

## AutoCAD 2005 – What's New

You may be sitting there asking yourself what they could have possibly added in a one year time frame since AutoCAD 2004 first started shipping. The new AutoCAD 2005 is packed full of large enhancements and small tweaks to the software. Below is a break down on many of the items that I have found in AutoCAD 2005.

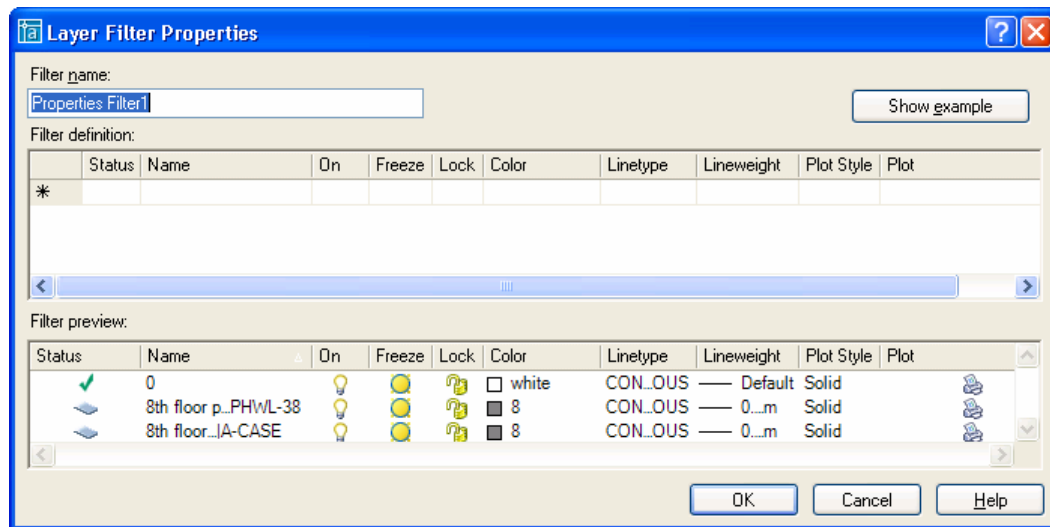
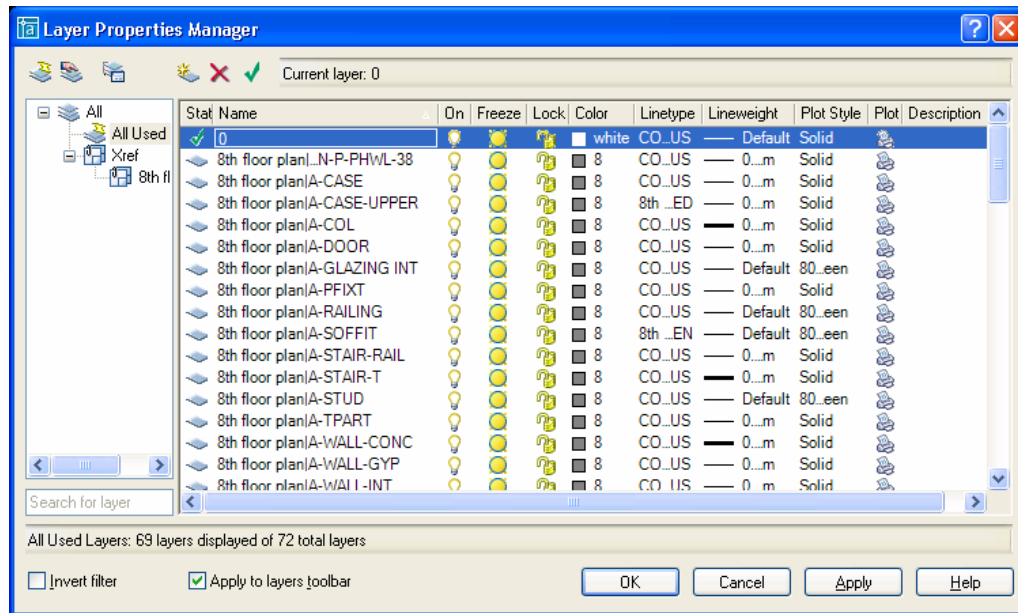
### What's New

1. **Drawing File Format** – There are no changes to the drawing file format so it is backwards compatible with AutoCAD 2004. This helps to make migration easier from AutoCAD 2004 to 2005.
2. **Customization Compatibility** – Unlike the move from AutoCAD 2002 to 2004. Customization should work for both AutoCAD 2004 and 2005. This means ObjectARX files are binary compatible between versions which should help protect software add-on purchase that were made with the jump to AutoCAD 2004. This does not guarantee that the developer of the software will allow the software to run under AutoCAD 2005 without an additional upgrade fee.
3. **Express Tools** – The Express Tools Vols. 1 – 9 are included on the CD browser and can be installed separately. Some of the Express Tools have been integrated into the core, but most still remain as Express Tools. A couple changes were made to the pull-down which now includes FLATTEN and OVERKILL. The EDITTIME has made its way into the Express Tools and can be found in the pull-down.
4. **Side-by-Side Install** – AutoCAD 2005 can be installed side-by-side with any of the AutoCAD 2000+ based products and/or AutoCAD 2004. This allows for easier migration and supporting of the software in a multi version environment.

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5. **New Layer Manager and Enhanced Layer Filters** – The Layer Manager has gone through a major overhaul. It now brings layer filters into the main interface and adds new grouping functionality. Along with changes to the UI for layers in general, the way filters are created has been greatly enhanced by allowing for complex filters to be created. A Description property has been added to a Layer.

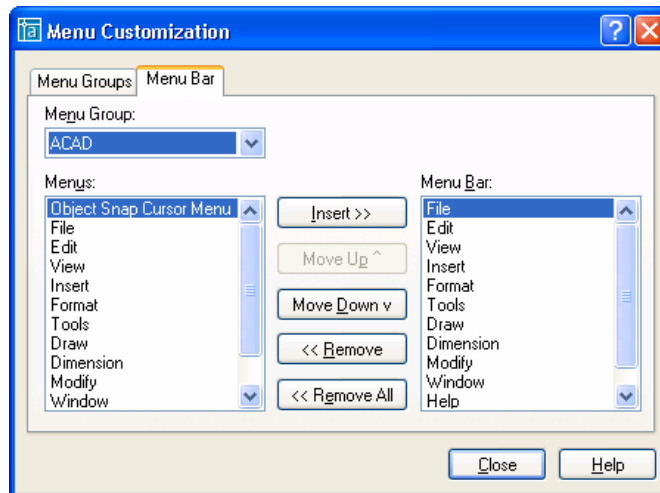


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6. **New Default Partial Menu called Custom** – This partial menu loads in a similar fashion that Acad.lsp or Acaddoc.lsp does. If the Custom menu is found within the support pathing of AutoCAD it will be loaded by default. This allows users that don't understand customization and menu loading a way to keep their custom toolbars out of the base AutoCAD Menu. This results in easier migration and company standards maintenance.

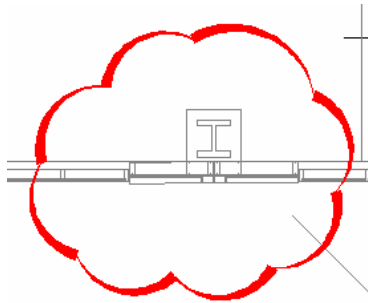
To Add a toolbar to the menu follow the steps below:

- Launch the Toolbar command from the View pull-down and selecting Toolbars... or by typing in toolbar at the command line.
  - Select Custom from the Menu Group section and click the New button next to the Menu Group list.
  - Make sure a check mark is placed next to the new toolbar under the list of Toolbars.
  - Then click the Commands tab of the Customize dialog box and Pick a category that has the command that you want a tool from.
  - Then left click and hold the mouse button down over the command in the Commands list. Drag the Command or Tool over the Toolbar. Once the blank "I" is displayed in the toolbar just let go of the mouse button.
  - After the tools have been added just click the Close button on the Customize dialog box.
7. **Change Order of Menubars** – It is now possible to move the Menubars or Pull-downs around in order with the MENULOAD command. Before it was trial and error at times when adding new Menubars to the listing when adding to the end of the list.



