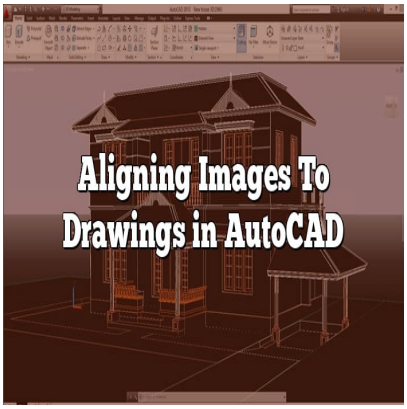


Aligning Images To Drawings in AutoCAD

Description

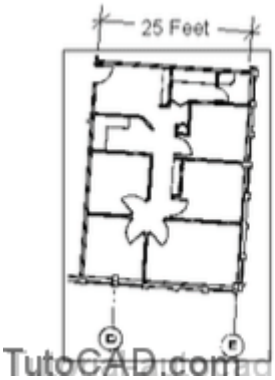
https://caddikt.com/

When you combine raster and vector data in a single drawing you must set the image insertion parameters appropriately.

- it may be difficult to know the required parameters before you actually insert the image into the current drawing
- but you can insert an image with default parameters & then use **Move**, **Scale** & **Rotate** commands to align images to vectors.

An effective way to align images with drawings is to use the Reference option of **Scale** & **Rotate**.

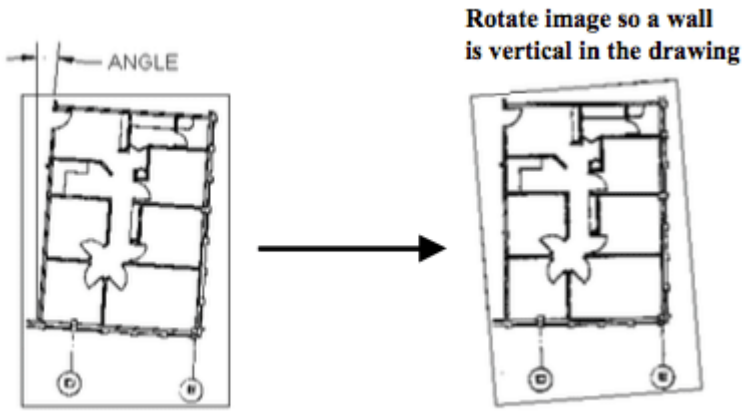
- you must know the distance (in drawing units) between 2 points in the image.



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Scale the image so the distance between two points matches the distance it represents in drawing units.

- similarly, you should know an angle (normally a vertical or horizontal scanned line) for a feature in the image file.



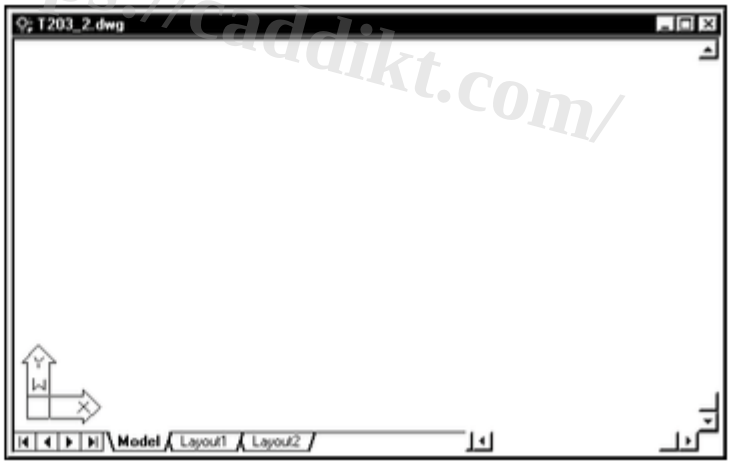
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PRACTICE ALIGNING IMAGES WITH VECTOR DRAWINGS

1) ***Close*** *the drawing from the previous exercise if it is open.*
2) ***Open*** *the* ***T203_2.dwg*** *drawing in your* ***personal folder****.*

