

**3.4**

Find a place that has a path and a wall or curb that are sloping (and whose owners will not mind your drawing in chalk on them). Draw contour lines as you understand them to work across various hard-scape elements. After drawing the contour lines, check them using a carpenter's level, or use a level app on your smartphone.

**3.5**

Now that you have taken some time to examine contours in the field, look through the pictures that you have taken to document your observations so far. Find two that show a distinct landform and more than 4 ft of grade change. One should include naturalistic curves and the other should be architectonic. At least one should have a grade change device in the frame of the picture. Now take copies of these pictures and trace contours as you imagine them to work over top. If it is easier to take chalk into the field to start thinking about this, do so.

**3.6**

What is the contour interval of the portion of the USGS map shown in Figure 3.1, shown in feet of elevation?

**3.7**

A (concave/convex/uniform) slope is one in which the slope gets progressively steeper moving from higher to lower elevations.

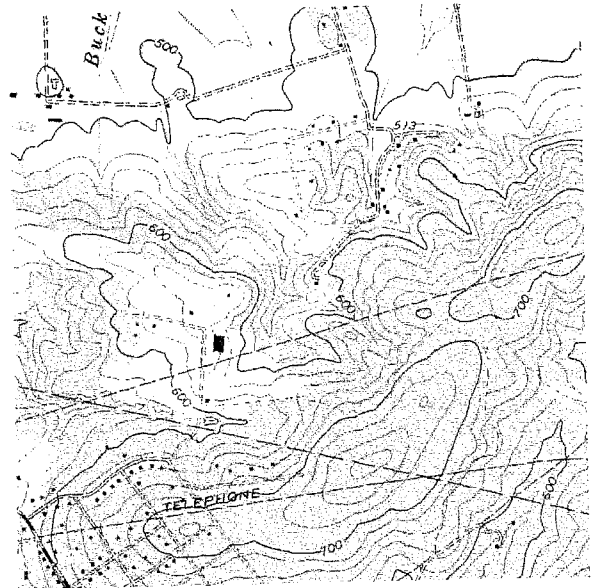


Figure 3.1. Contour map excerpt.

**3.8**

What is the mistake in the contours drawn in Figure 3.2?

**3.9**

How many contour lines are required to indicate a three-dimensional form and direction of slope?

**3.10**

The steepest slope is (parallel/perpendicular) to a contour line.

**3.11**

Construct a section of the topography shown in Figure 3.3 at the cut line indicated.

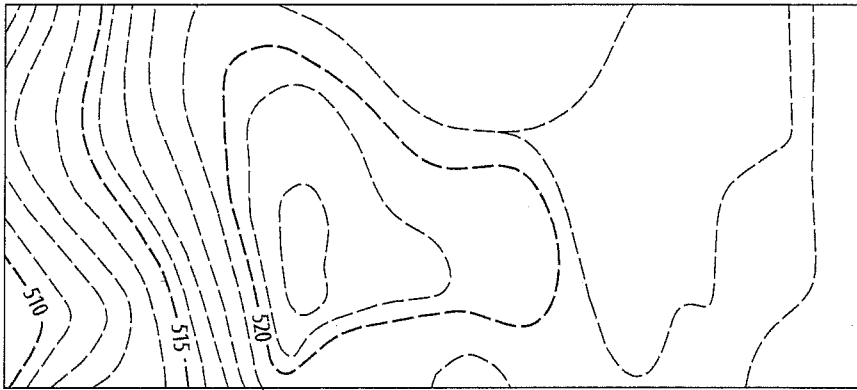


Figure 3.2. Contour plan

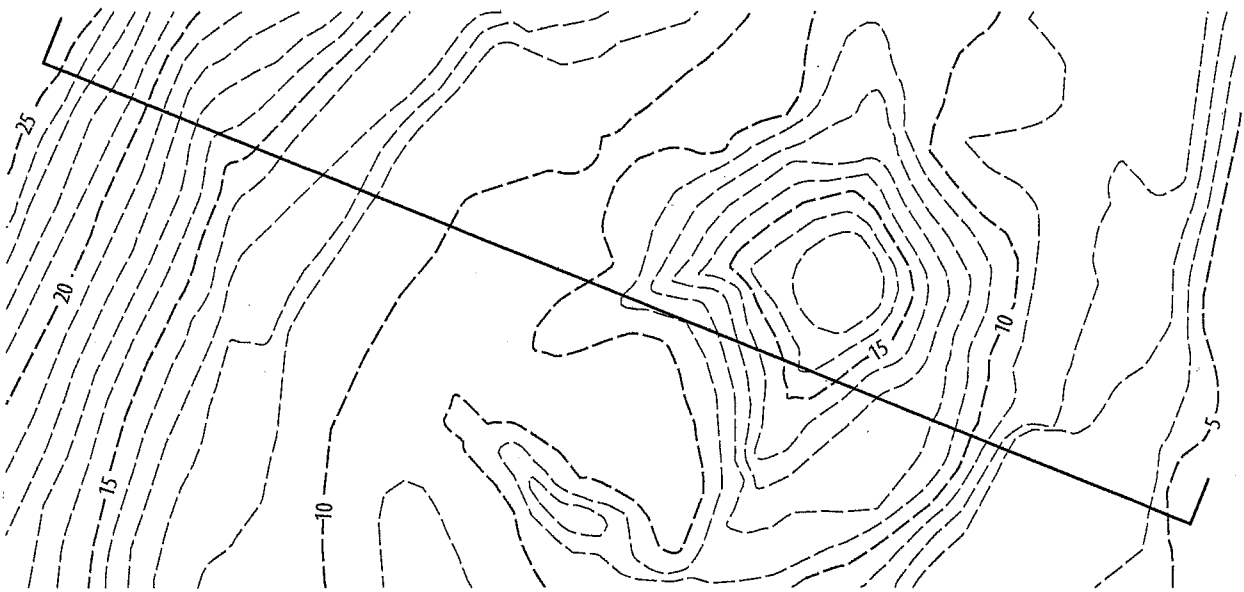


Figure 3.3. Contour plan

# CHAPTER 4

## Questions

### 4.1

In Figure 4.1, draw the 1-ft contours that result from interpolating between the elevations provided.

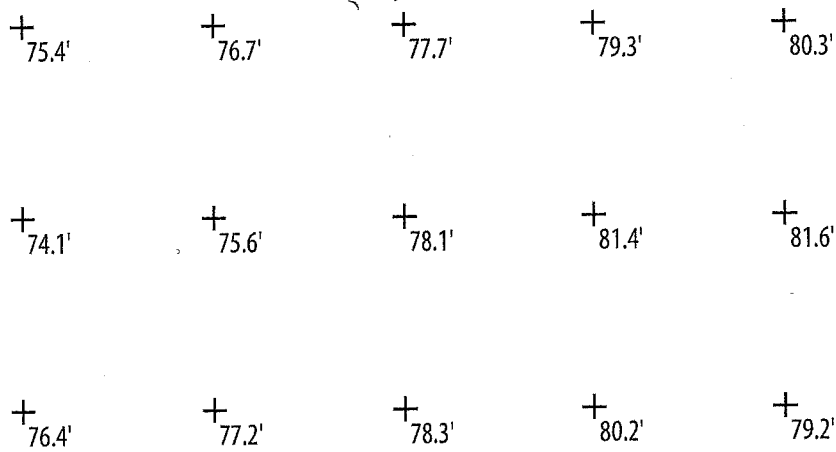


Figure 4.1. Spot elevations for interpolation

4.2

For the information provided in Figure 4.2, determine elevations for points A, B, and C.

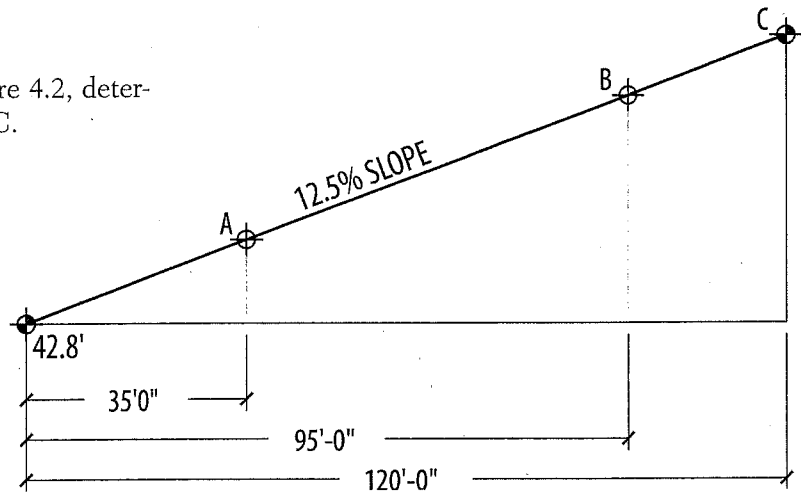


Figure 4.2. Slope triangle

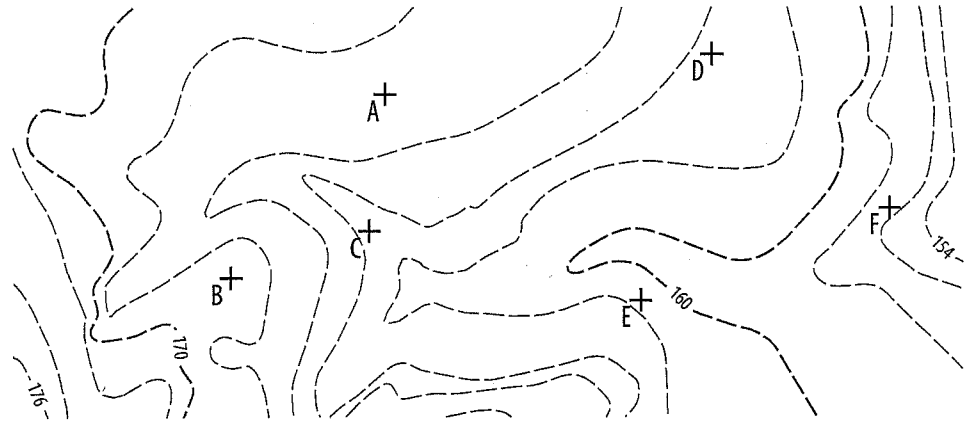


Figure 4.3. Contour plan

4.3

Interpolate the elevations at the points shown Figure 4.3.

following points if the drawing is at a scale of  $1" = 30'-0"$ : AC, AD, BC, CE, CF, DE, EF.

4.4

Having identified the elevations of the various points in Figure 4.3, find the slope between the

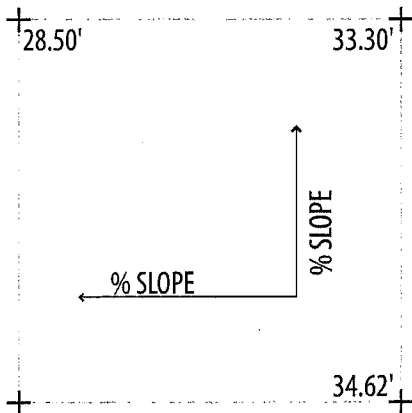


Figure 4.4. Slope calculation diagram

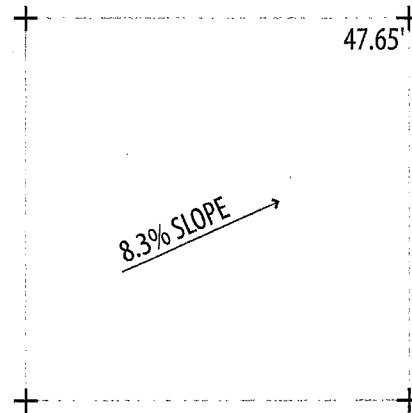


Figure 4.6. Slope calculation diagram

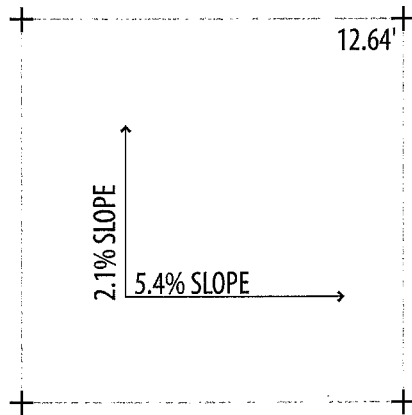


Figure 4.5. Slope calculation diagram

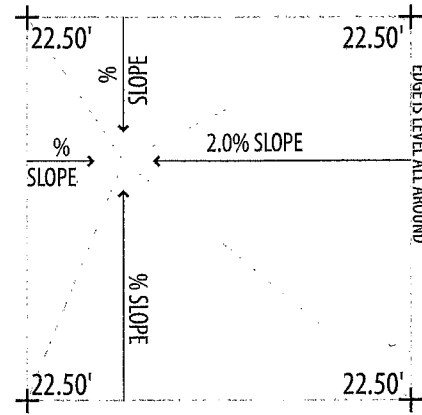


Figure 4.7. Slope calculation diagram

**4.5**

Calculate the missing information from the information provided in each of the following diagrams (Figures 4.4, 4.5, 4.6, and 4.7). Arrows indicate direction of descending slope. Each square is drawn at a scale of 1" = 20'-0". Round elevations off to the nearest hundredths and slopes off to tenths.

**4.6**

Convert the following ratios to percentage slopes: 50:1, 10:1, 8:1, 3:1.

**4.7**

Convert the following percentage slopes to degrees and minutes: 1.5 percent, 3.5 percent, 18 percent, 35 percent.