

LEARNING OBJECTIVES

After completing this lesson, you will be able to:

1. Understand the importance of True Associative dimensioning
2. Create Linear, Continue and Baseline dimensions
3. Draw, Select and Erase objects
4. Use Grips to manipulate dimensions
5. Create a New dimension Style
6. Ignore Hatch Lines when dimensioning

LESSON 16

DIMENSIONING

Dimensioning is basically easy, but as always, there are many options to learn. As a result, I have divided the dimensioning process into multiple lessons.

In addition, Annotative dimensioning will be discussed in Lesson 27. So relax and just take it one lesson at a time.

In this Lesson you will learn how to create a **dimension style** and how to create Linear (horizontal and vertical) dimensions.

Dimensions can be Associative, Non-Associative or Exploded. You need to understand what these are so you may decide which setting you want to use. Most of the time you will use Associative but you may have reasons to also use Non-Associative and Exploded.

Associative

Associative Dimensioning means that the dimension is actually associated to the objects that they dimension. If you move the object, the dimension will move with it. If you change the size of the object, the dimension text value will change also. (Note: This is not parametric. In other words, you cannot change the dimension text value and expect the object to change. That would be parametric dimensioning)

Non-Associative

Non-Associative means the dimension is not associated to the objects and will not change if the size of the object changes.

Exploded

Exploded means the dimension will be exploded into lines, text and arrowheads and non-associative.

How to set dimensioning to Associative, Non-Associative or Exploded.

1. On the command line type: ***dimassoc <enter>***
2. Enter the number ***2, 1 or 0 <enter>***.

2 = Associative

1 = Non-Associative

0 = Exploded

DIMENSIONING....continued

How to Re-associate a dimension.

If a dimension is Non-associative, and you would like to make it Associative, you may use the **dimreassociate** command to change.

1. Select **Reassociate** using one of the following:

Ribbon = Annotate tab / Dimension ▼ panel / 
or
Keyboard = Dimreassociate <enter>

2. Select objects: *select the dimension to be reassociated.*
3. Select objects: *select more dimensions or <enter> to stop.*
4. Specify first extension line origin or [Select object] <next>: *(an “X” will appear to identify which is the first extension); use object snap to select the exact location, on the object, for the extension line point.*
5. Specify second extension line origin <next>: *(the “X” will appear on the second extension) use object snap to select the exact location, on the object, for the extension line point.*
6. *Continue until all extension line points are selected.*

Note: You must use object snap to specify the exact location for the extension lines.

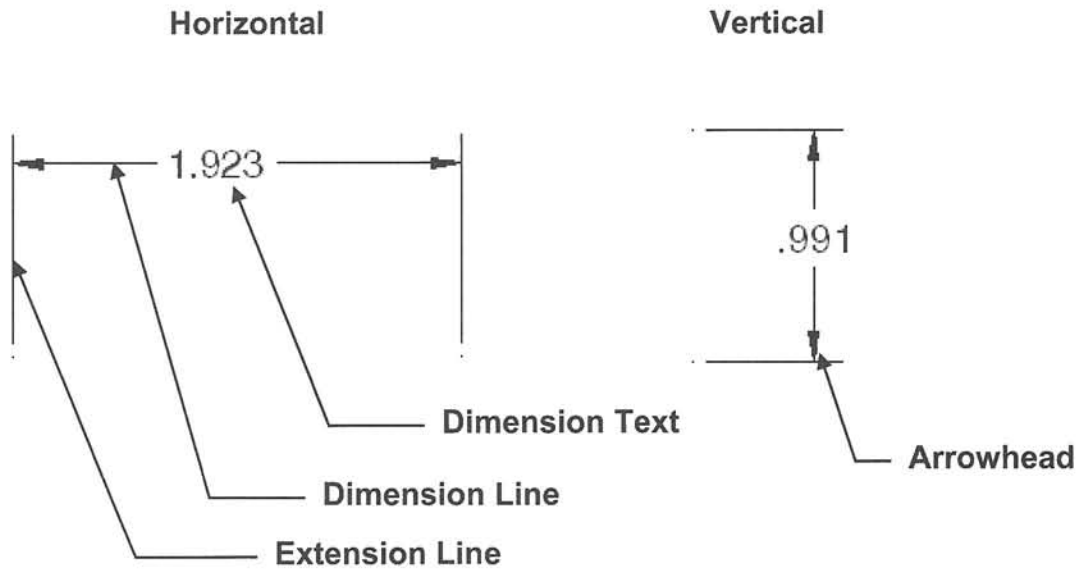
Regenerating Associative dimensions

Sometimes after panning and zooming, the associative dimensions seem to be floating or not following the object. The **DIMREGEN** command will move the associative dimensions back into their correct location.


Type: *dimregen <enter>*

LINEAR DIMENSIONING

Linear dimensioning allows you to create horizontal and vertical dimensions.

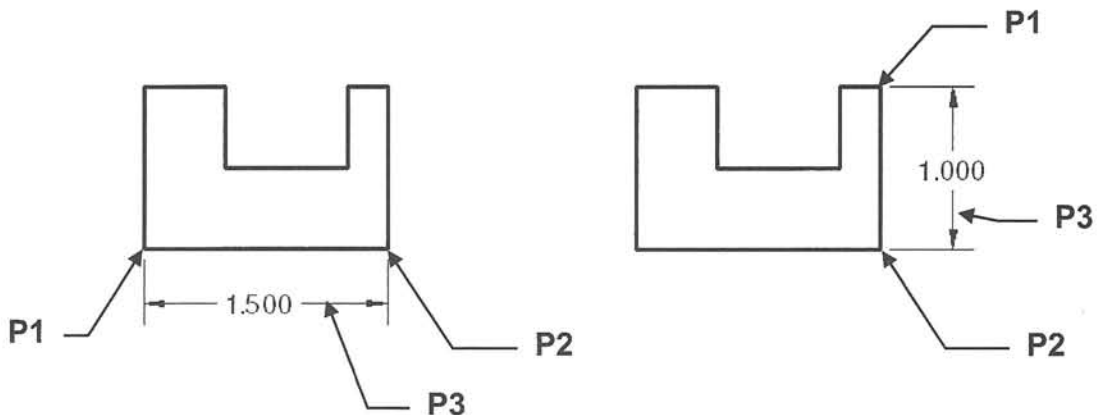


1. Select the **LINEAR** command using one of the following:

Ribbon = Annotate tab / Dimension panel / 
or
Keyboard = Dimlinear <enter>

Command: `__dimlinear`

2. Specify first extension line origin or <select object>: ***snap to first extension line origin (P1).***
3. Specify second extension line origin: ***snap to second extension line origin (P2).***
4. Specify dimension line location or [Mtext/Text/Angle/Horizontal/Vertical/Rotated]: ***select where you want the dimension line placed (P3).***



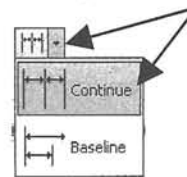
CONTINUE DIMENSIONING

Continue creates a series of dimensions in-line with an existing dimension. If you use the continue dimensioning immediately after a Linear dimension, you do not have to specify the continue extension origin.



