CHAPTER 40 EXERCISES

1. Grid Survey

Open the GRID-SURV drawing from Chapter 22 Exercises. Use the 3dmesh command to create a surface model of the terrain. For each point, use the .xy point filter to select its X and Y coordinates interactively and then type in the Z elevation as shown on the point attribute. Set up three Vports on the screen as shown in Figure CE40-1. Set up a Vpoint for each viewport so the top left viewport displays a plan view, the bottom left displays the left elevation, and the large right viewport displays an isometric or other 3D view. SaveAs CE40EX1.

2. Contours

Open the CE37EX2 drawing from the Chapter 37 Exercises. Offset the 50' elevation contour by 25' to produce a smooth ground outside the pond. Use the Rulesurf command to connect the contours with a surface. Change TILEMODE to 0 and Erase all of the objects in paper space. Create 4 new viewports with the Mview command. Set the Vpoint for each viewport as shown in Figure CE40-2. SaveAs CE40EX2.
3. Piping Fittings and Valves

Begin a New drawing. Create the following pipe fittings and valves by using the `Rulesurf` and `Revsurf` commands.

- **8” to 6” concentric reducer** *(Rulesurf between a 6” Circle and a 8” Circle with a 8” distance between them)*
- **8” 90° elbow** *(Revsurf with axis of revolution 12” from center of Circle)*
- **6” 90° elbow** *(Revsurf with axis of revolution 9” from center of Circle)*
- **8” gate valve** *(two 8” Circles separated by 8” with a Point in the middle—use a Rulesurf to connect)*
- **6” gate valve** *(same as the 8” gate valve but with 6” Circles and 6” separation)*

See Figure 40-3 for the final product. *SaveAs 3DPIPES.*

4. 3-Dimensional Piping Layout

Continue working on the exercise above. Using the `CE37EX1` exercise as a dimensional reference, create a layout of the entire piping assembly as shown in Figure CE40-4. The `Tabsurf` command can be used to generate the straight pipe runs. *Save* your changes to the drawing. Generate a three-dimensional `Vpoint`. *Plot* your drawing *Scaled to Fit* on an A-size sheet.