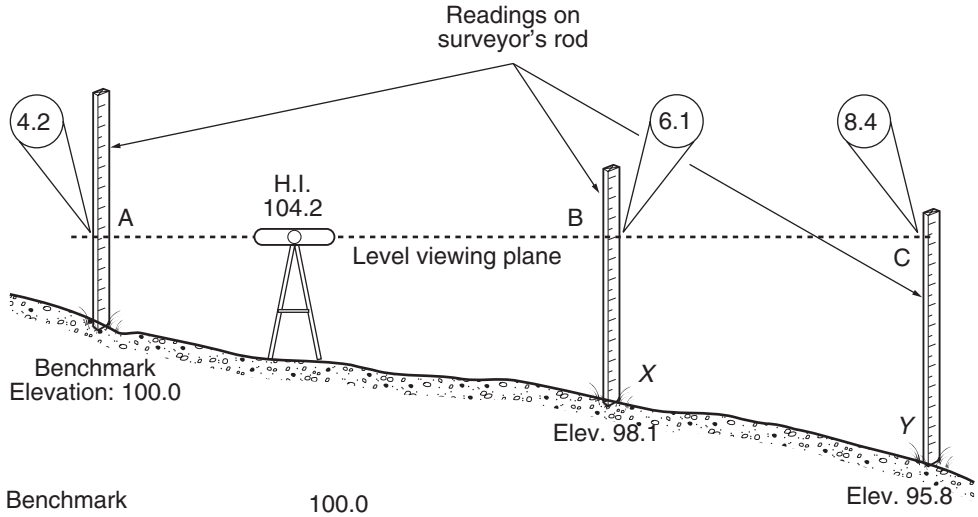
Figure 8-14 Leveling a survey instrument. Always turn the leveling screws in opposite directions.

Figure 8-15 Focusing a survey instrument. Use caution not to bump the instrument out of level.



Surveyors Notes:

Point	Backsite	H.I.	Foresite	Elevation
BM	4.2 (A)	104.2		100.0
			6.1 (B)	98.1
			8.4 (C)	95.8



Benchmark	100.0	
Backsite A	+ 4.2	
Height of instrument	104.2	
Foresite B	– 6.1	
Elevation of point *X*	98.1	(H.I. – Foresite B) (104.2 – 6.1 = 98.1)
Foresite C	– 8.4	
Elevation of point *Y*	95.8	(H.I. – Foresite C) (104.2 – 8.4 = 95.8)

Figure 8-16 Performing elevation calculations. The surveyor's notes and calculations are shown above the figure.

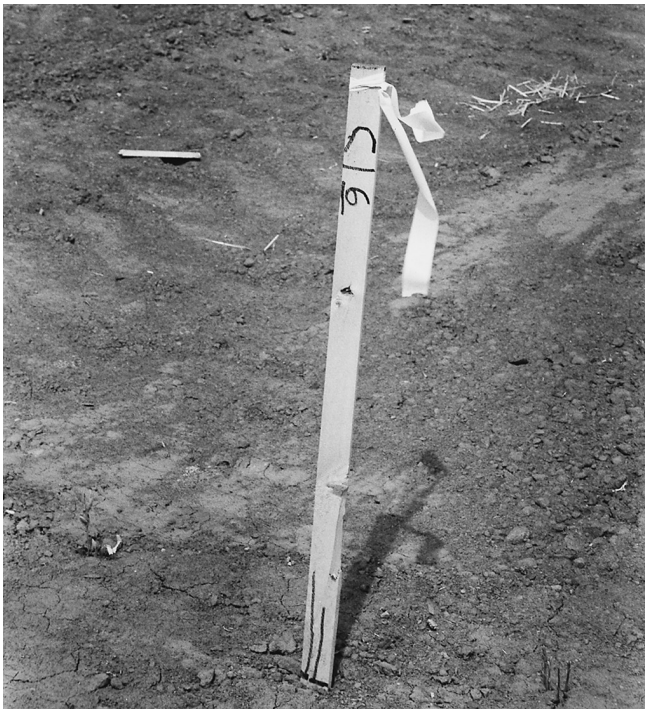


Figure 8-17 Cut markings on a grade stake. This stake shows a cut of 1.6 feet below existing grade (existing grade is indicated by the markings at the bottom of the stake).

Figure 8-18 Flagging of proposed plantings to review placement.