CHAPTER 21 EXERCISES

1. Piping Valves

   Complete the drawing of the four valves shown in Figure CE21-1. Each of the valves should be 1 unit long so that they can be accurately scaled when Inserted into a drawing. Create a Block for each of the valves. SaveAs CE21EX1.

2. Titleblock Creation and Insertion

   Begin a New drawing. Create Layers named Tblk and Tblk_text. On layer Tblk draw a Rectangle 35"x23". Offset the rectangle to the inside by .125". Create a titleblock similar to the one shown in Figure CE21-2 in the lower right corner. Create a logo for your own company in the space indicated as “Logo.” Create a revision block in the lower left corner. SaveAs TBLK_D, and Close the drawing.

   Open the drawing CE16EX2 from the Chapter 16 Exercises. Activate a Layout and Insert the TBLK_D drawing into paper space. Create Viewports into model space on a new separate layer. There should be three viewports as shown in Figure CE21-3.
Use appropriate ZoomXP factors to achieve the scale of the plan view at $1/8''=1'\text{-}0''$ and the scale for the detail drawings at $1''=1'\text{-}0''$. SaveAs CE21EX2.

3. Pump Station Section

Begin a New drawing. Create the three steel sections shown in Figure CE21-4. Next, create Wblocks of the three steel sections. The names for the Wblocks should agree with the labels in the figure.

![Figure CE21-4](image)

L6x4x3/8  C8x11.5  L2x2x3/8

Draw the section through the pump station as shown in Figure CE21-5. Insert each of the Blocks you created several times to complete the drawing. Remember to use different Layers for the different features of the drawing. You do not need to add dimensions or text at this point. SaveAs PUMPSTA.

![Figure CE21-5](image)
4. Steel Framing

Open the drawing CE20EX4 from the Chapter 20 Exercises. Insert W6X15 and W10X15 into the drawing and use these Blocks to create the framing for the roof as shown in Figure CE21-6.

Activate a Layout and Insert TBLK_D. Create a Viewport as shown in Figure CE21-7. The scale for this view should be ¼”=1'-0’. SaveAs FRAMING.