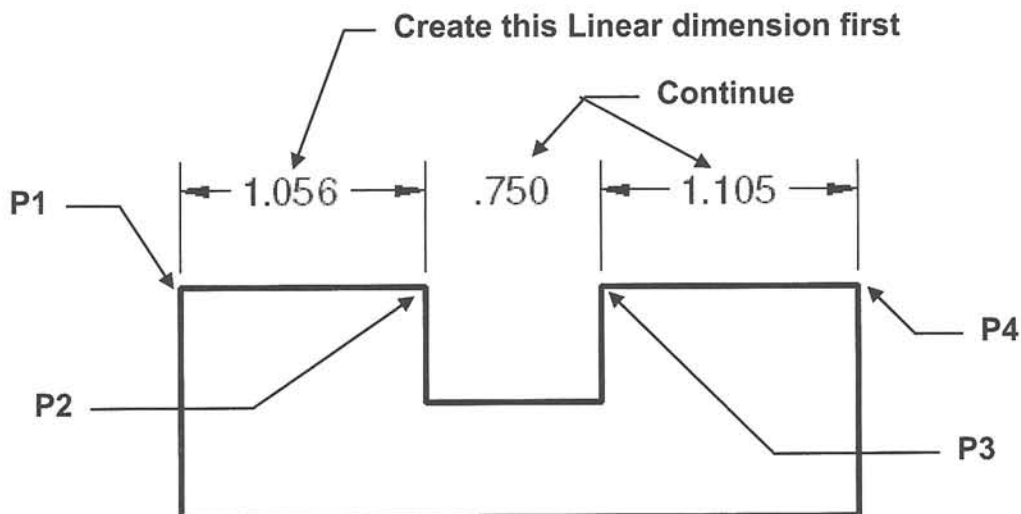
1. Create a linear dimension first (**P1 and P2 shown below**)
2. Select the Continue command using one of the following:

Ribbon = Annotate tab / Dimension panel /
or
Keyboard = Dimcontinue <enter>



Command: `_dimcontinue`

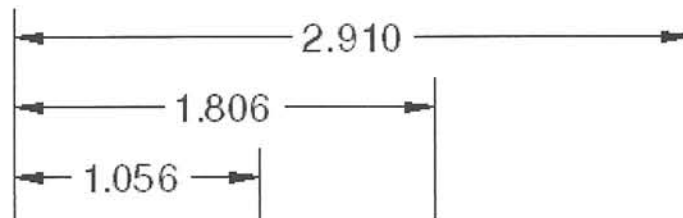
3. Specify a second extension line origin or [Undo/Select] <Select>: **snap to the second extension line origin (P3).**
4. Specify a second extension line origin or [Undo/Select] <Select>: **snap to the second extension line origin (P4).**
5. Specify a second extension line origin or [Undo/Select] <Select>: **press <enter> twice to stop.**



BASELINE DIMENSIONING

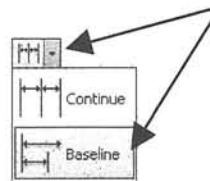
Baseline dimensioning allows you to establish a **baseline** for successive dimensions. The spacing between dimensions is automatic and should be set in the dimension style. (See 16-11, Baseline spacing setting)

A Baseline dimension must be used with an existing dimension. If you use Baseline dimensioning immediately after a Linear dimension, you do not have to specify the baseline origin.

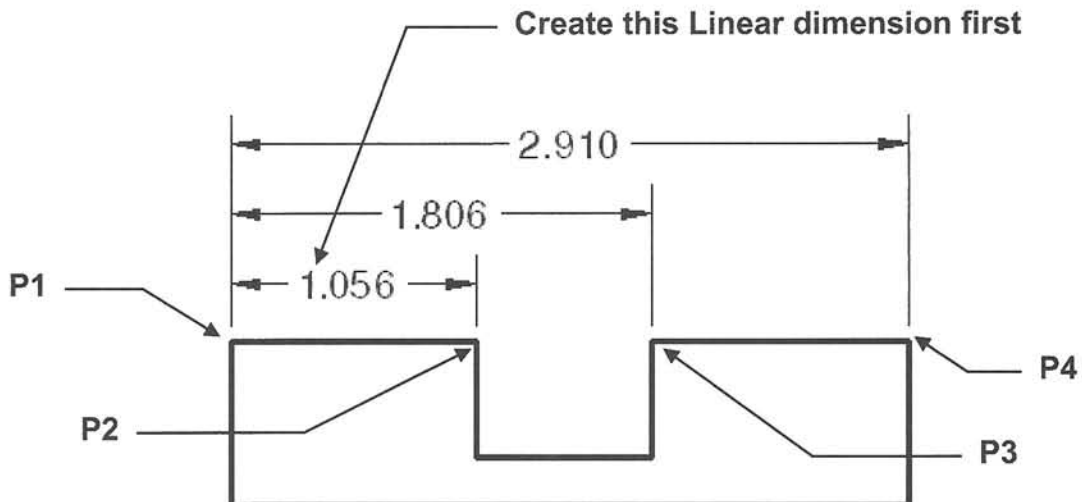


1. Create a linear dimension first (**P1 and P2**).
2. Select the **BASELINE** command using one of the following:
Command: `_dimbaseline`

Ribbon = Annotate tab / Dimension panel /
or
Keyboard = Dimbaseline <enter>



3. Specify a second extension line origin or [Undo/Select] <Select>: **snap to the second extension line origin (P3)**.
4. Specify a second extension line origin or [Undo/Select] <Select>: **snap to P4**.
5. Specify a second extension line origin or [Undo/Select] <Select>: **select <enter> twice to stop.**



DIMENSION STYLES

Using the “Dimension Style Manager” you can change the appearance of the dimension features, such as length of arrowheads, size of the dimension text, etc. There are over 70 different settings.

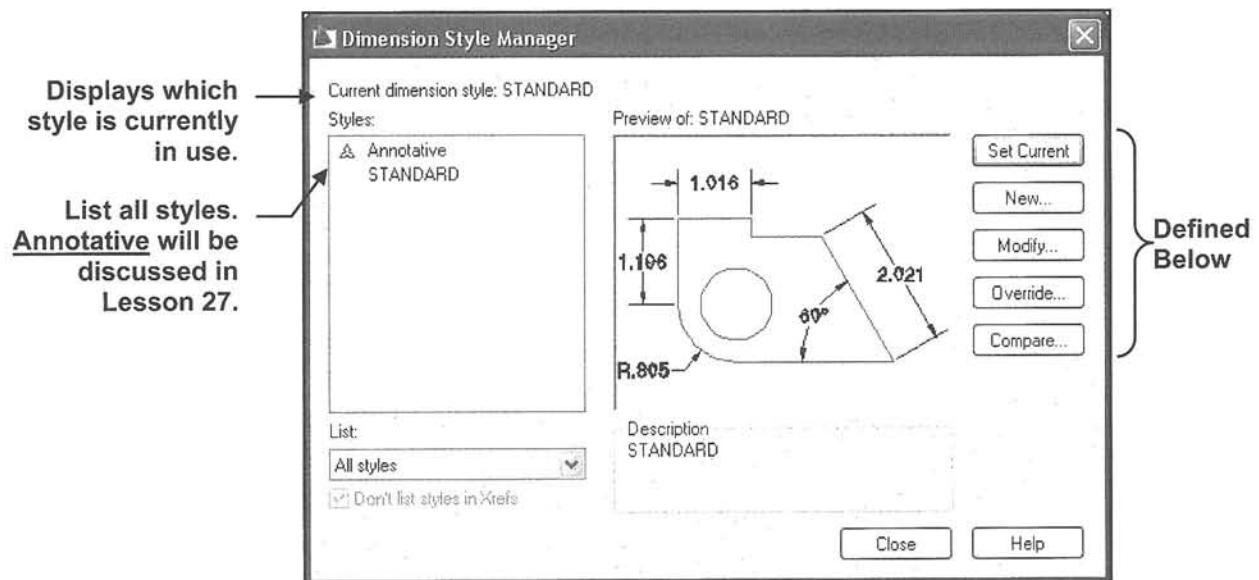
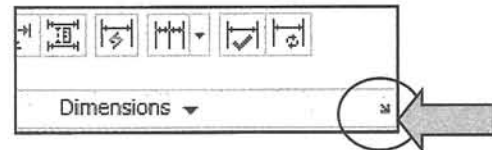
You can also Create New, Modify and Override Dimension Styles. All of these are simple, by using the Dimension Style Manager described below.

