

# Sheet Composition using Models

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MicroStation® sheet models provide a flexible mechanism for setting up sheets intended to be plotted. This session will review how to set and change the plot scale, sheet size and other plot sheet settings. Based on excerpts from the **MicroStation Fundamentals** reference manual and **MicroStation V8 2004 Update** manual by ProSoft.



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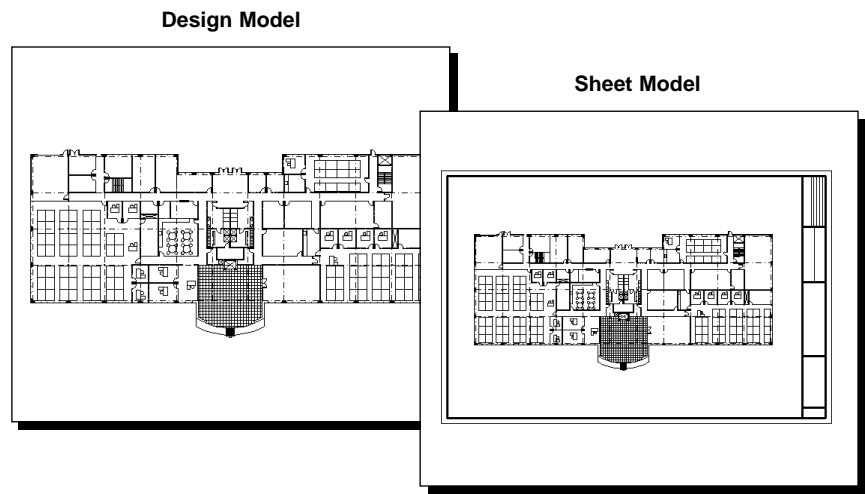
### What is a Model?

Simply put, a **model** is a container that stores a MicroStation drawing. A single design file can contain multiple models, which means that you can create more than one drawing in the same design file. Each model has its own set of views, view attributes and working units (feet, inches, meters, etc.) and can be viewed and edited individually. MicroStation's referencing feature allows you to create composite drawings by referencing a model to itself, to other models within the same design file or to models in different design files.

MicroStation supports two types of models: **design** models and **sheet** models. A design model is a working design in which you construct base geometry. A sheet model generally consists of one or more design models referenced together with a border to create a print-ready drawing sheet. Design models and sheet models improve MicroStation's compatibility with AutoCAD by simulating the Model Space and Paper Space working environments.

Models can be created in either a 2D or 3D format. When you create a new design file, a default model is created automatically. If you select a 2D seed file, the default model is a 2D model. If you select a 3D seed file, the default model is 3D. Both 2D and 3D models can be stored in the same design file, so regardless of the dimensions of the default model, you can create additional models as either 2D or 3D.

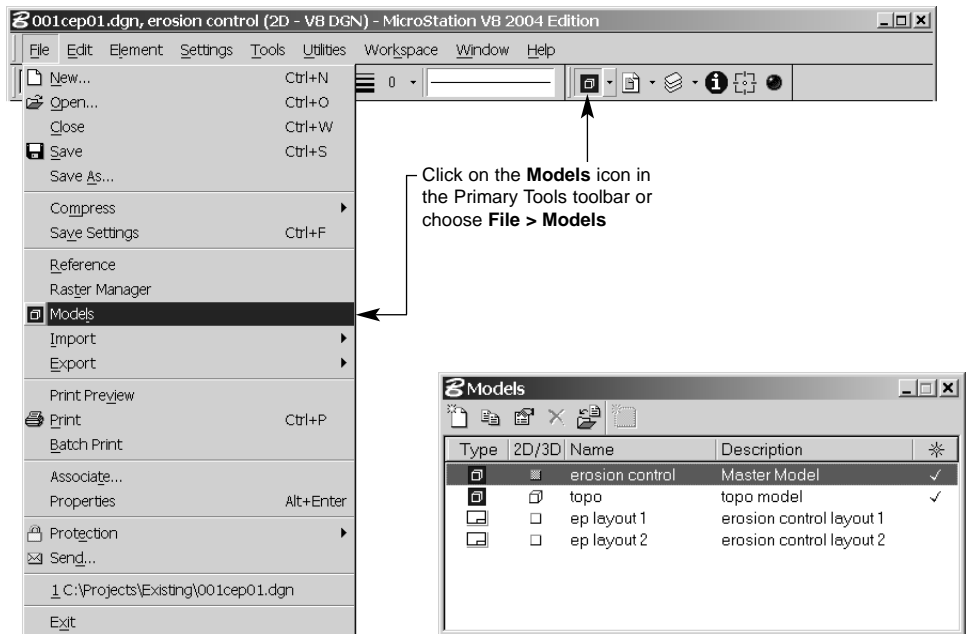
**Figure 1**  
Types of Models





If you do not see the **Models** tool in the Primary Tools toolbar, right-click on the toolbar and activate the **Models** check box in the menu that appears.

**Figure 2**  
Opening the Models Dialog Box



You can also activate a model by activating its view group.

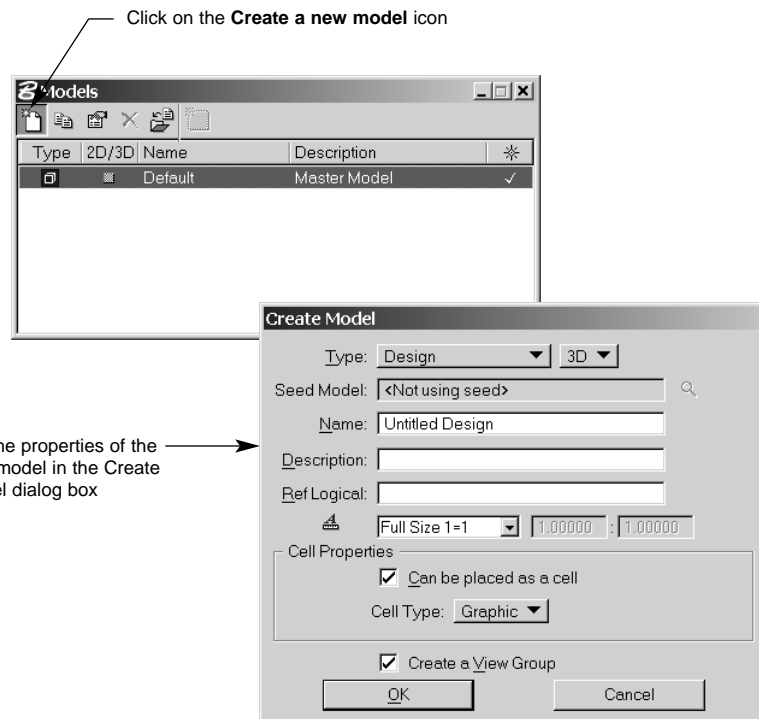
If you prefer, you can activate a model from the Key-in window with the **model active [model name]** key-in. If the model name includes spaces, you must enclose the name in quotes (e.g. **model active "1st floor"**).

### Creating Models

New models can be created in the Models dialog box shown in the figure below. To create a new model, click on the **Create a new model** icon at the top of the dialog box. The Create Model dialog box appears, where you can define the properties of the model, including the type of model (design or sheet), the model dimensions (2D or 3D) and the model name and description. You can also specify whether or not the model can be placed as a cell and whether or not a view group will be created for the model.

The working units assigned to a new model depend on the option you select from the **Type** option menu. If you choose **Design** or **Sheet**, the new model will be created with the same working units as the active model. For example, if the active model is based on feet and inches, the new model will also have working units defined as feet and inches. If you choose **Design From Seed** or **Sheet From Seed**, the new model is created with the same working units, view groups and view attributes as the seed model you select. Seed models can be selected from the active design file or from a different file.

**Figure 3**  
Creating a Model



When you use a seed model, the **2D/3D** option menu and **Cell Properties** options are dimmed in the Create Model dialog box, because these options are inherited from the selected seed model.

#### **2D/3D**

Sets the dimensions of the new model to either 2D or 3D. This option will be dimmed if the **Type** option menu is set to **Design From Seed** or **Sheet From Seed**, in which case the dimensions of the new model will be determined by the seed model you select.

#### **Annotation Scale**

Contains scale factors for the model to assist with text, dimension and sheet scaling for printing purposes. Choices include a list of common scales and a **CUSTOM** option to define your own scale. If you choose **CUSTOM**, the scale ratio can be input manually.

#### **Can be placed as a cell**

If activated, the new model can be placed as a cell with the cell placement tools.

## Sheet Composition using Models

### **Cell Type**

Specifies the type of cell that will be created when the model is placed as a cell. Options include **Graphic** and **Point**. This option is only available when the **Can be placed as a cell** check box is activated.

### **Change Seed Model**

Opens the Select File Containing Seed Model dialog box, from which you can select the design file that contains the seed model you wish to use. After you select a design file, the Select Models dialog box appears, from which you can select a seed model stored in the selected design file.

### **Create a View Group**

If activated, a view group will be created for the new model. A view group stores the orientation and magnification of the eight view windows associated with the model.

### **Description**

Specifies a description for the new model.

### **Display Sheet Layout**

If activated, a transient sheet element will display in the sheet model.

### **Name**

Specifies a name for the new model.

### **Origin**

Specifies the origin (in coordinates) of the sheet.

### **Ref Logical**

Predefines the Reference Logical name for the model for use when it is attached to another model as a reference.

### **Rotation**

Specifies the sheet's angle of rotation measured in degrees counter-clockwise from the x-axis (horizontal).

### **Seed Model**

Specifies the seed model that will be used when the **Type** option menu is set to **Design From Seed** or **Sheet From Seed**. You can select a different seed model by clicking the **Change Seed Model** button, which looks like a magnifying glass.

### **Sheet Properties**

This section includes options for setting a sheet's size, origin, and rotation as well as its display status. Sheet Properties are only applicable to sheet models.

### **Size**

Contains sheet sizes to define the height and width of the sheet. Choices include a list of common sheet sizes and a **CUSTOM** option to define your own size. If you choose **CUSTOM**, the height and width can be input manually.

### **Type**

Specifies the type of model to create. **Design** creates a design model with the same working units as the active model. **Sheet** creates a sheet model with the same working units as the active model. **Design From Seed** creates a design model based on a seed design model you select. **Sheet From Seed** creates a sheet model based on a seed sheet model you select.



### To create a model based on the working units of the active model:

1. Choose **File > Models** from the MicroStation menu bar to open the Models dialog box.
2. Click on the **Create a new model** icon in the Models dialog box. The Create Model dialog box appears.
3. Set the **Type** option menu to either **Design** or **Sheet**.
4. Specify whether you want the model to be **2D** or **3D** from the option menu on the right.
5. Enter a name for the new model in the **Name** field.
6. Enter a description in the **Description** field.
7. OPTIONAL: Enter a logical name in the **Ref Logical** field.
8. OPTIONAL: Set the **Annotation Scale** option if you wish to scale your text and/or sheet.
9. OPTIONAL: If you set the **Type** option menu to **Sheet** in Step 3, activate the **Display Sheet Layout** check box and set the remaining sheet properties.
10. OPTIONAL: Activate the **Create a View Group** check box if you want MicroStation to create a view group for the new model.
11. OPTIONAL: In the **Cell Properties** section of the dialog box, activate the **Can be placed as a cell** check box if you wish to be able to place the model as a cell and specify a cell type (**Graphic** or **Point**) from the **Cell Type** option menu.
12. Click the **OK** button to create the model. The new model inherits the working units of the model that is active at the time it is created.



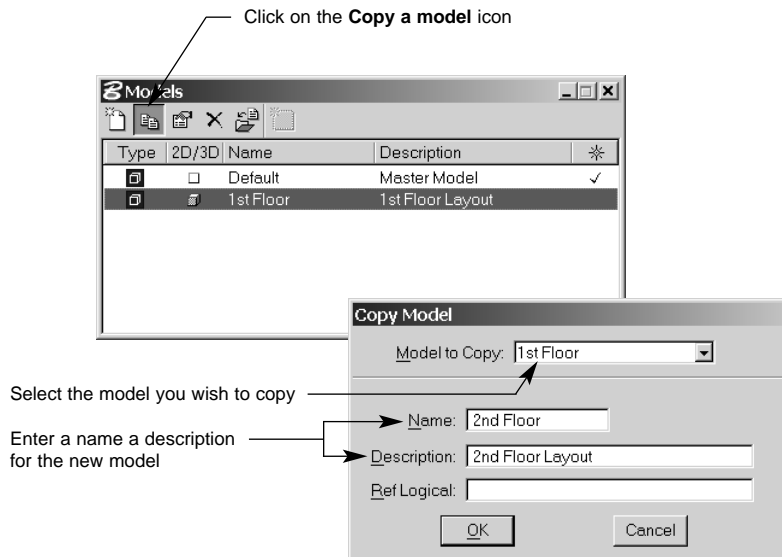
### To create a model from a seed model:

1. Choose **File > Models** from the MicroStation menu bar to open the Models dialog box.
2. Click on the **Create a new model** icon in the Models dialog box. The Create Model dialog box appears.
3. Set the **Type** option menu to either **Design From Seed** or **Sheet From Seed**.
4. If the seed model you wish to use is not listed in the **Seed Model** field, click the **Change Seed Model** button (the one that looks like a magnifying glass). The Select File Containing Seed Model dialog box appears.
5. Select the design file containing the seed model you wish to use, and click the **OK** button. The Select Models dialog box appears with a list of models in the design file you selected.
6. Select a seed model from the list in the Select Models dialog box, and click the **OK** button.
7. In the Create Model dialog box, enter a name for the new model in the **Name** field.
8. Enter a description in the **Description** field.
9. OPTIONAL: Enter a logical name in the **Ref Logical** field.
10. OPTIONAL: Set the **Annotation Scale** option if you wish to scale your text and/or sheet.
11. OPTIONAL: If you set the **Type** option menu to **Sheet** in Step 3, activate the **Display Sheet Layout** check box and set the remaining sheet properties.
12. OPTIONAL: Activate the **Create a View Group** check box if you want MicroStation to create a view group for the new model.
13. Click the **OK** button to create the model. The new model inherits the working units, view groups and view attributes of the seed model.

### Copying Models

You can create a copy of an existing model in the active design file by clicking on the **Copy a model** icon in the Models dialog box. The Copy Model dialog box appears, where you can select the model you wish to copy and assign a name, description, and reference logical, where you can select the model you wish to copy and assign a name, description, and reference logical name to the new model. The new model inherits all of the settings and geometry of the existing model.

**Figure 4**  
Copying a Model



#### **Description**

Specifies a description for the new model.

#### **Model to Copy**

Specifies the name of a model in the active design file that will be copied to create the new model.

#### **Name**

Specifies a name for the new model.

#### **Ref Logical**

Predefines the Reference Logical name for the model for use when it is attached to another model as a reference.



#### **To copy a model:**

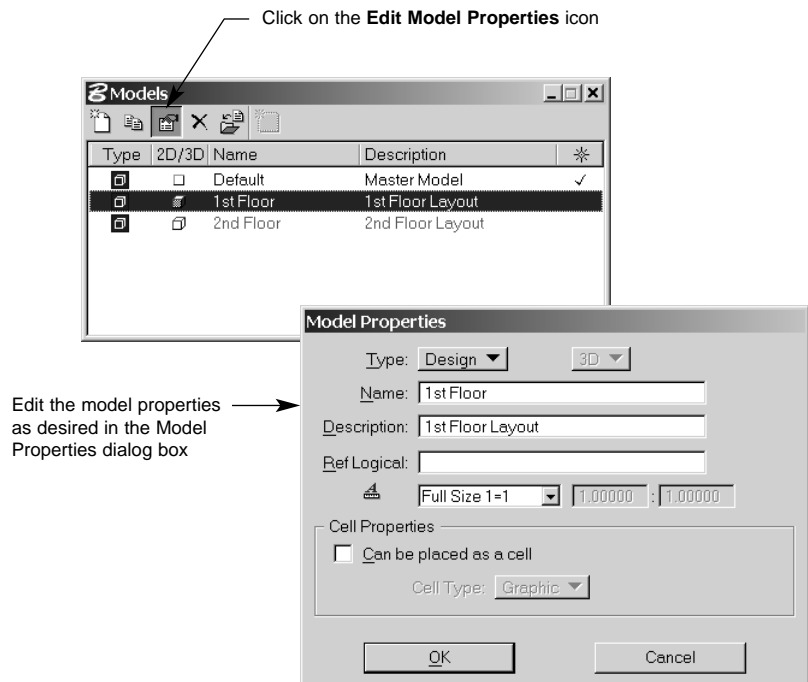
1. Choose **File > Models** from the MicroStation menu bar to open the Models dialog box.
2. Click on the **Copy a model** icon in the Models dialog box. The Copy Model dialog box appears.
3. Select the model you wish to copy in the **Model to Copy** drop-down menu.
4. Enter a name for the new model in the **Name** field.
5. Enter a description in the **Description** field.
6. **OPTIONAL:** Enter a logical name in the **Ref Logical** field.
7. Click the **OK** button to create the copy.

### Editing Model Properties

You can edit the properties of an existing model by selecting it in the Models dialog box and clicking on the **Edit Model Properties** icon. The Model Properties dialog box appears, where you can modify the model type (design or sheet), change the model name, description, reference logical name and specify whether or not the model can be placed as a cell. You can also adjust the annotation scale and sheet properties.

The settings in the Model Properties dialog box are similar to those found in the Create Model dialog box.

**Figure 5**  
Editing Model Properties



#### To edit the properties of an existing model:

1. Choose **File > Models** from the MicroStation menu bar to open the Models dialog box.
2. Select the model you wish to edit from the list in the Models dialog box.
3. Click on the **Edit Model Properties** icon in the Models dialog box. The Model Properties dialog box appears.
4. Edit the model properties as desired.
5. Click the **OK** button to activate the changes.

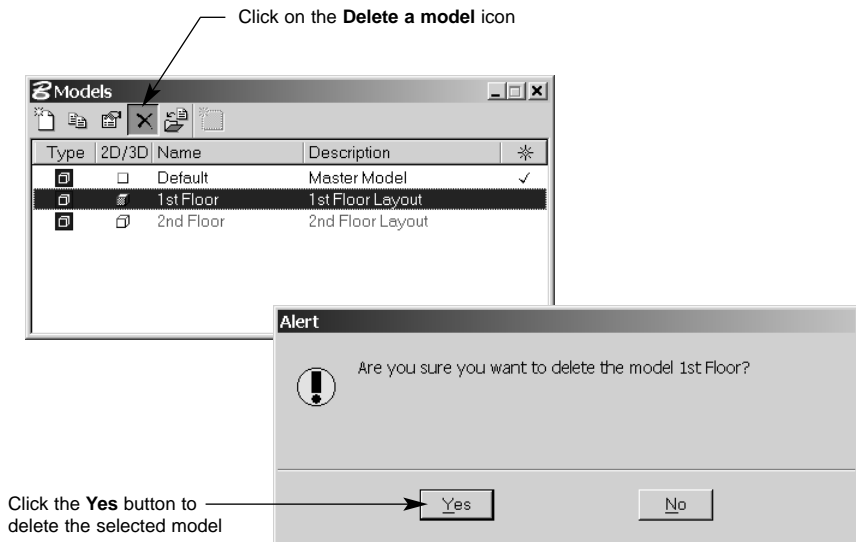


When you create a new design file, a default model is created automatically. MicroStation will not allow you to delete the default model.

**Figure 6**  
Deleting a Model

### Deleting Models

You can delete models from the active design file by selecting the models you wish to delete in the Models dialog box and clicking the **Delete a model** icon. An alert box appears, asking if you are sure you wish to delete the selected model(s). Click the **Yes** button to confirm the deletion.



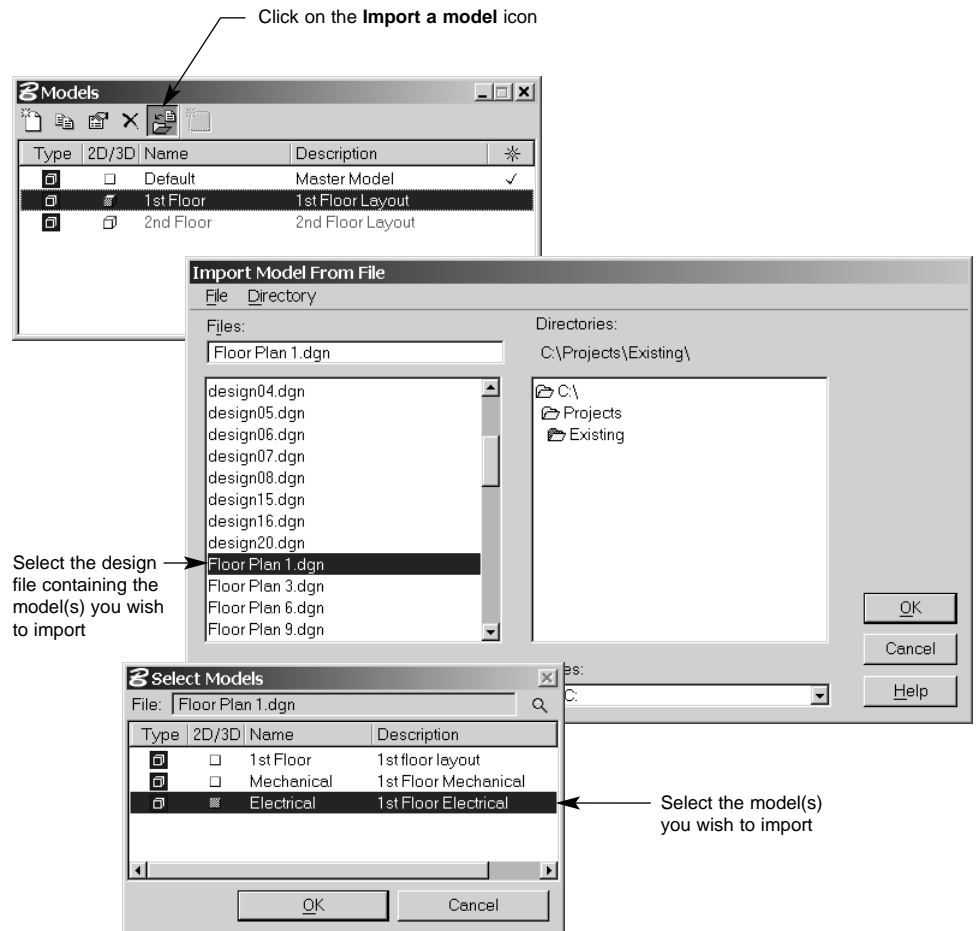
#### To delete a model:

1. Choose **File > Models** from the MicroStation menu bar to open the Models dialog box.
2. Select the model(s) you wish to delete from the list in the Models dialog box.
3. Click on the **Delete a model** icon in the Models dialog box. An alert box appears, asking if you are sure you wish to delete the selected model(s).
4. Click the **Yes** button to confirm the deletion.

### Importing Models

MicroStation allows you to import models from other design files into the active design file. To import a model, click on the **Import a model** icon in the Models dialog box. The Import Model From File dialog box appears, where you can select the design file containing the model you wish to import. After you select a design file, the Select Models dialog box appears, where you can select the model to import.

**Figure 7**  
Importing a Model



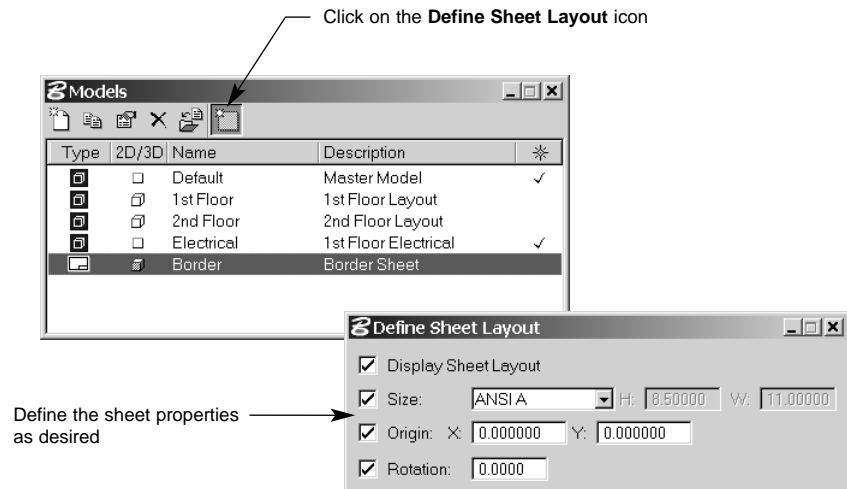
#### To import a model:

1. Choose **File > Models** from the MicroStation menu bar to open the Models dialog box.
2. Click on the **Import a model** icon in the Models dialog box. The Import Model From File dialog box appears.
3. Select the design file containing the model(s) you wish to import, and click the **OK** button. The Select Models dialog box appears.
4. Select the model(s) you wish to import, and click the **OK** button.

### Defining the Sheet Layout

MicroStation allows you to set up sheets by defining sheet layouts to help you create a print-ready drawing sheet. A transient sheet element can display in the drawing that adjusts according to the settings of the sheet layout dialog box (properties). Sheet layouts are only applicable to **sheet models**. To define a sheet layout, click on the **Define Sheet Layout** icon in the Models dialog box. The Define Sheet Layout dialog box appears where you can define the sheet properties including display, size, origin, and rotation.

**Figure 8**  
Defining the Sheet Layout



#### To define a sheet layout:

1. Choose **File > Models** from the MicroStation menu bar to open the Models dialog box.
2. Select the sheet model(s) you wish to edit from the list in the Models dialog box.
3. Click on the **Define Sheet Layout** icon in the Models dialog box. The Define Sheet Layout dialog box appears.
4. Edit the sheet properties as desired.
5. Click a data point in the view to accept the sheet layout definition.