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8. **Revccloud Revision** – Back by popular demand is the Calligraphy option for the Revision Cloud command.

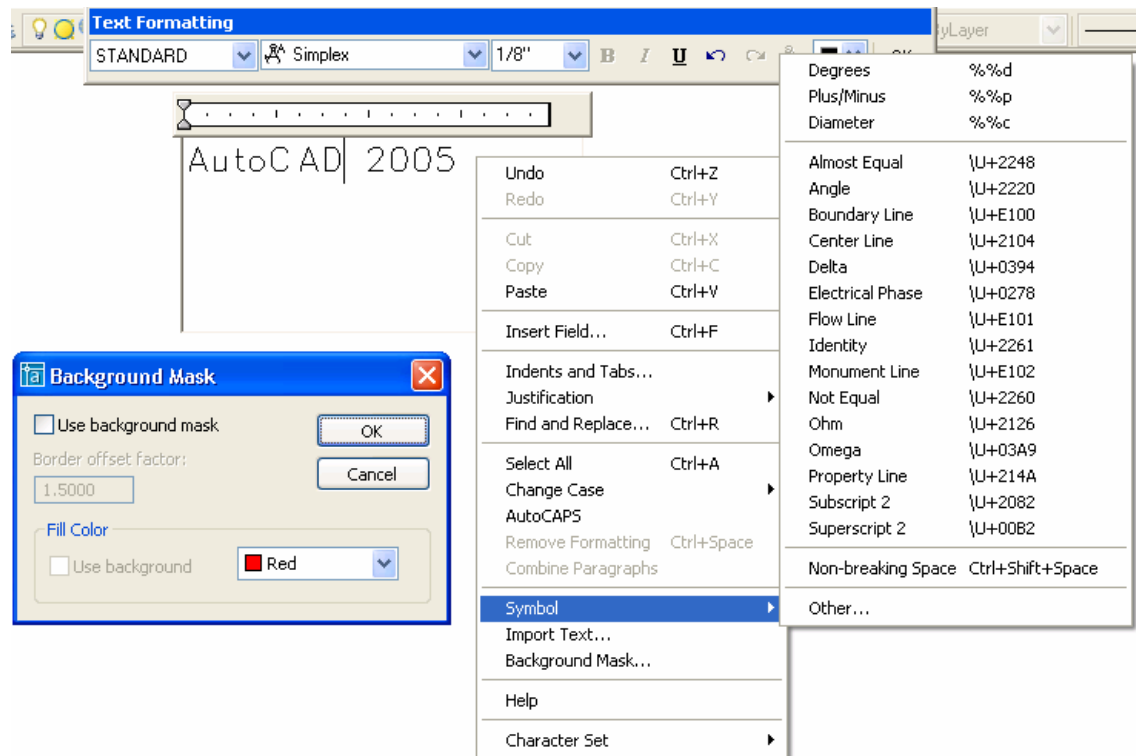


9. **New Table Object** – If you are one that does a lot of schedules and/or bill of materials (BOMs) from scratch the new Table object will be a must have feature. It gives you much of the power and functionality that you find in Tables from MS Words. You are able to add rows/columns, merge/unmerge cells and format both cells & text in a variety of ways. Data can also be copied from Excel to the Clipboard and into AutoCAD as a Table object.

Block Name	Count
DESK CHAIR	187
MULTI LINE PHONE	105
COMPUTER TERMINAL	8
20\" DIA. TABLE	1
84\" x 36\" DESK	2
SOFA	1
CONFERENCE TABLE WITH 8 CHAIRS	1
LASERJET PRINTER	1
COPY MACHINE	9
72 9-PIECE ROUND TABLE	2
30\" x 42\" RECTANGULAR TABLE	

Notes:

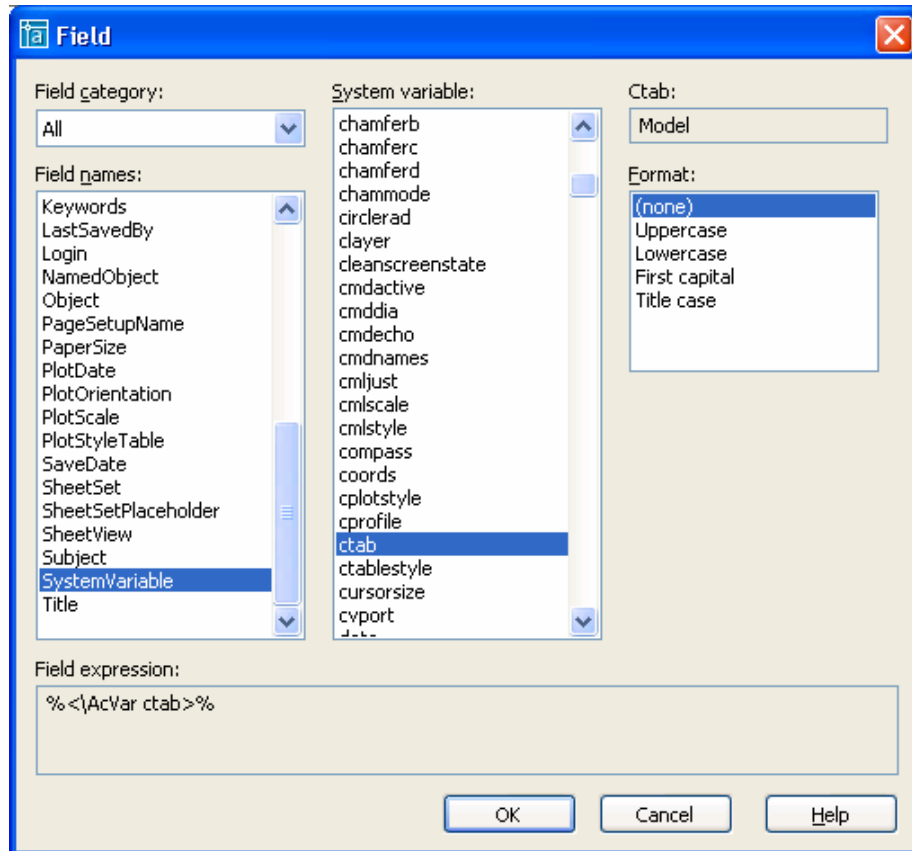
10. **Mtext Enhancements** – There have been a couple new changes to Mtext. One is the introduction of some new symbols which were released with the RX1 extension under 2004. The second is the ability to use Background Mask. The Background Mask works very similar to that of Wipeout or Text Mask, but is now actually a property on the Mtext object itself. This reduces the issue of things like Groups being turned off or other issues with additional objects just in the drawing that might get erased or lost. The Background Mask can be assigned to Dimensions as well.



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### 11. Fields – Fields by far is one of the most complex features at first in AutoCAD 2005.

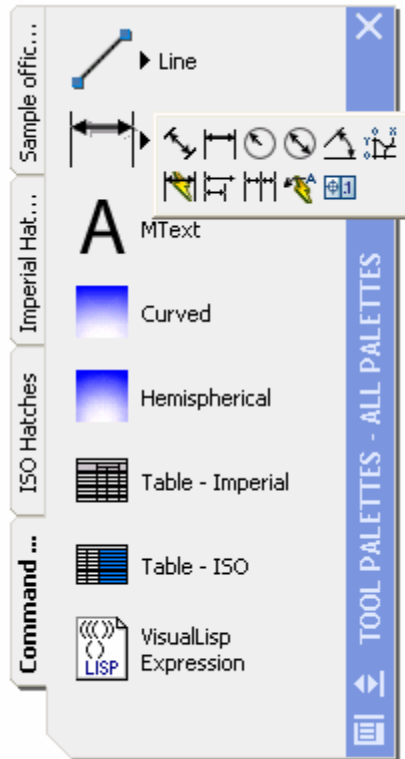
Once you understand how to use them you will begin to think how you could have lived without them. They work very similar to AutoText in MS Word. You insert them in the drawing as part of Mtext, Dimensions, Attributes or Text. Then they for the most part maintain themselves. They can be linked to a variety of information including Objects, Drawing and Sheet Properties, Diesel, File Name and Date/Time values from creation/stored or plotting. Since they work in Mtext they are a very practical replacement to the Express Tool Rtext.