1. Select the “Dimension Style Manager” using one of the following:

Ribbon = Annotate tab / Dimension panel / ↘

or

Keyboard = Dimstyle <enter>



Set Current Select a style from the list of styles and select the **set current** button.

New Select this button to create a new style. When you select this button, the **Create New Dimension Style** dialog box is displayed.

Modify Selecting this button opens the **Modify dimension Style** dialog box which allows you to make changes to the style selected from the “list of styles”.

Override An override is a temporary change to the current style. Selecting this button opens the **Override Current Style** dialog box.

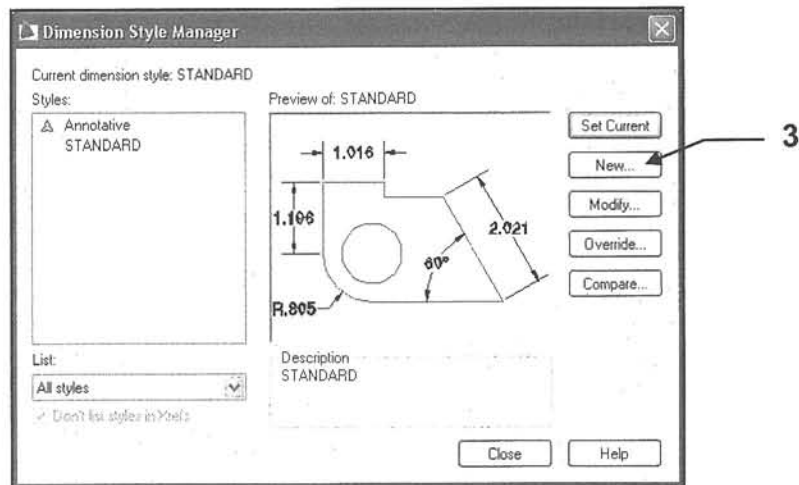
Compare Compares two styles.

CREATING A NEW DIMENSION STYLE

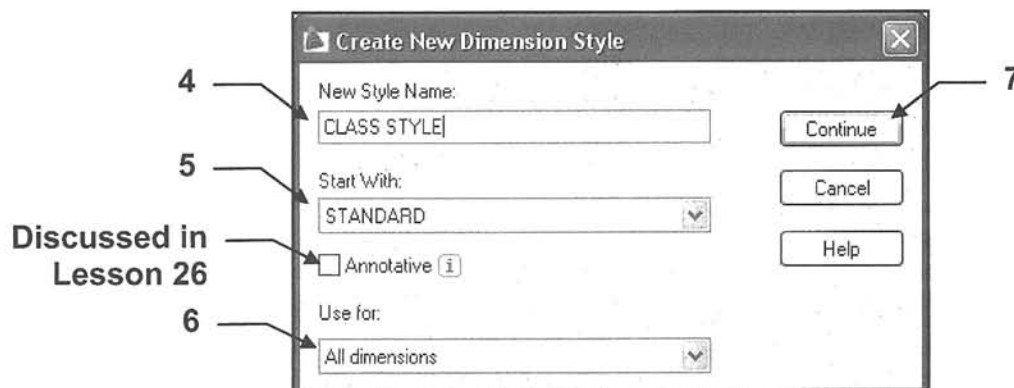
A dimension style is a group of settings that has been saved with a name you assign. When creating a new style you must start with an existing style, such as Standard. Next, assign it a new name, make the desired changes and when you select the OK button the new style will have been successfully created.

How to create a NEW dimension style.

1. Start a **New** file using **Border A-2013.dwt**
2. Select the **Dimension Style Manager** command (Refer to previous page)
3. Select the **NEW** button.