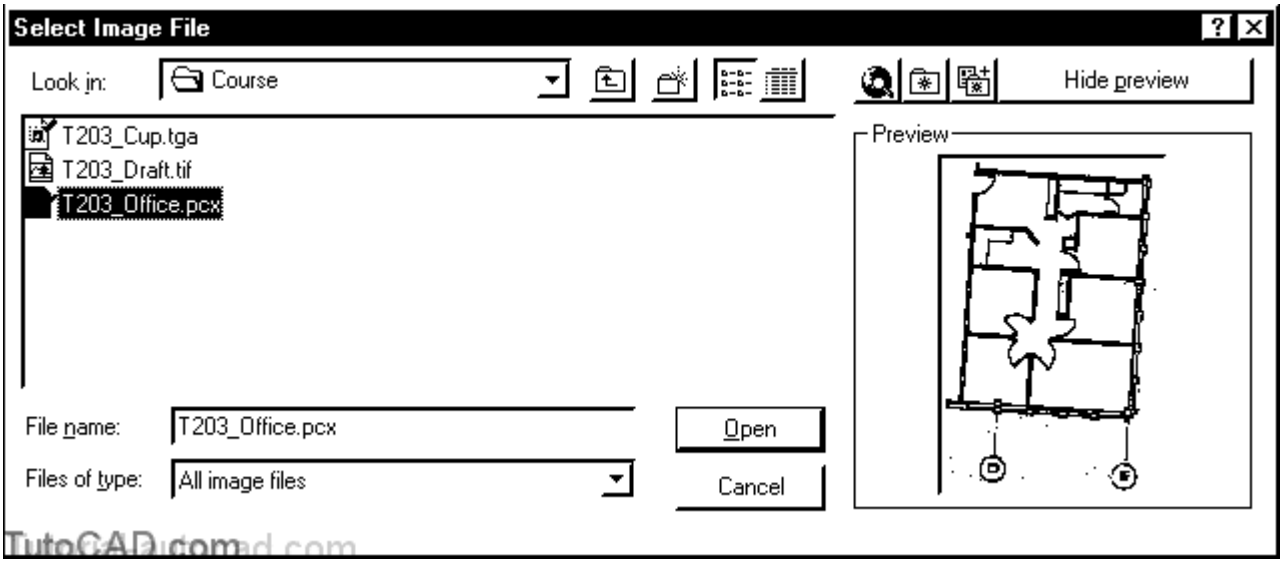
This empty drawing contains block definitions & layers but there are no objects in it yet.

In this exercise, you will attach an image of a floor plan and then insert furniture symbols into it.

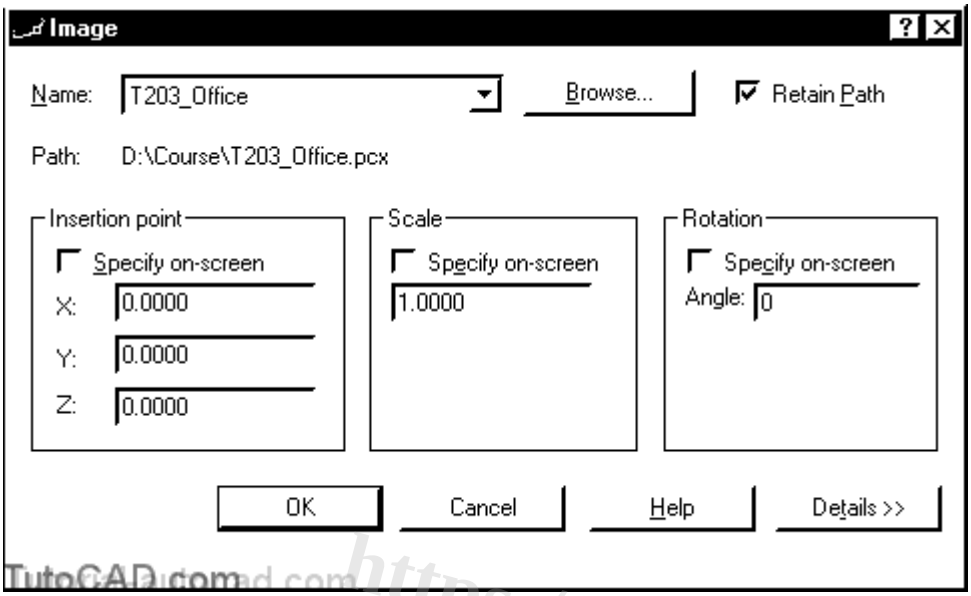


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3) Pick ***Insert*** *+* ***Raster Image****. Select the* ***T203_Office.pcx*** *file and pick* ***Open*** *to continue.*



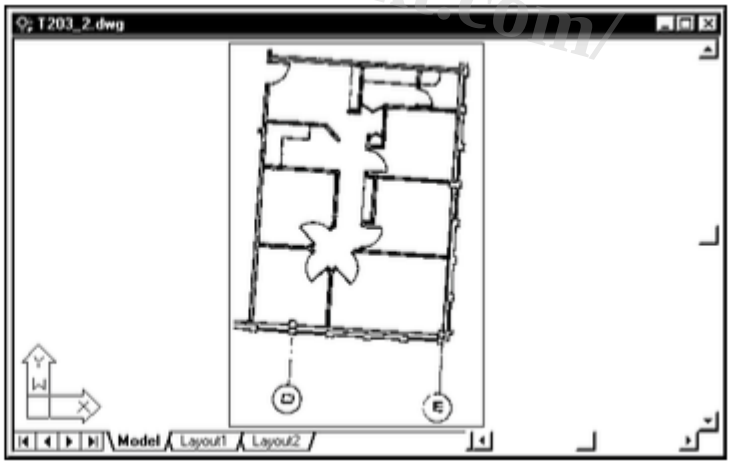
***4) Uncheck** all Specify on-screen boxes and pick **OK**.*



*5) Pick **View** + **Zoom** + **Extents** to see the attached image.*

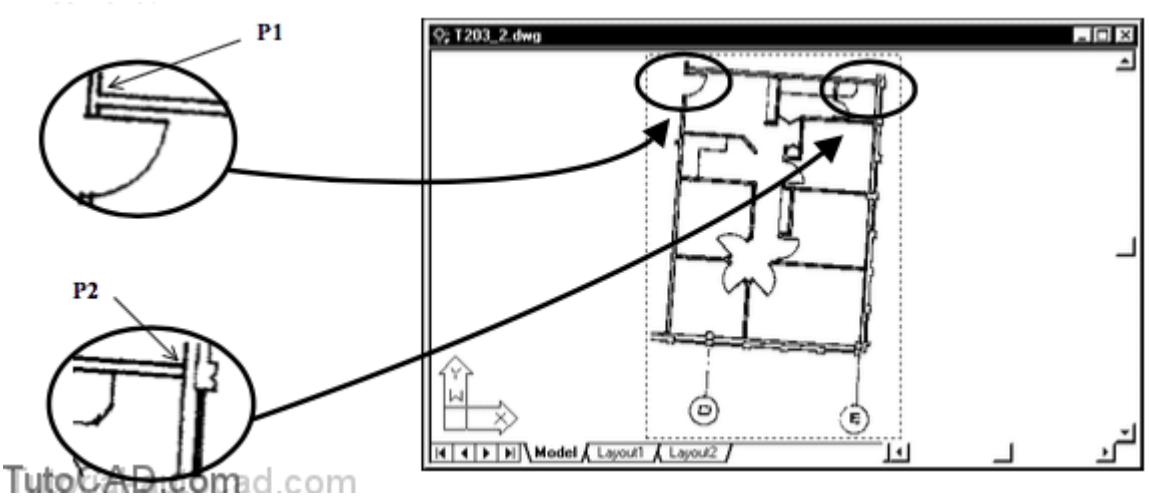
This is a low grade scanned image, typical of what you could expect after sending a hand drawing by fax to a computer and then saving the faxed image as a PCX raster image.

Scanned images can be much higher quality than this but the image file sizes would be much larger.



*6) Pick **Modify** + **Scale**. Select the **image frame** when prompted to select objects then press <**enter**> to continue. Follow the dialogue below to scale the image such that the distance between points **P1** & **P2** is **300** (25 feet).*

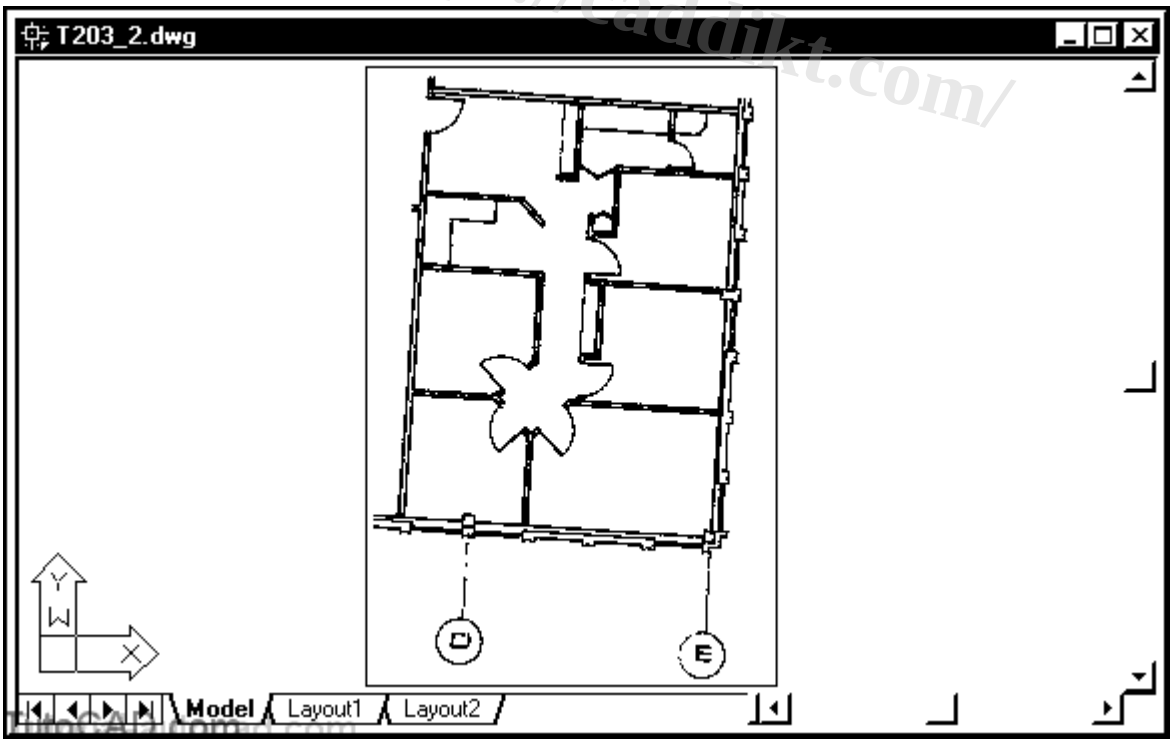
*Command: **SCALE**â†µ*
*Select objects: **(picktheimageframe)***
Select objects: â†µ
*Specify base point: **(pickinsidecornerpointnearP1)***
*Specify scale factor or [Reference]: **R**â†µ*
*Specify reference length <1>: **(pickinsidecornerpointagainnearP1)***
*Specify second point: **(pickinsidecornerpointnearP2)***
*Specify new length: **300**â†µ*
Command:



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You can **Zoom** in transparently to pick these points more precisely if you wish but in this exercise it is not critical to be precise.

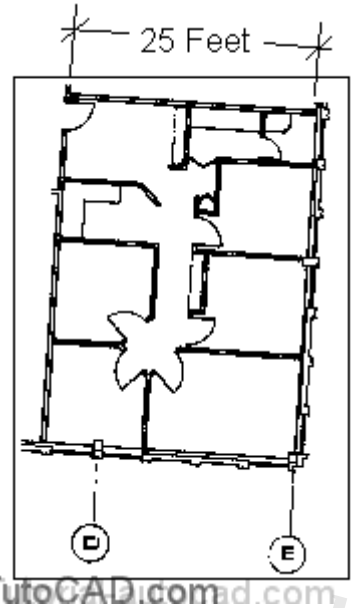
*7) Pick **View** + **Zoom** + **Extents**.*



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The image will look the same on your screen but if you performed the last step properly it should now be inserted at the desired scale.

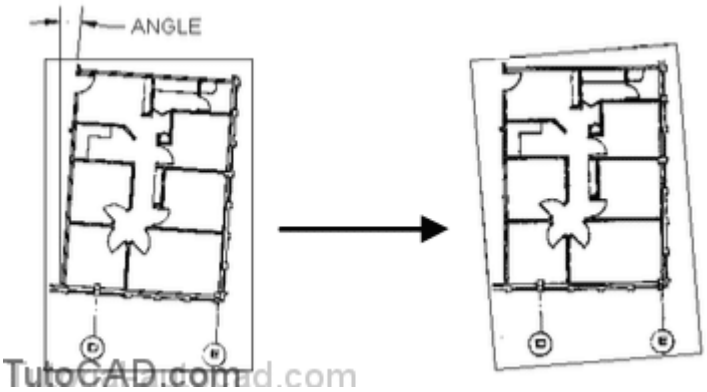
- the inside dimension shown below should be 300 drawing units (inches) which corresponds to 25 feet.
- you could use the **Dist** command to verify that the distance between these points in the image is approximately correct.



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In the next step you will use the Reference option of **Rotate** to align the image walls with vertical & horizontal directions in AutoCAD.

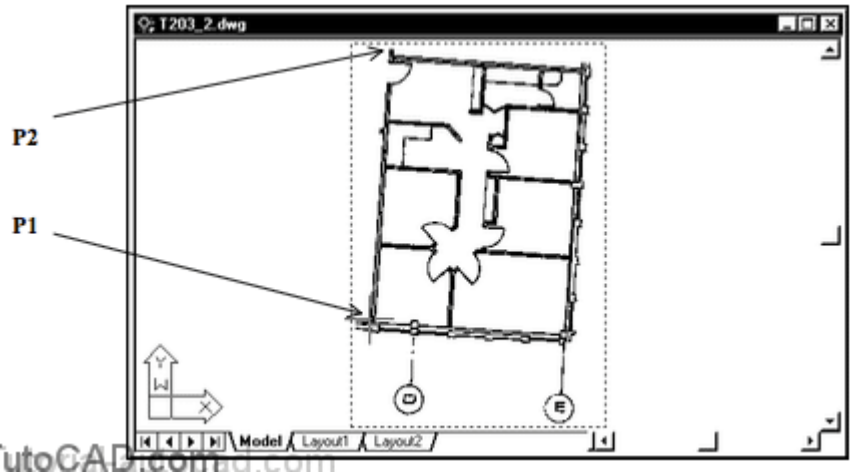
https://caddikt.com/



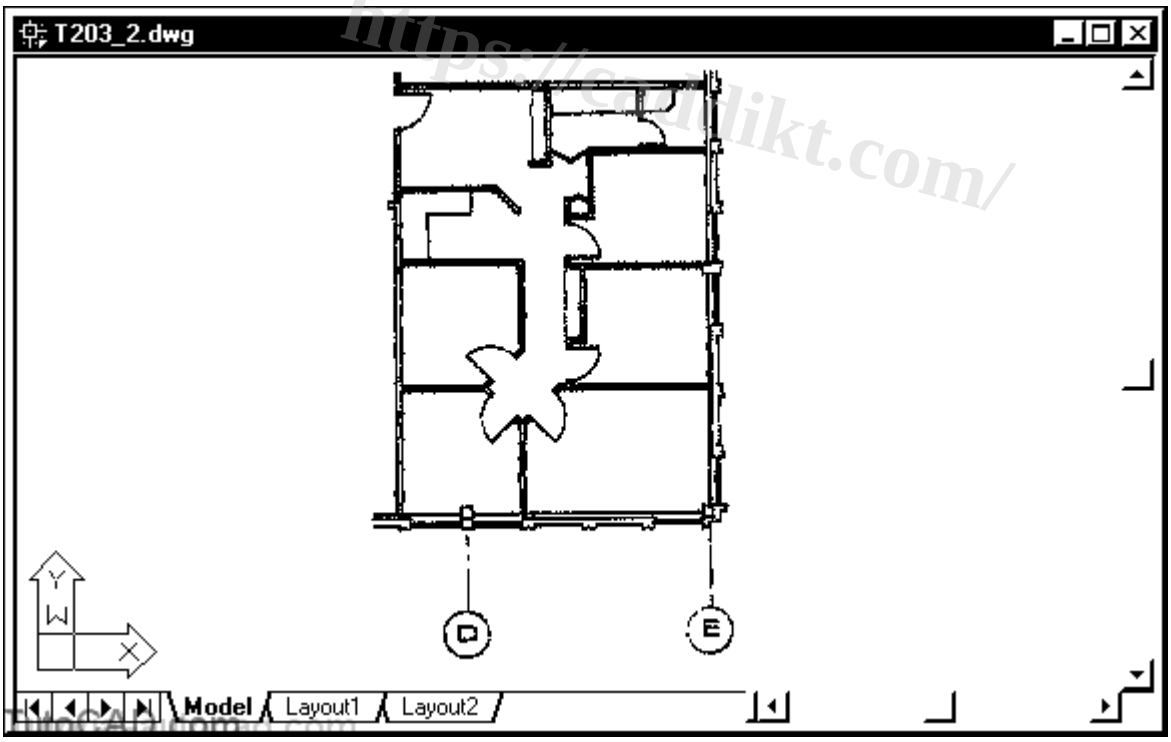
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*8) Pick **Modify** + **Rotate** and select the **image frame** when AutoCAD prompts to select objects then press <**enter**> to continue. Follow the dialogue below to align the image walls to vertical and horizontal directions.*

*Command: **ROTATE**â†µ*
*Current positive angle in UCS: ANGDIR=counterclockwise ANGBASE=0 Select objects: **(picktheimageframe)***
Select objects: â†µ
*Specify base point: **(pick point along outside edge of wall near P1)***
*Specify rotation angle or [Reference]: **R**â†µ*
*Specify the reference angle <0>: **(pick the same point P1)***
*Specify second point: **(pick another point along the outside of the wall near P2)***
*Specify the new angle: **90** â†µ*
Command:

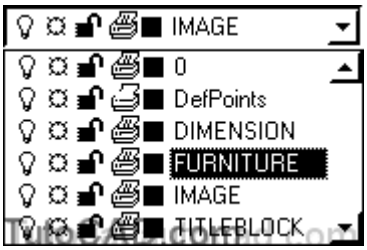


*9)Pick **Modify** + **Object** + **Image** + **Frame**. Then **right-click** in the drawing area to invoke a **shortcut** and select **OFF**.*

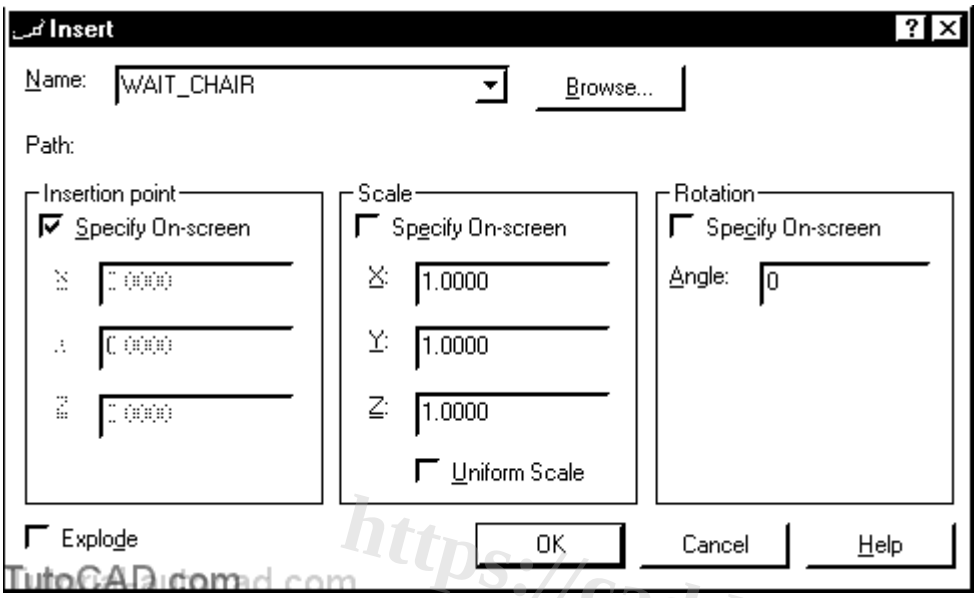


The image is now aligned with the vector drawing so you could now insert furniture symbols at a scale of 1 in this drawing.

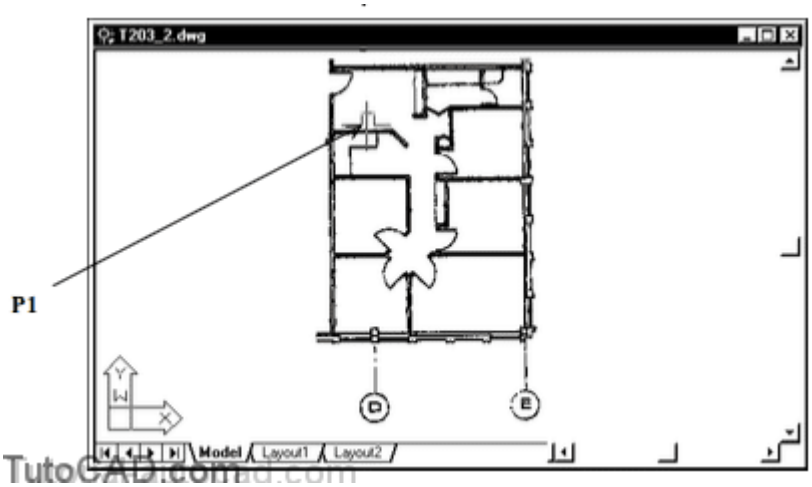
*10) Make **FURNITURE** the current layer.*



*11) Pick **Insert** + **Block**. Select **WAIT_CHAIR** as the name and **check** Specify on-screen for **Insertion point**. **Uncheck** Specify On-screen for **Scale** & **Rotation**. Pick **OK** to continue.*



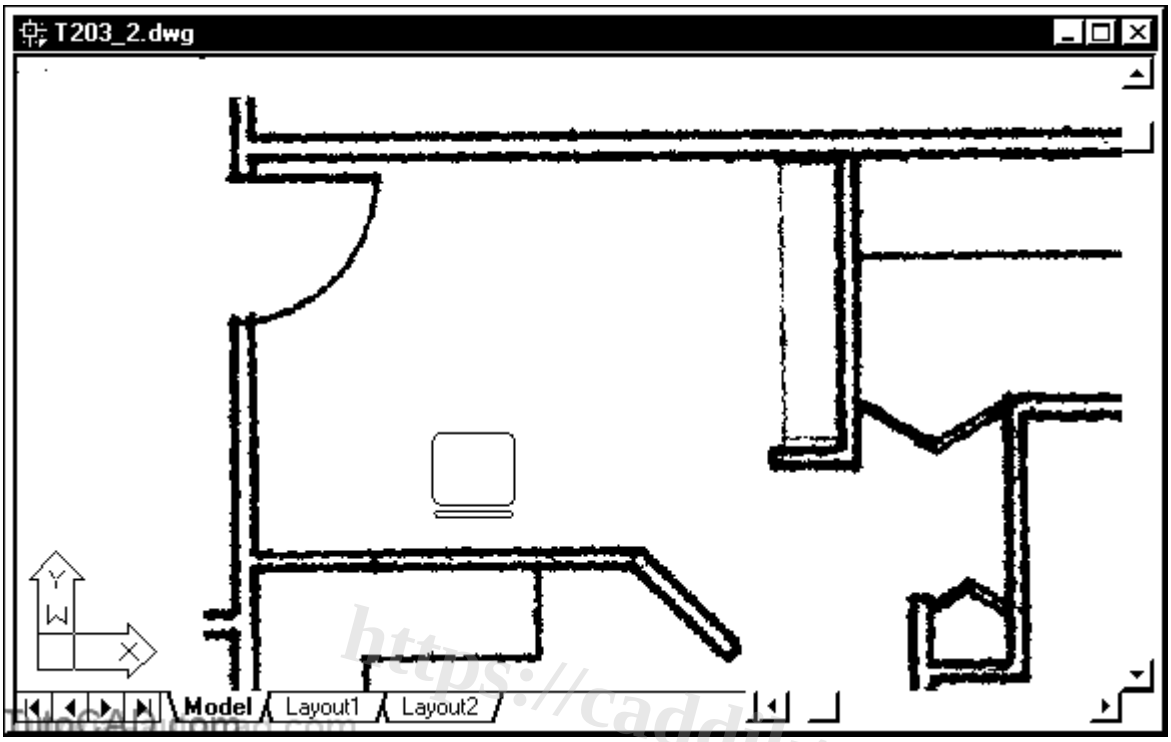
*12) Move your crosshairs near **P1** below and **left-click** to use this as the insertion point for this chair.*



*13) Pick **View** + **Zoom** + **Window** and zoom into the room that you just inserted the chair in so that this room almost fills your screen.*

When you **Zoom** in you can see clearly the difference between this low grade raster image and the (vector) chair symbol

- but with higher quality raster images (with much larger file sizes) it would not be obvious on your screen or in final plots.



You can use add-on applications (e.g. Autodesk CAD Overlay 2000) to convert a raster image into an equivalent vector drawing.

- a collection of pixels that appear to be in a straight line could generate an equivalent vector LINE object.
- a collection of pixels that appear to be in a circular form could generate an equivalent vector CIRCLE object, etc..

You may have to experiment to yield a suitable drawing that matches a raster image

- but the advantage of being able to edit the resulting vector objects may be well worth your effort
- file sizes are much smaller and it would be much easier than manually redrawing an entire image using vectors in AutoCAD.

*14) **Save** the changes to the current drawing and **Close** the file.*