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12. **Tool Palette Enhancements** – Tool Palettes have gained some additional tool types and ways of adding content to them. The RX1 extension that was released under 2004 has been rolled up into this new release of AutoCAD. Some of the new features that are now in Tool Palettes are Flyouts, Commands, Gradient Hatches, Tools by Example, Palette Grouping and Table objects.

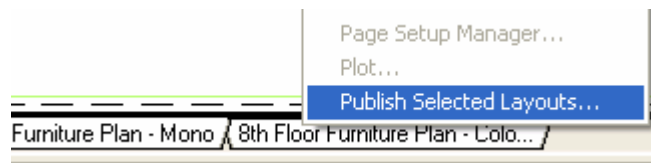


13. **Optimized Properties Palette** – There has been some work in the area of the Properties Palette to try and correct some performance issues. One of the performance issues revolves around how Plot Styles are loaded up when no object is selected. There have been some additional tweaks here and there.

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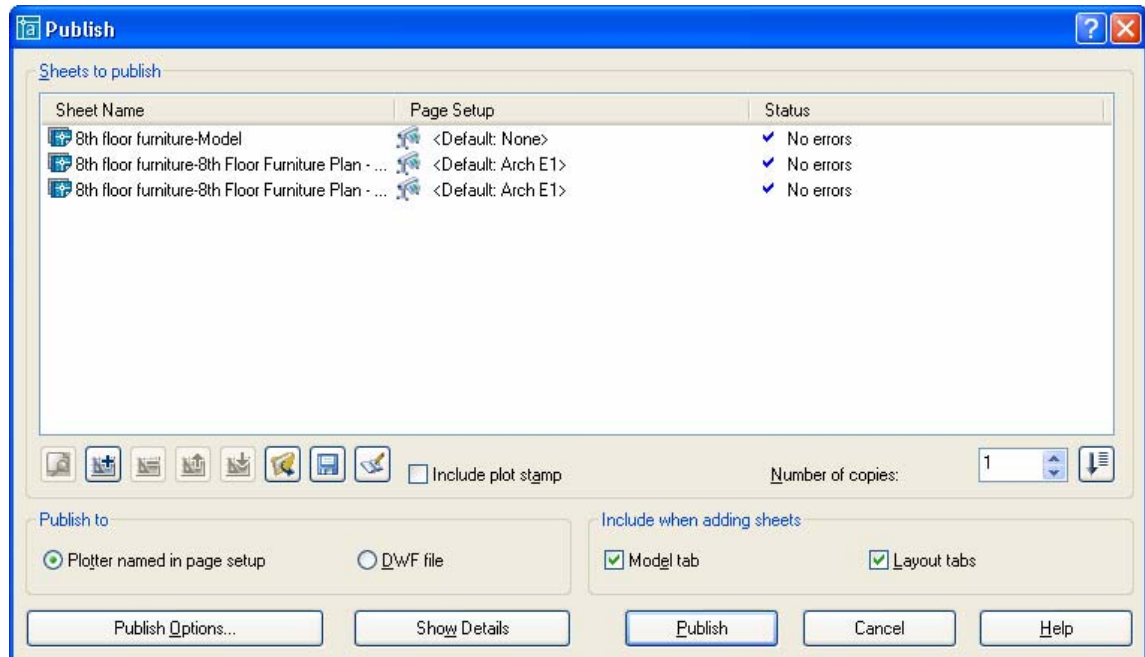
14. **Background Plotting** – One of the features that have been asked for many years has finally been added to AutoCAD. This is the ability to Plot or Publish in the background while you are able to continue to work. Even though you are able to get back to work it does take some additional time for the plot to come out the other end. So if you need a print right away it is best to disable this feature and then turn it back on. By default Plot has background plotting disabled, while Publish will plot to the background by default. There really is nothing that has to be done to get this feature to work. If you have in house customization you will want to read the next bullet point in this document entitled “Background Plotting Issue with Startup”.
15. **Background Plotting Issue with Startup** – If you use acad.lsp or acadoc.lsp or acad.dvb to setup settings and there features at startup this will cause problems with Background Plotting. Background Plotting issues a second instance of AutoCAD in the background as a hidden application. Since it is another instance of AutoCAD it will fire up just like AutoCAD normally does and change things in the drawing. This might cause issues when the Background Plot goes to close itself once it is done running by generating a message to save the drawing file. To avoid this you will need to handle if the application is visible or not visible. This check will be different for each development interface.
16. **Changes to Publish** – The Publish command continues to get better and better with each release. It has become the standard for performing many different tasks with in AutoCAD. It has replaced the Batch plot utility and has also replaced the ability to Plot multiple selected layout tabs. As you can see from the UI it has gotten a great looking face lift and lots of new functionality.



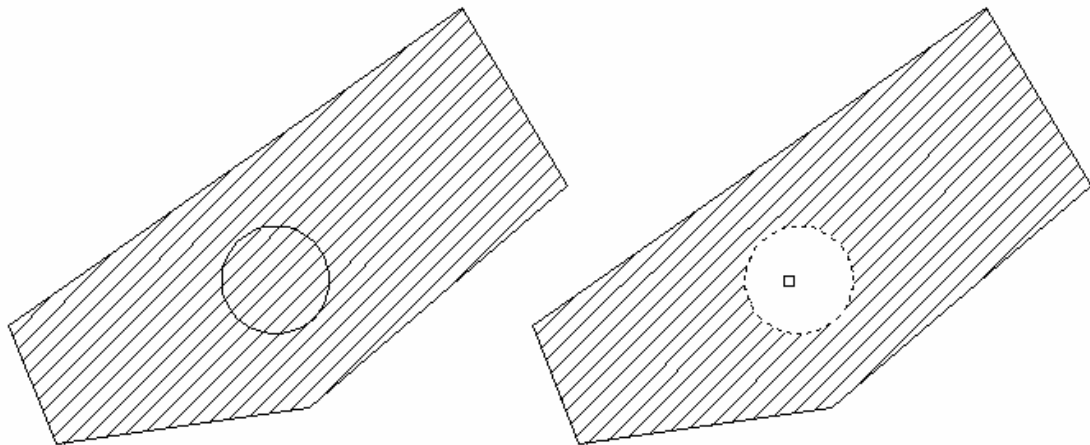
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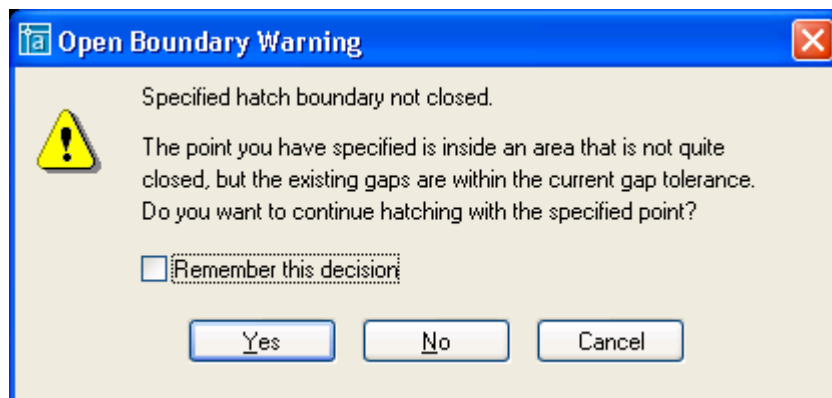
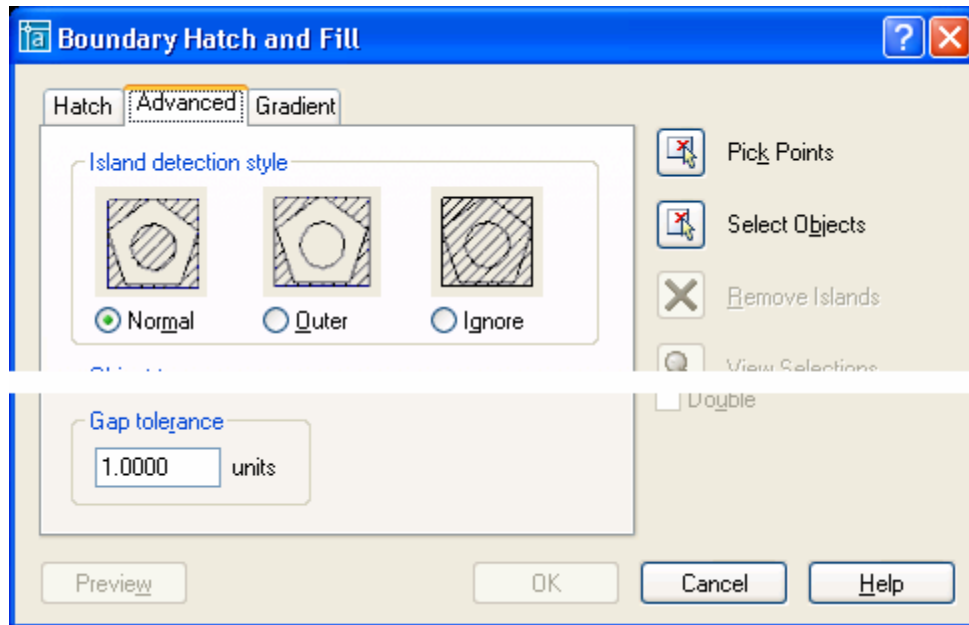


