LEARNING OBJECTIVES

After completing this lesson, you will be able to:

1. Understand the difference between Model and Layout tabs
2. Create Viewports
3. Create a Page Setup
4. Create a Plot Page Setup
5. Create a Decimal Setup Master template
6. Create a new Border
7. Experiment with multiple viewports

LESSON 26

SERIOUS BUSINESS

In the previous lessons you have been having fun learning most of the basic commands that AutoCAD offers and you have been using a template that included preset layers and drawing settings etc. But now it is time to get down to the "serious business" of setting up your own drawing from "scratch".

Starting from scratch means you will need to set or create the following:

Items 1 through 5 you have learned in previous lessons

1. Drawing Units (Lesson 4)
2. Snap and Grid (Lesson 2)
3. Create Text styles (Lesson 25)
4. Create Dimension Styles (Lesson 16)
5. Create new layers and load linetypes.

Items 6 through 9 will be learned in this lesson

6. Create a "Layout" for plotting.
7. Create a "Floating Viewport" in the Layout.
8. Create a "Page Setup" to save plot settings.
9. Plot the drawing from Paper space.

After reading pages 26-3 through 26-22 start Exercise 26A and work your way through to 26D. When you have completed Exercise 26E you will have created a master template named, "**My Decimal Setup**". This master template will have everything set, created and prepared, ready to use each time you want to create a drawing using decimal units and to be plotted on an 8-1/2 X 11 inch sheet.

This means, for future drawings you merely select **File / New** and "**My Decimal Setup.dwt**" and start drawing. No time consuming setups. It is all ready to go.

In Lesson 27 you will create a master template for "feet and inches".

So take it one page at a time and really concentrate on understanding the process.

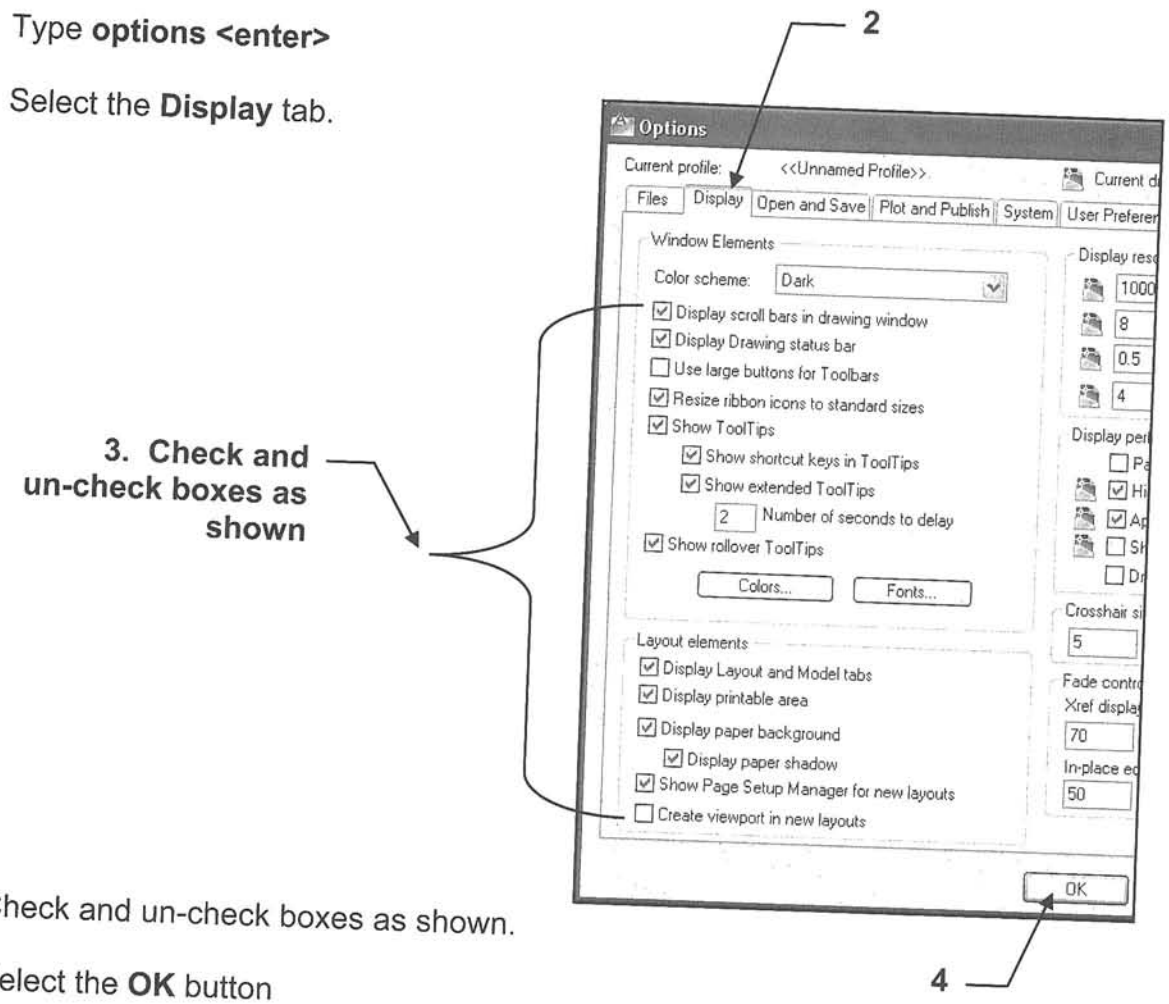
Note:
I am using sheet size 8-1/2 X 11 so you may print the exercises on your printer. After you understand the page setup concept you will be able to assign a larger sheet size to conform to any large format printer that you may use in the future.

MODEL and LAYOUT OPTIONS

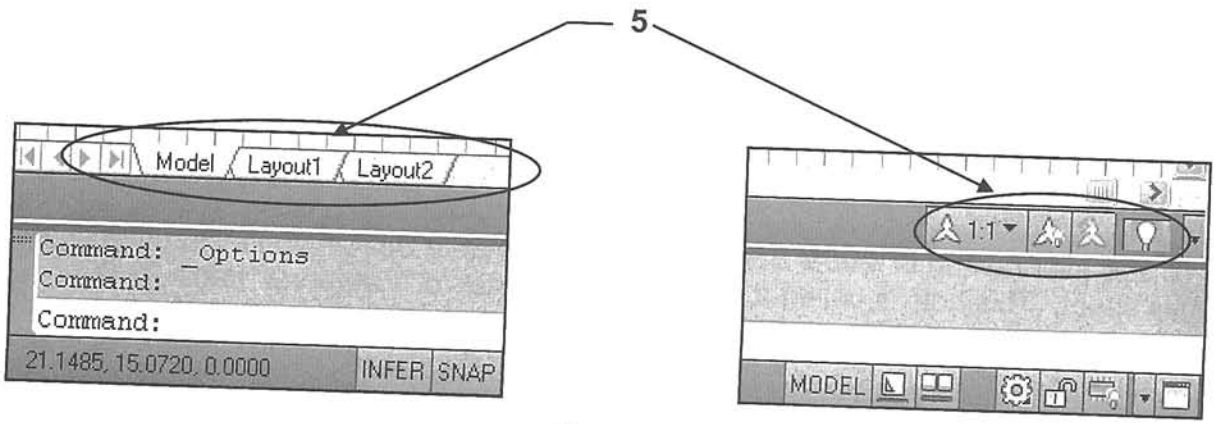
Very important:
Before I discuss Model and Layout I need you to confirm ***Model and Layout tabs*** *are displayed.*

This will just take a minute.

1. Type **options <enter>**
2. Select the **Display** tab.



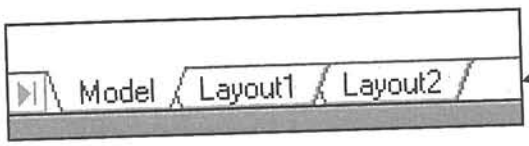
3. Check and un-check boxes as shown.
4. Select the **OK** button
5. The lower left corner of the drawing area should display the 3 tabs Model, Layout1 and Layout2 and a few tools should be displayed in the lower right corner above the command line.



MODEL and LAYOUT tabs

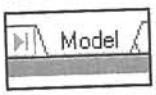
Read this information carefully. It is very important that you understand this concept. More information on the following pages.

AutoCAD provides two drawing spaces, **MODEL** and **LAYOUT**. You move into one or the other by selecting either the MODEL or LAYOUT tabs, located at the bottom left of the drawing area. (If you do not have these displayed follow the instructions on the previous page.)



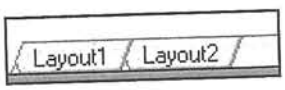
Refer to 26-3 if you do not have these.

Model Tab (Also called ***Model Space***)



When you select the Model tab you enter MODEL SPACE.
(This is where you have been drawing and plotting from for the last 25 lessons)
Model Space is where you **create** and **modify** your drawings.

Layout Tabs (Also called ***Paper Space***)



When you select a Layout tab you enter PAPER SPACE.
The primary function of Paper Space is to **prepare the drawing for plotting.**

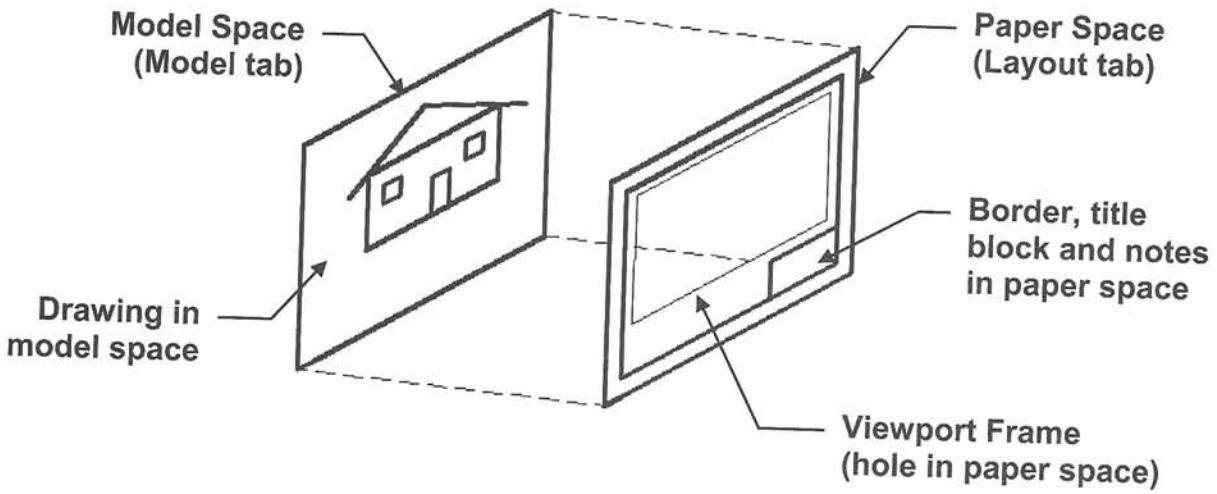
When you select the Layout tab for the first time, the "Page Setup Manager" dialog box will appear. The Page Setup Manager allows you to specify the printing device and paper size to use.
(More information on this in "How to create a Page Setup" page 26-13)

When you select a Layout tab, Model Space will seem to have disappeared, and a blank sheet of paper is displayed on the screen. This sheet of paper is basically in front of the Model Space. (Refer to the illustration on the next page)

To see the drawing in Model Space, while still in Paper Space, you must cut a hole in this sheet. This hole is called a **"Viewport"**. *(Refer to "Viewports" page 26-6.)*

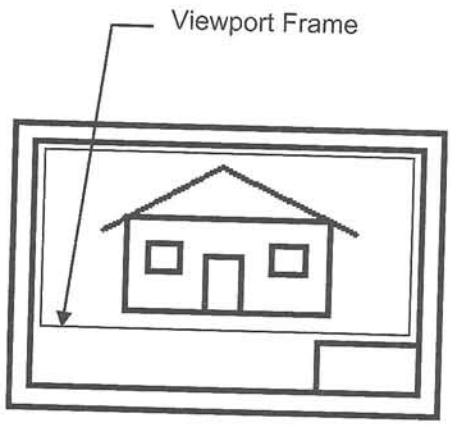
MODEL and LAYOUT tabs....continued

Try to think of this as a picture frame (paper space) in front of a photograph (model space).



This is what you see when you select the Model tab.

You see only model space.



This is what you see when you select the Layout1 tab with a viewport.

You see through the Viewport to Model Space.

Now hold this thought.....more explanation coming on the next few pages.

VIEWPORTS

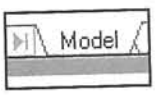
Note: This is just the concept to get you thinking. The actual step-by-step instructions will follow in the exercises.

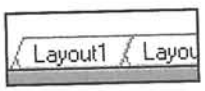
Viewports are only used in Paper Space (Layout tab).
Viewports are holes cut into the sheet of paper displayed on the screen in Paper Space.
Viewports frames are objects. They can be moved, stretched, scaled, copied and erased. You can have multiple Viewports, and their size and shape can vary.

Note: It is considered good drawing management to create a layer for the Viewport "frames" to reside on. This will allow you to control them separately; such as setting the viewport layer to "No plot" so it will not be plot.

HOW TO CREATE A VIEWPORT

1. First, create a drawing in Model Space (Model tab) and save it.

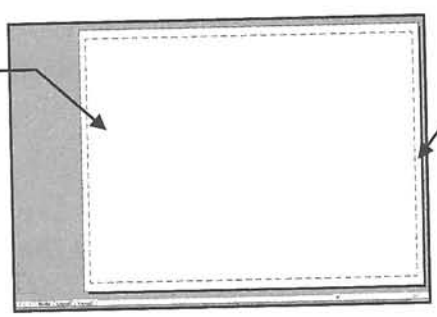


2. Select the "Layout1" tab. 

   When the "**Page Setup Manager**" dialog box appears, select the **New** button. Then you will select the Printing device and paper size to plot on.
   (Refer to "How to Create a Page setup" on page 26-13.)

3. You are now in Paper Space. Model Space appears to have disappeared, because a blank paper is now in front of Model Space, preventing you from seeing your drawing. You designated the size of this sheet in the "page setup" mentioned in #2 above. (The Border, title block and notes will be drawn on this paper.)

You designated the size of this sheet in the Page setup

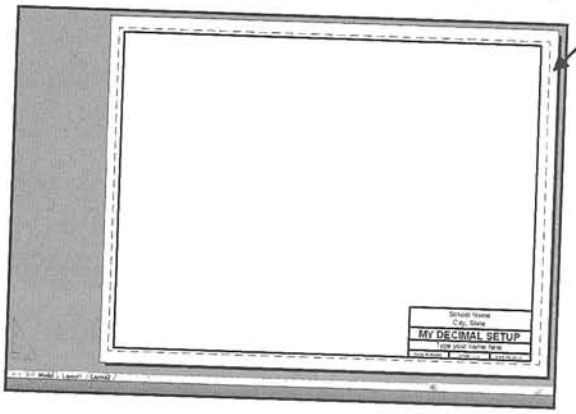


The dashed line represents the printing limits for the printer that you selected in the Page setup.

Continued on the next page...

VIEWPORTS....continued

4. Draw a border, title block and notes in Paper Space (Layout)



Keep all objects inside the dashed area. Any objects outside of the dashed lines will not print.

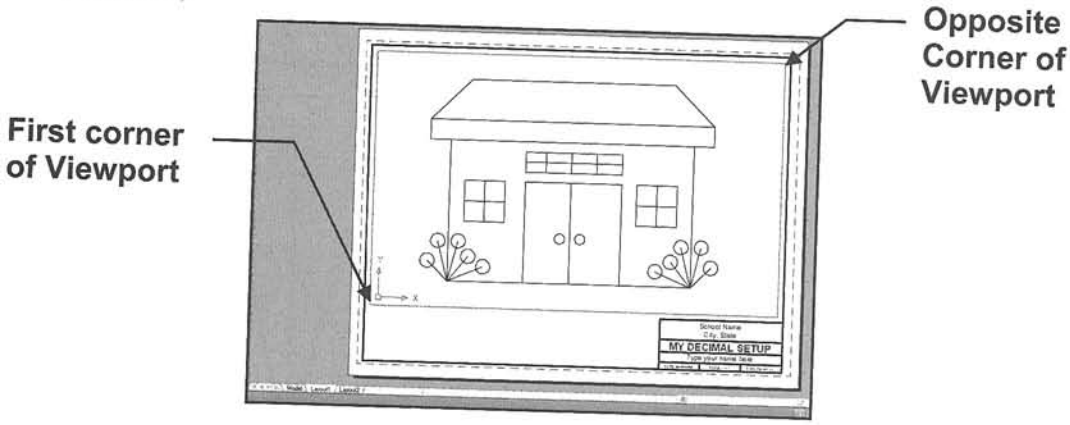
Now you will want to see the drawing that is in Model Space.

5. Select layer "**Viewport**" (You want the viewport frame to be on layer viewport)

6. Select the Viewport command using one of the following:

Ribbon = Layout tab / Layout Viewports panel /
or
Keyboard = MV <enter>

7. Draw a rectangular shaped Viewport "frame" by placing the location for the "first corner" and then the "opposite corner" using the cursor. (Similar to drawing a Rectangle, but **do not** use the Rectangle command. You must remain in the MV command)



You should now be able to look through the Paper Space sheet to Model Space and see your drawing because you just cut a rectangular shaped hole in the sheet.

Note: Now you may go back to Model Space or return to Paper Space, simply by selecting the tabs, model or layout.
(Make sure your grids are ON in Model Space and OFF in Paper Space. Otherwise you will have double grids)

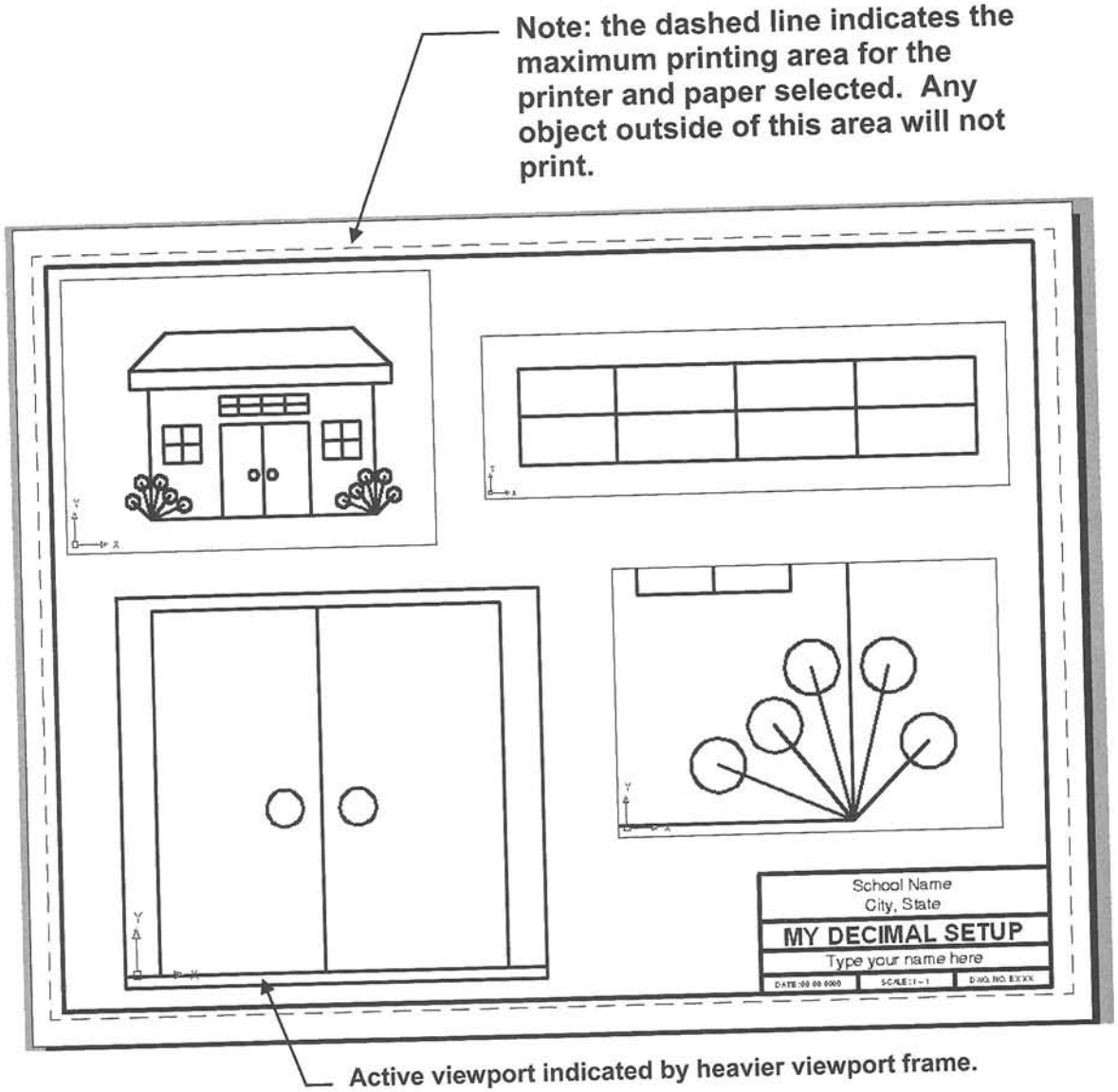
WHY LAYOUTS ARE USEFUL

I know you are probably wondering why you should bother with Layouts.
A Layout (Paper Space) is a great method to manipulate your drawing for plotting.

Notice the drawing below with multiple viewports.

Each viewport is a hole in the paper.
You can see through each viewport (hole) to model space.

Using Zoom and Pan you can manipulate the display of model space in each viewport.
To manipulate the display you must be inside the viewport.
Refer to the next page for instructions on how to achieve this.



HOW TO REACH INTO A VIEWPORT

Here are the rules:

1. You have to be in Paper Space (layout tab) and at least one viewport must have been created.

2. You have to be inside a Viewport to manipulate the scale or position of the drawing that you see in that Viewport.

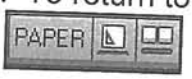
How to reach into a viewport to manipulate the display.

First, select a layout tab and cut a viewport

At the bottom right of the screen on the status bar there is a button that either says Model or Paper. This button displays which space you are in currently. 

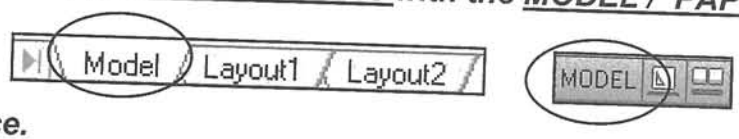
When the button is PAPER you are working on the Paper sheet that is in front of Model Space. (Refer to the illustration on page 26 - 5)
You may cut a viewport, draw border, title block and place notes.

If you want to reach into a viewport to manipulate the display, double click inside of the viewport frame. Only one viewport can be activated at one time. The active viewport is indicated by a heavier viewport frame. (Refer to the illustration on the previous page. The viewport displaying the doors is active).
Also, the Paper button changed to Model. 

While you are inside a viewport you may manipulate the scale and position of the drawing displayed. To return to the Paper surface click on the word Model and it will change to Paper 

You may now work on the paper surface.

Note: Do not confuse the Model / Layout tabs with the MODEL / PAPER button .



Here is the difference.

The **Model / Layout tabs** shuffle you from the actual drawing area (model space) to the Layout area (paper space). It is sort of like if you had 2 stacked pieces of paper and when you select the Model tab the drawing would come to the front and you could not see the layout. When you select the Layout tab a blank sheet would come to the front and you would not see model space.....unless you have a viewport cut.

The **MODEL / PAPER button** allows you to work in model space or paper space without leaving the layout tab. No flipping of sheets. You are either on the paper surface or in the viewport reaching through to model space.

Don't worry it will get easier. This is the concept....but it will get more clear when you have completed the exercises in this lesson.

PAN

After you zoom in and out or adjust the scale of a viewport the drawing within the viewport frame may not be positioned as you would like it. This is where **PAN** comes in handy. **PAN** will allow you to move the drawing around, within the viewport, without affecting the size or scale.

Note: Do not use the MOVE command. You do not want to actually move the original drawing. You only want to slide the viewport image, of the original drawing, around within the viewport.

How to use the PAN command.

1. Select a layout tab (paper space)
2. Unlock the viewport if it is locked. (Refer to page 26-12)
3. Click inside a viewport.
4. Select the **PAN** command using one of the following:

   Ribbon = View tab / Navigate 2D panel / 

   or
   Keyboard = P <enter>
   or
   Navigation Bar =  **(turned off on page 1-17)**

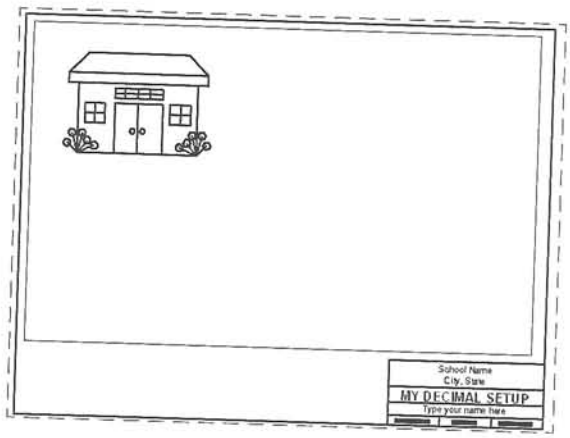
   (Consider adding the PAN tool to the Quick Access tool bar. See page 1-9)

5. Place the cursor inside the viewport and hold the left mouse button down while moving the cursor. (Click and drag) When the drawing is in the desired location release the mouse button.
6. Lock the viewport.
   (Refer to page 26-12)

Refer to the Example on the next page.

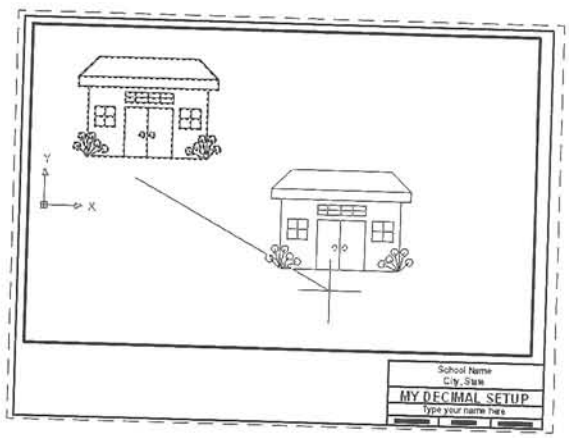
PAN....continued

Before PAN

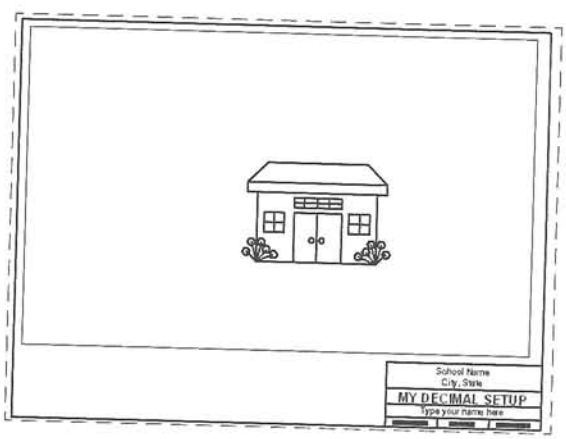


Double Click in the viewport to activate it.

Use PAN (Click, Drag, Release)



After PAN



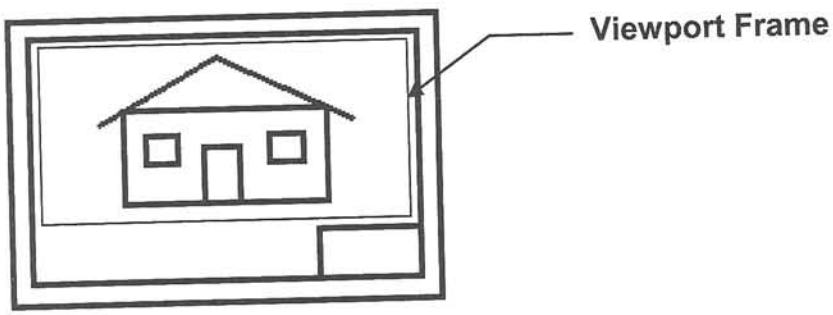
HOW TO LOCK A VIEWPORT

After you have manipulated the drawing within each viewport, to suit your display needs, you will want to **LOCK** the viewport so the display can't be changed accidentally. Then you may zoom in and out and you will not disturb the display.

Note:
Accurately adjusting the scale of a viewport will be discussed in detail in Lesson 27 .

1. Make sure you are in **Paper Space**.

2. Click once on a **Viewport Frame.**



3. Click on the **Open Lock tool** located in the lower right corner of drawing area.

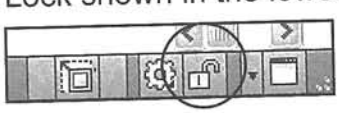
   The icon will change to a **Closed Lock tool**.

Viewport Unlocked

Viewport Locked

Now, any time you want to know if a Viewport is locked or unlocked just glance down to the Lock tool shown above.

Note: Do not use the Lock shown in the lower right corner of the screen.



This locks the size and position of toolbars and windows.