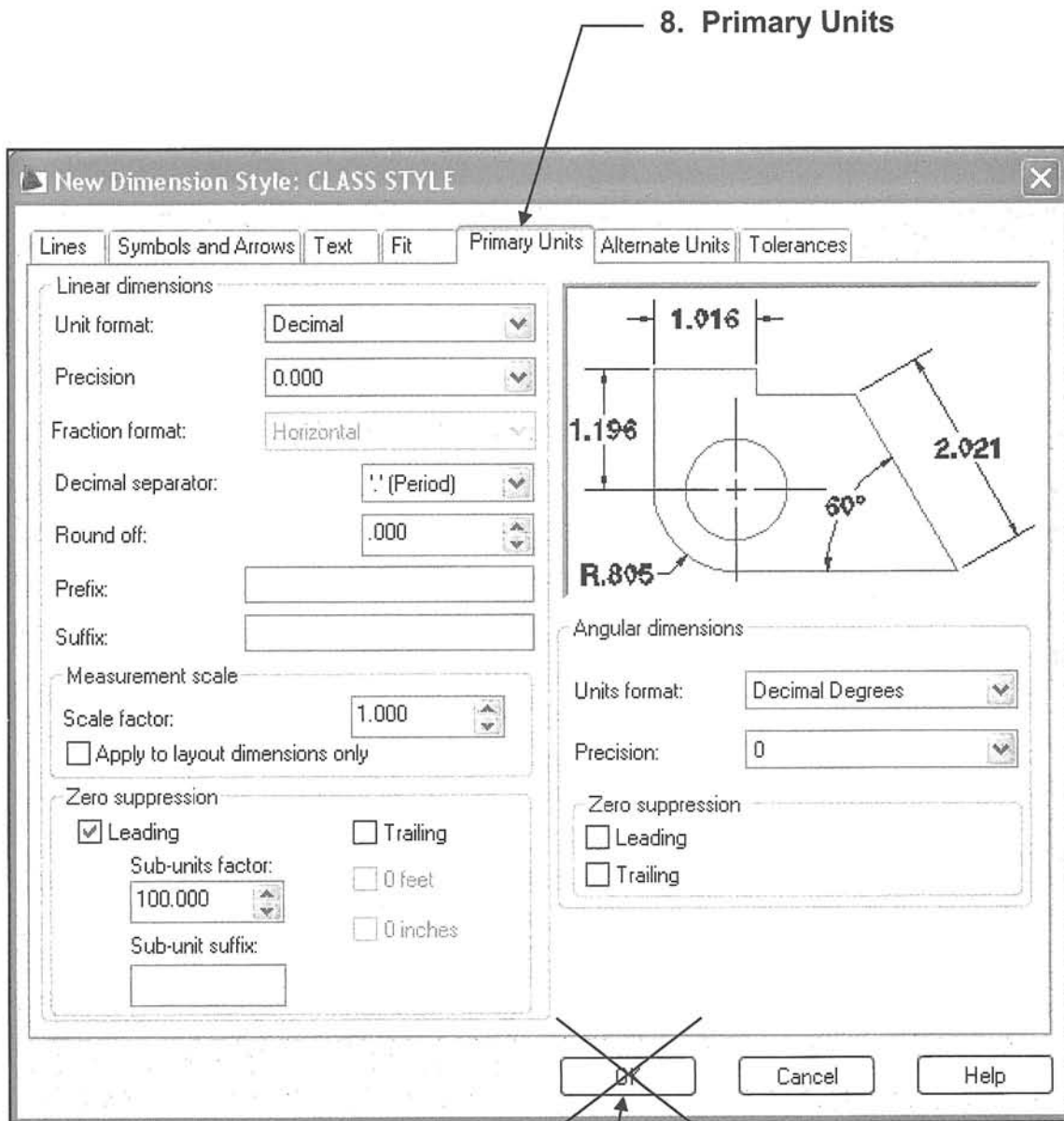


4. Enter **CLASS STYLE** in the “New Style Name” box.
5. Select **STANDARD** in the “Start With:” box.
6. “Use For:” box will be discussed later. For now, leave it set to “All dimensions”.
7. Select the **CONTINUE** button.



CREATING A NEW DIMENSION STYLE....continued

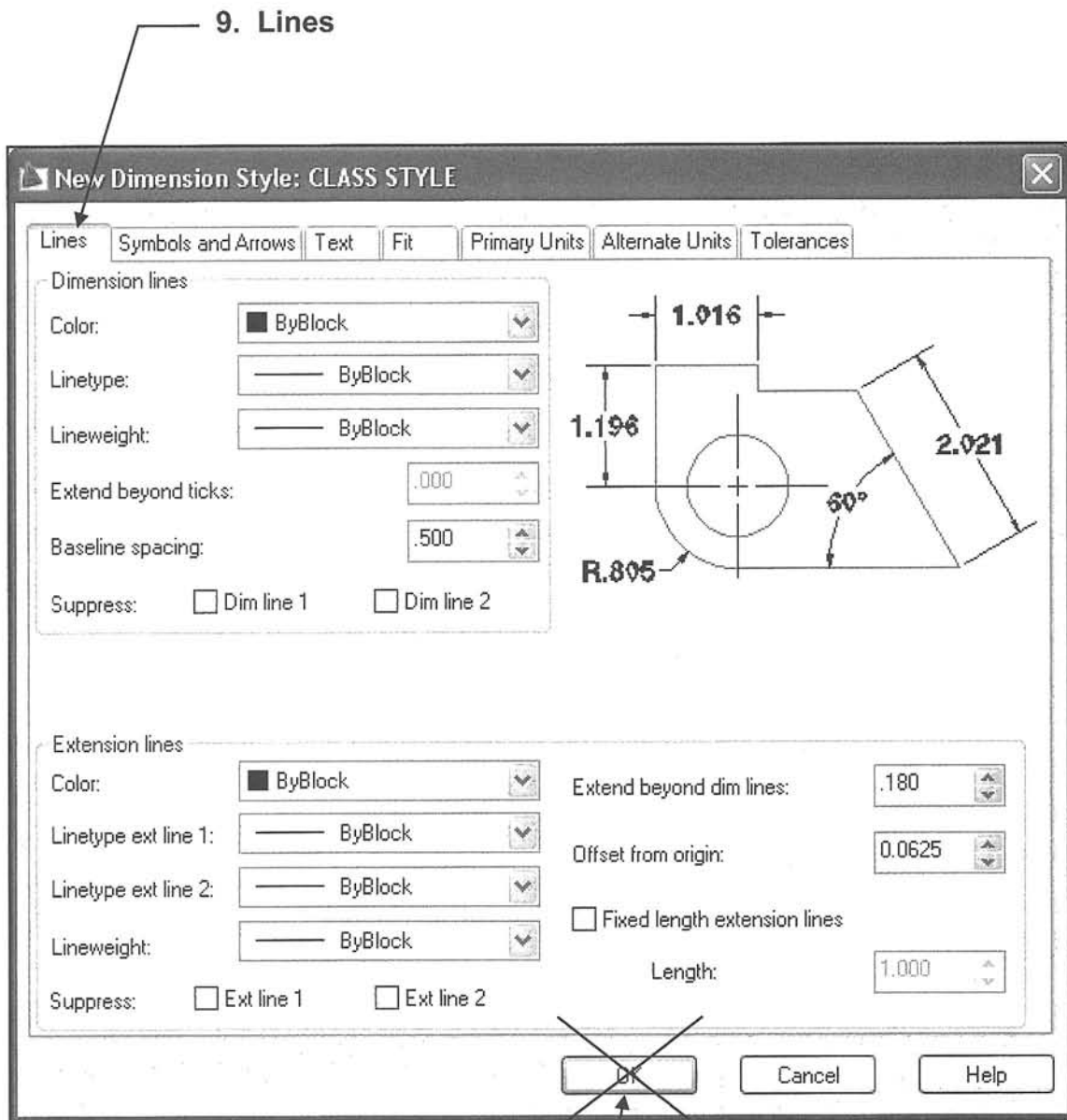
8. Select the **Primary Units** tab and change your setting to match the settings shown below.



Do not select the OK button yet.