17. **Hatch objects can now be Trimmed** – The ability to Trim Hatch Objects has been added.



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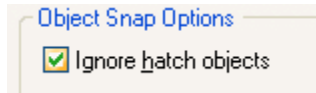
18. **Hatch Gap Tolerance** – First they added the Fuzz factor for joining Polylines together and now they give us a fuzz factor for creating Hatch Boundaries. This new Gap Tolerance allows for creating a Hatch object without the object being completely closed. If you have ever had the issue of trying to Hatch an area to have no luck and then to find out a corner is truly closed this will make your day.



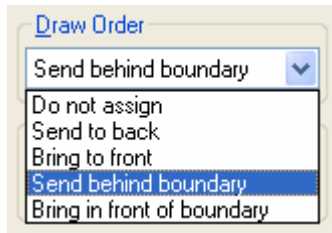
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19. **New Option to Exclude Hatch Objects from Object Snaps** – This is a nice feature if you are working with lots of Hatch objects in your drawing. Having the ability to not have Object Snaps lock onto and use Hatch Objects for snap points is great. The setting is located under the Drafting tab with in the Options command.



20. **Hatch Creation with Draw Order** – The Boundary Hatch dialog box now has a new option for setting Draw Order when creating a new Hatch object. Below is an image that shows the different choices of how the Hatch and Boundary should be affected when executing the command.



21. **First signs of .NET Support for Developers** – True .Net has arrived for those that wish to use VB .NET or C# when programming with AutoCAD. No longer are you limited to COM, but the .Net environment is only about 85% complete. It most of the items that were available in COM and then a bunch more. There are even things in the >NET environment that are not available in COM. Still not as powerful as ObjectARX, but a much needed step in that direction though. .Net modules can be loaded via the new NETLOAD command.
22. **Draw Order Enhancements** – Draw Order has been enhanced yet further in 2005. Draw Order took some much needed steps in 2004 and has gotten even better with this release. Objects now can inherit from the object it is being created from and when being modified it will retain its Draw Order. The Draw Order behavior is controls by the DRAWORDERCTL System Variable.

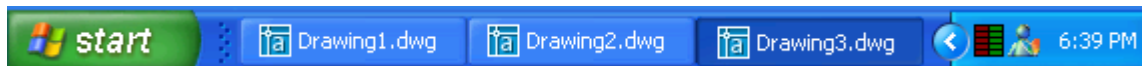
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23. **Copy Multiple** – One of the top ten items on the AUGI wish list has been added to this release. It is the ability to have Copy operate in a multiple mode by default. For legacy and customization compatibility of LISP the multiple is still part of the command options.
24. **Toggle Node Snapping for Mtext on or off** – One of the things that some complained about in 2004 was the new Mtext Node snaps. Although not in any public document there is now a System Variable that can be changed to control the behavior of this functionality. Many people in the Civil Survey field will jump at this one. The variable is called OSNAPNODELEGACY.
25. **Display drawings in System Taskbar as Individual Icons** – This functionality works very similar to the way MS Word displays separate icons in the Taskbar area for each document. The command TaskBar allows for the feature to be turned on or off. When running Windows XP similar icons can be stacked.

Command: taskbar

Enter new value for TaskBar <1>:



26. **New Option in Purge at the Command Line Only** – The command line version of Purge, (-Purge) allows for the removal of Register Applications.

Command: -purge

Enter type of unused objects to purge

[Blocks/Dimstyles/Layers/LTypes/Plotstyles/SHapes/textStyles/Mlinestyles/Tablestyles/Regapps/All]:

27. **Zoom to Object** – There is a new option under the Zoom command that allows for the selection of an object(s). It will then calculate the size of the objects and zoom in on it.

Command: zoom

Specify corner of window, enter a scale factor (nX or nXP), or

[All/Center/Dynamic/Extents/Previous/Scale/Window/Object] <real time>:

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Notes:

28. **Mid Between 2 Points** – For those that have wondered for many years why not have a way to find the middle of two points will be happy to see it has been added. Now more having to enter 'CAL MEE at the command line to do it or create custom menu picks. It can be started at the command line when picking a point by entering \_m2p or by holding down the Alt key and right clicking on the mouse.

LINE Specify first point: \_m2p

First point of mid: <Osnap on> Second point of mid:

Specify next point or [Undo]:

29. **General UI Changes:**

Style Toolbar has been revised to include Table Styles

Draw Toolbar has been revised to include the Table command

Standard Toolbar has been revised to include Sheet Set Manager

Standard Toolbar has been revised to include Markup Set Manager

Menuload now allows you to change the order of pull downs that are loaded with out the need to first remove and then re-add the pull down in a different location.

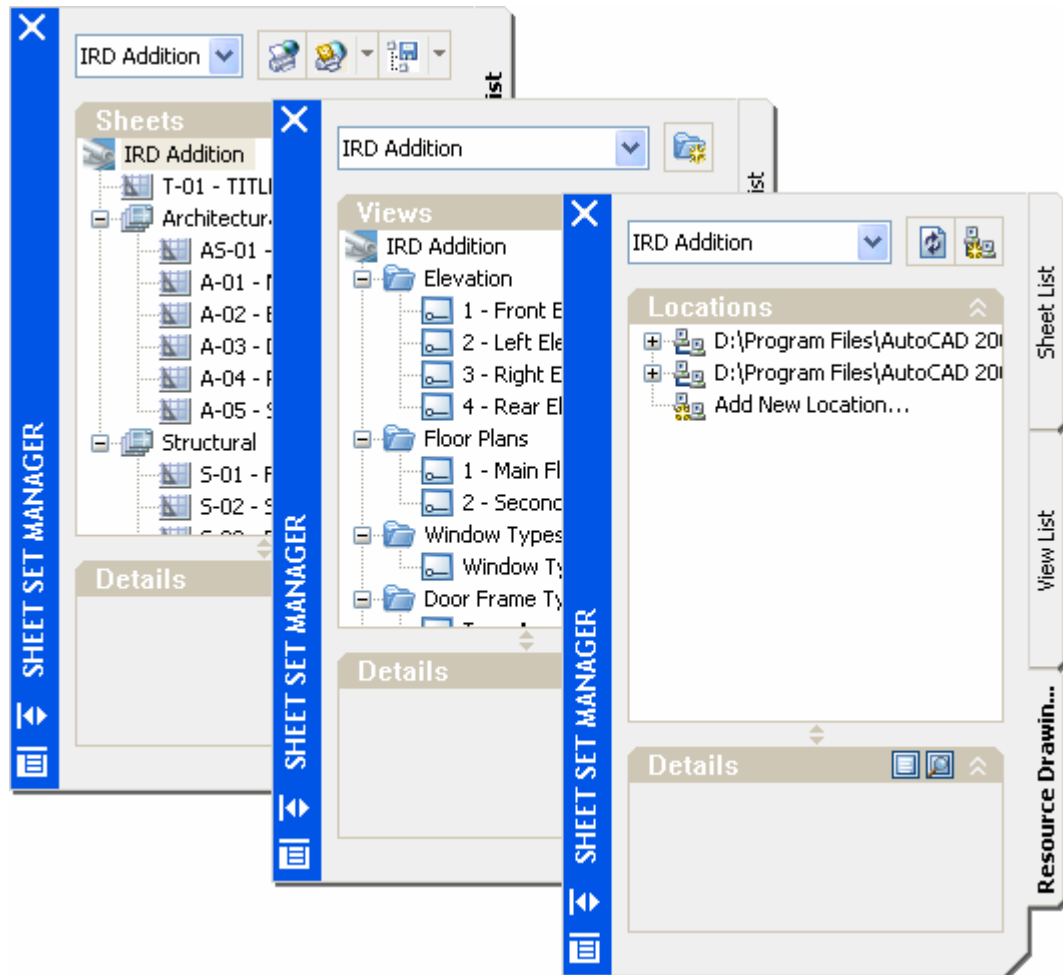
30. **Match Properties Enhancements** – Match Properties was extended to include support for properties that are specific to Table objects.

31. **Improvements in OLE Object Support** – There has been many improvements when working with OLE. You say some of these earlier with the new Table object and how it is now possible to get data from the Clipboard into AutoCAD as a Table object Well OLE has been one of those things that has just functioned different in AutoCAD pretty much since day one. If you wanted to actually get rid of an OLE object that was inserted into the drawing you had to right click and select clear. So it really never behaved like an AutoCAD object normally would with the Erase, Move and Scale commands. Much of these issues has been resolved in 2005, although not perfect it is not an all out nightmare to work with anymore.

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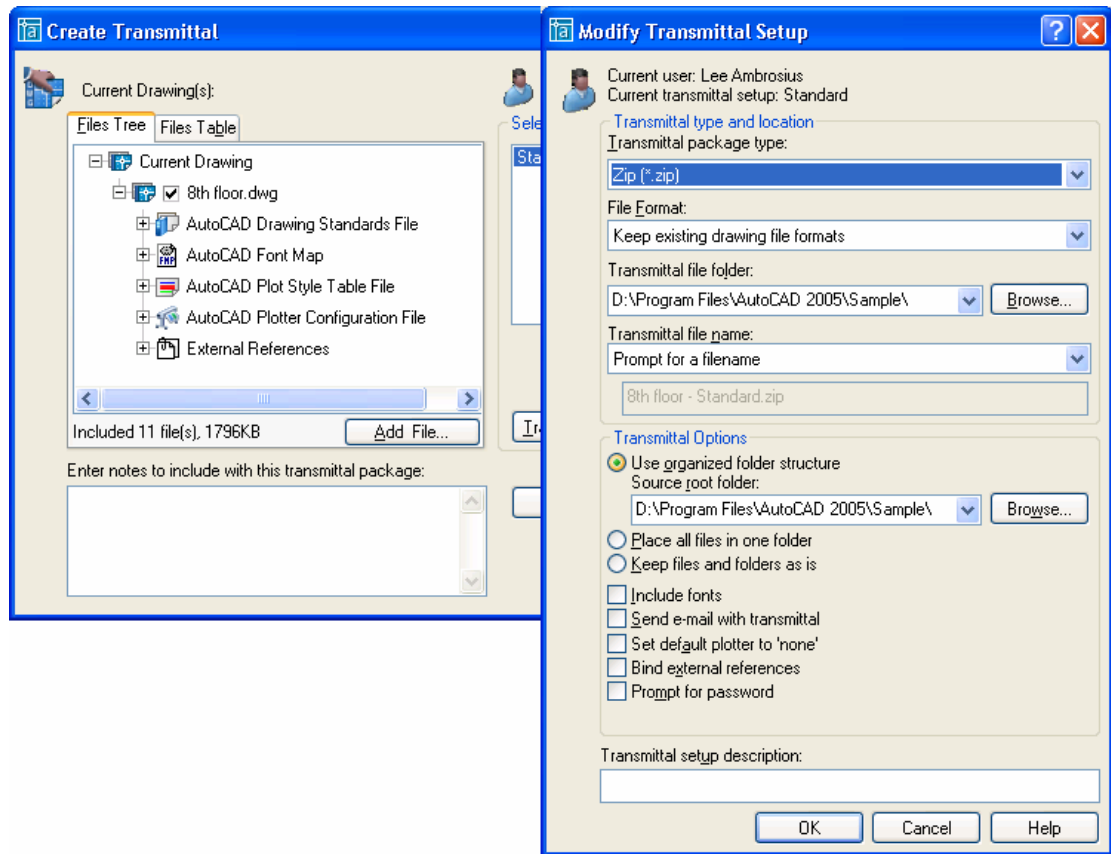
Notes:

32. **New Sheet Manager** – The Sheet Set Manager is a organization and navigation tool all in one. It allows for managing files on a network or local drive based on by project. It allows easily navigating files with in a project as well as creating new drawings for that project by having assigned templates to categories with in a project. Along with creating new layouts it can also create and place dynamic views on a layout based on a Model Space View created with the View command.



Notes:

33. **eTransmit Enhancements** – There have been numerous changes to eTransmit to make it easier to use. One of the nice new things that is in eTransmit is the ability to setup reusable Transmittals for future projects. eTransmit is fully integrated with Sheet Set Manager as well so it makes it easy to bundle an entire project in just a few clicks.

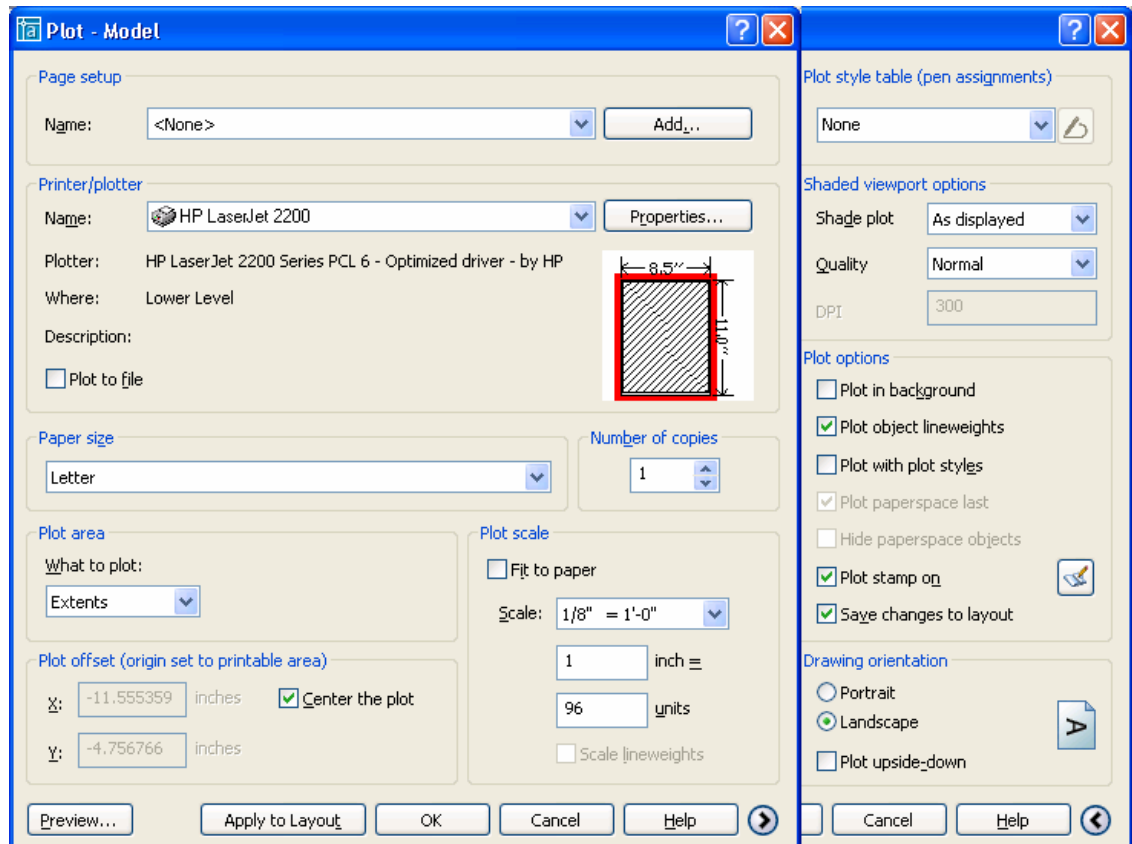


34. **Archive Sheet Set** – Something that happens on a project all the time is revisions. The Sheet Set Manager has a feature called Archive and it does just that. It allows you to take a snap shot of the entire project and store it in an archived file. The feature shares many things in common with the eTransmit command.