HOW TO CREATE A PAGE SETUP

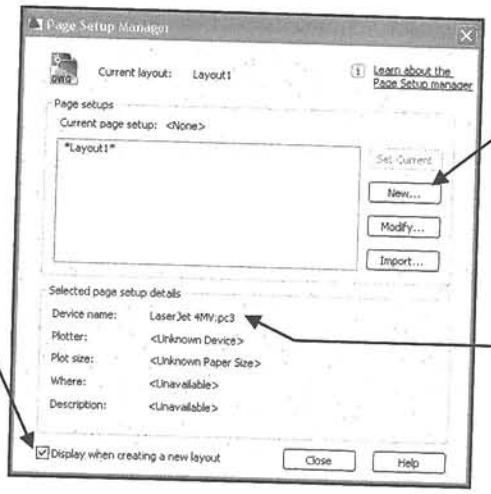
When you select a layout tab for the first time the Page Setup Manager will appear. The Page Setup Manager allows you to select the **printer/plotter** and **paper size**. These specifications are called the "**Page Setup**". This page setup will be saved to that layout tab so it will be available when ever you use that layout tab.

Note: The following is for concept only. The actual exercise starts with 26A.

1. **Open** the drawing you wish to plot.
   (The drawing must be displayed on the screen.)
2. Select a **Layout tab**. (Refer to page 26-3 if you do not have a layout tab)

Note: If the "Page Setup Manager" dialog box shown below does not appear automatically, right click on the Layout tab and select Page Setup Manager.

3. Select the **New...** button.

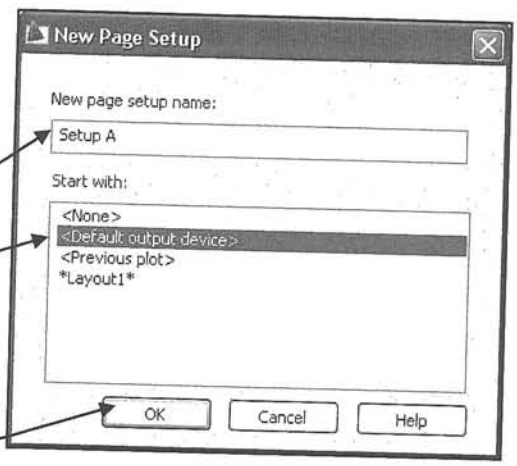


3

Check this box if the Page Setup Manager did not appear automatically when you selected a Layout tab.

Yours will be different. It may even display "None" That's OK for now

4. Select **<Default output device>** in the Start with: list.
5. Enter the New page setup name: **Setup A**
6. Select **OK** button.



5

4

(I am assuming that your computer is attached to a printer. If not select Layout1)

6

Continued on the next page...

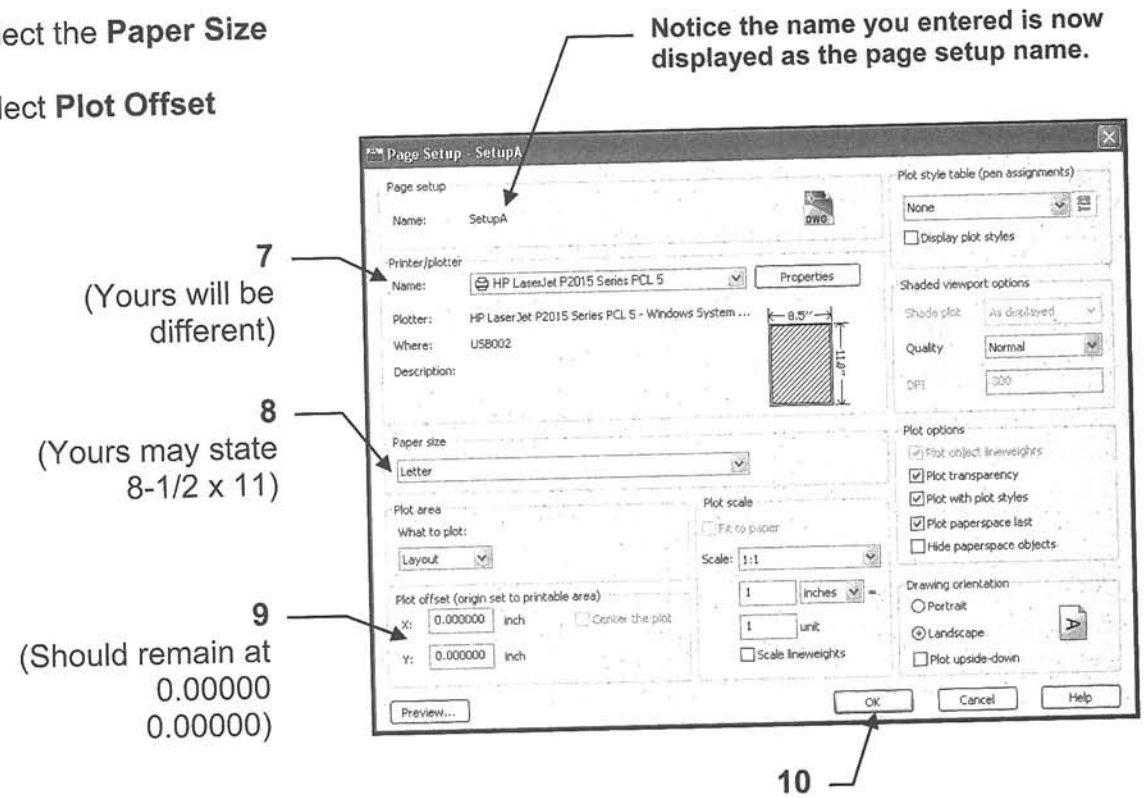
HOW TO CREATE A PAGE SETUP....continued

This is where you will select the **printer / plotter**, **paper size** and the **plot offset**.

7. Select the **Printer / Plotter**
   Note: Your current system printer should already be displayed here. If you prefer another select the down arrow and select from the list. If the preferred printer is not in the list you must configure the printer. Refer to Appendix-A for instructions.)

8. Select the **Paper Size**

9. Select **Plot Offset**

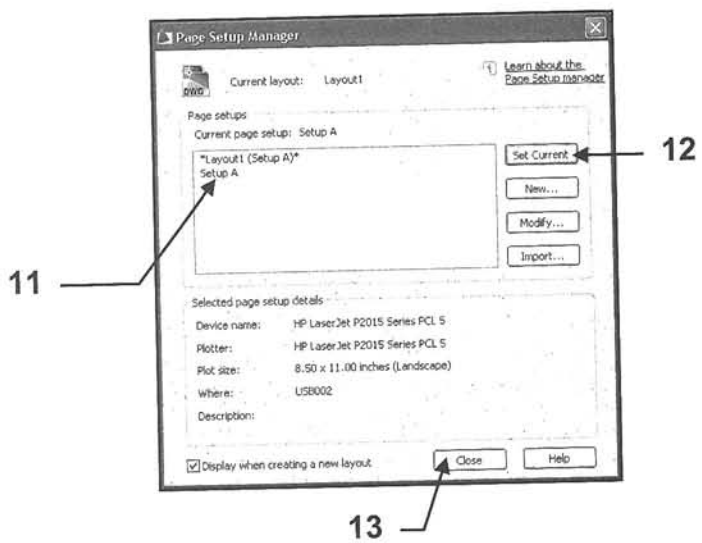


10. Select **OK** button.

11. Select the Page Setup.

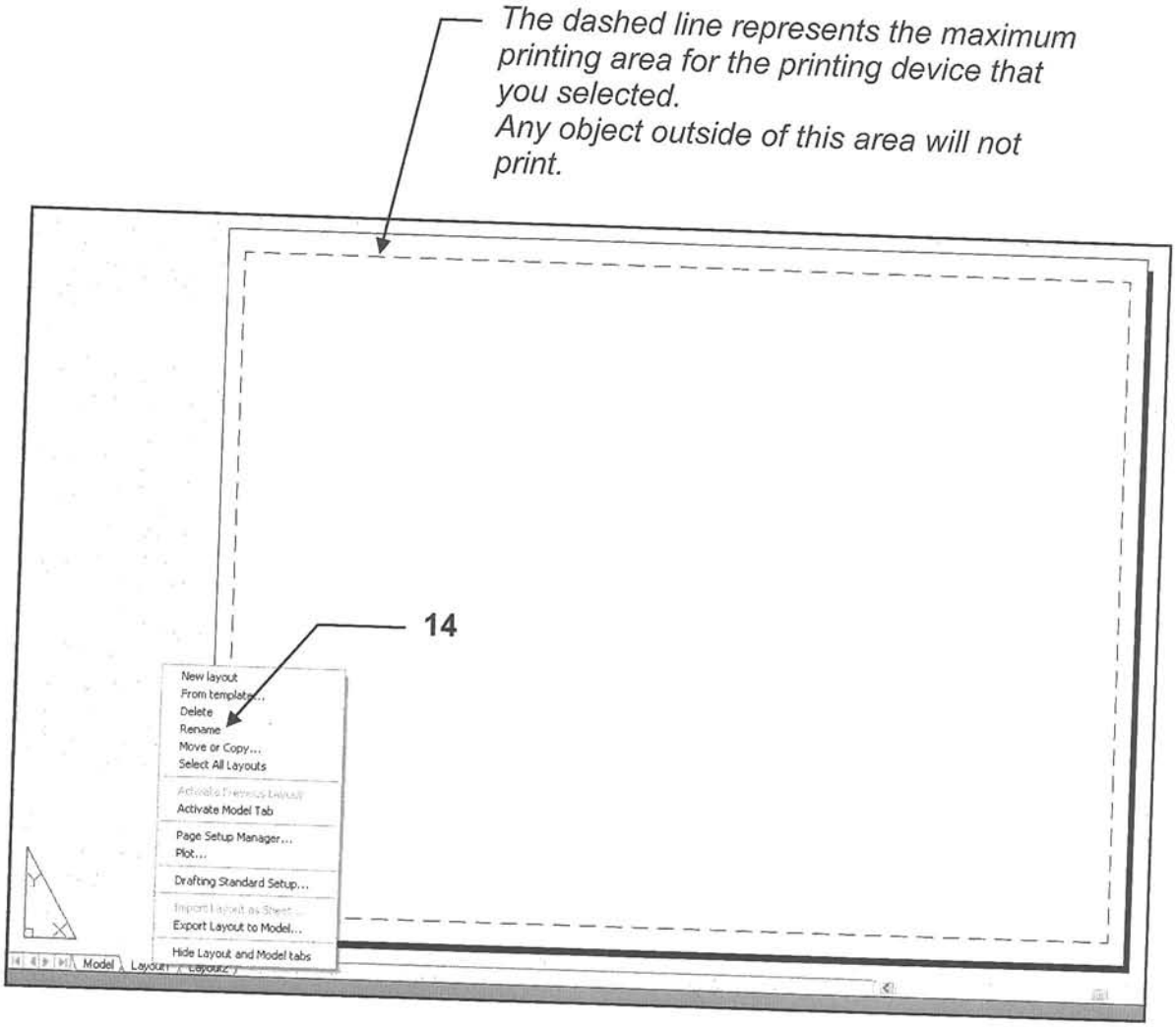
12. Select the **Set Current** button.

13. Select the **Close** button.



HOW TO CREATE A PAGE SETUP....continued

You should now have a sheet of paper displayed on the screen.
This sheet is the size you specified in the "Page Setup".
This sheet is in front of Model Space.



Rename the Layout tab

14. Right click on the active Layout tab and select **Rename** from the list.

15. Enter the new Layout name **A Size** <enter>

This was just the concept of Page Setup. You will actually create one in Exercise 26B.

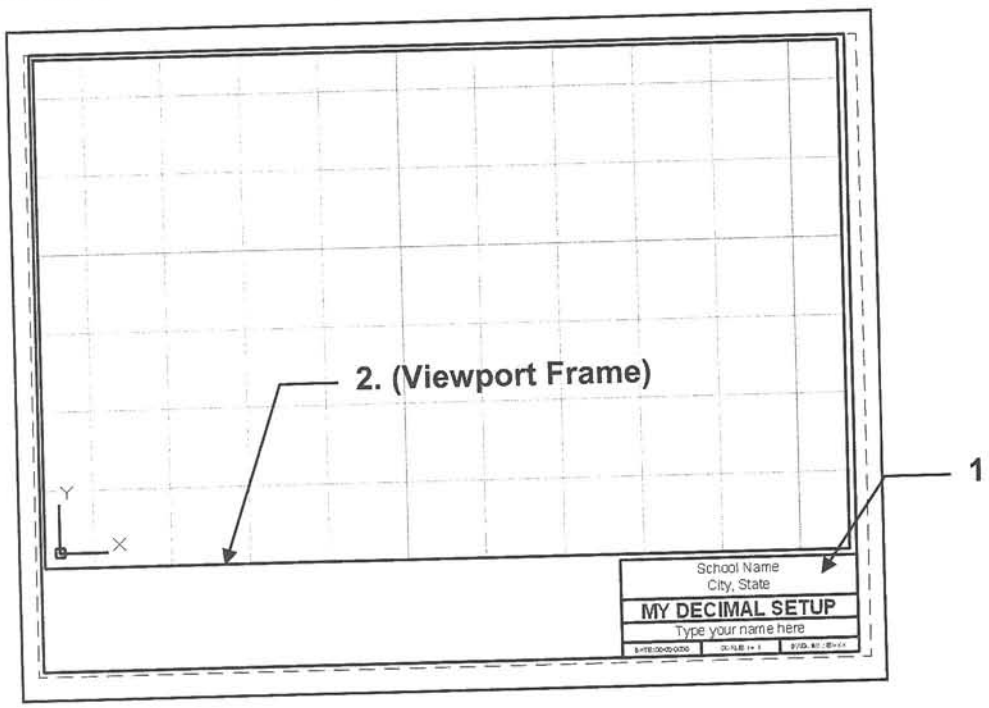
USING THE LAYOUT

Now that you have the correct paper size on the screen, you need to do a little bit more to make it useful.

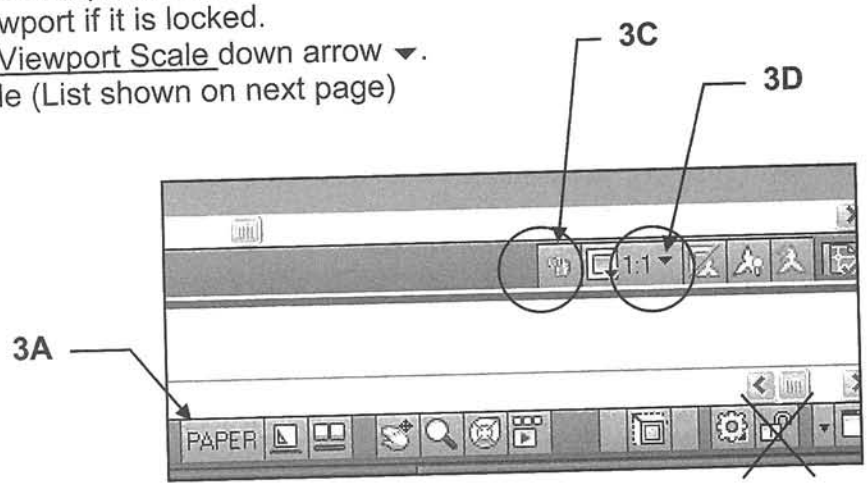
The next step is to:

1. Add a Border, Title Block and notes in Paper Space.

2. Cut a viewport to see through to Model Space. (Refer to page 26-6)



3. Adjust the scale of the viewport as follows.
   A. You must be in Paper Space.
   B. Click on the Viewport Frame.
   C. Unlock Viewport if it is locked.
   D. Select the Viewport Scale down arrow ▾.
   E. Select Scale (List shown on next page)



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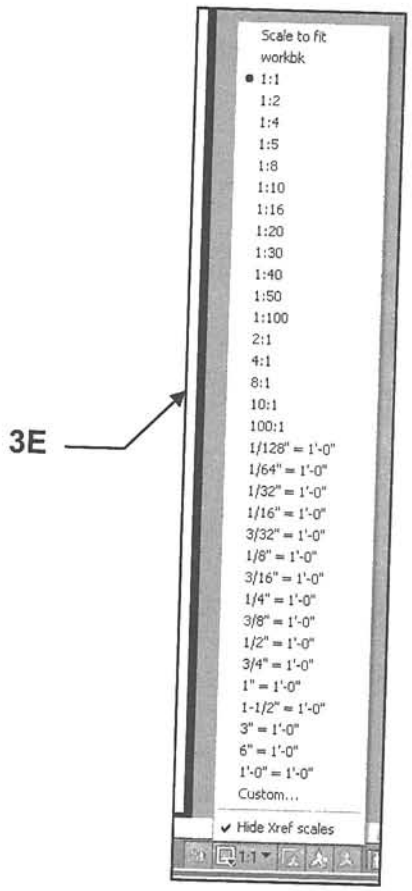
USING THE LAYOUT....continued



4. Lock the Viewport.

Now you may zoom as much as you desire and it will not affect the adjusted scale.

Note: Adjusting the scale of the viewport will be discussed more in lesson 27.

HOW TO PLOT FROM THE LAYOUT

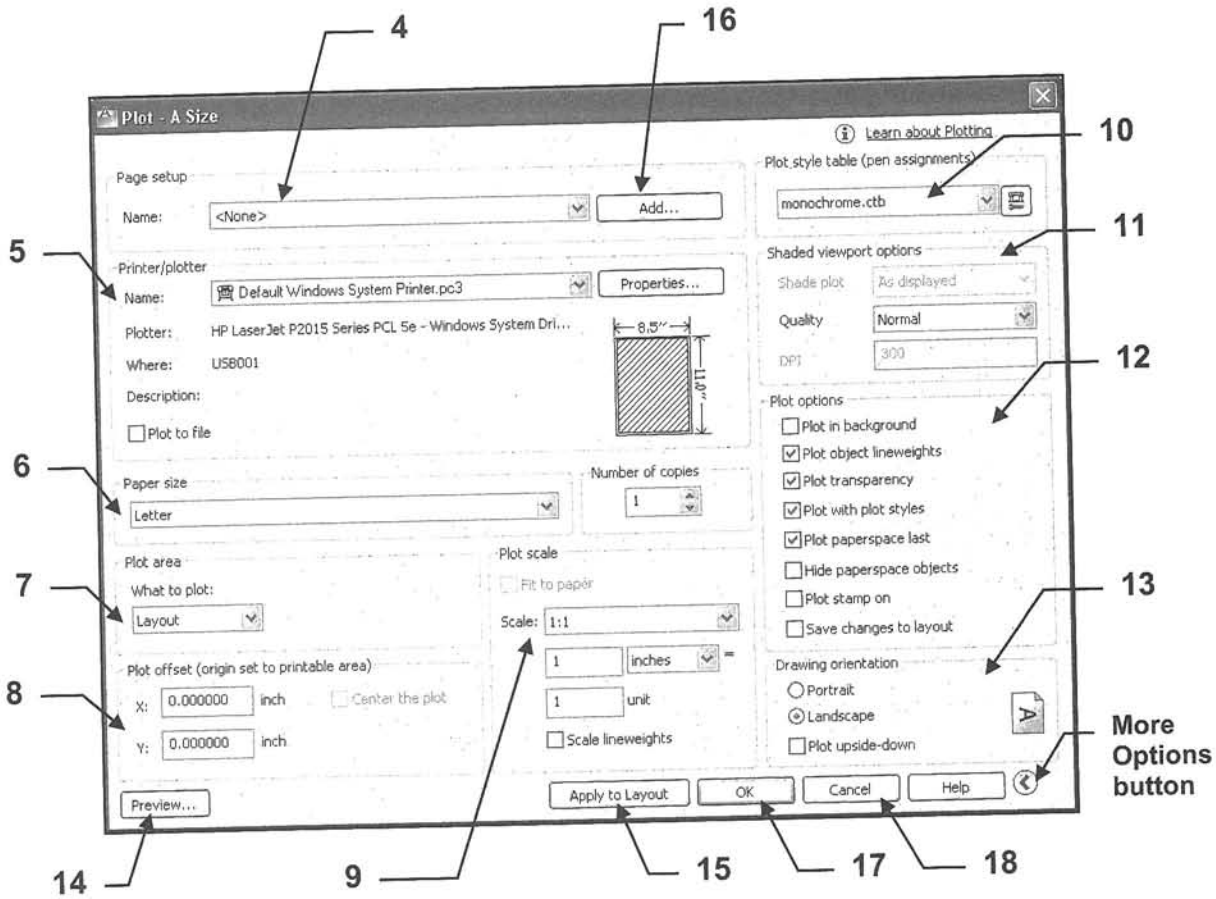
Note: You must create a Page Setup before Plotting from a Layout tab.
If you have not created a Page Setup refer to pg 26-13 before proceeding.

The previous page setup instructions were to select the printer and paper size. Now you need to specify how you want to plot the drawing. You will find the PLOT dialog box almost identical to the Page Setup dialog box.

1. Open the drawing you wish to plot.
2. Select the layout tab you wish to plot.
3. Select the Plot command using one of the following:

Quick Access tool bar = 
or
Ribbon = Output tab / Plot panel / 
or
Application Menu = Print / Plot
or
Keyboard = PLOT <enter>

The Plot dialog box shown below should appear.
Select the "More Options"  ***button in the lower right corner if your dialog box does not appear the same as shown below***



HOW TO PLOT FROM THE LAYOUT....continued

4. **Page Setup name**:
   After you have selected the desired settings you will save the new page setup and it will appear here. If you have previously created a page setup you may select it from the drop down list and all of the setting will change to reflect the previously saved page setup settings.

5. **Printer / Plotter:**
   Select the Printer that you wish to use. All previously configured devices will be listed here. (If your printer / plotter is not listed, refer to "Add a Printer / Plotter" Appendix A.)

6. **Paper Size:**
   Select the paper size. The paper sizes shown in the drop down list are the available sizes for the printer that you selected. If the size you require is not listed the printer you selected may not be able to handle that size. For example, a letter size printer can not handle a 24 X 18 size sheet. You must select a large format printer.

7. **Plot Area:**
   Select the area to plot. Layout is the default.

   Limits plots the area inside the drawing limits.
   (This option is only available when plotting from model space)

   Layout plots the paper size
   (Select this option when plotting from a Layout)

   Extents plots all objects in the drawing file even if out of view.
   (This option only available if you have a viewport)

   Display plots the drawing exactly as displayed on the screen.

   Window plots objects inside a window. To specify the window, choose **Window** and specify the first and opposite (diagonal) corner of the area you choose to plot. (Similar to the Zoom / Window command)

8. **Plot offset:**
   The plot can be moved away from the lower left plot limit corner by changing the X and / or Y offset.
   If you have select **Plot area** "Display" or "Extents", select "**Center the plot.**"

9. **Scale:** Select a **scale** from the drop down list or enter a custom scale.

   *Note: This scale is the Paper Space scale. The Model space scale will be adjusted within the viewport. If you are plotting from a "**LAYOUT**" tab, normally you will use **plot scale 1:1**. (I know this seems a little confusing right now. Scaling will be discussed more in Lesson 27)*

HOW TO PLOT FROM THE LAYOUT....continued

10. **Plot Style Table:** Select the Plot Style Table from the list. The Plot Styles determine if the plot is in color, Black ink or screened. You may also create your own.
    If you want to print in Black Ink only select Monochrome.ctb
    If you want to print in Color select Acad.ctb

11. **Shaded viewport options**
    This area is used for printing shaded objects when working in the 3D environment.

12. **Plot options**
    Plot background = specifies that the plot is processed in the background.

    Plot Object Lineweights = plots objects with assigned lineweights.

    Plot transparency = Plots any transparencies

    Plot with Plot Styles = plots using the selected Plot Style Table.

    Plot paperspace last = plots model space objects before plotting paperspace objects. Not available when plotting from model space.

    Hide Paperspace Objects = used for 3D only. Plots with hidden lines removed.

    Plot Stamp on = Allows you to print information around the perimeter of the border such as; drawing name, layout name, date/time, login name, device name, paper size and plot scale.

    Save Changes to Layout = Select this box if you want to save all of these settings to the current Layout tab.

13. **Drawing Orientation.**
    Portrait = the short edge of the paper represents the top of the page.

    Landscape = the long edge of the paper represents the top of the page

    Plot Upside-down = Plots the drawing upside down.

14. Select **Preview** button.
    Preview displays the drawing as it will plot on the sheet of paper.

(Note: If you cannot see through to Model space, you have not cut your viewport yet)

If the drawing appears as you would like it, press the **Esc** key and continue.

If the drawing does not look correct, press the **Esc** key and re-check your settings, then preview again.

Note: If you have any of the layers set to "no plot" they will not appear in the preview display. The Preview Display only displays what will be printed.

HOW TO PLOT FROM THE LAYOUT....continued

15. **Apply to Layout** button
    This applies all of the settings to the layout tab. Whenever you select this layout tab the settings will already be set.

16. **Save the Page Setup**
    At this point you have the option of saving these settings as another page setup for future use on other layout tabs. If you wish to save this setup, select the **ADD** button, type a name and select **OK.**

17. If your computer **is** connected to the plotter / printer selected, select the **OK** button to plot, then proceed to **19**.

18. If your computer is **not** connected to the plotter / printer selected, select the **Cancel** button to close the Plot dialog box and proceed to **19**.

    *Note: Selecting Cancel will cancel your selected setting if you did not save the page setup as specified in **16** above.*

19. **Save the drawing**
    This will guarantee that the Page Setup you just created will be saved to this file for future use.

Note: This is the concept only.
The step by step instructions are shown in Exercise 26E

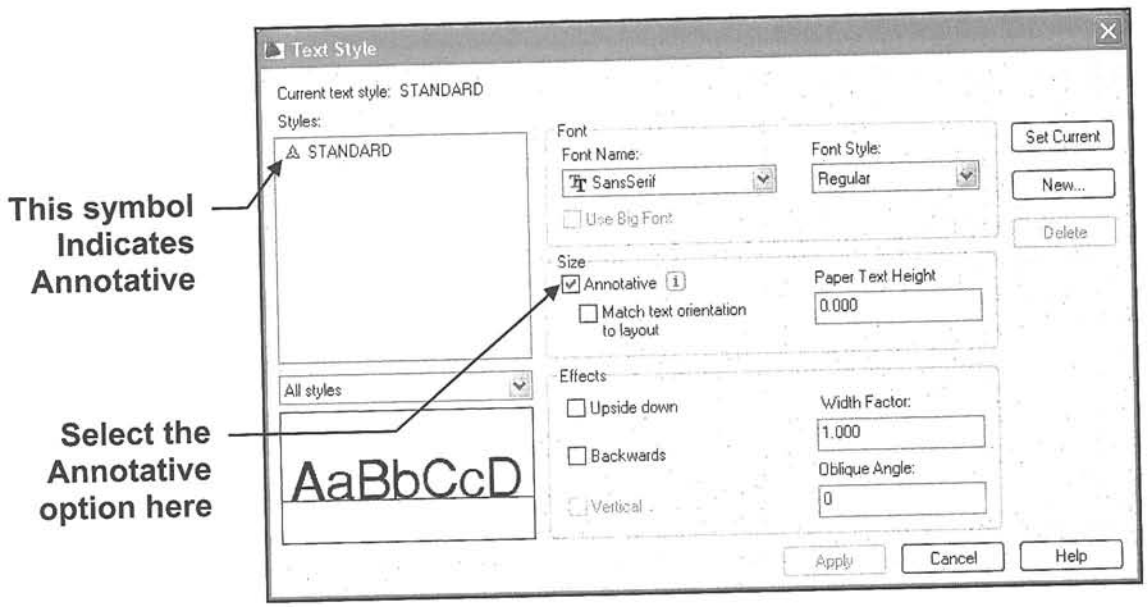
ANNOTATIVE PROPERTY

In Lesson 16 you learned to create a dimension style.
In Lesson 25 you learned to create a text style.
In this Lesson you will create a new dimension style and text style but this time you will include the **Annotative property** in both.

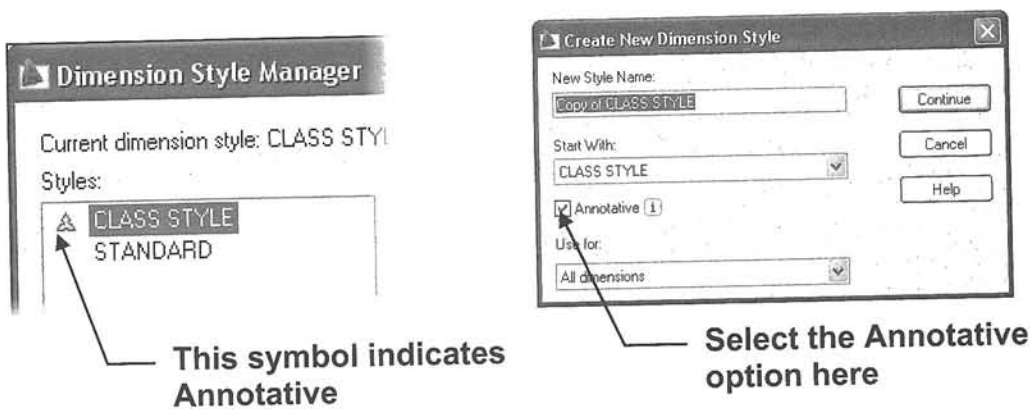
The Annotative property automates the process of scaling text, dimensions, hatch, tolerances, leaders and symbols. The height of these objects will automatically be determined by the annotation scale setting.

This will be discussed more in Lesson 27.
For now I just want you to know how to select it when creating your new styles.

TEXT STYLE



DIMENSION STYLE



EXERCISE 26A

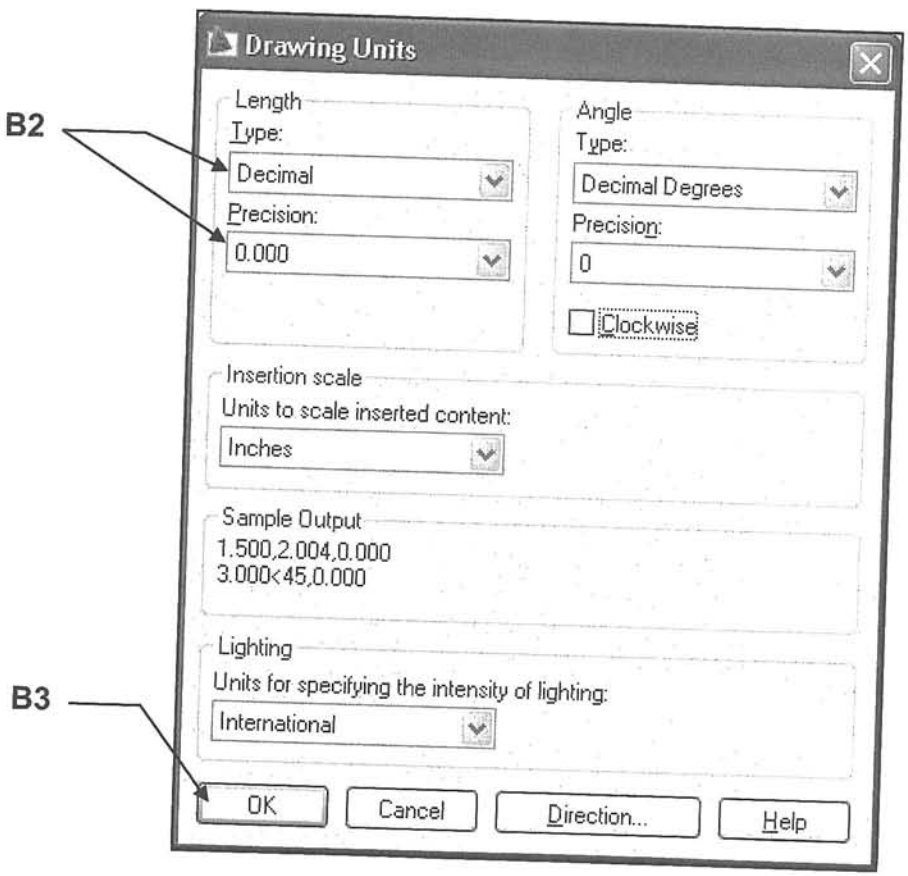
CREATE A MASTER DECIMAL SETUP TEMPLATE

The following instructions will guide you through creating a "Master" decimal setup template. The "2013-Workbook Helper and Border A" are examples of a Master setup template. Once you have created this "Master" template, you just open it and draw. No more repetitive inputting of settings.

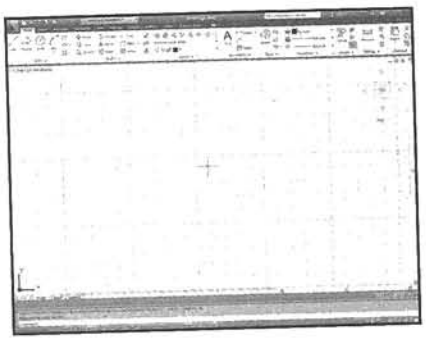
NEW SETTINGS

A. Begin your drawing with a different template as follows:
   1. Select the **NEW** command..
   2. Select template file **acad.dwt** from the list of templates.
      (Note: Do not select "acad3D.dwt" by mistake)

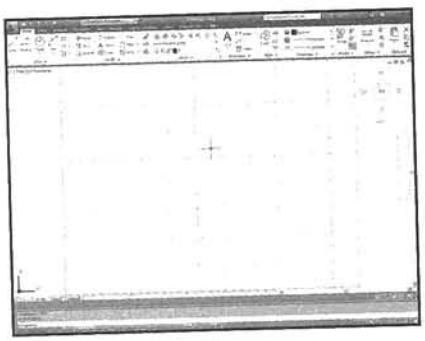
B. Set the drawing **Units** as follows:
   1. Type **UNITS <enter>**
   2. Change the **Type: Decimal** and **Precision: 0.000** as shown below.
   3. Select **OK** button



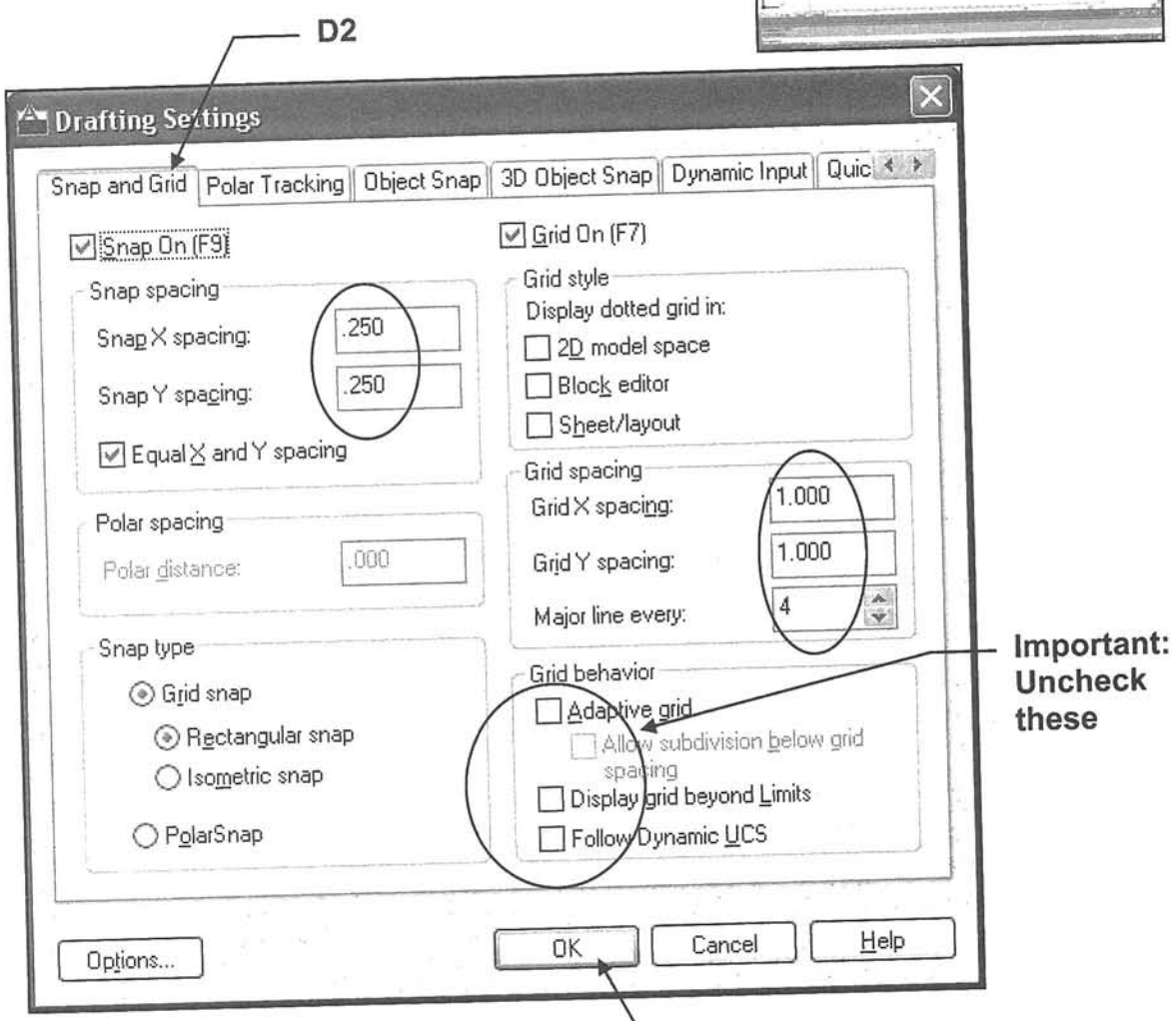
EXERCISE 26A continued



C. Set the **Drawing Limits**
(Size of the drawing area) as follows:
1. Type **Limits <enter>**
2. Enter Lower left corner = 0.000, 0.000
3. Enter Upper right corner = 11 , 8.5
4. Use **" ZOOM / ALL"** to view the new limits
5. Set your **Grids** to **ON** to display the limits

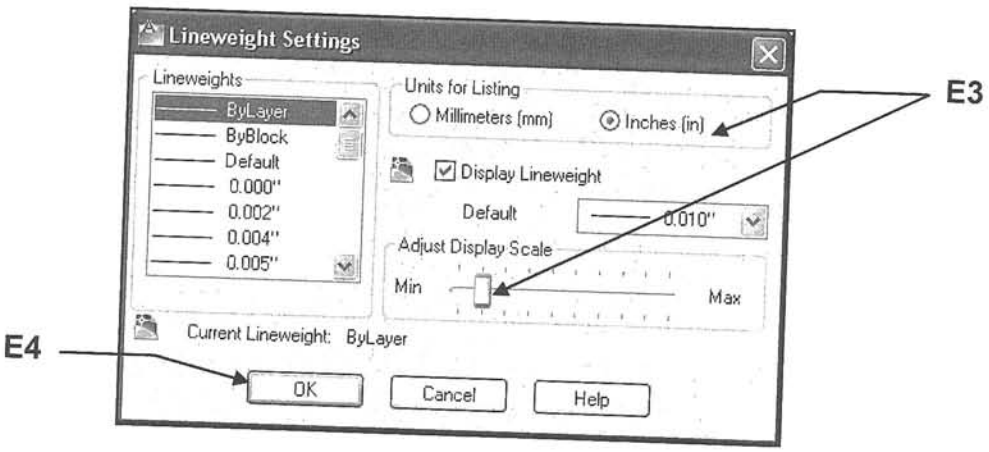


D. Set the Grids and Snap as follows:
1. Type **DS<enter>**
2. Select the **Snap and Grid** tab
3. Change the settings as shown below.
4. Select the **OK** button.

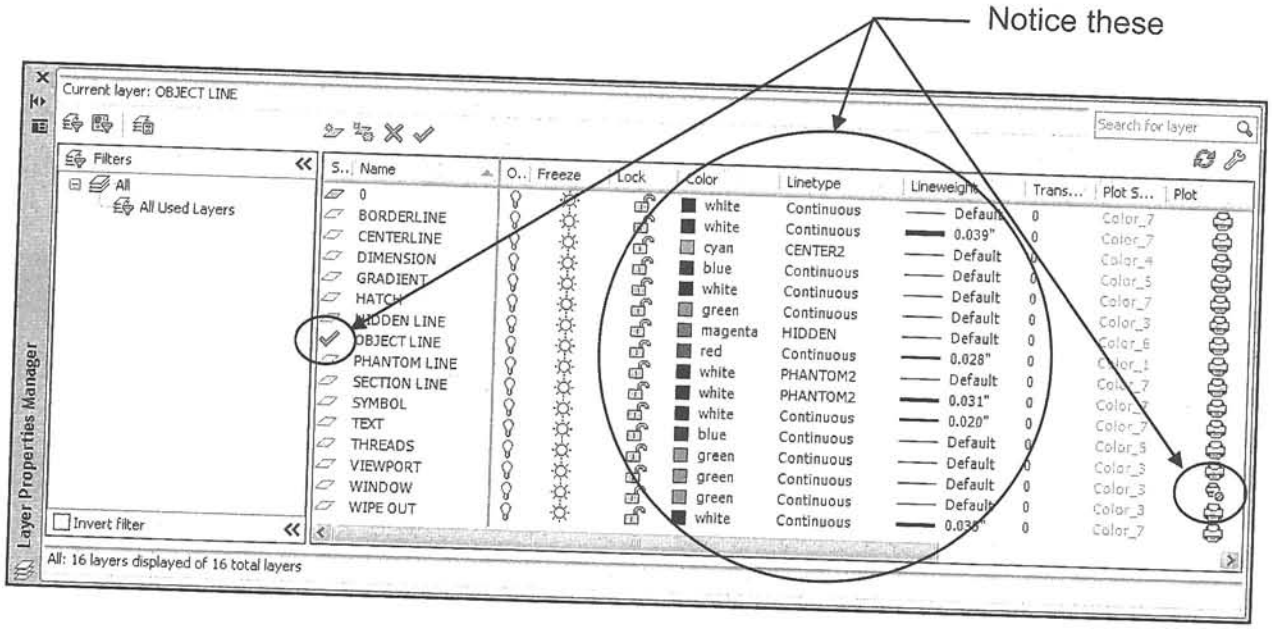


EXERCISE 26A continued

E. Change **Lineweight** settings as follows:
1. Right click on Lineweight button located on the status line LWT or +
2. Select **Settings**
3. Change to inches and adjust the Display scale as shown below.
4. Select the **OK** button.

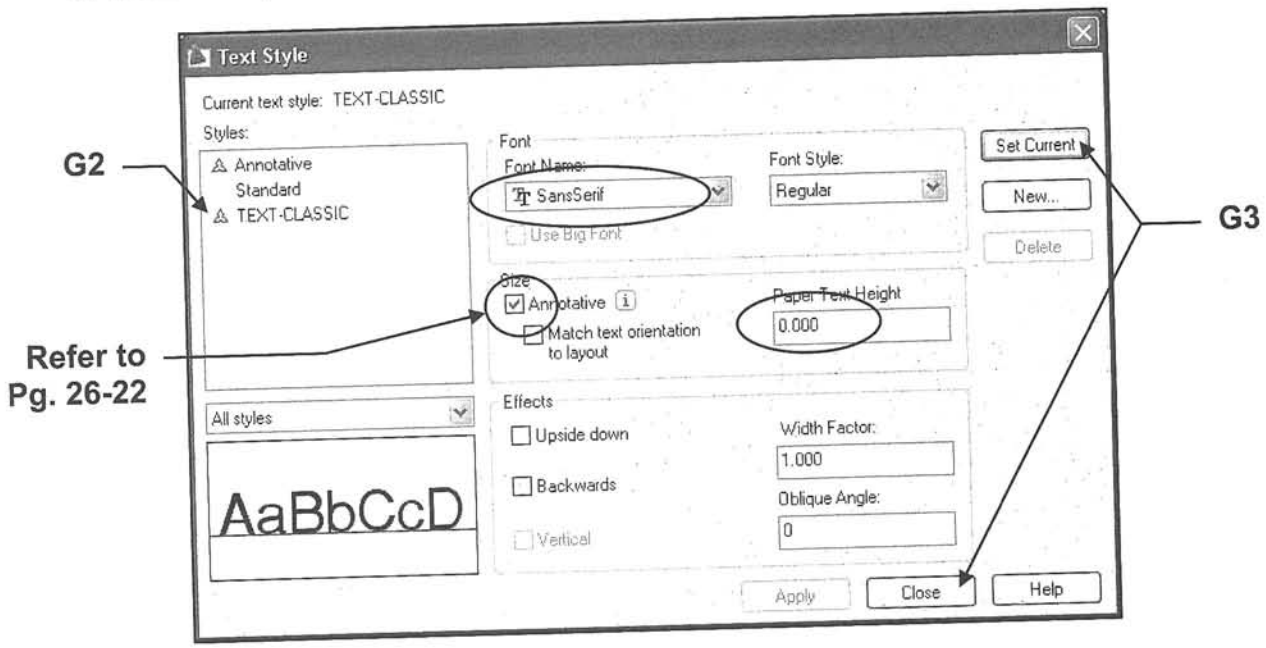


F. Create **new Layers** as follows:
1. Load the linetypes listed below. (Refer to page 3-16 for instructions)
   Center2, Hidden, Phantom2
2. Assign names, colors, linetypes, lineweights and plotability as shown below: (Refer to 3-15 for instructions)



EXERCISE 26A continued

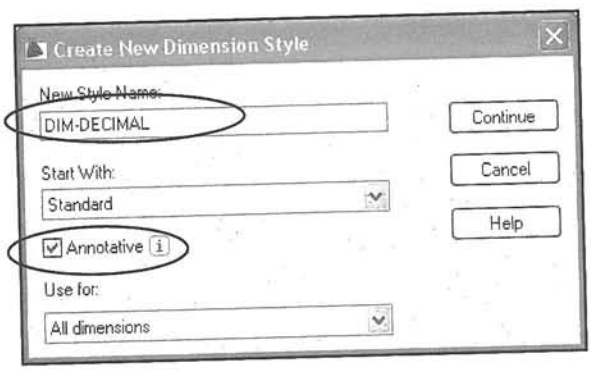
G. Create a new **Text Style** as follows:
   1. Select **Text Style** (Refer to page 25-2)
   2. Create the text style **Text-Classic** using the settings shown below.
   3. When complete, select **Set Current** and **Close.**

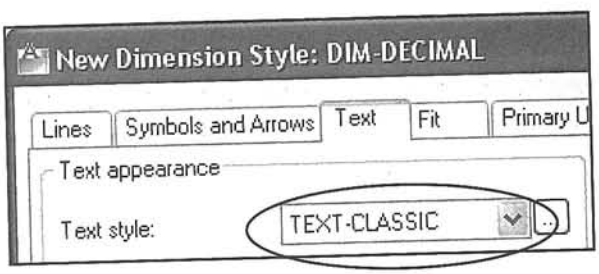


H. Create a **Dimension Style** as follows:

   1. **IMPORTANT:Follow the directions on page 16-8 through 16-14**

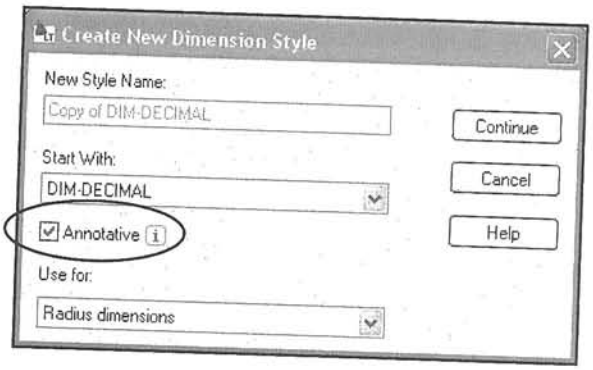
   2. All settings will be the same as page 16-8 through 16-14 except the following:
      Name = Dim-Decimal
      Annotative = this new dimension style will be Annotative (Refer to page 26-22)
      Text style: = select the newly created TEXT-CLASSIC



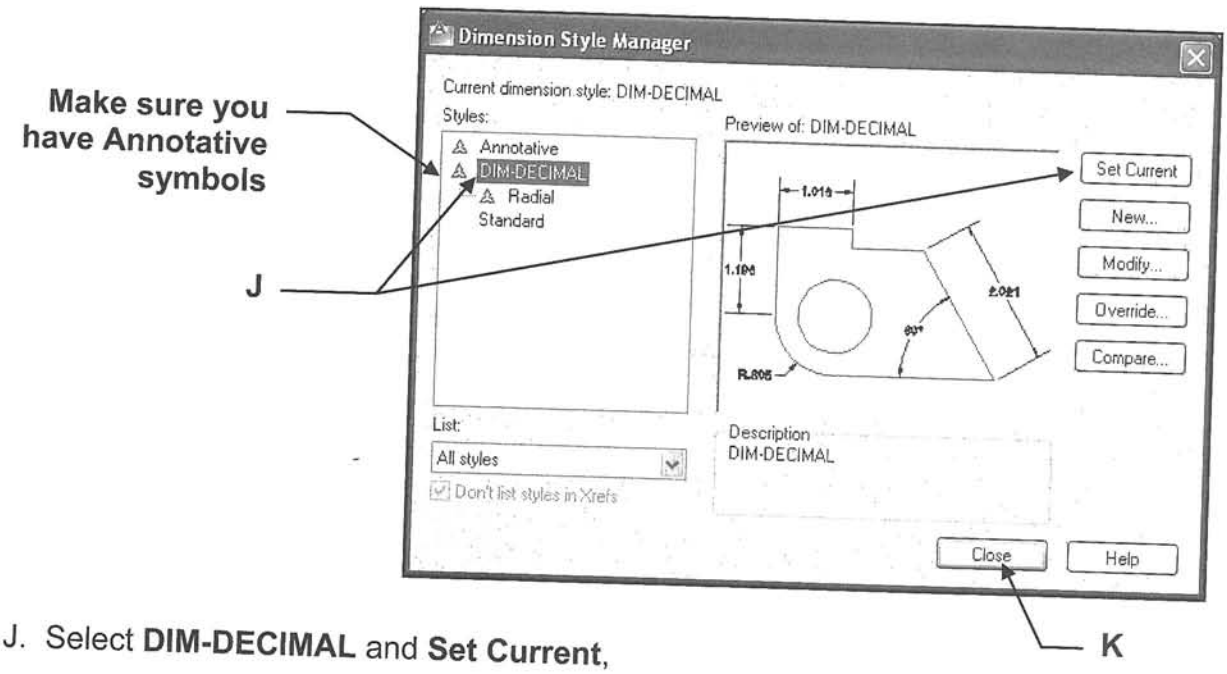


EXERCISE 26A continued

I. Create a Dimension Sub-Style as follows:
   1. Follow the directions on page 18-9 and 18-10
   2. All settings will be the same except the following:
      Annotative = this new sub-style will be Annotative (Refer to page 26-22)



Your Dimension Style Manager should now appear as shown below:



J. Select **DIM-DECIMAL** and **Set Current**,

K. Select **Close** button.

THIS NEXT STEP IS VERY IMPORTANT

L. **Save** all the settings you just created as follows:
   1. Save as / AutoCAD Drawing Template: **My Decimal Setup**

*Now continue on to **Exercise 26B**....you are not done yet.*

EXERCISE 26B

PAGE SETUP

Now you will select the printer and the paper size to use for printing.
You will use the Layout1 tab (Paper space).

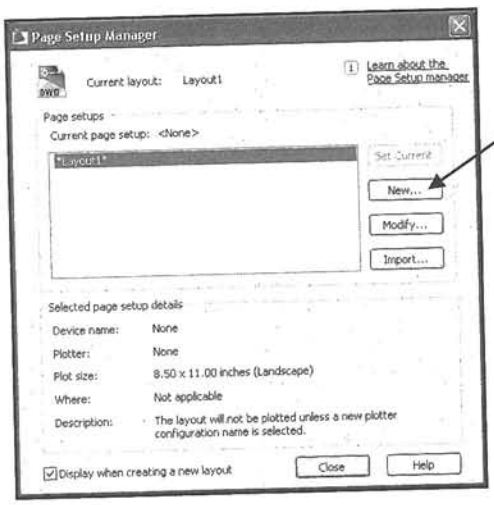
A. Open **My Decimal Setup** (if not already open)

B. Select **Layout1** tab.

Refer to page 26-3 if you do not have these tabs.

Note: If the "Page Setup Manager" dialog box shown below does not appear automatically, right click on the Layout tab and select Page Setup Manager.

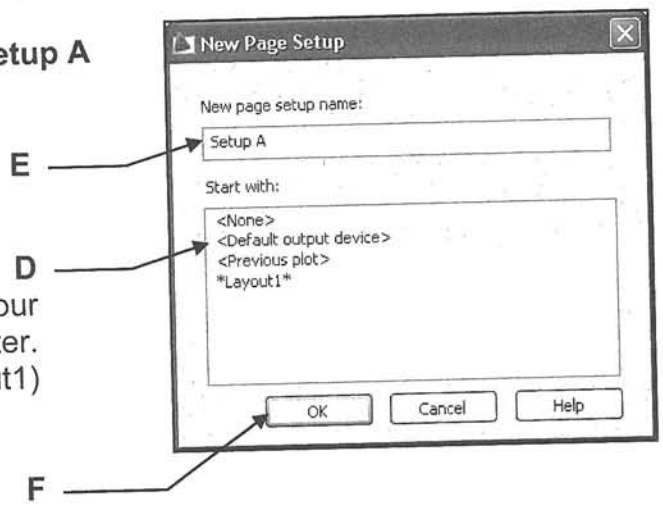
C. Select the **New...** button.



D. Select the **<Default output device>** in the Start with: list.

E. Enter the New page setup name: **Setup A**

F. Select **OK** button.



(I am assuming that your computer is attached to a printer. If not select Layout1)

Continued on the next page...

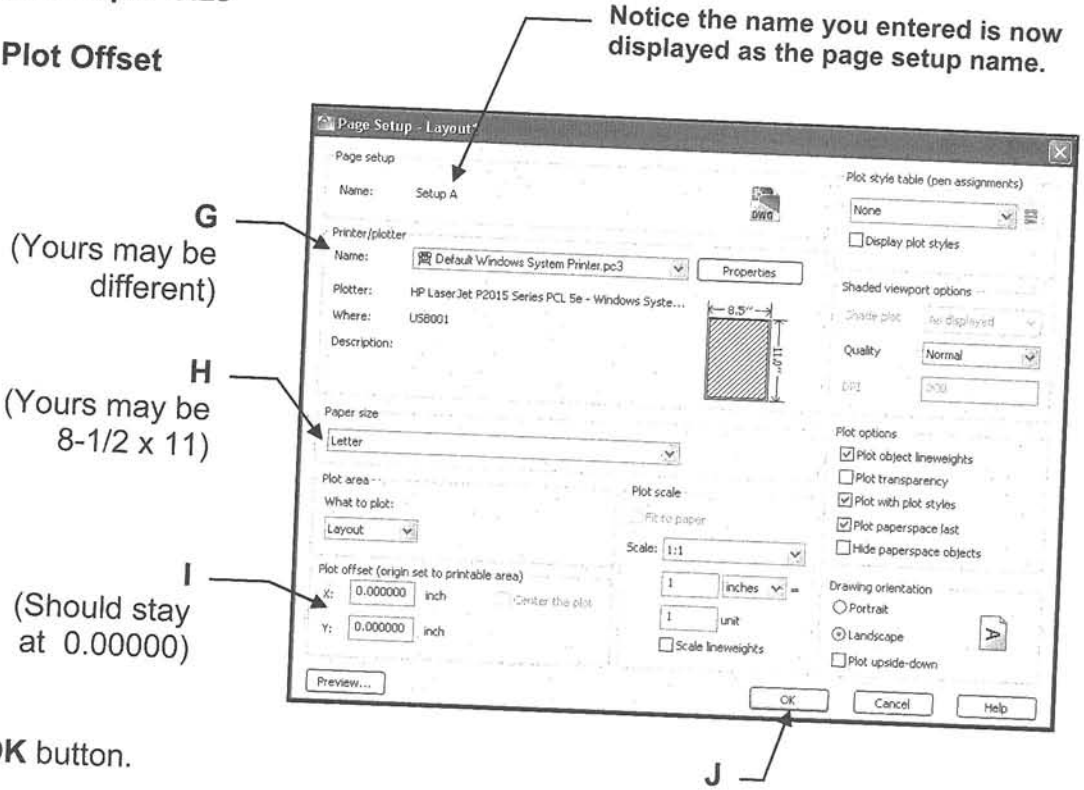
EXERCISE 26B continued

This is where you will select the **print device**, **paper size** and the **plot offset**.

G. Select the **Printer / Plotter**
Note: Your current system printer should already be displayed here. If you prefer another select the down arrow and select from the list. If the preferred printer is not in the list you must configure the printer. Refer to Appendix-A for instructions.)

H. Select the **Paper Size**

I. Select **Plot Offset**

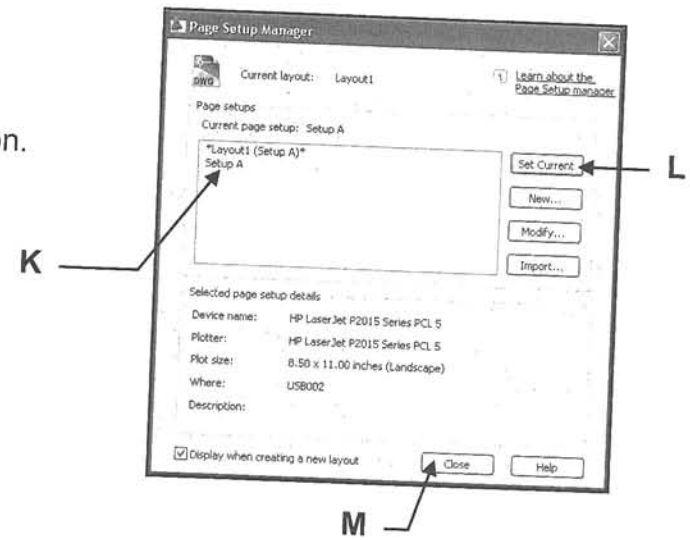


J. Select **OK** button.

K. Select **Setup A**.

L. Select the **Set Current** button.

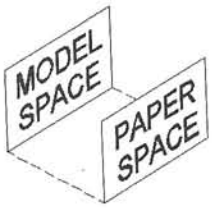
M. Select the **Close** button.



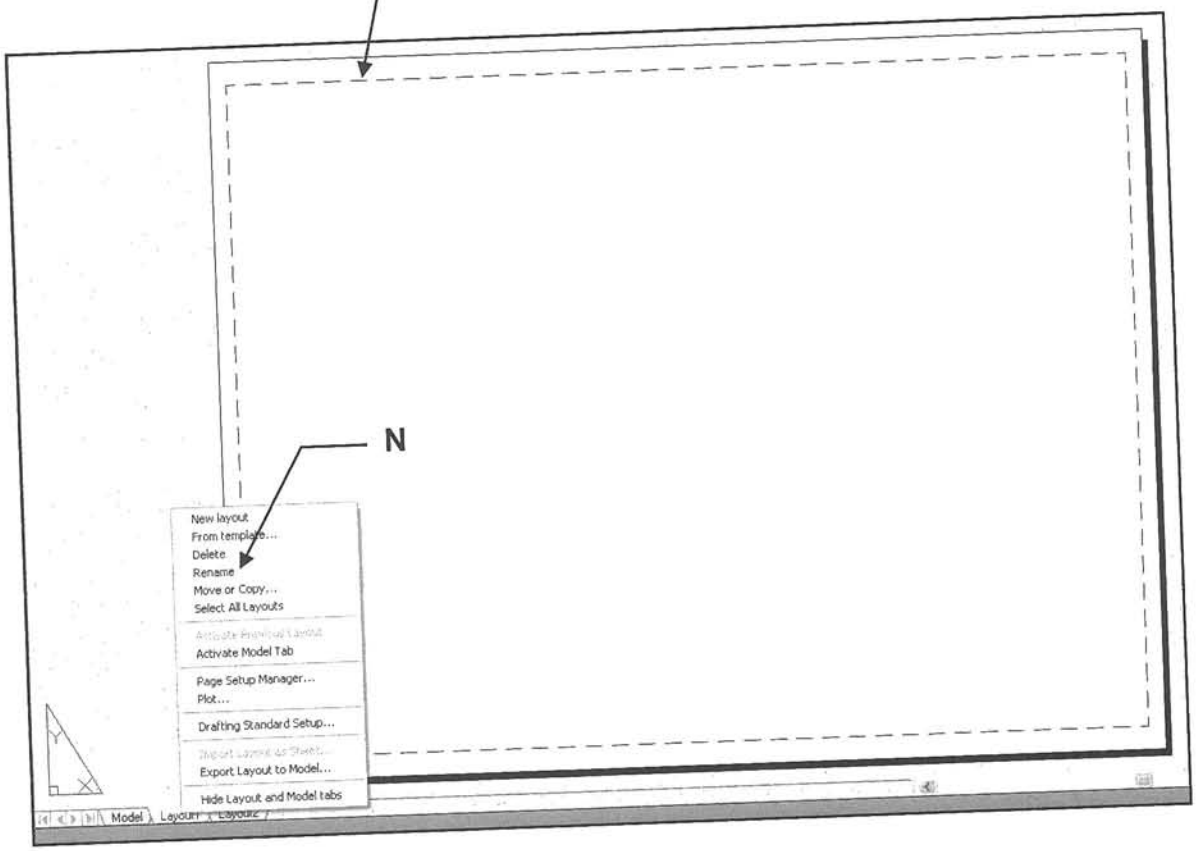
Continued on the next page...

EXERCISE 26B continued

You should now have a sheet of paper displayed on the screen.
This sheet is the size you specified in the "Page Setup".
This sheet is in front of Model Space.



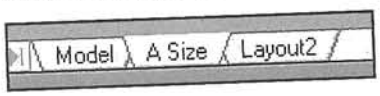
The dashed line represents the maximum printing area for the printing device that you selected.
Any object outside of this area will not print.



Rename the Layout tab

N. Right click on the **Layout1** tab and select **Rename** from the list.

O. Enter the New Layout name **A Size <enter>**



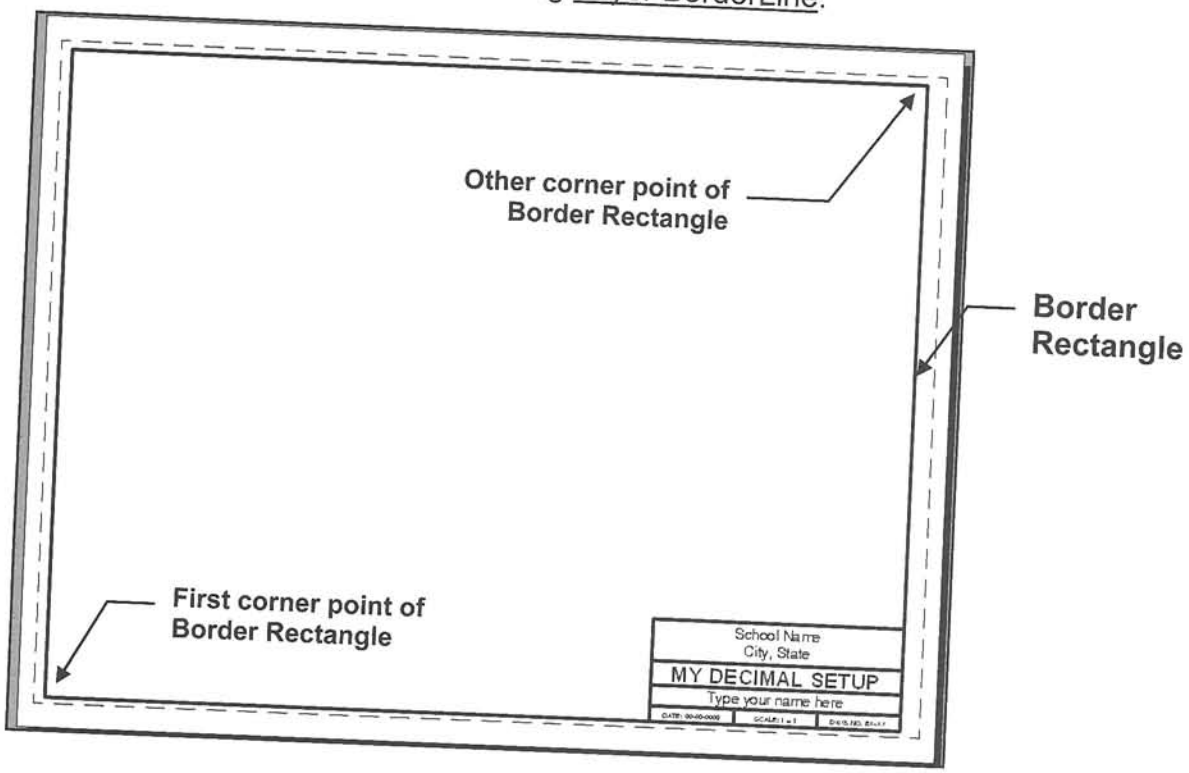
P. ***Very important:*** Save as / AutoCAD Drawing Template/ **My Decimal Setup** again.

Continue on to **Exercise 26C**.....you are not done yet.

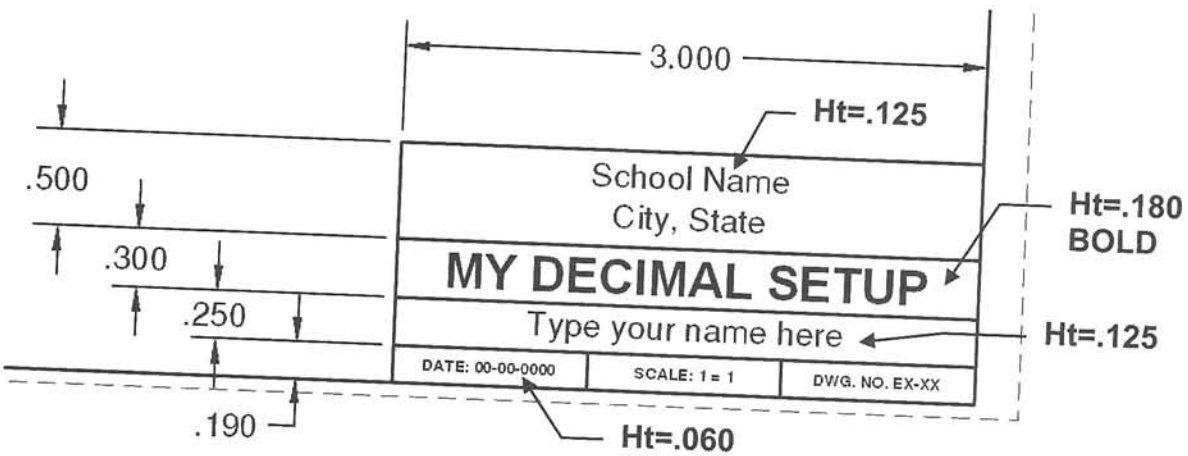
EXERCISE 26C

CREATE A BORDER AND TITLE BLOCK

A. Draw the Border rectangle as large as you can within the dashed lines approximately as shown below using Layer BorderLine.



B. Draw the Title Block as shown using:
1. Layers BorderLine and Text.
2. Multiline Text ; Justify Middle Center in each rectangular area.
3. Text Style= Text-Classic Text height varies.



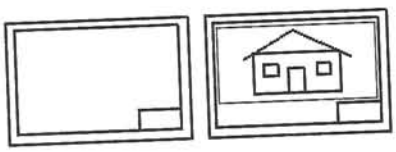
C. ***Very important:*** Save as / AutoCAD Drawing Template/ **My Decimal Setup** again.

Continue on to **Exercise 26D**.....you are not done yet.

EXERCISE 26D

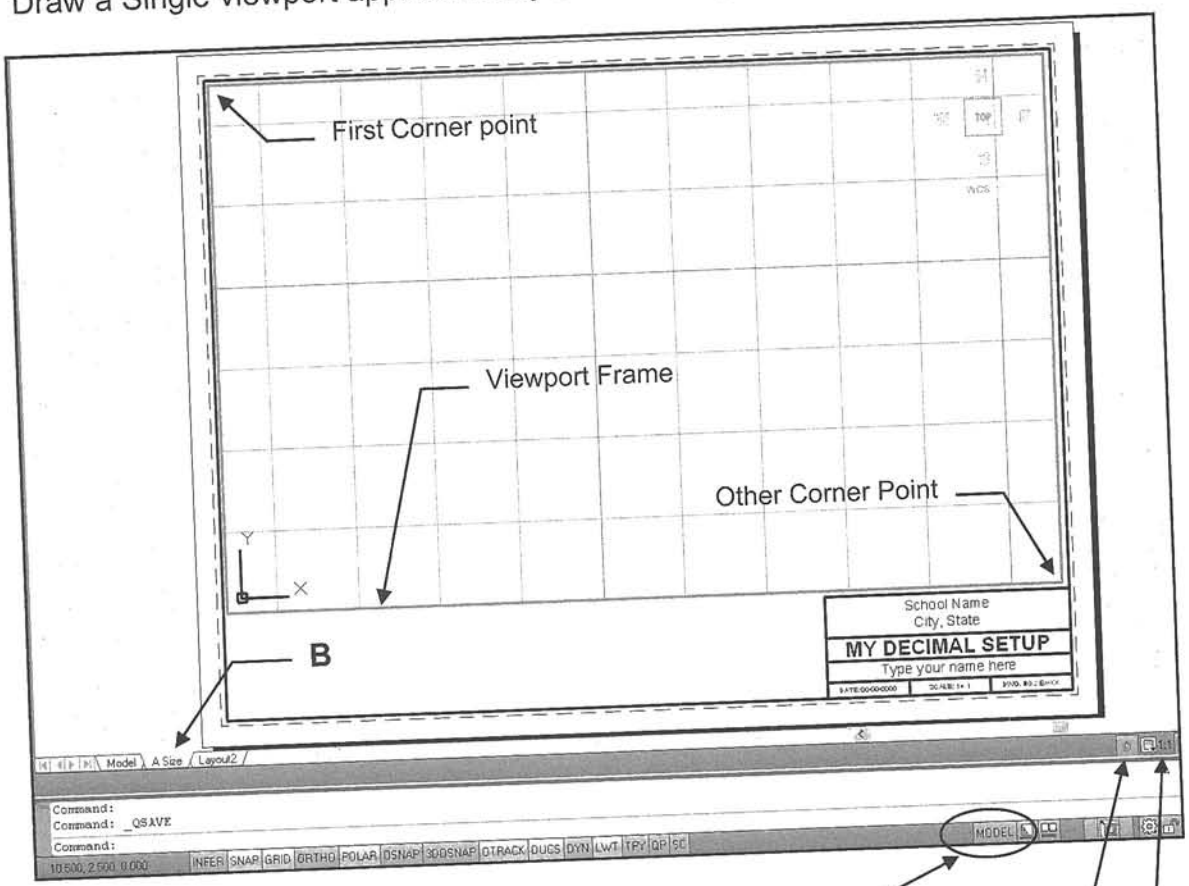
CREATE A VIEWPORT

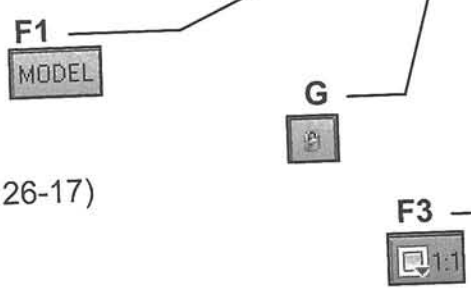
The following instructions will guide you through creating a VIEWPORT in the Border Layout sheet. Creating a viewport has the same effect as cutting a hole in the sheet of paper. You will be able to see through the viewport frame (hole) to Modelspace.



Before **After**

A. Open **My Decimal Setup** (If not already open)
B. Select the **A Size** tab.
C. Select layer **Viewport**
D. Type: **MV <enter>** (Refer to pg. 26-7)
E. Draw a Single viewport approximately as shown. (Turn off OSNAP)





F. Adjust the Viewport Scale as follows:
   F1. Confirm **"Model" button** showing.
   F2. Select **"Zoom / All"**
   F3. Select the **Viewport Scale** of **1 : 1** (pg. 26-17)

G. Lock the Viewport (Refer to page 26-12)

H. ***Very important:*** Save as / AutoCAD Drawing Template/ **My Decimal Setup** again

Continue on to **Exercise 26E**....you are not done yet.

EXERCISE 26E

PLOTTING FROM THE LAYOUT

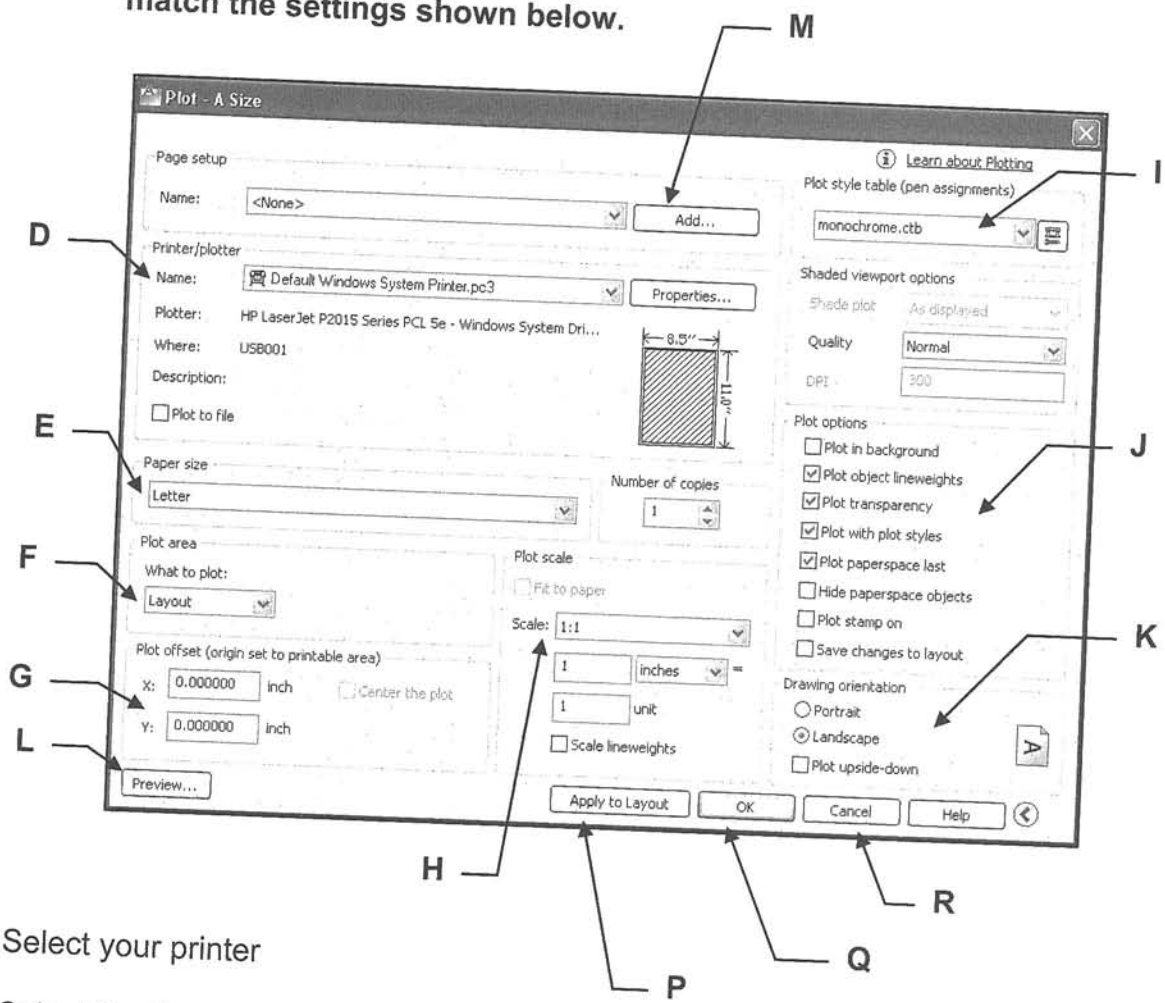
The following instructions will guide you through the final steps for setting up the master template for plotting. These settings will stay with **My Decimal Setup** and you will be able to use it over and over again.

A. Open **My Decimal Setup** (If not already open)

B. Select the **A Size** layout tab.

C. Select the **Plot** command

Note: Make definite that your settings match the settings shown below.



D. Select your printer

E. Select the Paper Size

F. Select the Plot Area

G. Plot offset should be 0.00000 for X and Y

EXERCISE 26E continued

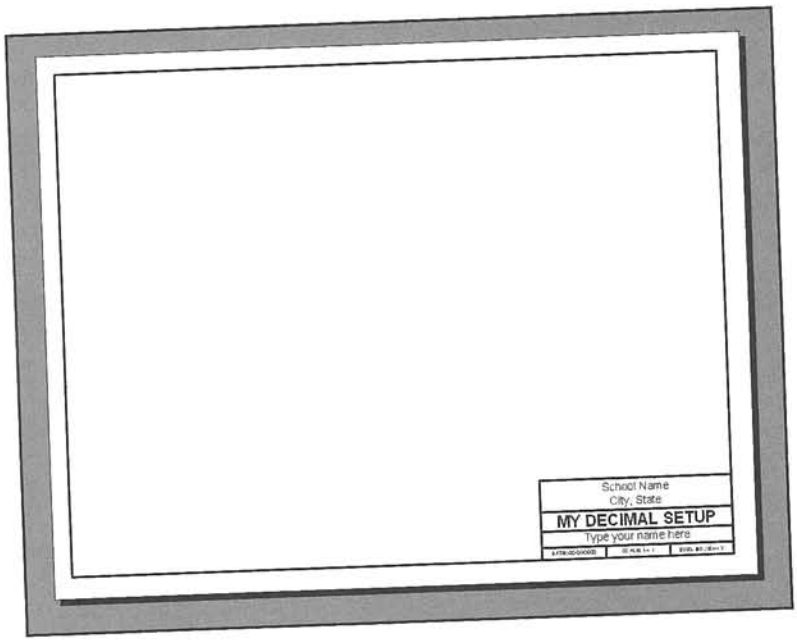
H. Select scale 1 : 1

I. Select the Plot Style Table **Monochrome.ctb**

J. Select the Plot options shown

K. Select Drawing Orientation: **Landscape**

L. Select **Preview** button.

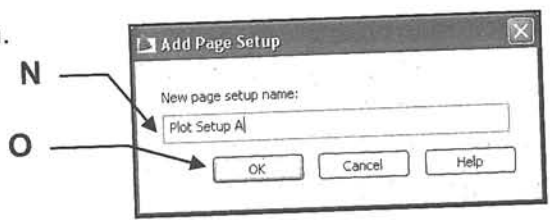


Note:
The Viewport frame and the grids will not appear in the Preview because the viewport layer is set to no plot and grids never plot.

If the drawing appears as you would like it, press the **Esc** key and continue on to **M**.

If the drawing does not look correct, press the **Esc** key and re-check all the settings, then preview again.

M. Select the **ADD** button.



N. Type the New page setup name: **Plot Setup A**

O. Select the **OK** button.

EXERCISE 26E continued

P. Select the "**Apply to Layout**" button.
The settings are now saved to the layout tab for future use.

Q. If your computer **is** connected to the plotter / printer selected, select the **OK** button to plot, then proceed to **S**.

R. If your computer is **not** connected to the plotter / printer selected, select the Cancel button to close the Plot dialog box and proceed to **S**. *Note: Selecting Cancel will cancel your selected setting if you did not **ADD** the page setup as specified in **M**.*

You are almost done

S. Select Layer **Object Line**.
(You don't want Layer Viewport to be the current layer)

T. Now Save all of this work as a **Template** one last time.
1. Select **Application Menu / Save As / AutoCAD Drawing Template**
2. Type: **My Decimal Setup**
3. Select **Save** button.

*Wow, I know that seemed like a lot of work but you have now completed the **Plotting Page Setup** for the **My Decimal Setup.dwt**.*

Now you are ready to use this master template to create and plot many drawings in the future. In fact, you have one on the very next page.

EXERCISE 26F

This exercise is in 2 parts. First you will draw the drawing in the model tab. Then you will create a layout to display parts of the drawing in 3 viewports. *Hopefully this will help you understand the differences between model space and paper space.*

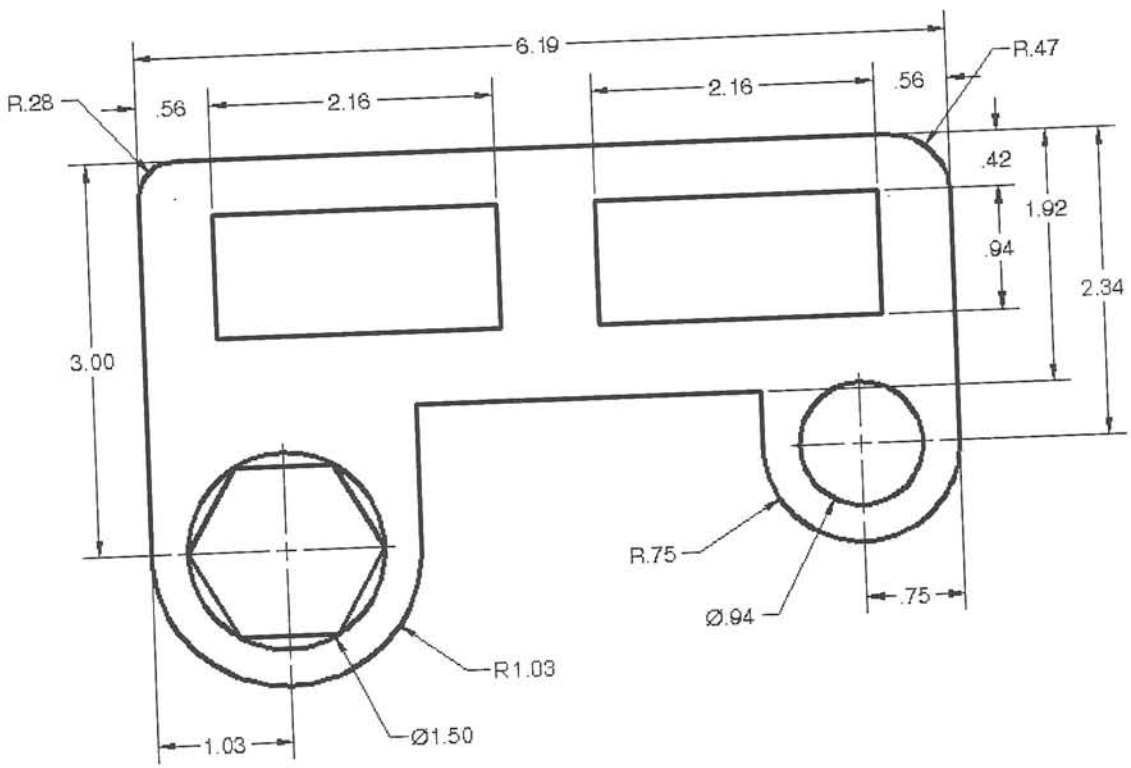
Part 1

A. Select **New** and select **My Decimal Setup** template. (If it is not already open)

B. Select the Model tab. 

C. Draw the drawing shown below.
Use Layer Object Line.....do not use Layer Viewport
Do not dimension.

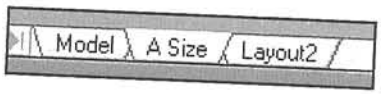
D. Save as: **EX-26F1**.
(Make sure that you save it as a drawing (.dwg) and not as a template.



Continue to Part 2 on the next page.

EXERCISE 26F continued

Part 2

A. Select the **A Size** tab. 

B. Confirm the Model / Paper button says Paper. 

C. Erase the one existing viewport frame. (Click on the frame and select Erase)

D. Select the Viewport Layer and create 3 new viewports approximately as shown below.

E. Using Zoom and Pan, inside each viewport, try to display each viewport content as shown below. (Note: Scale is not critical at this time but it will be in Lesson 27.)

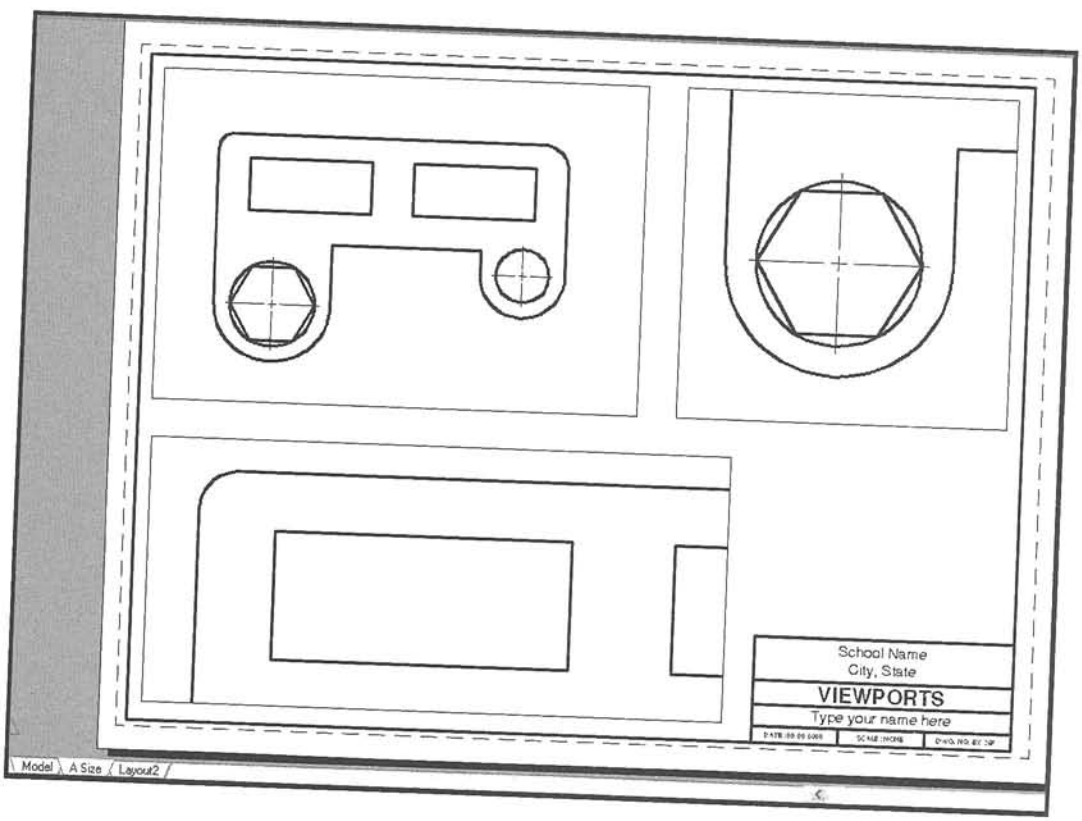
F. Lock each viewport.

G. This time I would like you to print the Viewport Frames, so you need to make the Viewport layer **plottable**.
(Remove the **no plot sign** on the printer symbol in the Layer Properties Manager)

H. Change the Title block: **Title**: VIEWPORTS **Scale**: NONE **Dwg no**: EX-26F

I. Save as: **EX-26F**

J. Plot using Plot Page Setup name: **Plot Setup A**. (Remember to view the Preview)



Notes: