CE 3372 – Water Systems Design
Exercise Set 2

Topographic/Contour Maps

Figure 1 is a subdivision conceptual map for Somewhere, USA. The numbers on the map are land surface elevations located at the decimal points in the drawing. Along the bottom edge of the map is a black line segment (with arrowheads at each end) that indicates a distance of 1,100 feet on the map. The black circle in the lower left hand corner is to be used as an origin for X-Y measurements for making XYZ data files.

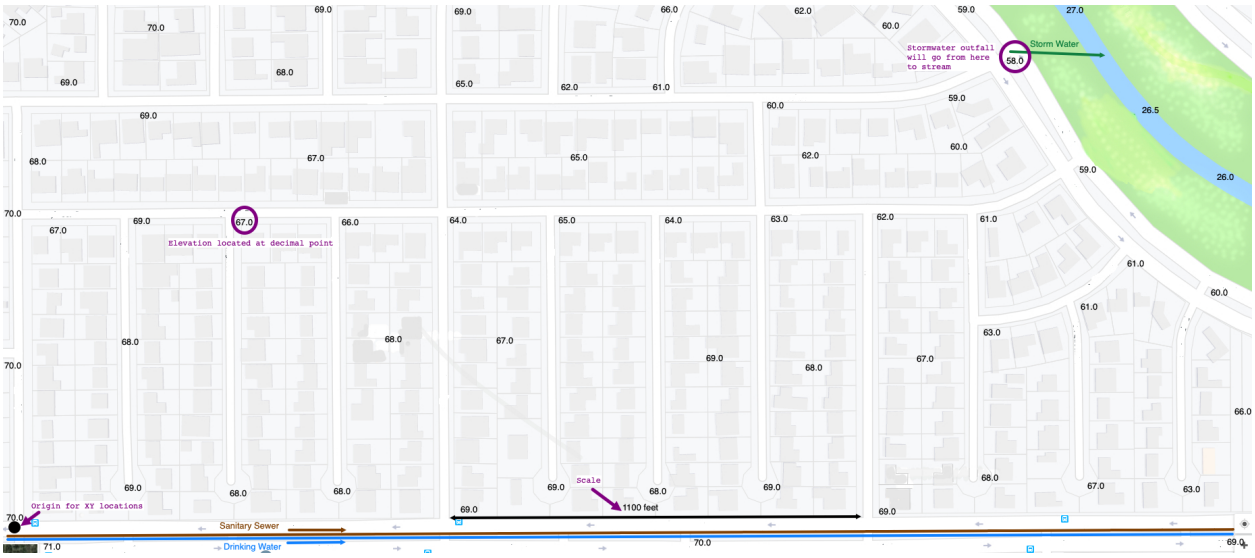

Figure 1: Somewhere USA Study Area

You will be tasked with conceptual design of a water distribution, stormwater collection, and wastewater collection system for this subdivision. All three systems will be influenced by the local topography, so a first step is to build a topographic map to guide design decisions, especially for the stormwater part of the design. The `.png` file is included with the exercise so you can render a larger graphic if needed.

Exercise

Construct a topographic contour map of the area.

1. Use the indicated origin and find X,Y, and Z coordinates for each displayed elevation. (50 points)

2. Arrange those coordinates into an ASCII (text) file where each row of the file is a coordinate triple. (10 points)
3. You can choose a variety of software to make a topographic map, even the class server can render a topographic contour map (20 points)
4. Use graphics tools to overlay the topographic map onto the base map (this is tricky, you will have to read how to make a layer have transparent portions to do the overlay, scaling and alignment take some effort) (20 points)

Submit your completed map as a PDF file to Blackboard.