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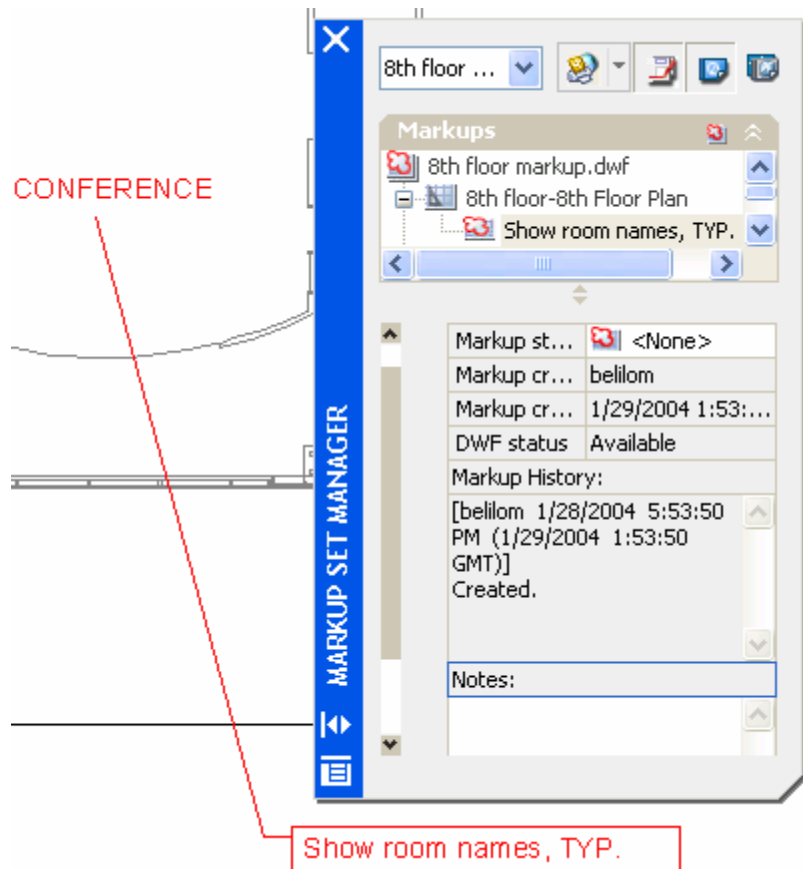
35. **Revamped Plot Interface** – Before you fall out of the seat by the title it has gotten simpler. As hard as it might be the Plot UI has been cleaned up and the tabs have been removed. The Plot UI is expandable to see all the settings, but comes up the first time in the compact state. This will help users focus on the things that are most important to get a plot out.



Notes:



36. **New Markup Set Manager** – The new Markup Set Manager is the next generation and replacement tool for RMLIN.



37. **RMLIN Removed from Insert pull down** – The command RMLIN has been removed from the Insert pull down, but can be accessed from the command line yet. This command allowed you to import/overlay Markup files that were created in Volo View into AutoCAD. The file extension that the command allows you to browse for is RML which stands for Redline Markup Language.

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Notes:

**38. New Commands Introduced:**

ARCHIVE	Archive is used with Sheet Sets and allows you to create a snap shot of your project. It works very similar to the way eTransmit does.
ASSISTCLOSE	Closes the Info Palette.
FIELD	Creates a Mtext object with a new Field value in it.
MARKUP	Launches the new drawing Markup Manager
NETLOAD	Allows for a DLL created with VB.Net or C# to be loaded into AutoCAD.
NEWSHEETSET	Launches the Wizard for creating a Sheet Set.
OPENDWFMARKUP	Launches the new drawing Markup Manager.
OPENSHEETSET	Allows for the browsing and opening of a saved Sheet Set.
SHEETSET	Launches the Sheet Set Manager.
SHEETSETHIDE	Closes the Sheet Set Manager
TABLE	Creates a new Table object.
-TABLE	Creates a new Table object at the Command Line.
TABLEEDIT	Allows a Table Cell to be edited.
TABLEEXPORT	Exports the values of the Table out to a CVS file.
TABLESTYLE	Table Style Manager allows for the creation or modifying of styles.
TASKBAR	Displays all drawings in the Taskbar as separate icons or just under the application icon.
TEXTTOFRONT	Changes the drawing order of Mtext so it is always at the topmost level. This is important when using the new Background Masking of Mtext objects.
TINSERT	Allows a block to be inserted into a Table Cell.
UPDATEFIELD	Forces the Fields to update their values.
'VIEWPLOTDETAILS	Displays the details of the recent Plot and Publish jobs.
VPMAX	Maximize Viewport when a Viewport is active.
VPMIN	Minimize Viewport that has been maximized.

**39. Commands Removed/Discontinued:** (None)

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Notes:

**40. Changed Commands:**

3DCLIP	Support was added for panning and zooming.
ARRAY	Support for Draw Order was added.
ASSIST	The interface was changed to be on a Palette and to allow it to be dockable.
ATTDEF	Support was added for Fields.
ATTEDIT	Support was added for Fields.
BHATCH	Support for using Draw Order when creating a Hatch object and also the ability to detect and fill in a gap when an area is not completely closed.
BMPOUT	Support for Draw Order was added.
BREAK	Support for Draw Order was added.
COPY	Support for Draw Order was added.
COPYCLIP	Support for Draw Order was added.
COPYCUT	Support for Draw Order was added.
DDATTE	Support was added for Fields.
DDEDIT	Support was added for Fields.
DRAWORDER	Multiple objects can be select and the need for retentions has been minimized.
DTEXT	Support was added for Fields.
DWGPROPS	An improved interface for adding custom properties was added.
EATTEDIT	Support was added for Fields.
ETRANSMIT	The user interface was changed and no allows you to create Transmittal setups. It was also changed to support Sheet Sets.
EXPLODE	Support for Draw Order was added.
FILLET	Support for Draw Order was added.
FIND	Support was added for Table objects.
HATCH	Support for Draw Order was added.
HATCHEDIT	Support for Draw Order was added.
HYPERLINKOPTIONS	The command now affects tooltips, along with cursor and shortcut menu like it did before.
JPGOUT	Support for Draw Order was added.

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Notes:

**Changed Commands cont.:**

LAYER	User interface was redesigned to allow better access to Filters. Along with the new user interface changes a Status icon was added as well as a Description property. The new Filters section allows for Grouping as well.
MATCHPROP	Support was added for Table objects.
MENULOAD	A new set of controls has been added to help with reordering pull-downs. This helps to avoid the current workaround to remove and then re-insert the pull-down in the location you want it.
MIRROR	Support for Draw Order was added.
MIRROR3D	Support for Draw Order was added.
MREDO	Support for Draw Order was added.
MTEDIT	Updated to support Background Mask, new symbols and Fields.
MTEXT	Updated to support Background Mask, new symbols and Fields.
OFFSET	Support for Draw Order was added.
OPTIONS	There were many changes in the Options dialog box for Plotting, Sheet Sets and several other things.
PAGESETUP	User interface was revised and is now a Page Setup Manager.
PASTECLIP	Support for Draw Order was added.
PASTEBLOCK	Support for Draw Order was added.
PASTEORIG	Support for Draw Order was added.
PASTESPEC	The default for pasting from Excel has been changed from lines and text to the new Table object.
PEDIT	Support for Draw Order was added.
PLOT	User interface was redesigned to make it simpler for novice users. Many of the more advanced settings are hidden behind an expandable area. Plot also supports Background Plotting.
-PLOT	Support was added for Background Plotting.
PNGOUT	Support for Draw Order was added.
PREVIEW	When previewing a drawing all the standard toolbars are hidden and a special toolbar is displayed.

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Notes:

**Changed Commands cont.:**

PROPERTIES	There were many changes to the Properties Palette. Many of these changes were for the new Table object and support for Fields.
PURGE	Support was added for Table Styles.
-PURGE	Support was added for Table Styles and to be able to remove Registered Application Ids.
PUBLISH	User interface was redesigned and supports a variety of new features. Some of the new features include Plot Stamp, support for Sheet Sets and Background Plotting.
-PUBLISH	Support was added for Background Plotting.
QSELECT	Support for Table objects has been added and now you can select a Block Name from a dropdown list instead of typing it in.
REDO	Support for Draw Order was added.
REFEDIT	Support for Draw Order was added.
RENAME	Support was added for Table Styles.
REVCLOUD	The option Calligraphy was re-added as an option for Style. This option existed in the original Express Tool, but wasn't originally added in when the command was added to the core in AutoCAD 2004.
SAVEAS	Has been updated to allow for the saving of thumbnails for Sheets and Views.
SPELL	Support was added for Table objects.
TIFOUT	Support for Draw Order was added.
TOOLPALETTES	Support added for Command tools, Flyouts, Gradient Hatches and Tables. New property added for Block tools called Auxilary Scale.
TRIM	Support for Draw Order was added.
U	Support for Draw Order was added.
UNDO	Support for Draw Order was added.
VIEW	Ability to save Layer State with the View and give it a category for when the View is used in the Sheet Set Manager. A new Edit Boundaries buttons has been added to the dialog box.

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Notes:

**Changed Commands cont.:**

WBLOCK	Support for Draw Order was added.
WMFOUT	Support for Draw Order was added.

**41. New System Variables Introduced:**

BACKGROUNDPLOT	CTABLESTYLE
DRAWORDERCTL	FIELDDISPLAY
FIELDEVAL	HPDRAWORDER
HPGAPTOL	MSOLESCALE
OLEFRAME	OSNAPHATCH
OSNAPNODELEGACY	PLOTOFFSET
RASTERDPI	SSFOUND
SSLOCATE	SSMAUTOOPEN
SSMSTATE	UPDATETHUMBNAIL
TBCUSTOMIZE	VPMAXIMIZEDSTATE

**42. System Variables Removed/Discontinued:** (None)

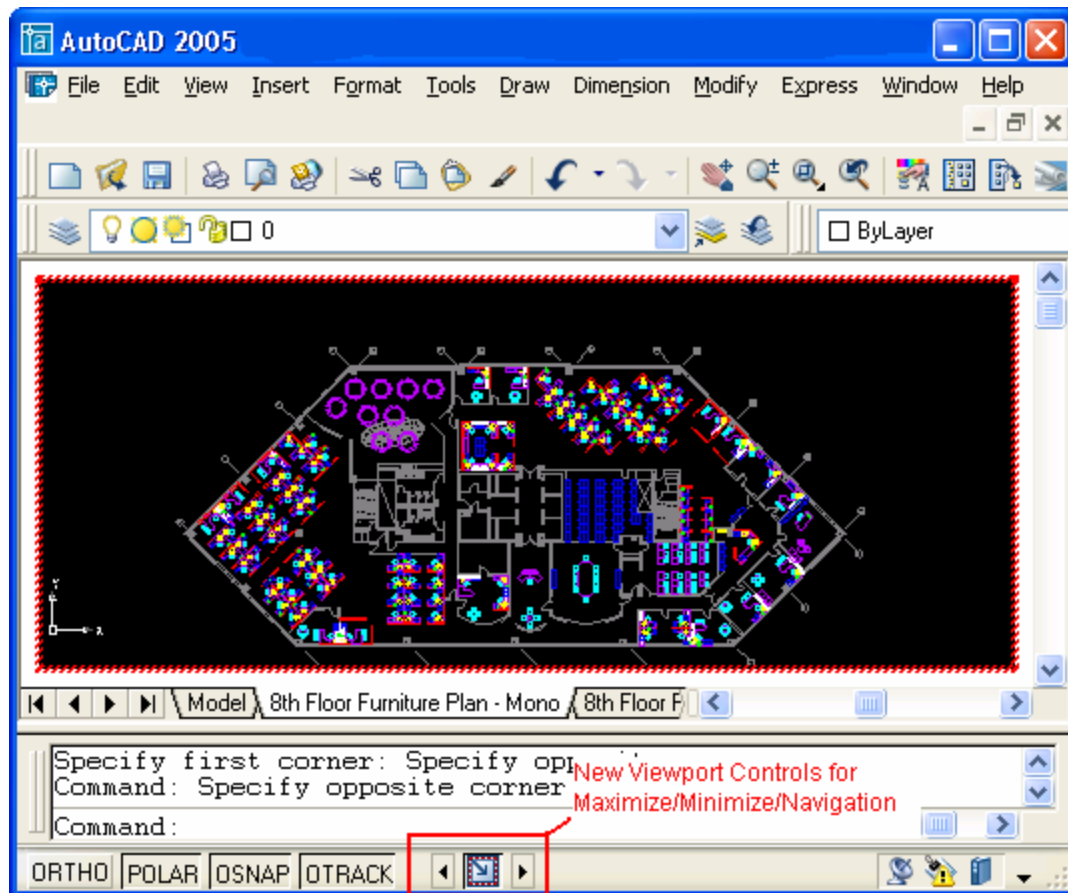
**43. Multiple Versions of AutoCAD Help can be Running** – For many years now even with Side-by-Side support you could only run Help from one version at a time. So if you launched Help from AutoCAD 2002 and then tried to launch Help from 2004 it would only flash the 2002 Help in the Task Bar and not launch the 2004 Help. With 2005 they have renamed the Help file from “acad.chm” to “acad161.chm” to avoid this problem.

**44. Operating System Support** – AutoCAD 2005 does not support any of the Windows 9x operating systems, Windows ME, Windows NT 3.51 and Windows NT 4. You need to have Windows 2000, Windows XP Professional, Home or Tablet PC.