CREATING A NEW DIMENSION STYLE....continued

9. Select the **Lines** tab and change your settings to match the settings shown below.

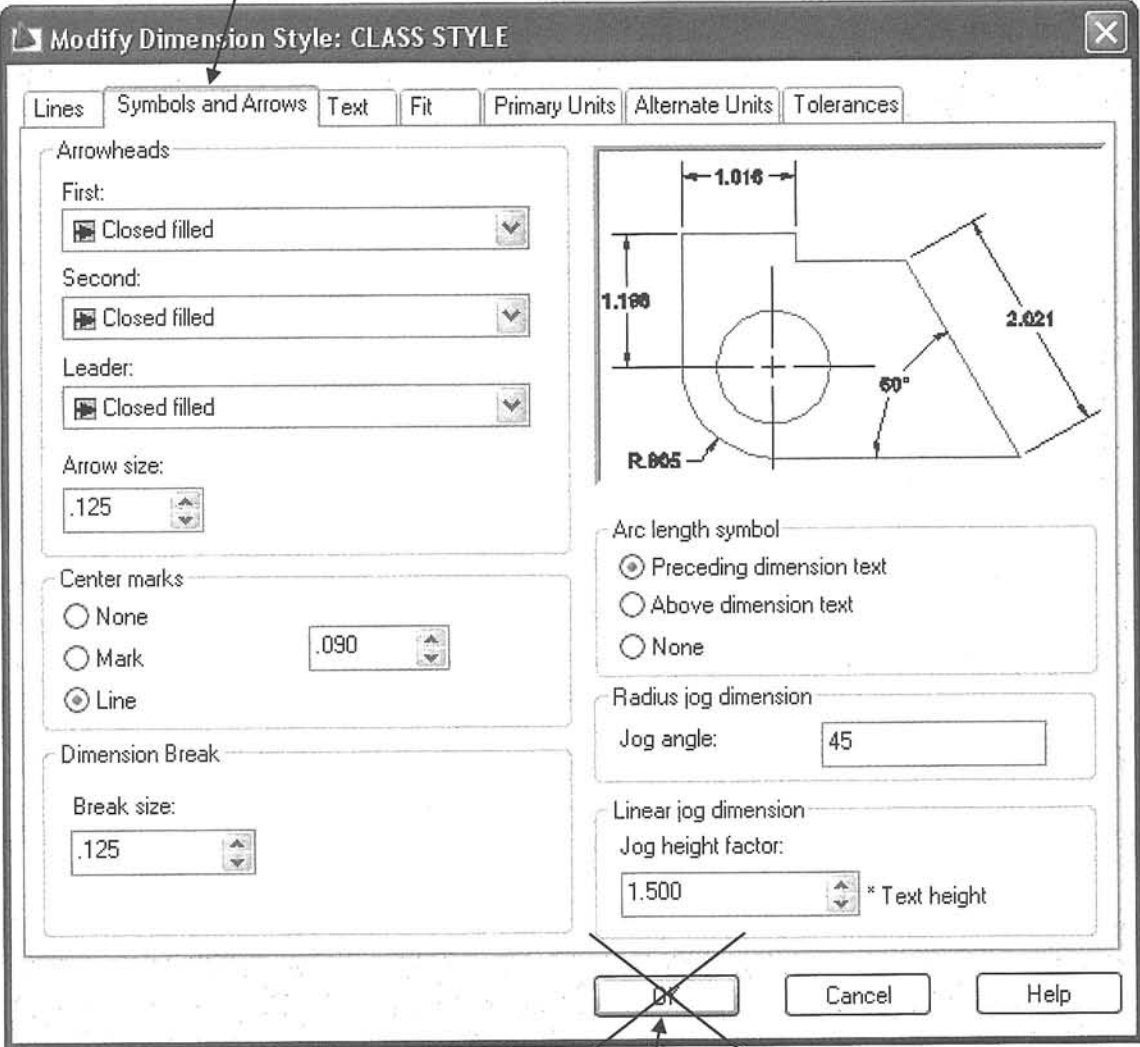


Do not select the OK button yet.

CREATING A NEW DIMENSION STYLE....continued

10. Select the **Symbols and Arrows** tab and change your setting to match the settings shown below.

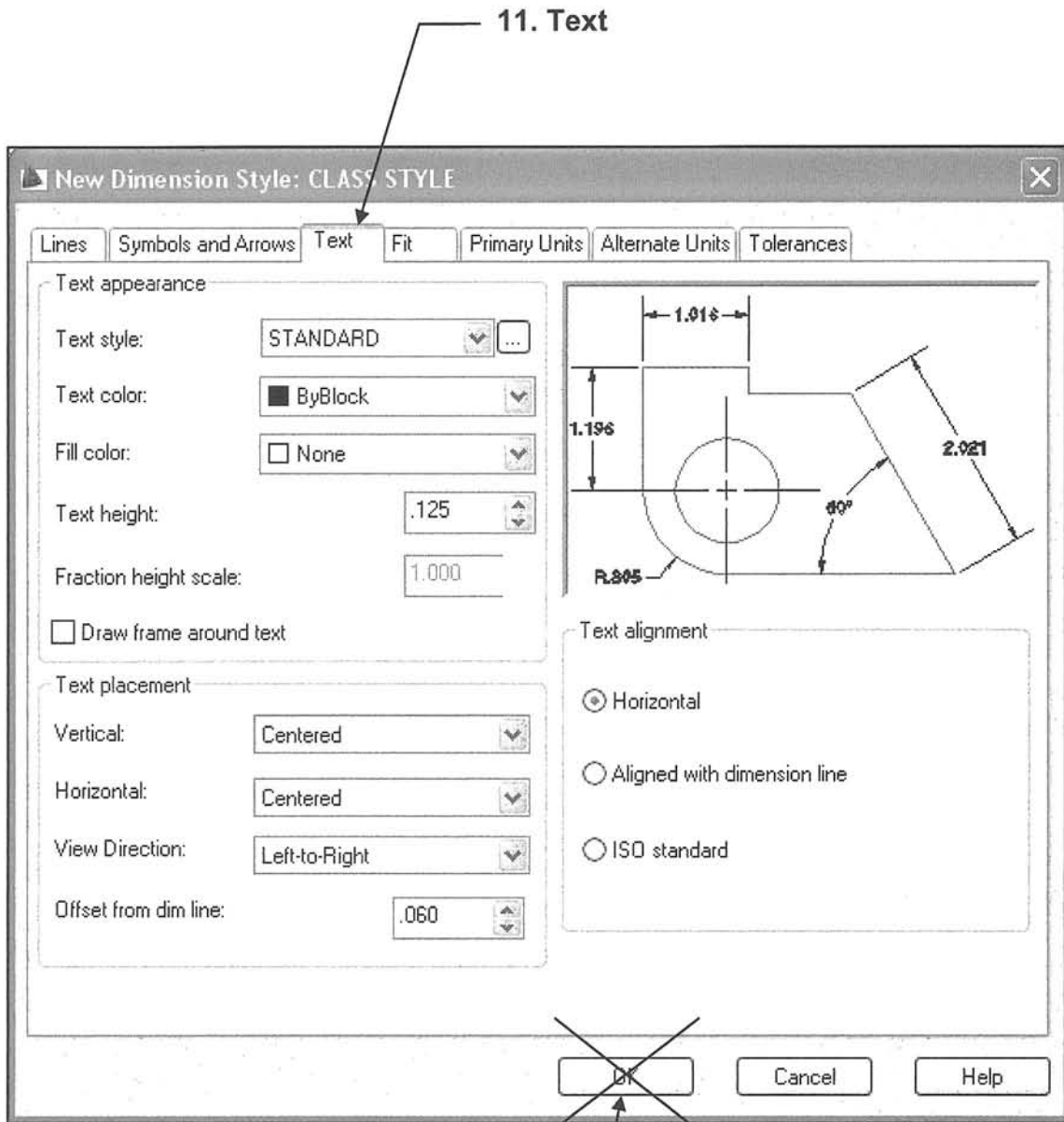
10. Symbols and Arrows



Do not select the OK button yet.

