



## Surveying - CE 260 Home Work #3

A topographic survey was performed on a tract of land using theodolite/EDM techniques to locate the topographic detail. The sketch shows the traverse (A to G) and the grid baseline (0 + 00 at A) used to control the survey. Also given are grid elevations. Numerical values can be chosen as meters or feet.

1 Establish the grid, plot the elevations (the decimal point is the plot point from Table 8.5), and interpolate the data to establish contours at 1-m (1-ft) intervals. Scale at 1:500 for metric units, or 1 in = 10 ft or 15 ft for foot units. Use pencil.

2 A highway is to be constructed to pass through points A and X. The proposed highway CL grade is + 2.30 percent rising from A to X (CL elevation at A = 67.15). The proposed cut and fill sections are shown in Figure below. Plot the highway and calculate approximate volume of Cut and Fill material.

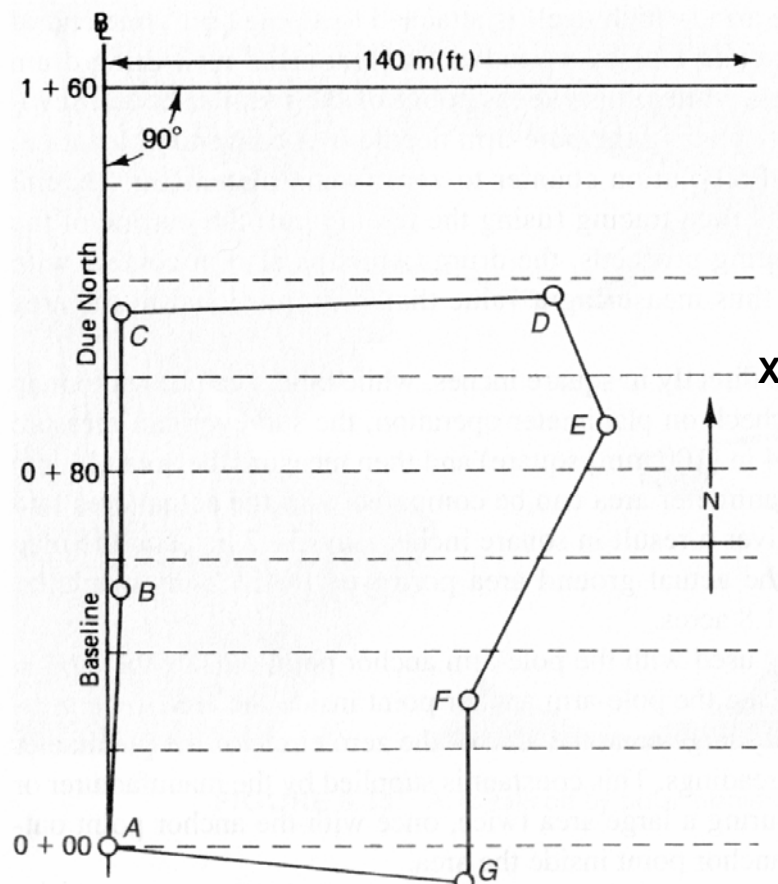


FIGURE 8.25 Grid traverse and control.

**Table 8.5 ELEVATION DATA: SURVEYING GRID ELEVATIONS (PROBLEM 8.1)**

Station	Baseline	20 m (ft) E	40 m (ft) E	60 m (ft) E	80 m (ft) E	100 m (ft) E	120 m (ft) E	140 m (ft) E
1 + 60	68.97	69.51	70.05	70.53	70.32			
1 + 40	69.34	69.82	71.12	71.00	71.26	71.99		
1 + 20	69.29	70.75	69.98	71.24	72.07	72.53	72.61	
1 + 00	69.05	71.02	70.51	69.91	72.02	73.85	74.00	75.18 (X)
0 + 80	69.09	71.90	74.13	71.81	69.87	71.21	74.37	74.69
0 + 60	69.12	70.82	72.79	72.81	71.33	70.97	72.51	73.40
0 + 40	68.90	69.66	70.75	72.00	72.05	69.80	71.33	72.42
0 + 20	68.02	68.98	69.53	70.09	71.11	70.48	69.93	71.51
0 + 00	67.15	68.11	68.55	69.55	69.92	71.02		

@ Sta. A

