

Placing Text, Data Fields and Tags



PROJECT EXERCISE

This project exercise provides step-by-step instructions for creating the circuit board drilling diagram and hole locations table shown in Figure P7-1. The project provides practice for placing and filling in Text Nodes and Data Fields, and for placing text elements.



Notes: Dimensions are shown in some of the instruction pictures in this project only as an aid to drawing the design, and are not drawn as part of this project.

As you complete each step in the project procedures, place a check mark by the step to help you keep up with where you are in the project.

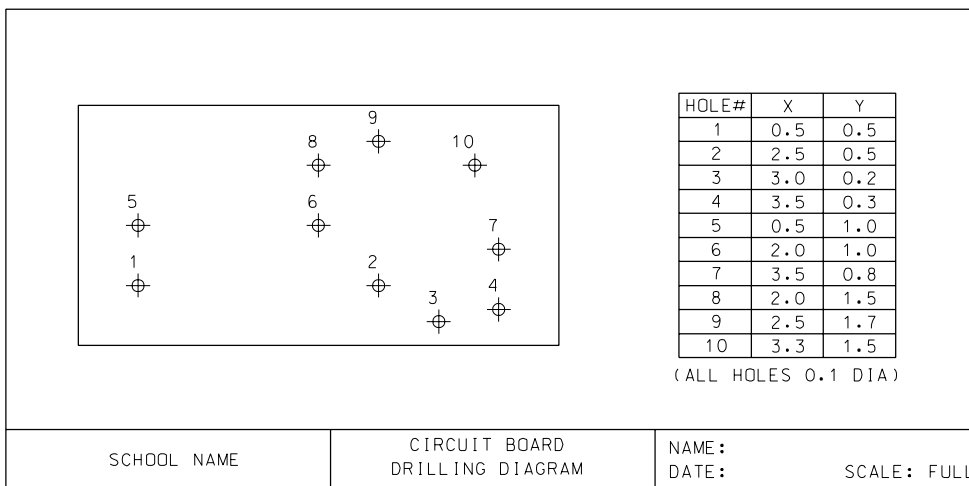


Figure P7-1 Completed project design

PREPARE THE DESIGN FILE

This procedure starts MicroStation, creates a design file and enters the initial settings.

- STEP 1:** Invoke MicroStation and create a new design file named CH7.DGN using the seed2d.dgn seed file.
- STEP 2:** In the Design File dialog box, set the **Working Units Master Unit** and **Sub Unit** to “Inches” and the **Coordinates Format** to **Master Units**.
- STEP 3:** If focus is not on View Window 1, focus on it by clicking the Data button on its title bar or border.
- STEP 4:** Select **Element > Text Style** and, in the Text Styles settings box, select **File > New**.
- STEP 5:** Click the **General** tab and enter the settings shown in Figure P7–2.

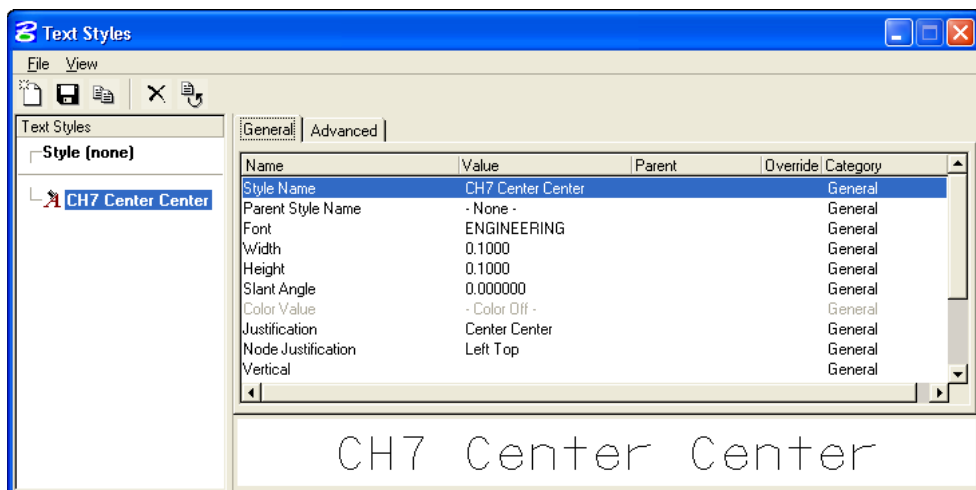


Figure P7–2 Initial Text settings

- STEP 6:** Select **File > Save** to save the new text style.
- STEP 7:** Create another text style. In the **Style Name** field, key-in **CH 7 Left Center**; in the **Parent Style Name** menu, select **CH 7 Center Center**; and in the **Justification** menu, select the **Left Center** option.



Note: Setting the CH 7 Center Center style as the parent of this new, child style causes the child to assume all the settings of the parent style.

- STEP 8:** Select **File > Save** to save the new text style.
- STEP 9:** In the **Text Styles** column on the left side of the Text Styles settings box, select **CH 7 Center Center** to make it the default text style for text placement.
- STEP 10:** Turn on AccuDraw.

STEP 11: Select **Settings > AccuDraw** to open the AccuDraw settings box and make the following AccuDraw setting on the three tabs:

- ▶ On the **Operation** tab, turn the **Auto Point Placement** check box OFF, and turn the other check boxes ON.
- ▶ On the **Display** tab, turn OFF the **Delayed Update** and **Show Negative Angles** check boxes and turn ON the **Pop-up Confirmations** check box.
- ▶ On the **Coordinates** tab, set the Coordinate System **Rotation** to **View** and the **Type** to **Rectangular**, lock the Unit Roundoff **Distance** at 0.1 inch, and turn ON the Indexing **Axis** and **Distance** check boxes.

STEP 12: Select **Settings > Snaps > AccuSnap** and, on the AccuDraw settings box **General** tab, turn the **Enable AccuSnap** check box ON.

STEP 13: Select **Settings > Level > Manager** and create the following level names:

- ▶ Border
- ▶ Object

STEP 14: Select File > Save Settings.

DRAW THE BORDER AND TITLE BLOCK

This procedure draws the border and title block.

STEP 1: Set the Active Level to Border, the Active Color to white (0), the Active Line Style to 0 (solid), and the Active Line Weight to 1.

STEP 2: Using Figure P7-3 as a guide, draw the border and title block.

STEP 3: Fit View Window I.

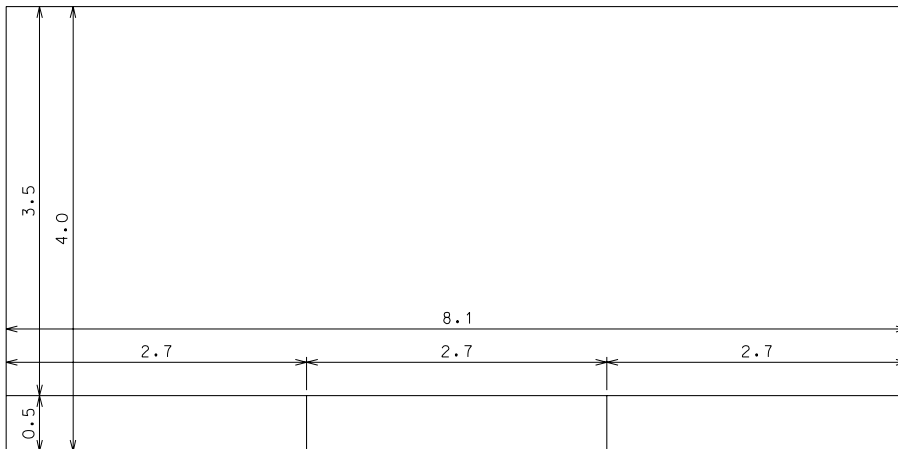


Figure P7-3 Dimensions for drawing the border and title block

PLACE TEXT NODES ON THE TITLE BLOCK

This procedure places empty Text Nodes in the title block area.

- STEP 1:** Select **Settings > View Attributes** to open the View Attributes settings box.
- STEP 2:** In the View Attributes settings box, turn the **Text Node** check box ON and click the **Apply** button to apply the settings to View Window 1.
- STEP 3:** Invoke the Place Text Node tool from the Task Navigator tool box (active task set to Text), and, in the Tool Settings window, set the **Active Angle** to 0 degrees.
- STEP 4:** Snap to the lower left corner of the border and press the **O** key to center the AccuDraw compass on the corner.
- STEP 5:** Place the first text node at an offset from the AccuDraw compass of $X = 1.35$ and $Y = 0.25$.
- STEP 6:** Place the second text node at an offset from the previous node of $X = 2.7$ and $Y = 0$.
- STEP 7:** Select **Elements > Text Styles** to open the Text Styles settings box, select **CH 7 Left Center** from the **Text Styles** column, and close the settings box.
- STEP 8:** Place the third text node at an offset from the previous node of $X = 1.45$ and $Y = 0.1$.
- STEP 9:** Place the fourth text node at an offset from the previous node of $X = 0.0$ and $Y = -0.2$
- STEP 10:** Select **Elements > Text Styles** to open the Text Styles settings box, select **CH 7 Center Center** from the **Text Styles** column, and close the settings box.
- STEP 11:** Place the fourth text node at an offset from the previous node of $X = 2.5$ and $Y = 0.0$.

The title block area of the design should now be similar to Figure P7–4 (note that the node numbers in your design may be different than those shown in the figure).



Figure P7–4 The Text Nodes in the title block area

PLACE TEXT NODES ON THE TITLE BLOCK

This procedure places text on each Text Node in the title block.

- STEP 1:** Select **Settings > Locks** and turn ON the **Text Node** lock in the submenu.
- STEP 2:** Invoke the Place Text tool, and, in the Tool Settings window, select the **By Origin Method**.
- STEP 3:** Type your school name in the Text Editor box (or make up a name).
- STEP 4:** After you type the text, click the Data button on the leftmost Text Node to tentatively place the school name on the node, and click the Data button a second time to place the text on the node (the text shown on the node is only a temporary image until you click the Data button a second time).
- STEP 5:** Click the Reset button to drop the image of the text from the pointer and clear the Text Editor box.
- STEP 6:** Using Figure P7-5 as a guide, place text on the other Text Nodes in the title block.
- ▶ Place your name to the right of “NAME:”
 - ▶ Place today’s date to the right of “DATE:”

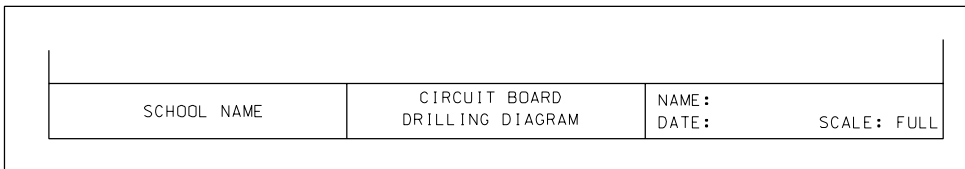


Figure P7-5 Title block text (shown with the Text Node view attribute OFF)

- STEP 7:** In the View Attributes dialog box, turn the **Text Node** attribute OFF and click the **Apply** button to apply the settings to View Window 1.
- STEP 8:** Select **Settings > Locks** and turn OFF the **Text Node** lock.
- STEP 9:** Select **File > Save Settings**.

DRAW THE CIRCUIT BOARD

This procedure draws the circuit board.

- STEP 1:** Set the Active Level to Object, the Line Weight to 1, and the Color to blue (1).
- STEP 2:** Using Figure P7-6 as a guide, use the Place Block tool to draw the circuit board.

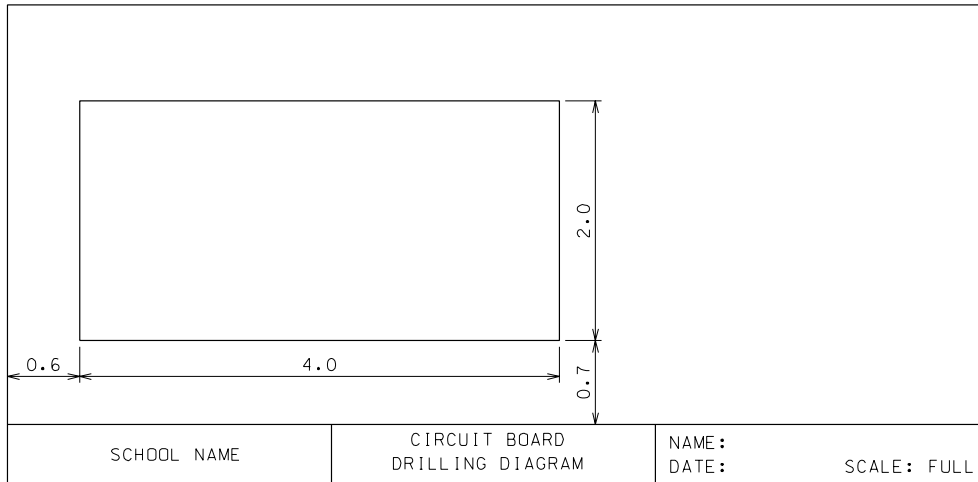


Figure P7-6 Circuit board dimensions

STEP 3: If View Window 2 is not open, open it.

STEP 4: In View Window 2, turn OFF the display of the Borders level (to hide the border and title block) and Fit the view.

STEP 5: Select File > Save Settings.

DRAW THE FIRST HOLE IN THE CIRCUIT BOARD

This procedure draws a symbol for circuit board hole number 1 and groups the hole elements to make them easy to copy when the other holes are placed on the circuit board.

STEP 1: Invoke the Place Circle tool Task Navigator tool box (active task set to Circles) and, in the Tool Settings window, select the **Center Method** and lock the **Diameter** to 0.1 inch.

STEP 2: Snap to the lower left corner of the circuit board and press the **O** key to center the AccuDraw compass on the keypoint.

STEP 3: Place the circle center at an offset from the compass of $X = 0.5$ and $Y = 0.5$.

STEP 4: Draw two lines through the center of the circle, as shown in Figure P7-7.

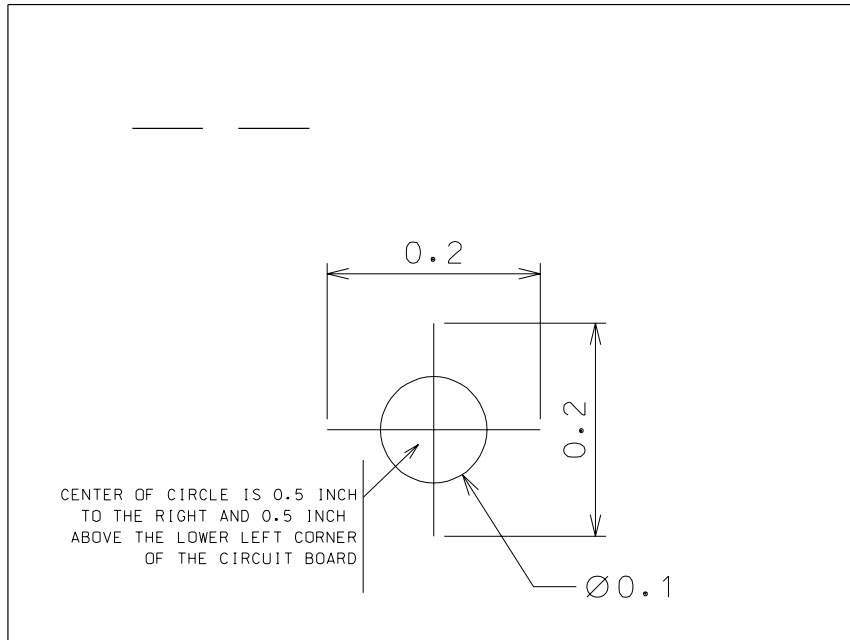


Figure P7-7 Dimensions of the first circuit board hole symbol

- STEP 5:** Invoke the Place Text tool and, in the Tool Settings window, select the **By Origin Method**.
- STEP 6:** Type two underscores (“__”) in the Text Editor box (to create a Data Field) and place the text string above and to the left of the circle, as shown in the top, left corner of Figure P7-7.
- STEP 7:** If the Key-in window is closed, open it.
- STEP 8:** In the Key-in window, type **justify right** ENTER, and then select and accept the Data Field to set right text justification within the field.
- STEP 9:** Use the Element Selection tool to select the circle, two lines, and Data Field that form the circuit board hole symbol.
- STEP 10:** Select **Edit > Group** to group the selected elements so they act like one element when copies are made to create the other holes.

PLACE THE REST OF THE HOLES IN THE CIRCUIT BOARD

This procedure makes copies of the circuit board hole group to place the other nine holes.

- STEP 1:** Select **Settings > AccuDraw** and, on the **Operation** tab of the AccuDraw Settings box, turn OFF the **Floating Origin** check box to keep the compass on the corner of the circuit board block while you place copies of the hole symbol.

- STEP 2:** Invoke the Copy tool from the Manipulations tool box and click the hole symbol group to select it.
- STEP 3:** Snap to the lower left corner of the circuit board block and press the **O** key to center the AccuDraw compass on the keypoint.
- STEP 4:** Place a hole symbol at an offset from the AccuDraw compass of X = 2.5 and Y = 0.5.
- STEP 5:** Using the hole positions table in Figure P7–8 as a guide, place the other eight holes on the circuit board. Figure P7–9 shows the completed circuit board.
- STEP 6:** In the AccuDraw settings box, turn ON the **Floating Origin** check box.
- STEP 7:** Select **File > Save Settings**.

HOLE#	X	Y
1	0.5	0.5
2	2.5	0.5
3	3.0	0.2
4	3.5	0.3
5	0.5	1.0
6	2.0	1.0
7	3.5	0.8
8	2.0	1.5
9	2.5	1.7
10	3.3	1.5

(ALL HOLES 0.1 DIA)

Figure P7–8 The hole positions table

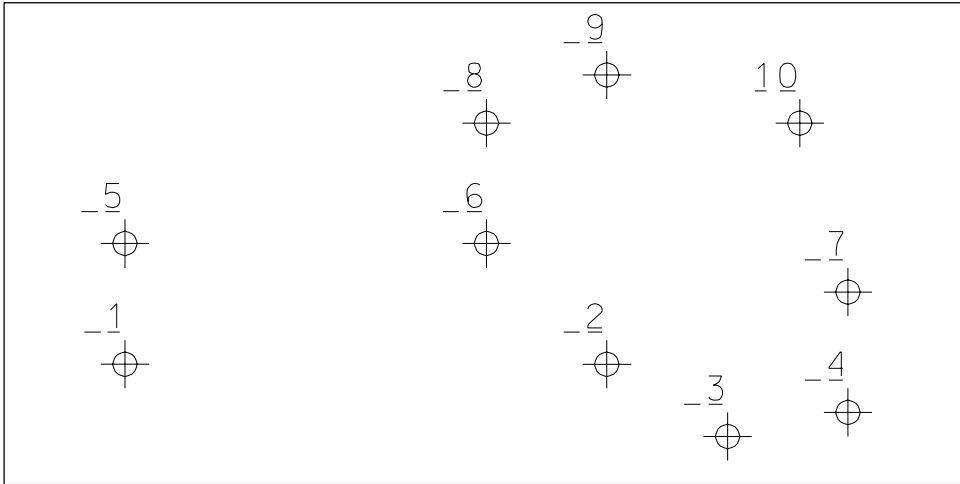


Figure P7-9 The hole symbols in the circuit board

FILL IN THE HOLE SYMBOL DATA FIELDS

This procedure places numbers in each of the hole symbol Enter Data Fields.

- STEP 1:** Invoke the Fill in Single Enter Data Field tool from the Task Navigator tool box (active task set to Text).
- STEP 2:** Select the first Data Field (refer to Figure P7-9 for the numeric order), type the number **1** in the Text Editor box, and press ENTER.
- STEP 3:** Invoke the Copy and Increment Enter Data Fields tool from the Task Navigator tool box (active task set to Text) and, in the Tool Settings window, set the **Tag Increment** to **1**.
- STEP 4:** Select the Data Field that contains the number **1** to tell the tool what number to increment.
- STEP 5:** Select each of the other hole Data Fields in numeric order and click one extra time to accept the last field.
- STEP 6:** Select **File > Save Settings**.

DRAW THE HOLE LOCATIONS TABLE

This procedure draws the hole locations table in View Window 3.

- STEP 1:** Turn on View Window 3, Fit the view, and set focus to it.
- STEP 2:** Using Figure P7-10 as a guide, draw the table outline block and grid lines.

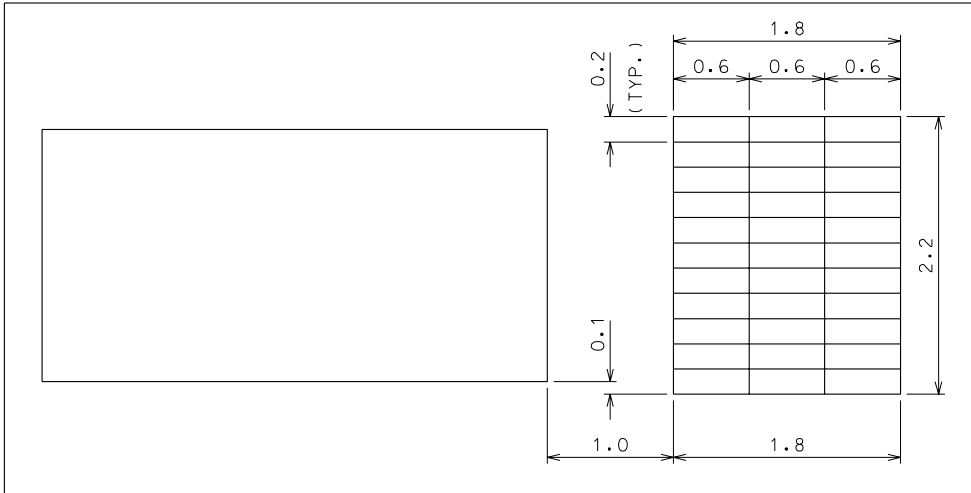


Figure P7-10 The hole locations table dimensions

STEP 3: Use the Window Area tool to fill the view with the hole locations table.

STEP 4: Invoke the Place Text tool and, in the Tool Settings window, select the **By Origin Method** and set the **Justification** to **Top Center**.

STEP 5: In the Text Editor box, key-in all the text for the left table column, as shown in Figure P7-11.

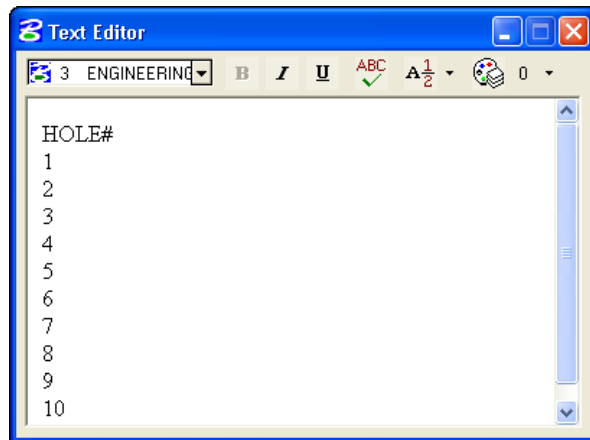


Figure P7-11 The Text Editor box containing the text for the first table column

STEP 6: Drag the text string to the top of the left table column, center it horizontally within the column, click the Data button to place it, and then click the Reset button to clear the Text Editor.

STEP 7: Using the same method as steps 5 and 6 (and Figure P7-11), place the text in the X and Y table columns.

STEP 8: Place the text string below the table, as shown in Figure P7-11.

PREPARE TO CLOSE THE DESIGN

This procedure checks the design for mistakes, compresses it, and saves the current settings.

STEP 1: Set focus to View Window 1, by clicking on its title bar or border.

STEP 2: Fit View Window 1.

STEP 3: Compare your design to Figure P7-1 and, if necessary, correct mistakes.

STEP 4: Select **File > Compress Design**.

STEP 5: Select **File > Save Settings**.



Note: Some companies have MicroStation set to automatically compress the design and save settings when design files are closed.

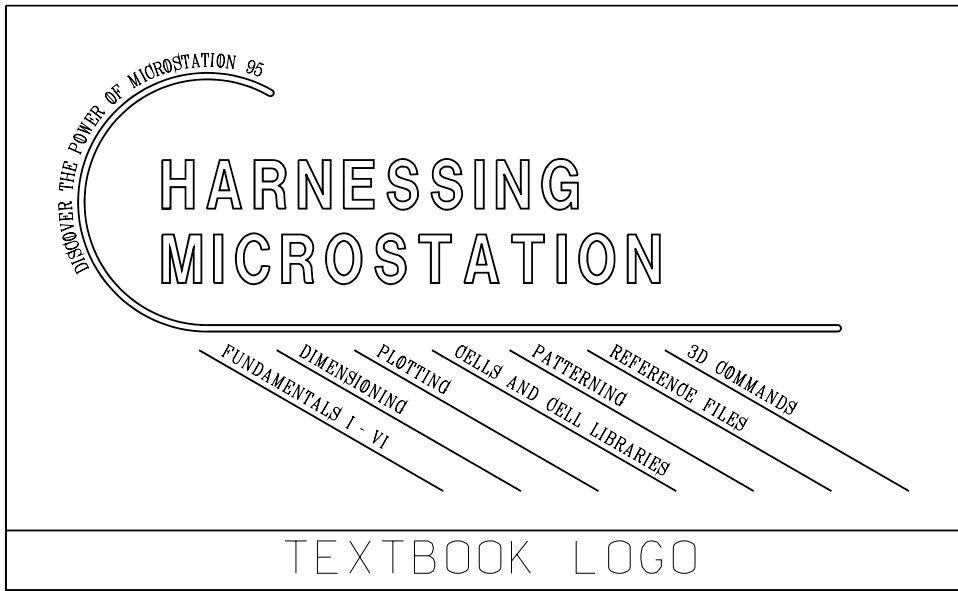
DRAWING EXERCISES 7-1 THROUGH 7-5

Use the following table to set up the design files for Exercises 7-1 and 7-2.

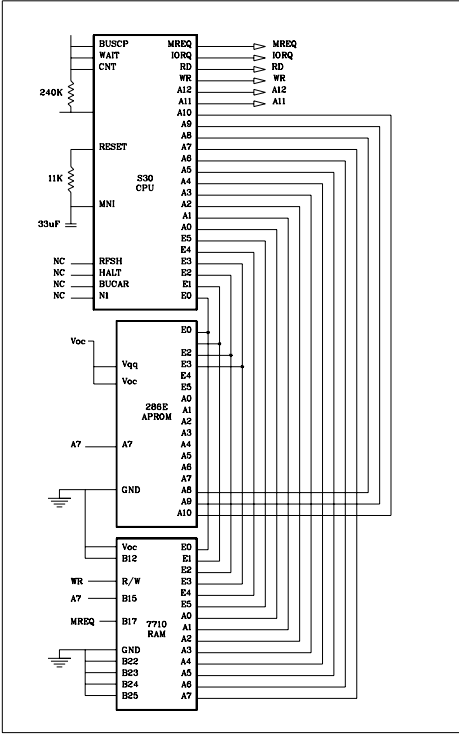
SETTING	VALUE
Seed File	seed2d.dgn
Working Units	Master Unit=Inches, Sub Unit=Inches
Grid	Grid Master = 0.1, Grid Reference = 10, Grid Lock ON

Exercise 7-1

TEXTBOOK LOGO



Exercise 7-2
TERMINAL STRIP



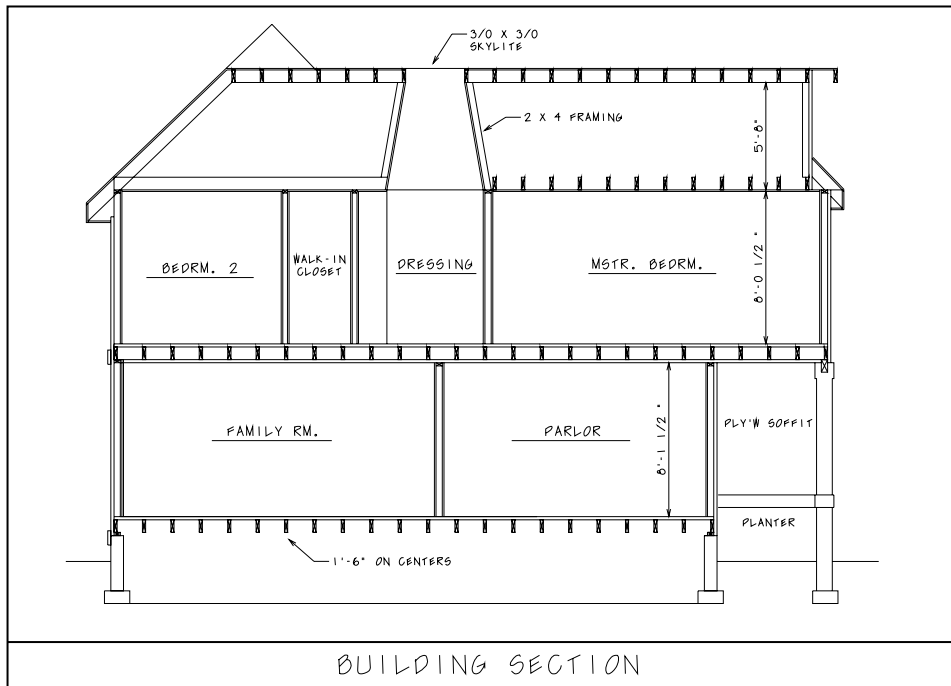
Use the following table to set up the design files for Exercises 7–3 through 7–5.

SETTING	VALUE
Seed File	seed2d.dgn
Working Units	Master Unit=Feet, Sub Unit=Inches
Grid	Grid Master = .5, Grid Reference = 24, Grid Lock ON

In Exercise 7–3, make your best estimate to determine the dimensions of the building section.

Exercise 7–3

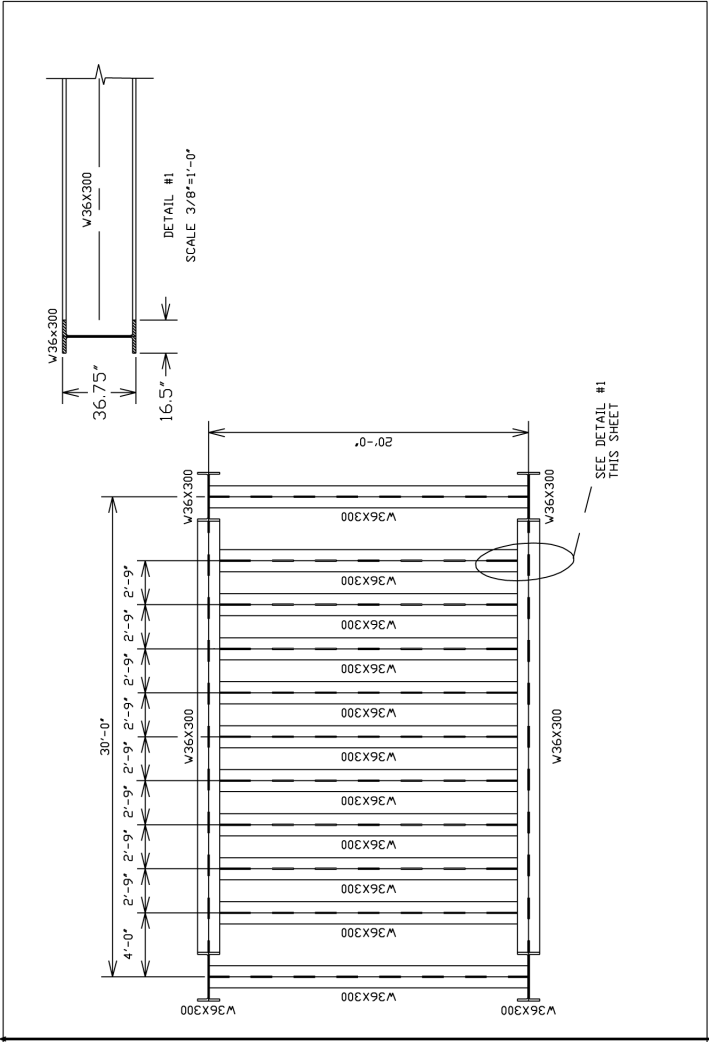
BUILDING SECTION



For Exercise 7–4, draw the structural plan and place the descriptive text. Do not draw the dimensions.

Exercise 7-4

STRUCTURAL STEEL PLAN



Exercise 7-5
SITE PLAN