CREATING A NEW DIMENSION STYLE....continued

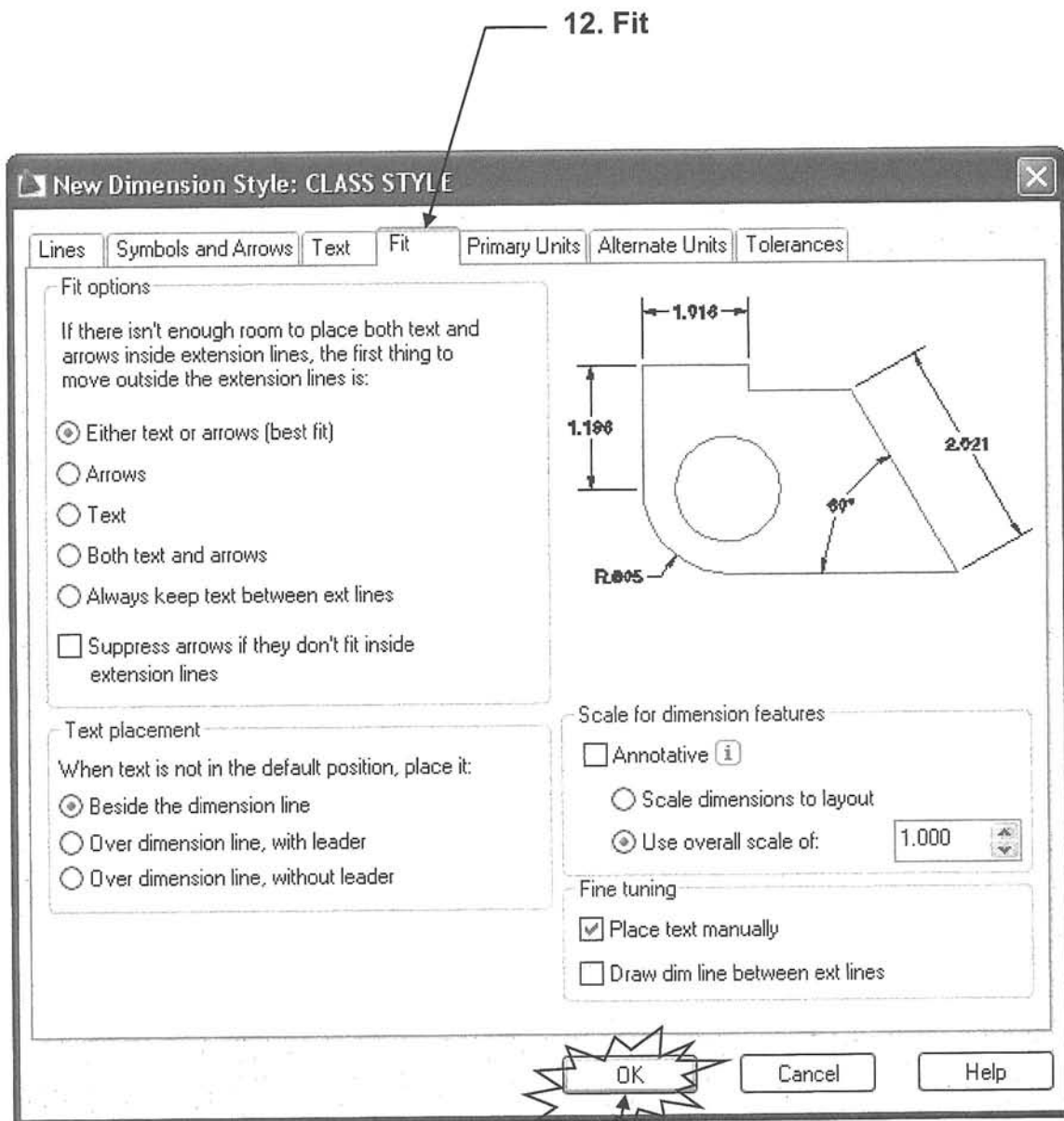
11. Select the **Text** tab and change your settings to match the settings shown below.



Do not select the OK button yet.

CREATING A NEW DIMENSION STYLE....continued

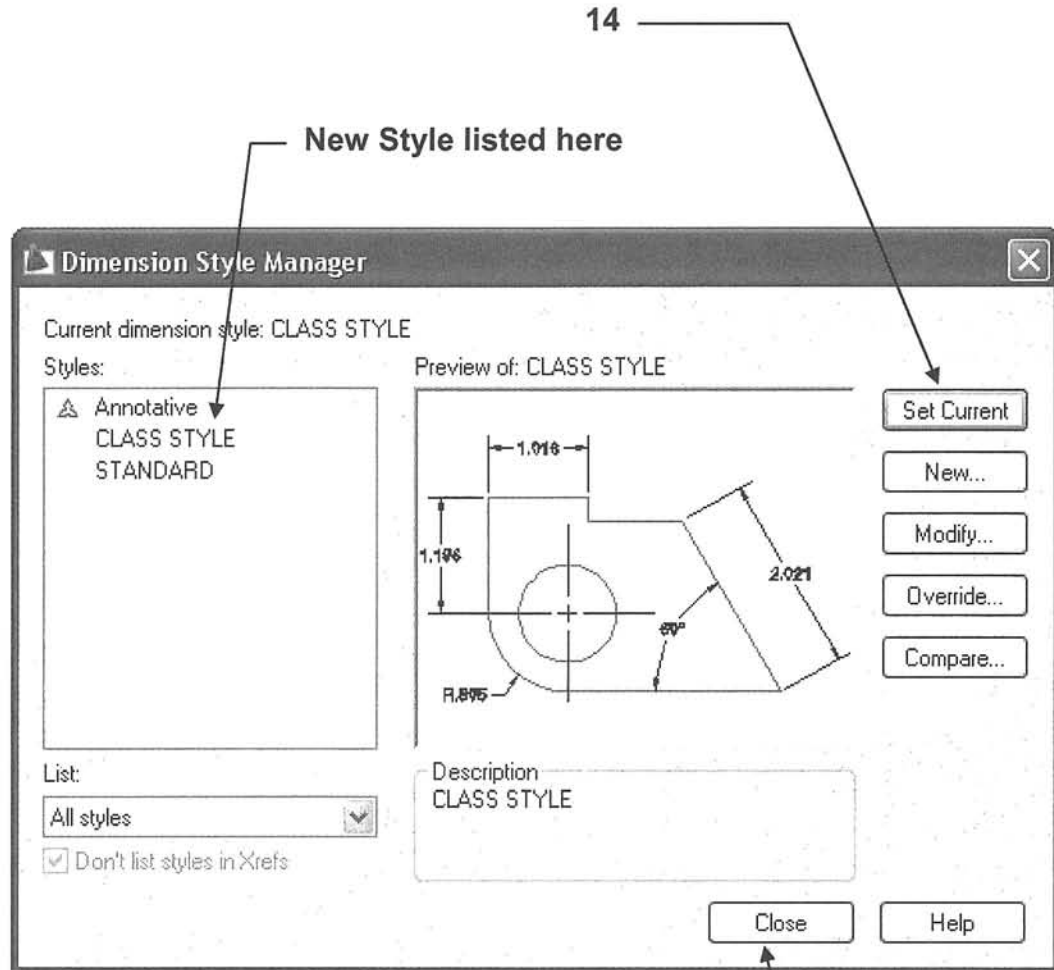
12. Select the **Fit** tab and change your setting to match the settings shown below.
13. Now select the OK button.



CREATING A NEW DIMENSION STYLE....continued

Your new style “**Class Style**” should be listed.

14. Select the “**Set Current**” button to make your new style “**Class Style**” the style that will be used.



15. Select the **Close** button.

16. **Important:** Re-Save this “template” as **Border A-2013.dwt** (Refer to page 2-4)

Note:

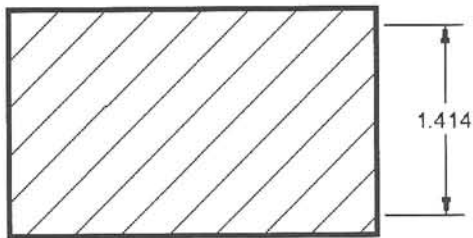
You have successfully created a new “*Dimension Style*” called “**Class Style**”. This style will be saved in your **Border A -2013** template after you save the template. So every time you use this template the *Dimension Style* will already be there and you will not have to create it again. It is important that you understand that this dimension style resides only in the **Border A-2013** template. If you open another drawing, this dimension style will not be there.

IGNORING HATCH OBJECTS

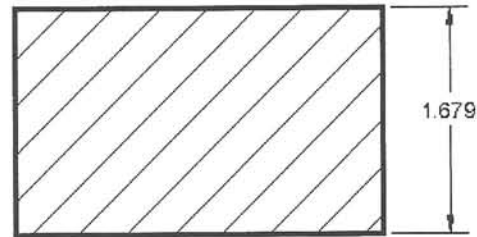
Occasionally, when you are dimensioning an object that has “Hatch Lines”, your cursor will snap to the Hatch Line instead of the object that you want to dimension. To prevent this from occurring, select the option “**IGNORE HATCH OBJECTS**”.

EXAMPLE:

“Ignore Hatch Objects”
option not selected

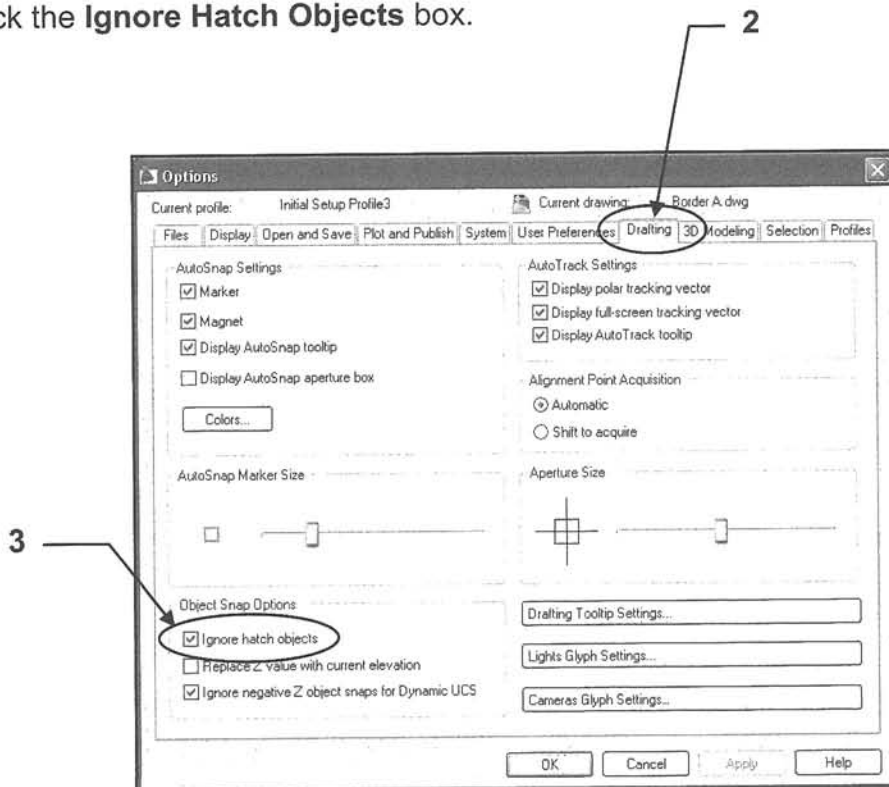


“Ignore Hatch Objects”
option selected



How to select the “IGNORE HATCH OBJECTS” option

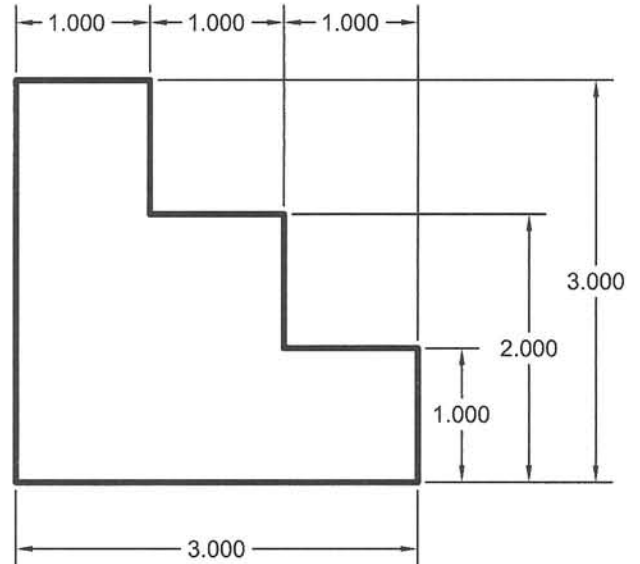
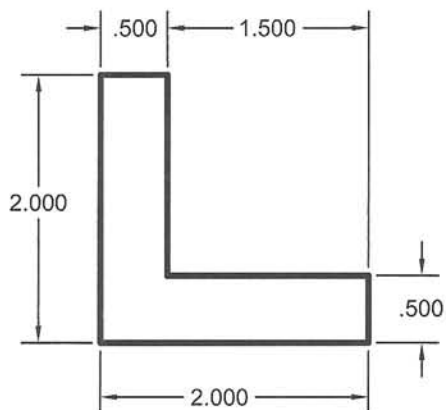
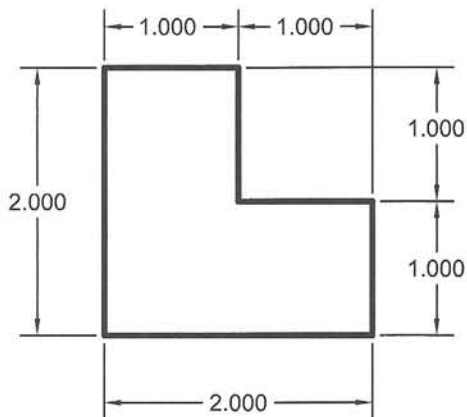
1. Type **Options** <enter>
2. Select **Drafting** tab.
3. Check the **Ignore Hatch Objects** box.



EXERCISE 16A

INSTRUCTIONS:

1. Start a **New** file using **Border A-2013.dwt**
2. Create a Dimension Style in your Border A by following the instructions on pages 16-8 through 16-14. Re-Save the template as Border A.dwt before starting the drawing shown below.
3. Draw the Objects as shown using layer Object line.
4. Dimension as shown using Dimension Style "Class Style" on Layer Dimension.
5. Use Linear, Continue and Baseline.
6. Edit the Title and Ex-XX by double clicking on the text. Do not erase and replace.
7. Save as **EX16A**
8. Plot using Page Setup **Class Model A**



Your Name Here

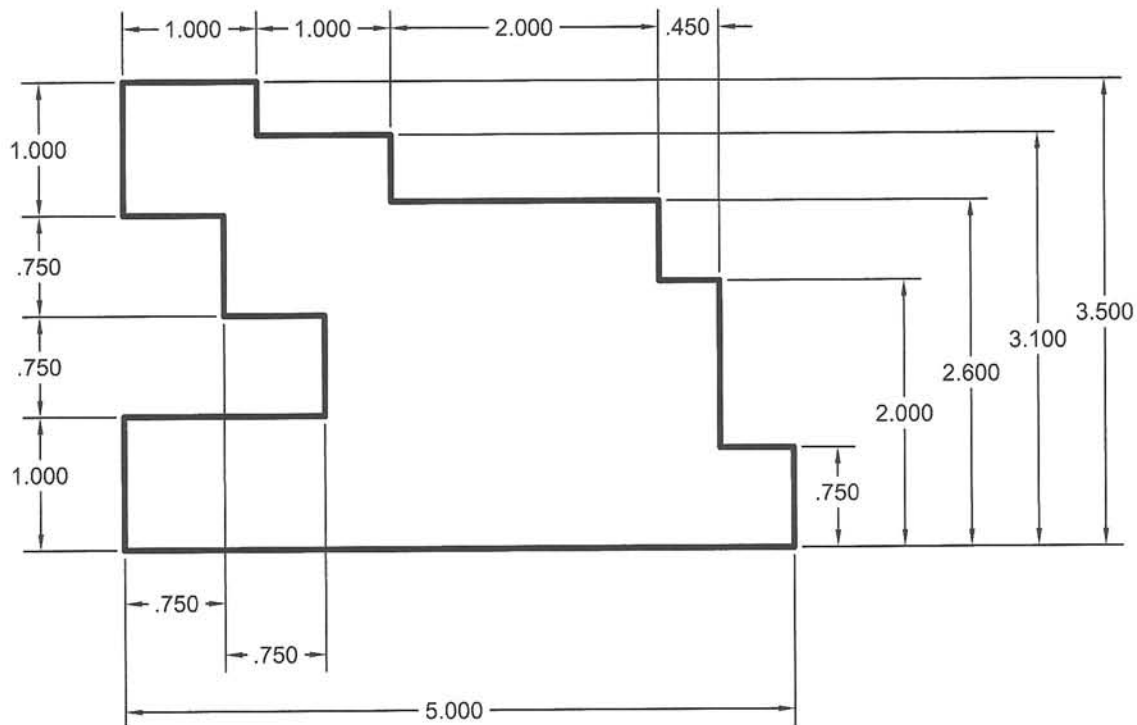
Beginning Dimensioning

Ex-16A

EXERCISE 16B

INSTRUCTIONS:

1. Start a **New** file using **Border A-2013.dwt**
2. Draw the Objects as shown using layer **Object line**.
3. Dimension as shown using Dimension Style "**Class Style**" on Layer **Dimension**.
4. Use **Linear**, **Continue** and **Baseline**.
5. Edit the Title and Ex-XX by double clicking on the text. Do not erase and replace.
6. Save as **EX16B**
7. Plot using Page Setup **Class Model A**



Your Name Here

Intermediate Dimensioning

Ex-16B

EXERCISE 16C

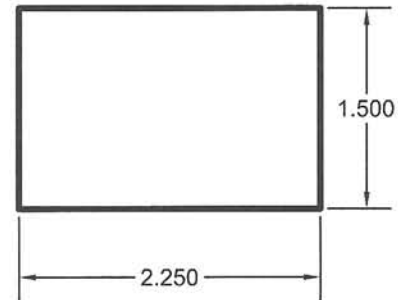
INSTRUCTIONS:

1. Start a **New** file using **Border A-2013.dwt**
2. Follow the instructions below.
3. Do not divide your drawing into 4 sections. Just draw one rectangle in the middle of your drawing area and follow instructions.
4. Edit the Title and Ex-XX by double clicking on the text. Do not erase and replace.
5. Save as **EX16C**
6. Plot using Page Setup **Class Model A**

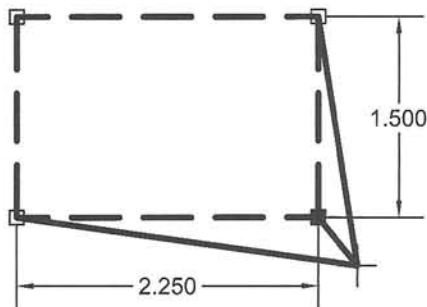
1. Draw a 2.250" long by 1.500" wide Rectangle.



2. Set "Dimassoc" setting to 2.
3. Dimension the Rectangle as shown here.

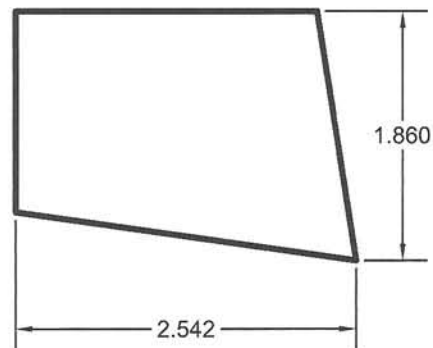


4. Stretch one corner of the rectangle using "Grips" approximately as shown (with Ortho and Osnap OFF)



Did the dimensions change?

Note: Your dimensions may not be exactly the same as shown. That's OK.



Your Name Here



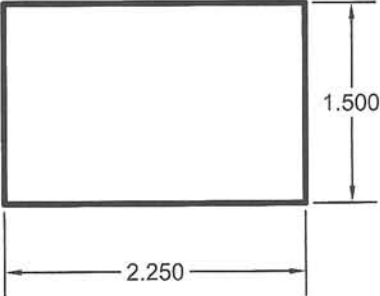
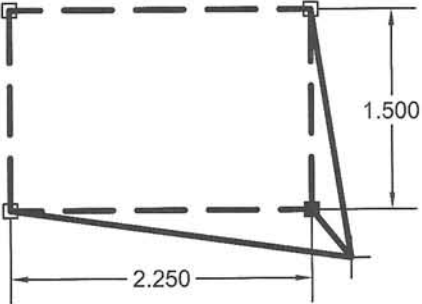
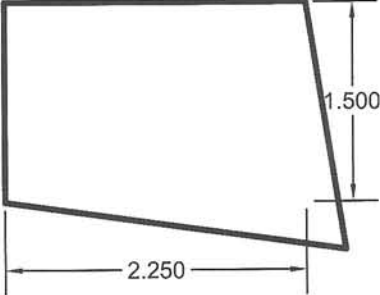
Stretch and Associative Dims

Ex-16C

EXERCISE 16D

INSTRUCTIONS:

1. Start a **New** file using **Border A-2013.dwt**
2. Follow the instructions below.
3. Do not divide your drawing into 4 sections. Just draw one rectangle in the middle of your drawing area and follow instructions.
4. Edit the Title and Ex-XX by double clicking on the text. Do not erase and replace.
5. Save as **EX16D**
6. Plot using Page Setup **Class Model A)**

<p>1. Draw a 2.250" long by 1.500" wide Rectangle.</p> 	<p>2. Set "Dimassoc" setting to 1.  Note</p> <p>3. Dimension the Rectangle as shown here.</p> 	
<p>4. Stretch one corner of the rectangle using "Grips" approximately as shown (with Ortho and Osnap OFF)</p> 	<p>Notice the difference? The dimensions are not associated to the object, so they did not respond to the stretch.</p> 	
<p>Your Name Here</p>	<p>Stretch and Non-Associative Dims</p>	<p>Ex-16D</p>

Notes: