

Topographic Survey

Construction of Contours

- Compute the spacing of the elevation grid such that there is **no more than 1-foot contour elevation** change in each grid cell.
- Consider the following survey data:

Side	Length (ft.)	Point	Elevation
AB	162.43	A	97.64
BC	101.51	B	98.24
CD	145.63	C	105.21
DA	89.43	D	100.00

Topographic Survey

Construction of Contours

- Grid spacing = $\text{Length}/|\Delta\text{Elevation}|$
- Repeat this calculation for each side of your site and use the smallest value for your grid spacing

Side	Length (ft.)	$ \Delta\text{Elevation} $	Grid Spacing
AB			
BC			
CD			
DA			

Topographic Survey

Construction of Contours

- Grid spacing = $\text{Length}/|\Delta\text{Elevation}|$
- Repeat this calculation for each side of your site and use the smallest value for your grid spacing
- Select the smallest spacing = 14.56 ft.

Side	Length (ft.)	$ \Delta\text{Elevation} $	Grid Spacing
AB			
BC			
CD			
DA			

Topographic Survey

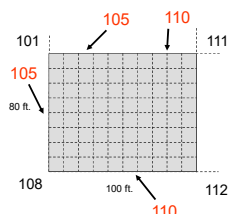
Construction of Contours

- If the grid spacing value is problematic to use or set-up, round down to a convenient value – probably a multiple of 10 ft.
- Grid spacing is 10 ft.

Side	Length (ft.)	$ \Delta\text{Elevation} $	Grid Spacing
AB	162.43	$ 97.64 - 98.24 $	270.71
BC	101.51	$ 98.24 - 105.21 $	14.56
CD	145.63	$ 100.00 - 105.21 $	27.95
DA	89.43	$ 97.64 - 100.00 $	37.89

Topographic Survey

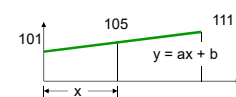
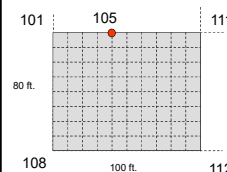
Construction of Contours



- First see if a contour interval exist between nodes of the grid cell; if so, estimate where along the side the contour interval would be located
- Apply simple linear interpolation to each side to locate the contour interval

Topographic Survey

Construction of Contours – top edge for 105



$$a = \text{slope} = \frac{111 - 101}{100}$$

$$b = \text{intercept} = 101$$

$$x = \frac{4(100)}{10} = 40 \text{ ft.}$$

$$105 = \frac{10}{100}x + 101$$