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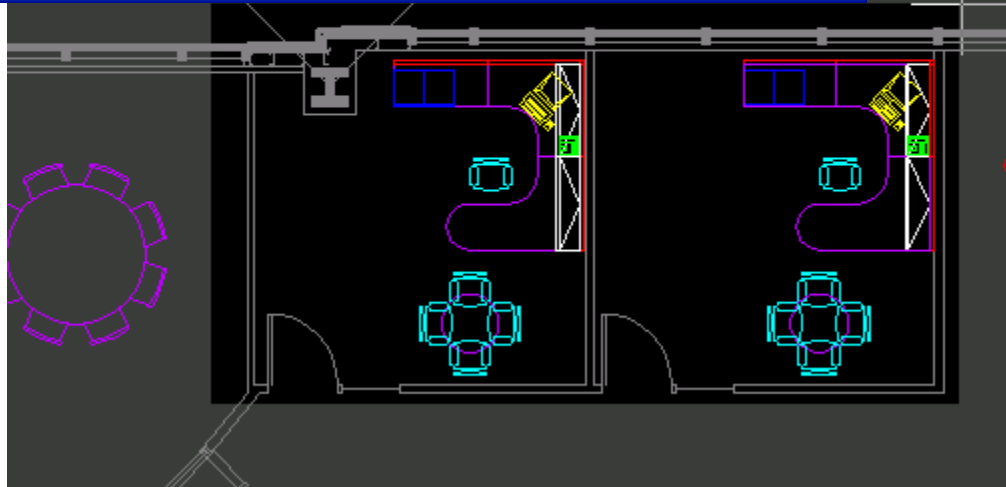
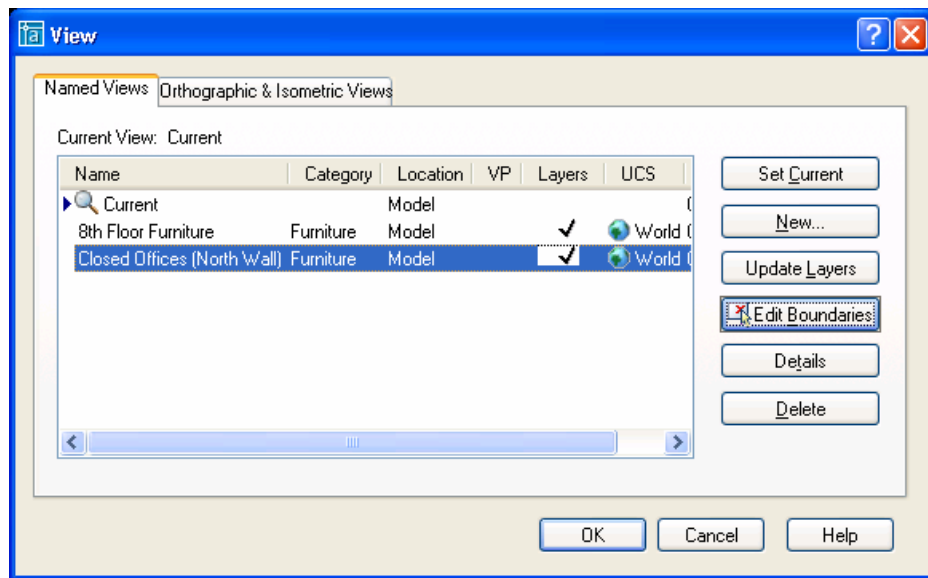
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45. **Maximize Viewport** – The double click action has been revised when clicking on a Viewport in a Layout. It now will Maximize the Viewport to fill the drawing area to allow you to work in Model Space with out limitations of Zooming or Panning even if the Viewport is locked. Once you click back outside of the viewport the Zoom Scale is returned to the size before the Viewport being Maximized.



Notes:

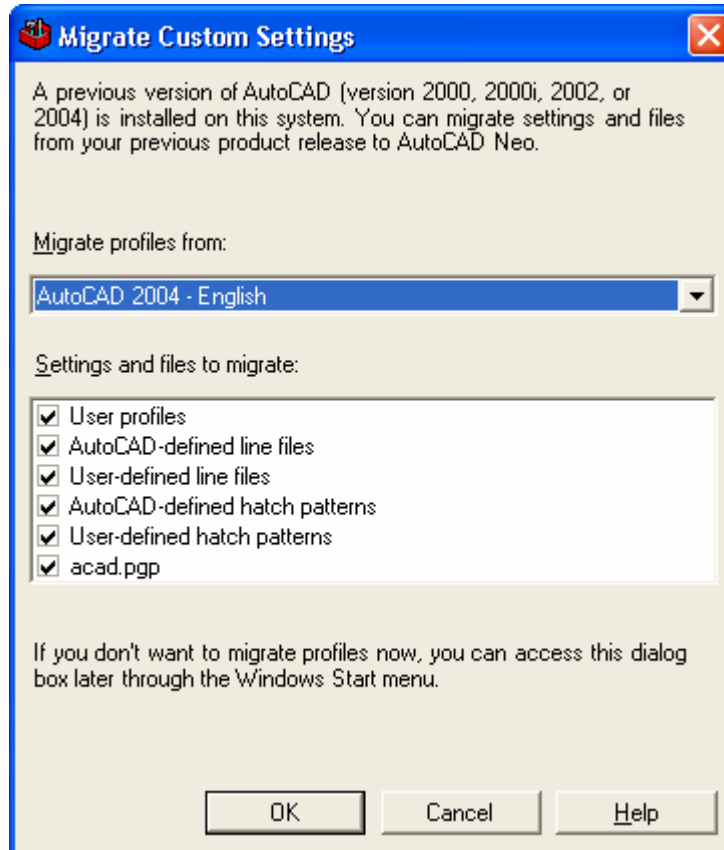
46. **Changes to the View dialog and Views** – Model Space Views have been enhanced to provide some of the new functionality for Sheet Sets. Along with being an intricate part of Sheet Sets the interface has gotten some additional upgrades as well. Views now can retain Layer States for use with Viewports. So if a Layer is Frozen when the View is created, the Layer is set to be Frozen when the View is used. Along with storing Layer States a View also can have a Thumbnail associated with it. The Thumbnail is displayed in the Sheet Set Manager if the drawing containing the view is part of a Sheet Set. The image below shows the new Edit Boundary button in the View dialog. This button allows to easily define what part of the drawing is displayed with the View.



Notes:



47. **Migrate Custom Settings** – Opens by default when AutoCAD is installed and run for the first time. The tool can help migrate settings from AutoCAD 2000, 2000i, 2002 or 2004 if found on the machine. Otherwise, you can choose to not have it migrate any settings at all. The tool can be launched from Start>>All Programs>>Autodesk>>AutoCAD 2005>>Migrate Custom Settings if you decided not to run it right away or you need to rerun it at a later date.



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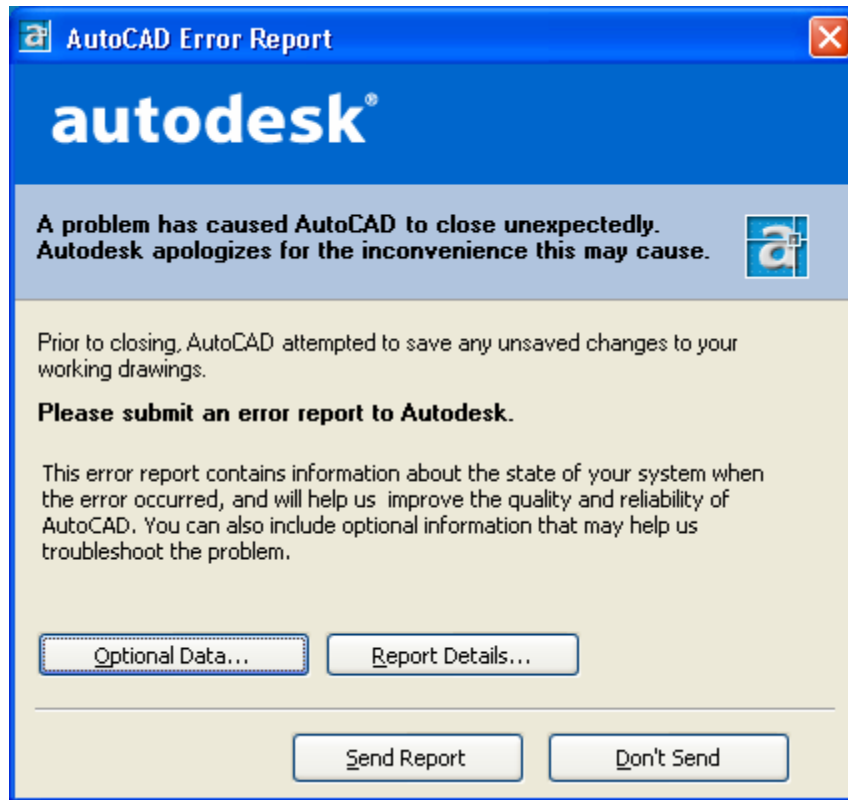
Notes:

48. **New Features Workshop** – Many releases ago Autodesk introduced the Learning Assistant which helped to learn both new and old features in the software. Then it went away and has now been released with a much more functional interface. The New Features Workshop will help you learn the new features fast. It was introduced in 2004, but has been enhanced. Not only will you find coverage of 2005 features, but you will also find that it covers features from 2004. The feature can be disabled at the time the install is done, but with the information that is found in the feature it would be silly to do so unless space is an issue.



Notes:

49. **Error Reporting Tool** – There is a new Error Reporting tool that works just like the one found in Windows XP. This one will send information directly to Autodesk about the problem that was encountered in the software so they can get these problems identified quicker and get the updates out in the form of Service Packs. This feature can be turned on and off via a System Variable called REPORTERROR.



### Summary

This list contains many of the changes and new features, but I am sure there are some additional ones in the software that I have not come across and identified yet. This document will be updated along the way as things come up.

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Notes: