Designer Plus

from

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1 HISTORY

Let’s begin with a little about where Designer Plus came from. I have been self-employed in the custom kitchen business since 1976, and have been doing business as Kitchen Consultants since 1979. During the years I have made every effort possible to produce finely finished products for my clients, not just for my own ego but for my own peace of mind. Good work seldom needs callbacks, except to add cabinets. I have found the first requirement for a satisfied customer is good communications. If you deliver something other than what your customer has in his/her minds eye you will have a dissatisfied customer regardless of how well made the finished product.

When I began designing kitchens I probably did it the same way you are now, with a T-square and triangles. This method produced good elevations and floor plans. However I quickly found most of my clients could not visualize the proposed project in 3D space.

When I discovered perspective graph paper I thought I had the solution. Using the perspective aids along with the drawing board my kitchen presentations began to come alive and my closing rate climbed substantially. My client base grew and since my customers did not need a new kitchen every two years but wanted my work they came back and asked for entertainment centers, bookcases, etc.. That was great, but the drawing aids I was using were designed for kitchens and did not work very well for smaller items.

The next step in my quest for excellence in drafting was the Klok perspective drafting board. This drawing board produced very nice scaled perspective drawings in 1, 2, or 3 point perspectives but I still had to free hand any curves, and in cabinetry repetitive curves are a design feature often used. While I never ran into a job I could not draw on the Klok board, it would take 3 to 6 hours to complete a drawing. Very seldom would a client take the first proposal intact, usually there were a couple of changes, but sometimes it seemed there were dozens. I tried all sorts of ways to cut redraw time. To tape another piece of paper over the area to be changed, draw the new section, photocopy the composite, and then present the new drawing was the fastest and most reliable method. It also protected me from having to start over when my customer said. "I liked the first one better over all, but I like this piece better on the second”.

In 1987, through one of the cabinet manufactures I represented at the time, I was offered a computer drawing program. I looked at the sample drawings they had supplied and eagerly asked, “How much?”. Would you believe ten thousand dollars for the package? I put that out of my mind for several years. As prices fell and more people entered the business more options became available. In 1990, an ad in one of the trade magazines caught my eye, “Kitchen perspective drawings and cut lists for only $1600.”, and the program only required another $1500 worth of computer. I bought the program, the computer immediately showed how to save time and reduce errors in pricing and bookkeeping, but the kitchen

package could not draw a perspective without major errors. I called the company who had written the program whose drawings had awed me earlier, to ask about the current cost. It was still over $4,000. While I was talking with them they told me their program cost was high because it required an expensive ($3,000 dollars) CAD program.

From that conversation I reasoned that with a less expensive CAD program I could draw the individual cabinets with the different door styles separated by layers that could be turned off and on to create the cabinets I needed. I could have drawings that looked as nice as I had seen. After contacting all moderately priced CAD program manufacturers I could find I sat down to analyze who offered the most. Of those, I felt DesignCAD was superior so I ordered DesignCAD 3D and the work began. First I drew 2D fronts and attached them to 3D boxes flat faced but I did not care for the lack of depth on the front of the cabinets, so I modified the door drawings to give depth to the door. The first large kitchen I drew with my improved 3D drawings took 15 hours to complete, however some of that time was spent drawing cabinets that were added to the catalog already completed. When I went to print it with the hidden lines removed the computer chugged away for 6 hours printing 1 view. I was depressed. The drawing was impressive, and I got the job. However I was very reluctant about continuing on that course. I had seen what the computer and DesignCAD could do, and I was happy with the product but not the time and stress of doing it. I found the greatest reason it took so long to print was the amount of data in all those unused door styles in the layers that were turned off. The average base cabinet consumed over 30,000 bytes of hard disk space, and when a normal kitchen can have more than 20 cabinets plus trim, walls, windows, sinks, etc., memory shortage became a real problem. So I went back to thinking and reading. While reading the BasicCAD manual that came with the DesignCAD program I played with a program to draw a box as outlined in the manual. It worked, and fast too!

I reasoned that cabinets are only boxes placed in space so... I wrote a program to draw a cabinet. It worked! It did not take up half the hard drive, or load the computer down with unused data. I then set out to write programs for each of the standard cabinets I used regularly. This worked so well I began to improve on the original programs. A menu was added so I did not have to remember what I had called each program. Then modifications and accessories were added until a complete system had been created. I was not a programmer when this began. I was just challenged to make better drawings for use in my business at an affordable cost. Looking back, perhaps I should have spent the $10,000.00 and saved the time. Then on second thought maybe not, I have learned a lot and have a very good tool in the bargain.

First and foremost this program, in conjunction with DesignCAD 3D, will draw very impressive floor plans, elevations and true 3D views. It will not draw a single drawing faster than by hand, only better and more accurately. It will save time if using multiple views or editing for changes. If you use only this

program, and follow my formats, you can get cabinet lists, parts lists and door / drawer front lists for all the cabinets drawn, even in multiple style configurations, all accurate to 0.005 inch. See the material lists section of the tutorial on where this information is stored and how to manipulate it.

Designer Plus is a series of commands in written form. When you execute a Designer Plus program, DesignCAD 3D opens the Designer Plus file desired and follows the instructions until the end of the program is reached. Control is then returned to the keyboard for the next command. Imagine making your fingers move as fast as the computer can read, executing normal DesignCAD 3D commands such as line box, arc, etc.

Designer Plus was first released in 1994. With the addition of metric support, 3D solid door styles, and part listing, version 2 was released in 1997. Version, 3 released 2000 is optimized for DesignCAD 97/2000/3000's texture mapping tool, with a catalog of textures. In addition to approximately 100 new door styles, limited curved cabinets, 3D window/door and appliance drawings with auto insertion, it includes a free spreadsheet tool for pricing. This step improvement version 3.1 offers file descriptions, combination cabinets, mm and cm as well as inch unit support, and the list of parts is now editable before adding them to the drawing.

I have arranged this manual so that you can test my program without setting up the drawing details first. After you have drawn the sample, you should set up the data files to draw cabinets using your own dimensions and nomenclatures.

Do you know what it costs to build a cabinet? Included with Designer Plus is a M.S. Excel spreadsheet method of pricing cabinets. It works on the principle that every cabinet is composed of smaller units, (joints, panels etc.). By breaking the time necessary to build a cabinet down into these units and averaging several jobs to get an accurate time value, you can get very accurate pricing estimates. Based on the way you work, not a guess estimate, or worse, one based on being cheaper than guy down the street. If he's losing money you could be losing more!

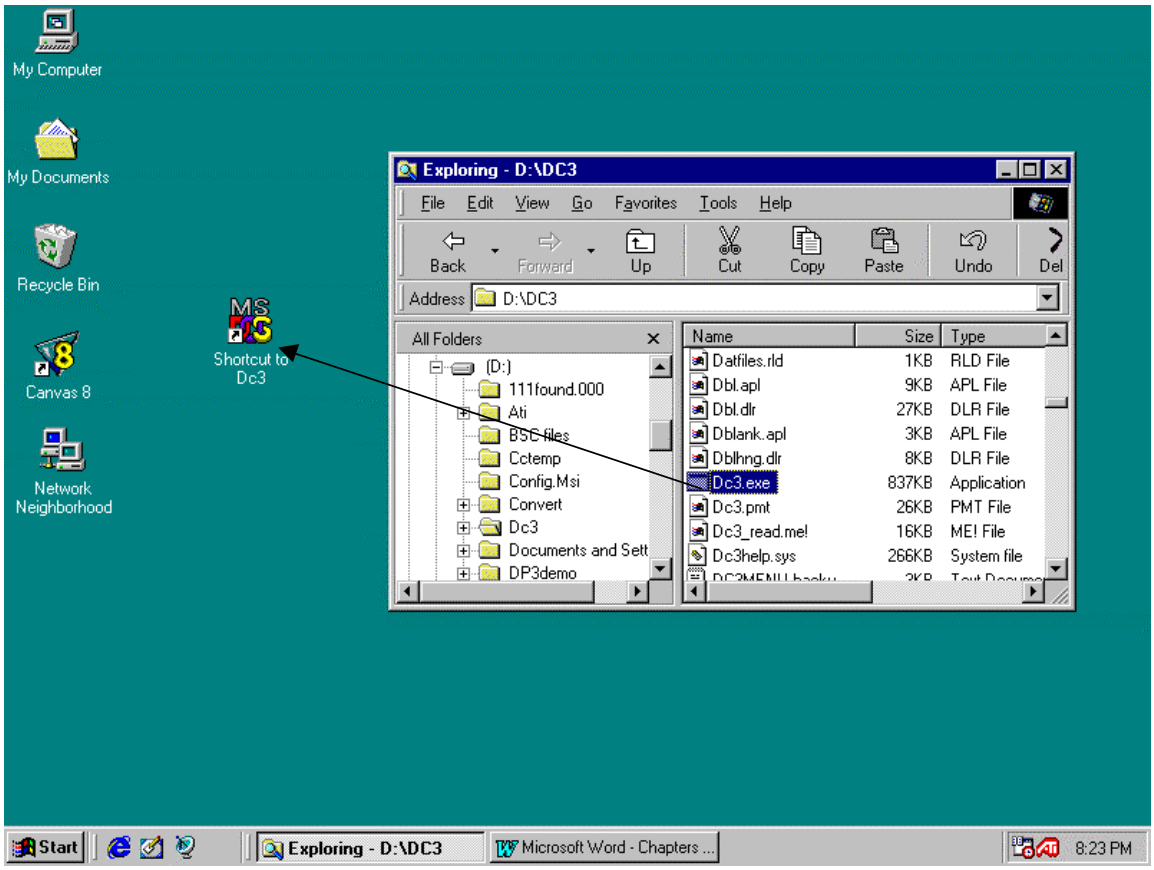
2 INSTALLATION

DesignCAD and Designer Plus are pre-configured and are in the ***Designer Plus v3.1*** folder of the CD. This DesignCAD version uses a common serial number that is not eligible for an upgrade from UpperSpace, see below for using a registered number.

To install the programs to your computer use Windows Explorer to find the program folder ***DP3***, right-click on it and drag it to the drive letter you want to install to. Select the option to copy to the new location. You can rename the DP3 folder but remember this is a DOS program and you are limited to 8 characters and no spaces in the directory's name. Designer Plus must be started and exited once to configure DesignCAD before any setting changes are made in DesignCAD.

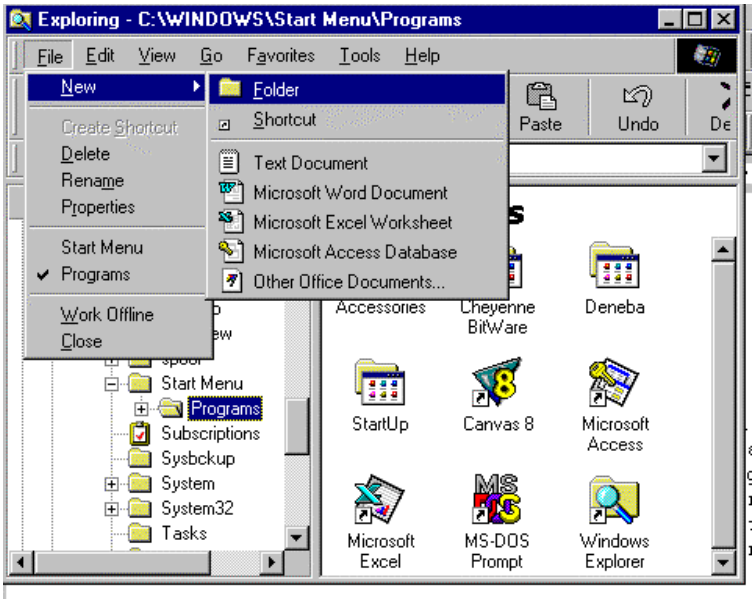
- **Windows 95/98/XP menu items:**

You can place a menu icon shortcut to DesignCAD 3D on your Windows desktop.

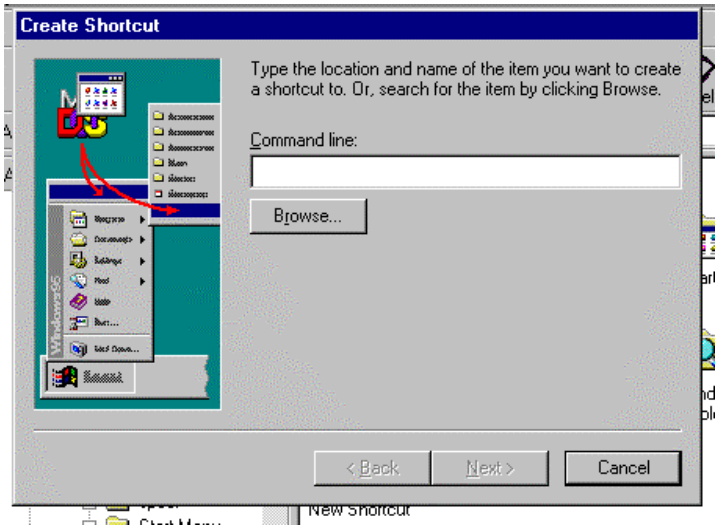


Make Windows Explorer a window with the desktop in the background. Find ***DC3.EXE*** in the Designer Plus directory, select it and drag it to the desktop. The shortcut is made.

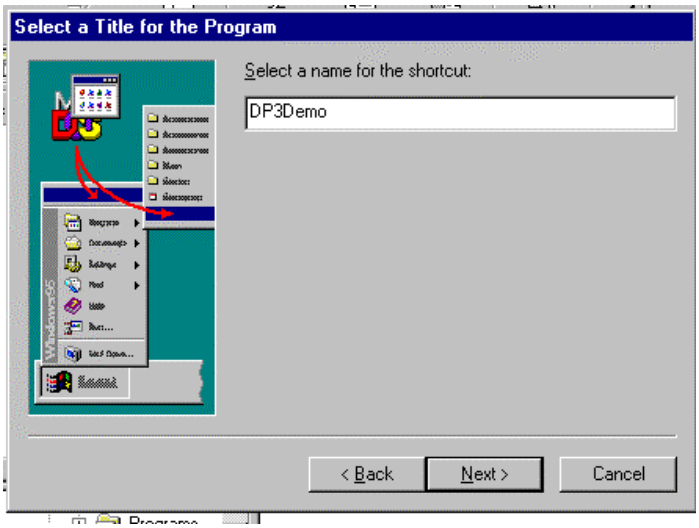
To create a program item, right-click the Windows Start icon and select explore.



Find the Start Menu Folder and open the Program directory under it. Click File on the main menu line, pick new and shortcut.



Use the Browse button and locate DC3.EXE in the Designer Plus directory.



Enter the name you want displayed on the task bar and then the icon for it.

When you choose Start - Programs from the start button you can start DesignCAD 3D the same as a Window's program.

This will also work in Windows 3.1, but the steps are different.

To configure a new installation of DesignCAD, start DesignCAD 3D (the screen will be black); press the ***SPACE BAR*** and type ***CAB*** on the command line, press ***ENTER***. A screen telling you that this is a new installation of Designer Plus will be displayed, press ***X*** to exit Designer Plus and ***F8*** to exit DesignCAD 3D. The next time DesignCAD 3D is started it will be configured for Designer Plus. A new installation is the only time this screen is displayed.

- **System requirements:**

Memory requirements for Designer Plus vary although the program will run on much less than I have listed here. As a drawing gets larger Designer Plus programs will be the first to show memory shortages with ERROR 49 (out of memory) messages, yet the drawing may be using only 50% of available resources. With a 300k-drawing file (the color-shaded kitchen in the literature) loaded I have tested all of the drawing programs on a machine with 300 Meg RAM in a DOS window of Windows XP. Smaller drawings will require less RAM. If you are having trouble with memory you can break the drawing up and assemble the finished drawing from the sections, as I have followed in the tutorial.

- If you are going to texture map with DesignCAD 2000 or make colored shaded drawings you need at least a 300 MHz Pentium class processor. For line drawings a 486/100 will work acceptably.
- DOS needs 16 Megs of RAM and 20 Meg of storage.
- Windows 95/98 needs 32 Megs of RAM, I recommend 64 meg or more with 20 megs of storage.

- Windows XP needs 196 Megs of RAM with 20 Megs of storage.

With DesignCAD 2000 (Windows only) you will need another 40 Megs of storage.

• Default Setup Values:

The setup values of DesignCAD are:

- 2 button mouse
- no printer
- no plotter, or digitizer
- video is 16 color 640 x 480,

To change any of the values, run *SETUP3D.EXE* from the DOS prompt.

To have DesignCAD 3D run as fast as possible, especially on an older machine, you may want to change the video mode used to the mono mode (black and white) and 640 X 480 resolution. Use the standard VGA for normal work if you want color and want to use the PCX help files. You can use a higher resolution, however the help files will not be visible and your computer will run slower.

DesignCAD drawings (*.dw3) cannot be used in other applications, however you can create HGL (also called HPGL) (Hewlett Packard Graphics Language) files from DesignCAD 3D that can be used with some other programs. Set the plotter option to HP7475 A Size for files that can be read by WordPerfect. To create a HGL file, from the file menu of DesignCAD 3D select plot.

If you want to use your own DesignCAD 3D v4 serial number with Designer Plus copy the following file from your installed DesignCAD v4 directory to your Designer Plus directory: ***DCAD11.SYS***. When restarted your serial number will be active.

• UNINSTALLING the Designer Plus DEMO:

Using a file manager, such as Windows Explorer, delete the DesignCAD directory where you placed the Designer Plus files.

• Configuring DesignCAD 3D for Designer Plus:

Setting the Path: DesignCAD needs to know where to look for information. Under the file menu select 'Set Path', on each path name double click to remove the text, press the arrow down key to automatically enter the DesignCAD directory. Save as the default values. You may exit DesignCAD 3D by pressing the F8 key.

This is not a tutorial for DesignCAD 3D. The manual for DesigCAD is the ***DC3 Manual.pdf*** file on your CD. You may want to look at the section "NOTES ON THE CABINETS" (5) before, or while running the tutorial, for added information of why something was done the way it was. The tutorial has been written so the novice computer user can make a valid evaluation of this program as soon as possible.

• Settings for high resolution video:

To change the video driver, in the next paragraph I will have you do some testing which may crash the computer. Exit all other programs (you can run this in a DOS window of Windows), from the DOS prompt enter '*path*\SETUP3D' (path being where the DesignCAD program is located) and enter. This starts the DesignCAD setup program, select monitor from the list and you are given a list of video card drivers to choose from. You probably will not find yours listed here but if it is select it with the resolution you want. Exit and save, and you should be ready to go.

For those who didn't find (or don't know what their video card is), select a video driver in the resolution you want. Exit and save the settings then from the DOS prompt. Start DesignCAD by entering DC3. If the video driver you selected is compatible with your hardware the DesignCAD screen will appear full sized with smaller text, and the screen colors may be different. If you are using Windows, check program swapping with ALT-TAB. If this is ok then change the screen colors with the screen color command under the display menu. More than likely it will take you several tries to find a compatible driver. If after starting DesignCAD the screen is not usable, press the F8 key to exit DesignCAD. In most cases this will return you to the DOS prompt where you can run SETUP3D again. On occasion however the computer will freeze or reboot. This is to be expected. Return to the DOS prompt and run SETUP3D again and try another setting. Do not try to restart DesignCAD as this will only crash the system again.

If none of the specific drivers will work with your hardware you will have to use the standard VGA 16 color setting and forgo color shading, or upgrade to DesignCAD 2000 and use Designer Plus and DesignCAD 3D as a cabinet/kitchen builder, then edit and finish in DesignCAD 2000. Finishing in DesignCAD 2000 is good even if there is a compatible driver available.

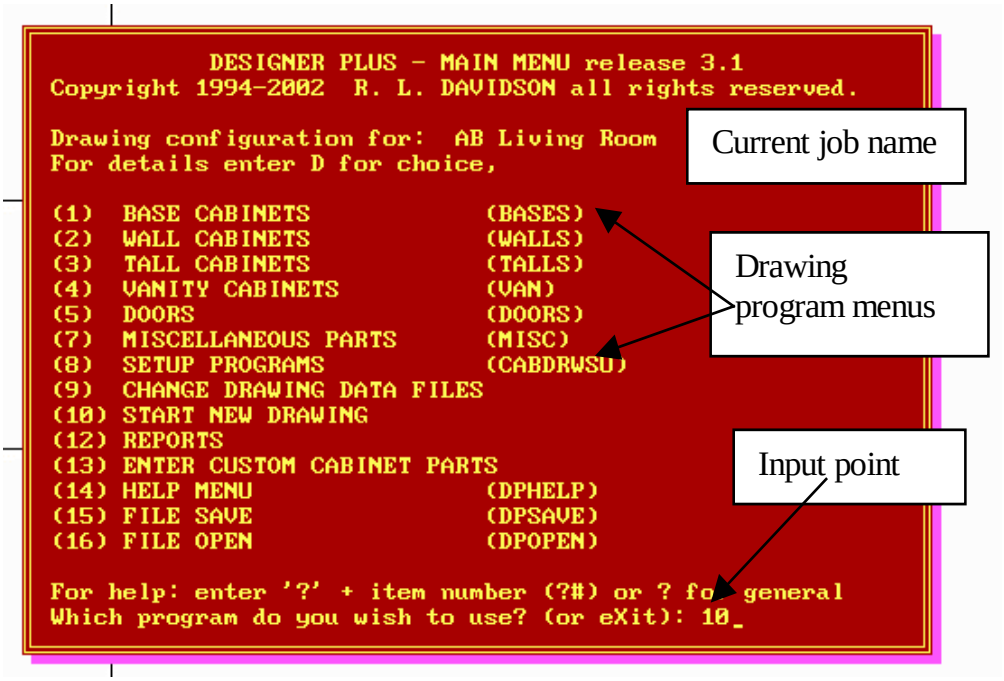
3 INTRODUCTION

Designer Plus is a collection of programs written in BasicCAD, DesignCAD 3D's programming language. Designer Plus is essentially a menu driven "electronic draftsman" that performs the same steps to draw a cabinet as you would, only at the speed that your computer can execute lines of code. By using programming code to draw cabinets Designer Plus offers several advantages over using pre-drawn symbols:

1. Accurately drawing cabinets any size is easily accomplished. Make shop drawings and dimension with accuracy to 0.001 units. Using symbols to draw fails for this use because if you load a 30 units wide cabinet and stretch it to 36 units, the width of each section is increased 20% resulting in a distorted drawing.
2. Modifying a cabinet before it is drawn is easy. Any number of doors and drawers can be drawn automatically with just a few keystrokes.
3. Cabinet construction member sizes are variable. This allows an unlimited number of manufacturing construction methods to be kept readily available for drawing cabinets. Using this feature you can easily match existing work.
4. Because door and drawer front sizes are accurately calculated before they are drawn, the program records the sizes, should you want them for manufacturing.
5. The information necessary to draw the cabinet is used to create and record a nomenclature from which a custom cabinet, using standard practices could be constructed, or priced using other software or manually.
6. Text can be entered and placed automatically by the program.
7. Several custom cabinets can be combined to create a new cabinet.
8. Smaller storage space required on your hard drive. Designer Plus requires less than 3M of space on your hard drive, with another optional 1.2M of help files that can be omitted.

If you have trouble, the technical support is ***free*** and ***unlimited*** for both DesignCAD 3D and Designer Plus. Technical support is through Kitchen Consultants via e-mail at support@kitchen-consultants.com.

Designer Plus' menu system



Above is the Designer Plus' main menu. To select items enter the number of the item desired. Question marks (?) are used to get help in Designer Plus. If you have a question about an item enter ?+item number (i.e. **?6** for help on item 6). An X is used to stop the program and exit Designer Plus.

When multiple letters are listed for the selection, the capital letter is the default and will be executed unless one of the other letter options is entered.

Designer Plus will operate only with the DOS version 4 of DesignCAD 3D. NOTE - Windows 3.1 and Windows 95/8 versions of DesignCAD 3D are available but none of them will run Designer Plus. For information on all DesignCAD products call Upper Space at 800-233-3223.

DesignCAD Commands

If you are new to DesignCAD 3D you will find it helpful if you review this section before using the TUTORIAL. Pages 52-56 of the DesignCAD 3D manual give a complete list of the commands, and a short description of each available in DesignCAD 3D. Pages 57-61 lists:

- **Menu Command** name, this is the name as found in the menu.
- **Short Form,** this is the abbreviation that can be typed at the command line to use this command.
- **Keystroke Command**, by using this single key the corresponding command is executed.
- **Page number**, is where a full explanation of the command can be found.

To be able to use Designer Plus for drawing you will need to become familiar with some of the commands used in DesignCAD 3D these are:

Command name	**Short / Key stroke**	**Description**
Block Define	/ B	Defines a selection into a block which can be copied, stretched, etc. as a single unit.
Block Extrude	/ X	Extrudes a 2D block into a 3D solid.
Block Handle	BH	Sets a reference point for the block, which is used for other manipulations.
Block Insert	BI	Inserts a copy of the block referenced on the block handle.
Block Layer	BL	Sets the layer for the block.
Block Load	BLO	Recalls a drawing from the hard drive, adds it to the drawing, and defines it as a block.
Block Move	BM	Moves the block referenced on the block handle.
Block Rotate	BRO	Rotates the block only, in the drawing around a point you set.

Command name	Short / Key stroke	Description
Block Save	BS	Saves the block as a separate Drawing.
Block Solid	BSO	Groups all of the individual parts of a block into a single unit.
Box	/]	Draws a 6 surfaced (sided) box solid between 2 points.
Clear Screen	/ Y	Clears the screen – this erases everything from memory.
Dimension	/ @	Enters dimension, needs 3 points: two ends, and text location.
Dimension Angle	DA	Used to dimension an angle, needs 4 points: end-center-end, and text placement.
Dimension Line	DL	Multiple dimensions based on a single line.
Erase	/ E	Set points on item(s) to erase press E.
Fillet	/ F	Radiuses a 2-line corner, points on lines forming the corner.
Fillet Edge	FE	Fillets an edged formed by 2 plains. 1 point on the edge to be filleted.
Gravity Point	GP / *	Snaps to and places a point on the nearest point to the current cursor position.
Hide	Hide	Removes hidden lines from current view.
Home	/ Ctrl-H	Returns cursor to center of screen.
Layer	/ L	Starts layer management screen.

Command name	Short / Key stroke	Description
Line (vector)	/ V	Draws a line through all points on screen in order of placement.
Macro Execute	ME	Executes the macro chosen.
Midpoint	menu only	Sets a point at the center of the line nearest cursor position when mouse is left clicked.
Orthogonal Line	/ Ctrl-V	Draws vertical or horizontal lines through points set.
Parallel	/ =	Draws a line parallel to designated line. 2 points 1 on existing line second at new line location.
Perpendicular	menu	Draws a line at 90° to existing line. 2 points, 1 at starting point second on line to be perpendicular to.
Plane	/ P	Creates a plane defined by points set.
Point XYZ	/ :	Sets a point using x-y-z coordinates.
Point Relative	/ ‘	Sets a point relative to the last point set.
Point Set	/ 0	Sets a point at the cursors position. Same as left mouse button.
Point Snap	/ .	Snaps to the nearest point and sets a point. This is the same as a right mouse button click.
Retrieve	/ F9	Opens a previously saved file.
Rotate	/ R	Rotate the drawing around a point.
Save	/ F10	Saves the drawing.

Command name	Short / Key stroke	Description
Save 2-D	/ F4	Saves a 2D view of the drawing.
Section Delete	/ Ctrl-D	Similar to area erase but will break lines.
Set Path	Path	Sets the path that DesignCAD will use for locating files.
Set View	View	Used to define how you are looking at the drawing.
Solid Block	BSO	Defines a block to be a solid – all block elements are grouped into a single entity.
Solid Free	SF	Dissolves a solid defined by the solid command, so it can be edited.
Text	/ T	Add text to the drawing.
Text Size	TS	Sets the size of text.
Undo	/ ESC	Erases the last entity from the drawing.
Unerase	/ !	Reinserts the last item erased with the undo command.
Units	/ U	Used to set scale by defining the distance between two points.
View	View	Used to set view.
Zoom	/ Z	Zoom in or out of drawing. Zoom out by entering a 0 for the zoom value. Zoom in by entering a multiplier value, 0 – X including decimals.

There are other commands you will use from time to time, however these will be used regularly. Using Pages 52-62 in the DesignCAD 3D manual look up what each of the commands listed does, and how to use them. If the manual is not available you can find descriptions of the commands listed in DesignCAD 3D's menus. Highlight the command and use the right mouse button to access the description of the command.

Start DesignCAD 3D and use the mouse to move around the screen. Set some points with the left mouse button and draw a few lines "V" key and a few Ortho lines "Ctrl - V". Now notice what happens if you press the "V" key before setting points. Clear the screen by pressing "Y" twice.

Set a point at coordinates 0, 0, 0 by using the Point XYZ command, "**:**" then enter **0**,**0**,**0** and enter to execute. Set a point relative to this point with the Point Relative command "**'**" and enter the amounts to move **15**, **-24**, **0** and enter. Draw a box by pressing the "**]**" key. The cursor is off the screen, to bring it back use the Home command "**Ctrl - H**". To view all of the drawing use the Zoom command "**Z**", enter "**0**" for the zoom amount.

On the box you just drew set points on the upper left and lower right corners. Use the Run command by pressing the **space bar**, type "**doors**" on the command line and press enter.

(The first time Designer Plus is run you will be asked to set your drawing configuration. The serial number of your program and name are encrypted in the program, it cannot be changed. Each copy of Designer Plus has its own serial number that can be viewed by typing RLD at the prompt in the main menu. If this is the first time Designer Plus is run you will need to enter the number for "DOORS" from the list of options.)

Press enter repeatedly until page 2 of the Door style nomenclatures window is displayed. Pick item 18 by entering **18** then press enter. Pick item **1**, which is a single arch cathedral raised panel door, then press enter. Press enter at each stop. Do not press any keys while Designer Plus is running. Simply watch what happens. You have just run your first Designer Plus program.

Invest some time and familiarize yourself with DesignCAD 3D. Use the DesignCAD 3D manual and do something with each of the commands in the above list. The tutorial will take you through the steps of drawing a typical kitchen and attempt to help you learn the commands and there functions by repetition. You will not learn these programs without using them – play with the program drawing programs and experiment with what happens with changing selection options.

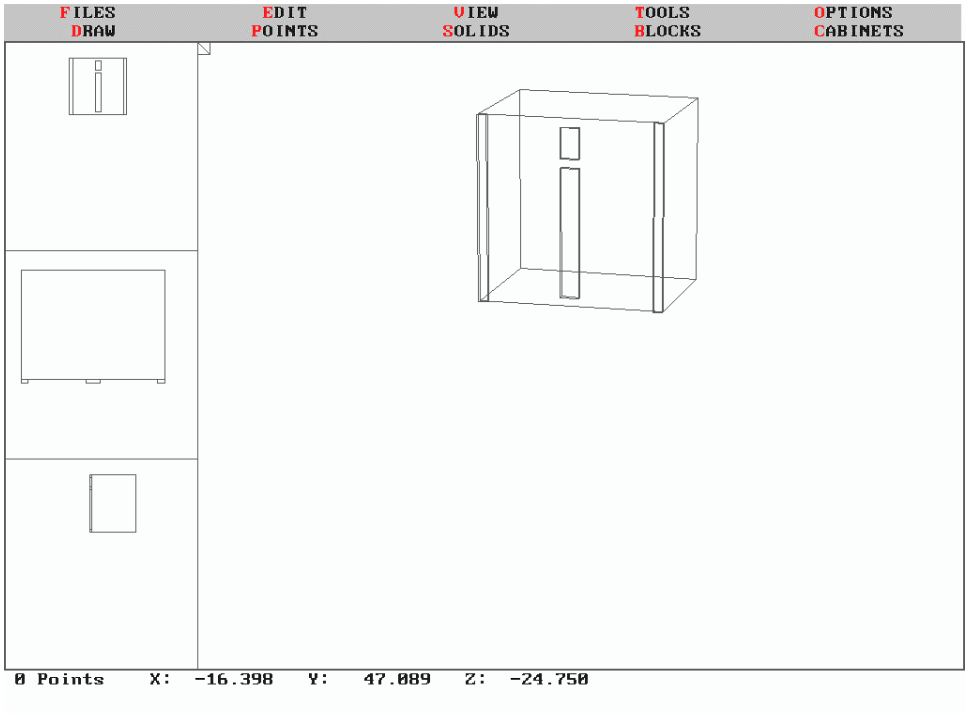
- **How Designer Plus draws a cabinet over multiple layers:**

Cabinet Layer Detail

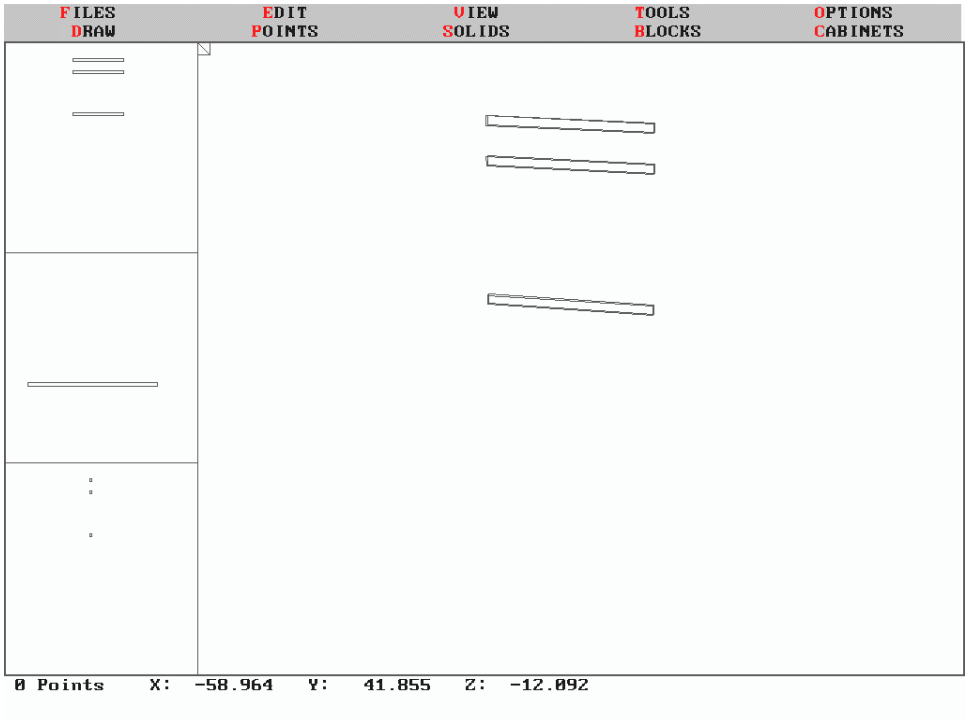
Designer Plus draws a cabinet over several layers. This is done so that you may manipulate a drawing more effectively. For instance to make a drawing for use as a 3D presentation you would not want dimension information in the drawing, so to remove it you 'turn off' (hide) the layer with the dimension information in it.

All of the pictures of the layers below are at the same scale and placement. The ability to view attributes, which are the individual parts of a parts list, has been turned on, so that you can see where they are placed in relationship to the drawing. The hidden line and shaded drawings at the end of this section have been zoomed (enlarged) to show more detail.

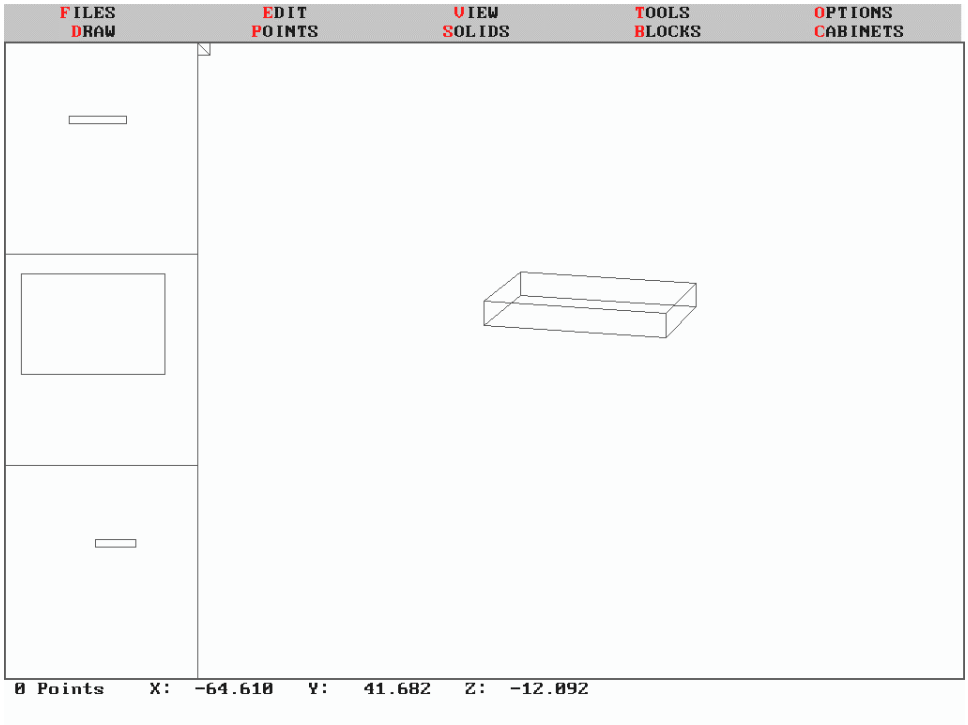
The sizing in these pictures are in inches, DesignCAD draws in full size units which you select. Designer Plus uses 1.5 drawing units as the default text size and 3.8 when using centimeters or 38 with mm.



Layer 4: Contains the parts of the cabinet box that would normally have a vertical wood grain direction.

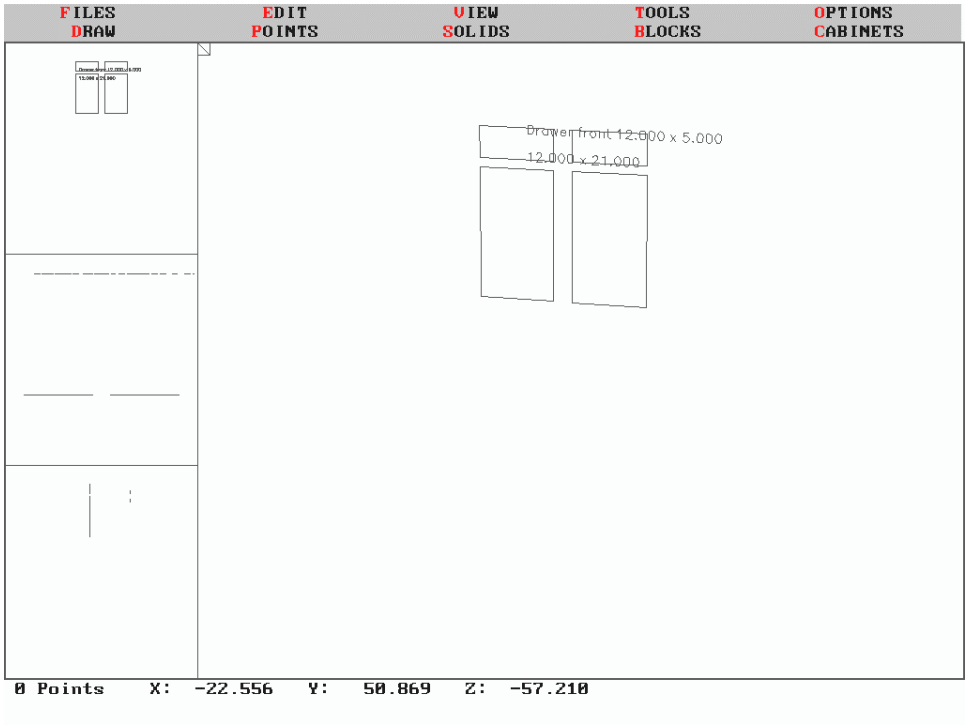


Layer 5: Contains the parts of the cabinet box that would normally have a horizontal wood grain direction.



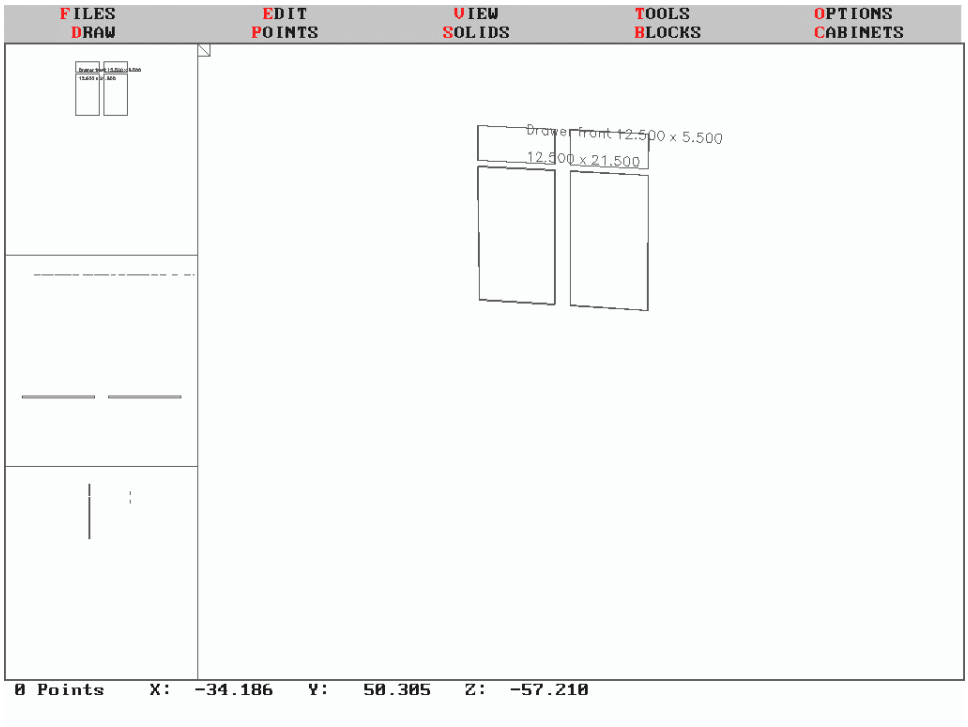
Layer 7: Contains the toe kick.

Layers 10-15 are door blank overlay construction layers. These layers are used as a foundation for drawing the styled doors. Any of overlay types that you do not use may be turned off in the setups so they will not be drawn (not available in the demo version of Designer Plus).

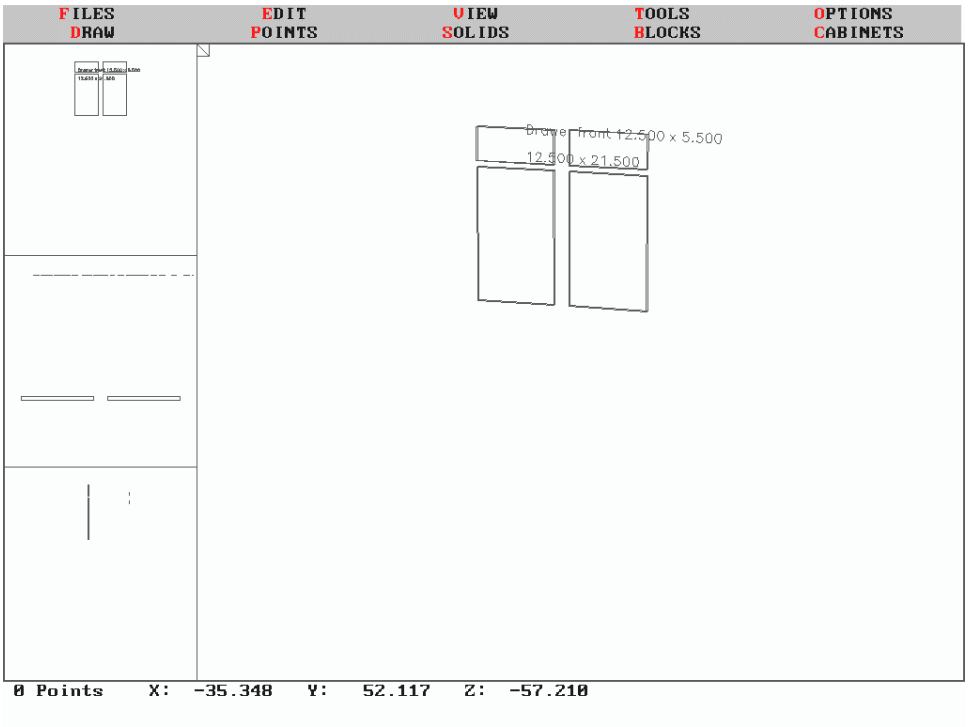


Layer 10: Contains the flush inset door overlay blank. No allowance is made for door reveal in the drawing or in door/drawer sizing.

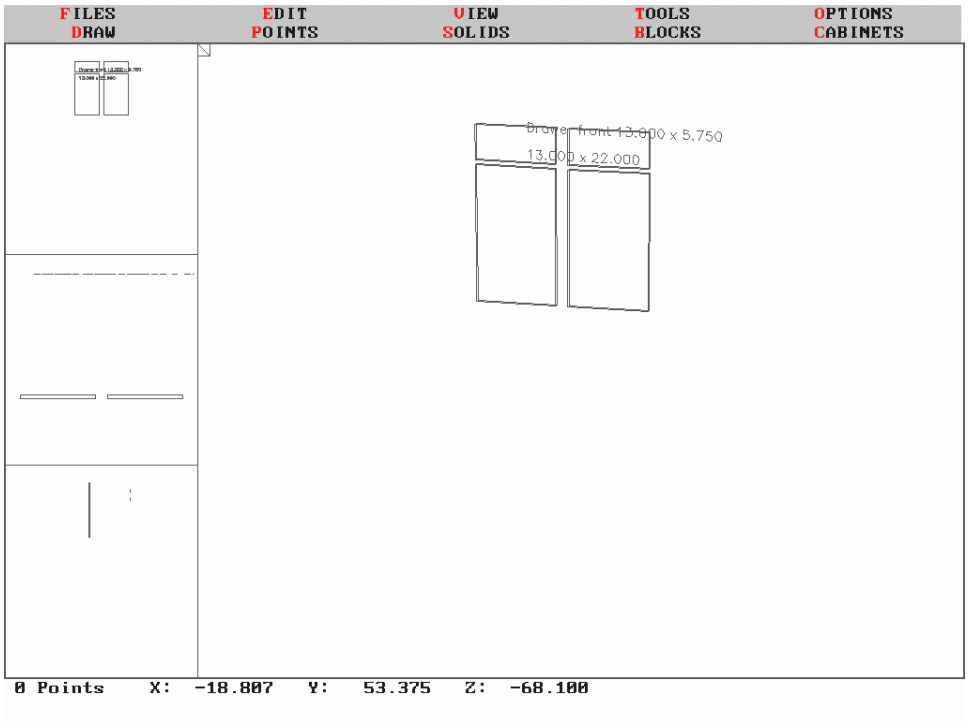
If the flush door overlay blank (layer 10) is not drawn (turned off in the set-ups) then the door-opening dimensions are not made in layer 29.



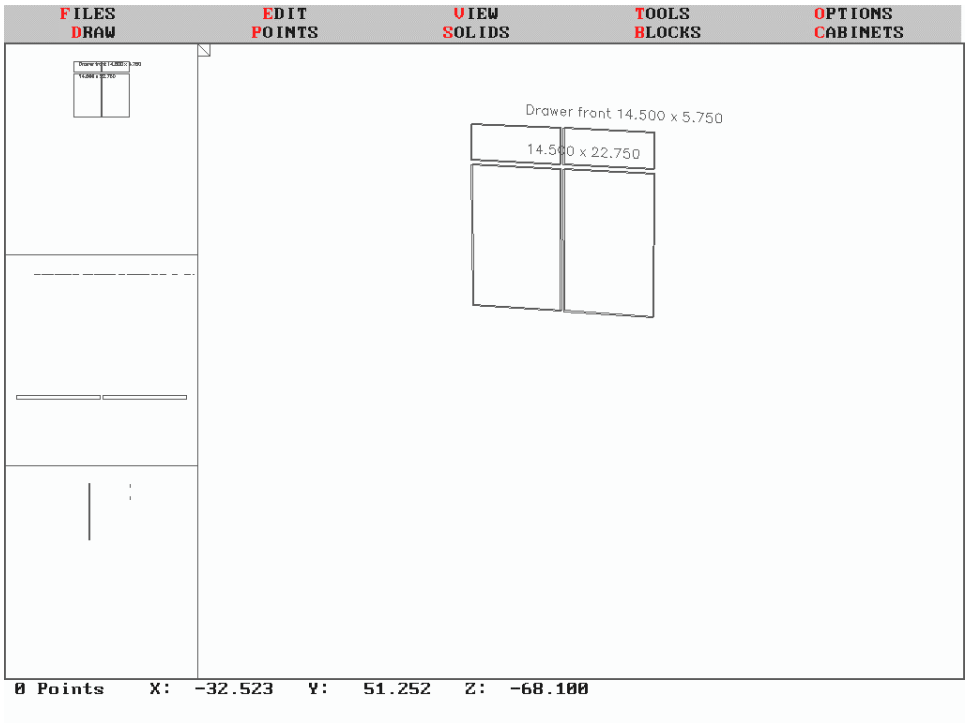
Layer 11: Contains the 3/8″ (9.5mm) inset overlay blank.



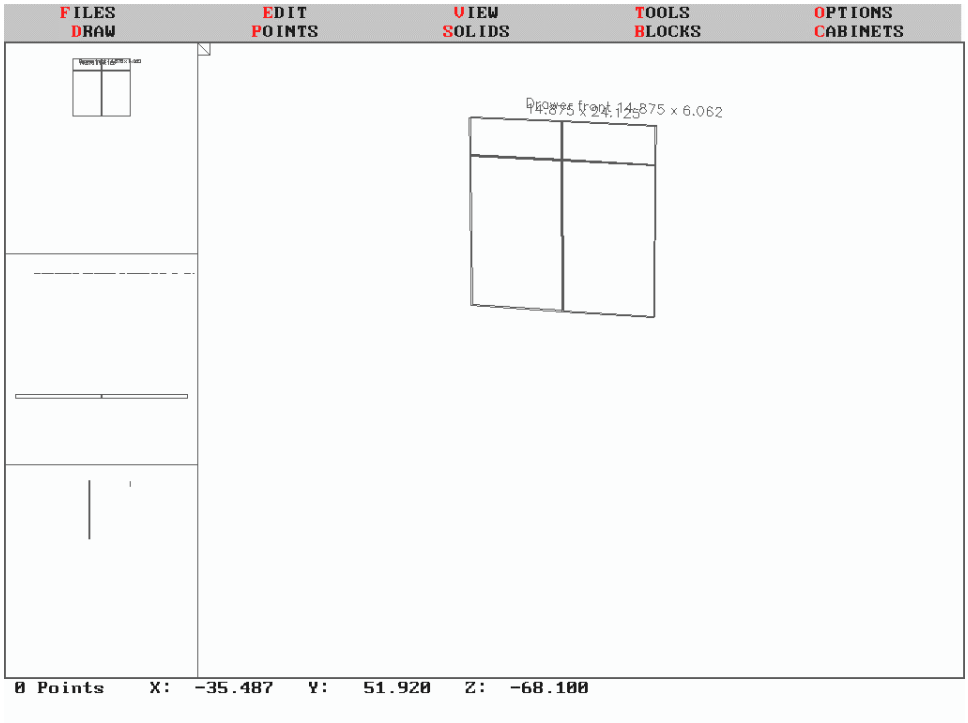
Layer 12: Contains the 1/4″ (6.4mm) overlay blank. The sizes are the same as the 3/8″ inset blank.



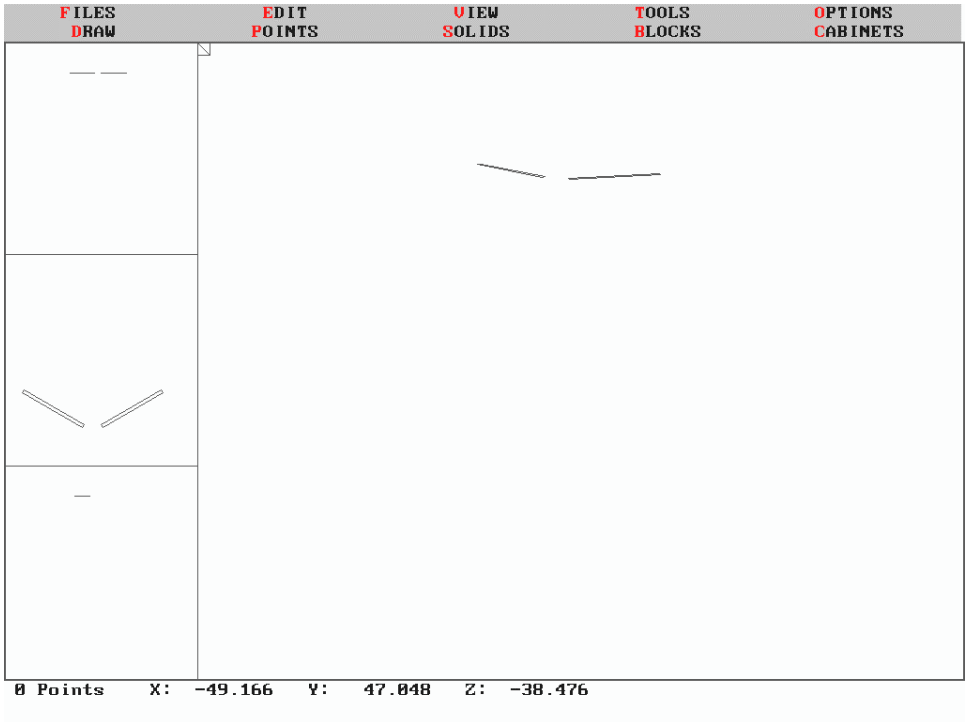
Layer 13: Contains the 1/2″ (12.7mm) overlay blank.



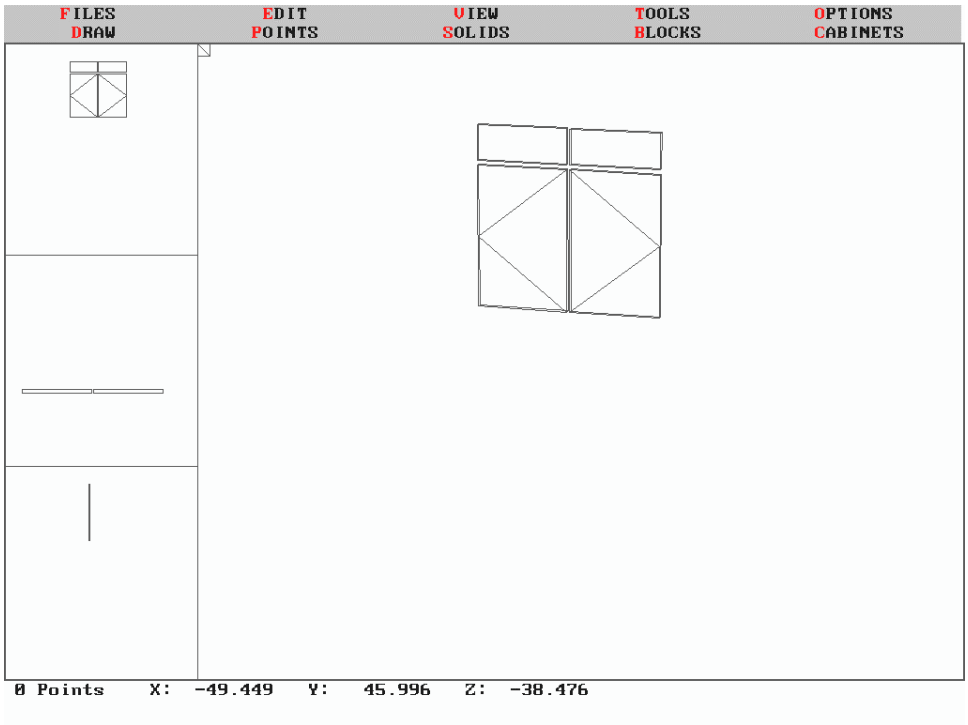
Layer 14: Contains the 1-1/4″ (31.8mm) overlay blank.



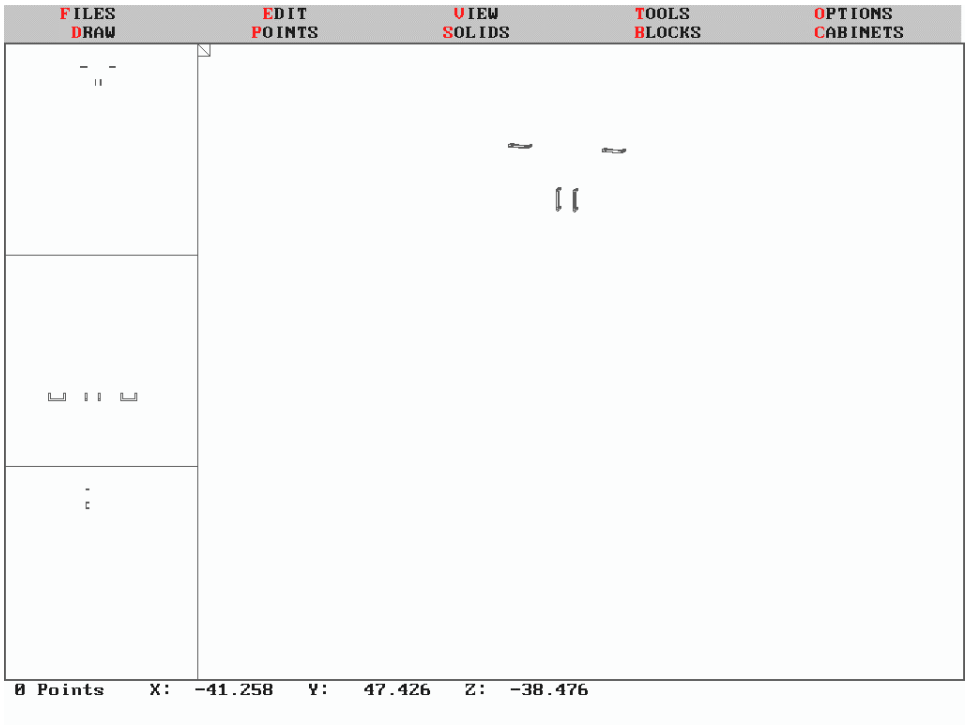
Layer 15: Contains the full overlay blank. This is the only door blank available if this is frameless construction. You can set the reveal (space between the doors) to anything you wish; all reveals will be the same.



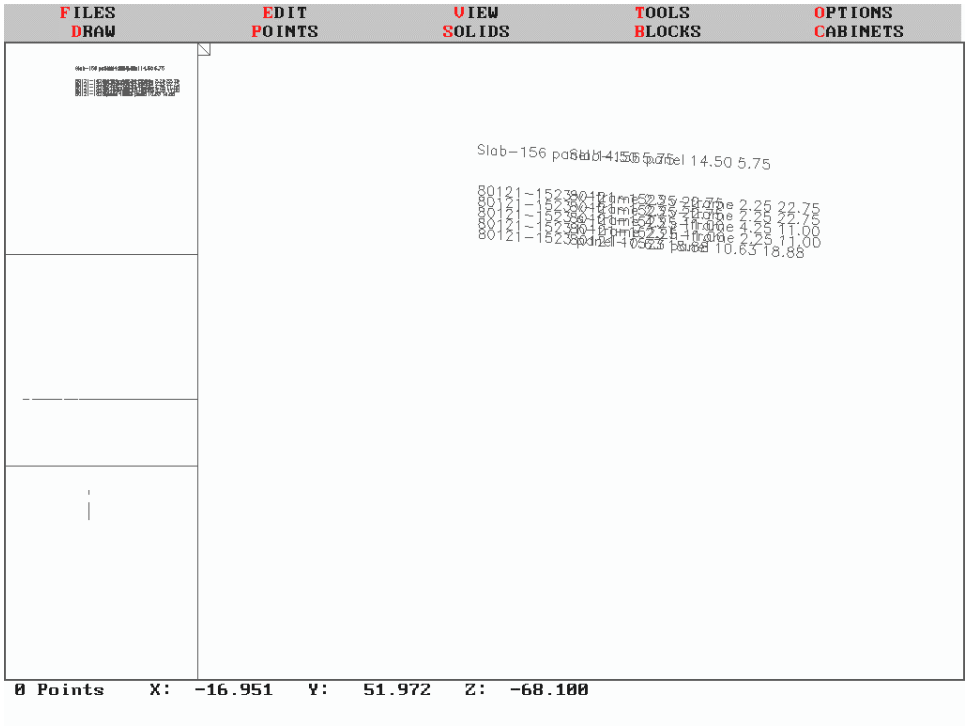
Layer 16: Contains the plan view door swings.



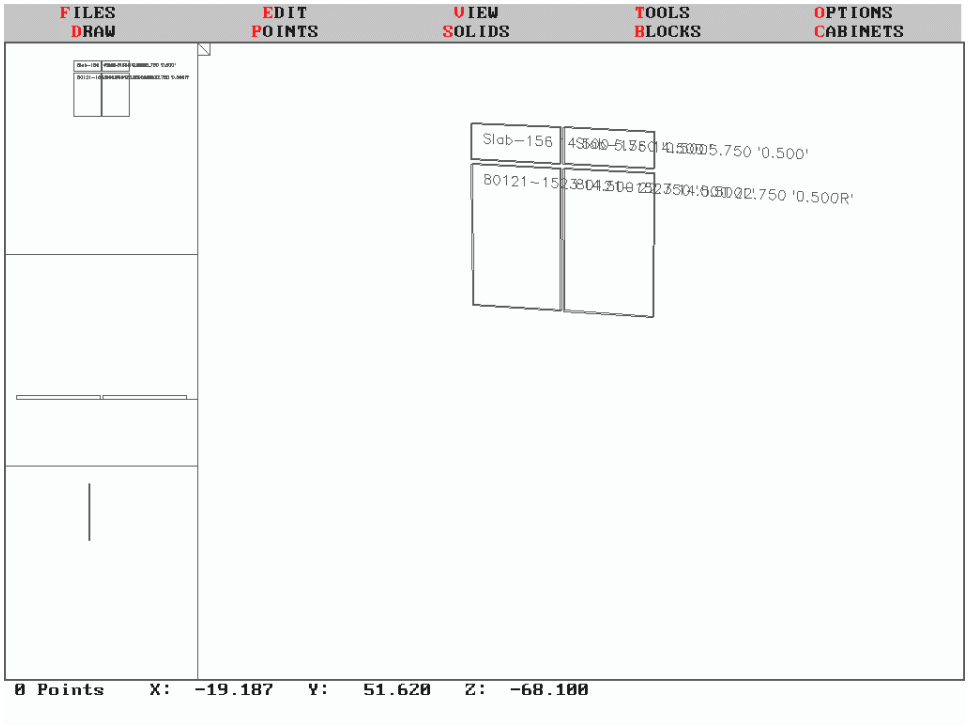
Layer 17: Contains the elevation view door swings.



Layer 18: Contains the knob (pull) drawings. Designer Plus automatically places a pull drawing from a file (pull.dw3). You can also create your own pull drawings for Designer Plus to use.



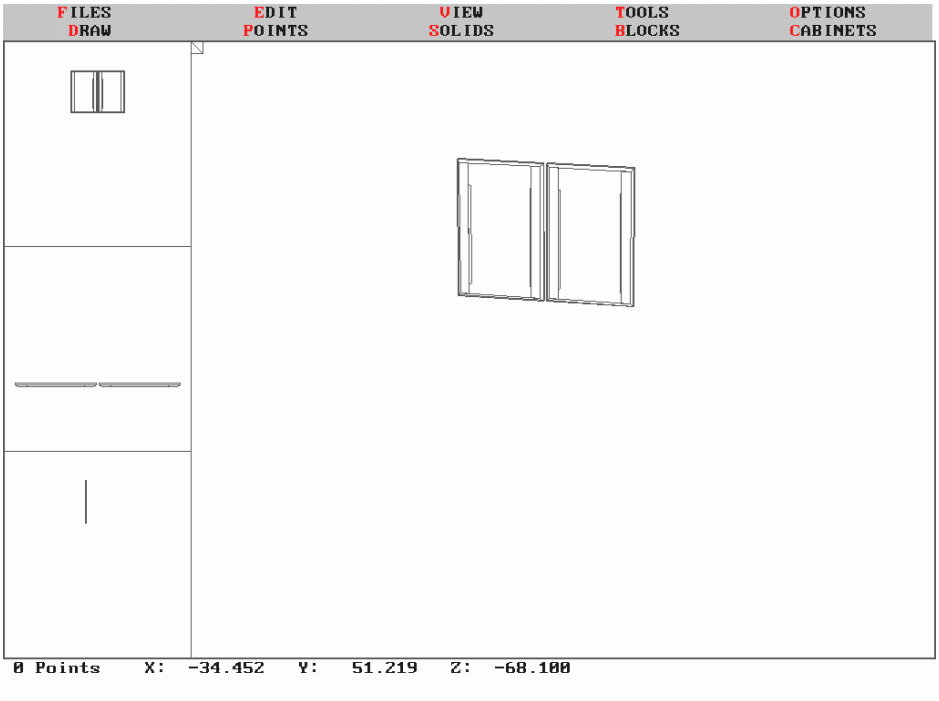
Layer 19: Contains the attributes for the styled door parts list. This list is used to make a cutting list.



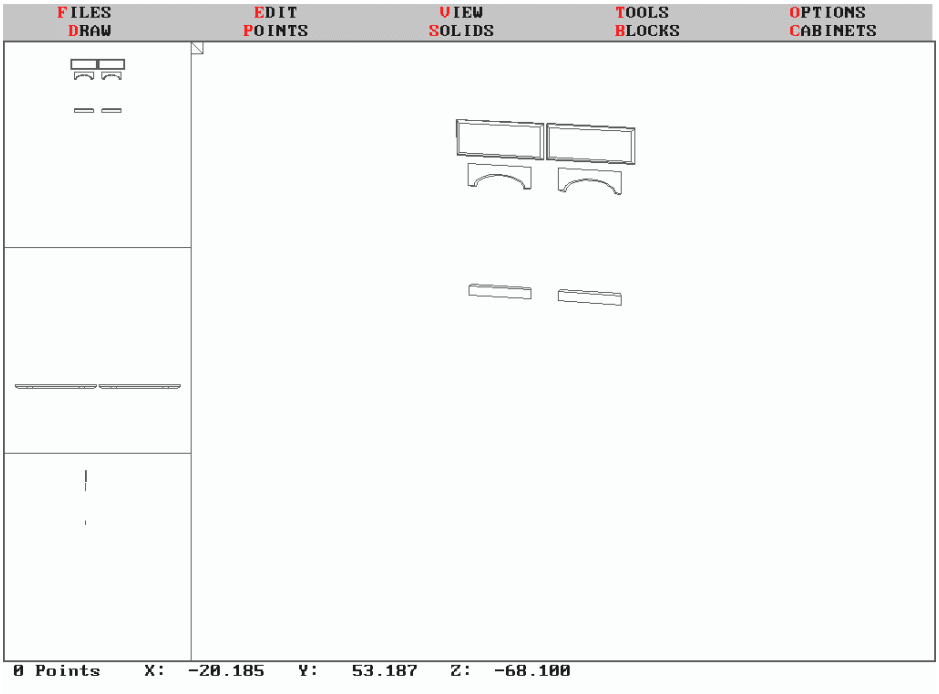
Layer 20: Contains the styled door or editing blanks (shown) and the styled door/drawer attribute list. If the shading option of Designer Plus is turned on, the door drawn is a 3D object spread

over several layers. If there is an edge detail, the door edge is no longer flush with the face of the door. The blanks are used for locating points to change the styled door because of this. If the shading option of Designer Plus is turned off then the styled door is drawn in this layer and the edge is drawn in layer 21.

The next few layers aid the selection of the styled doors for the application of wood grain textures, using DesignCAD 97 or later.

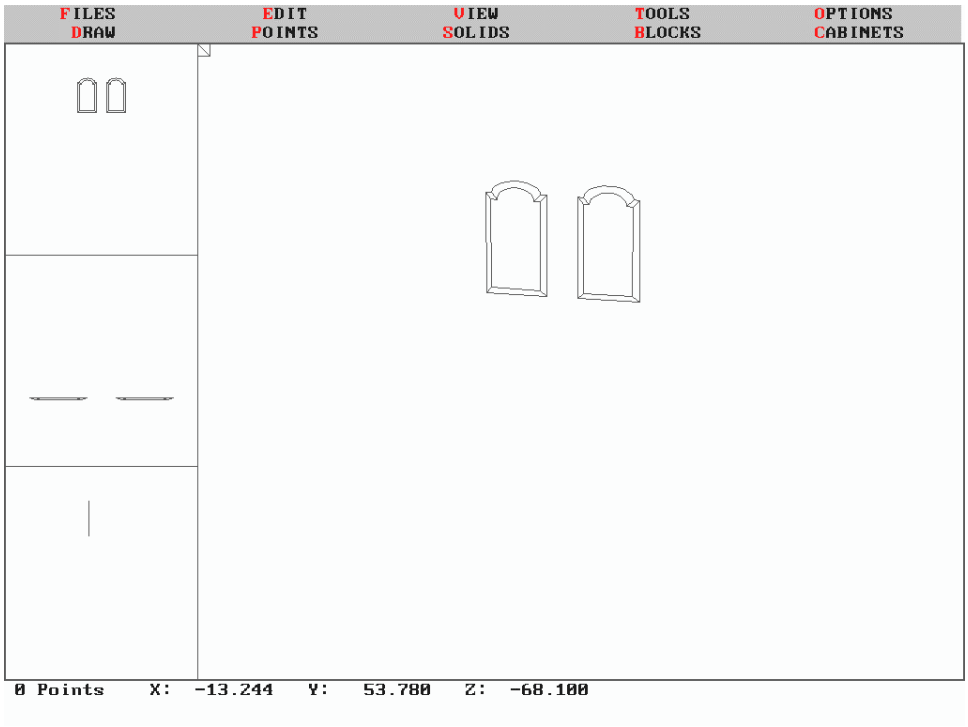


Layer 22: Contains the vertical wood grained frame parts of styled doors.



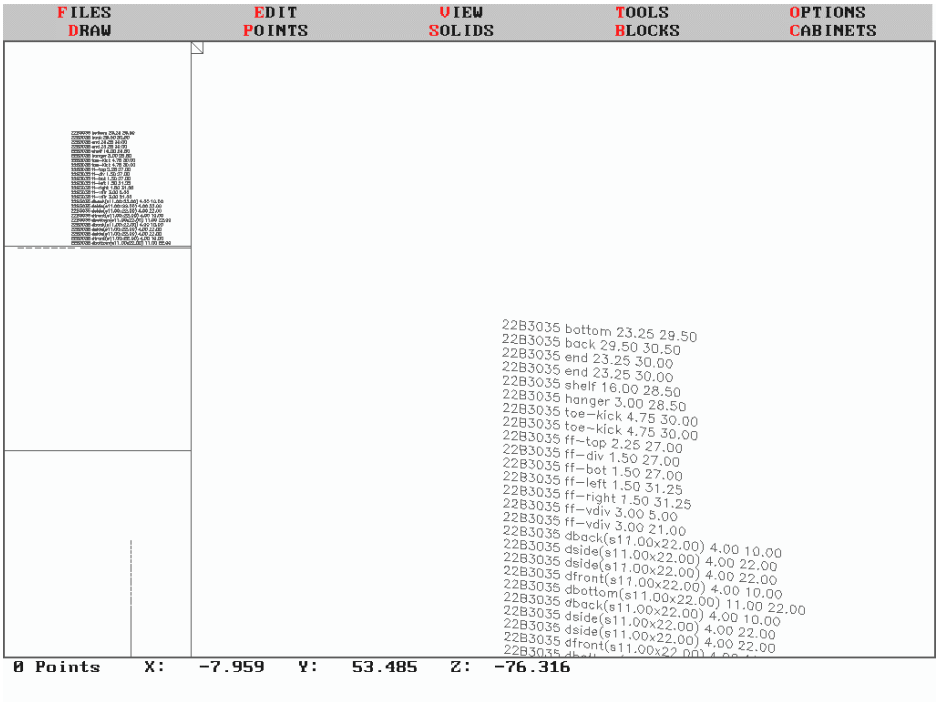
Layer 23: Contains the horizontal wood grained parts of styled doors.

Layer 24: Contains the frame plains of arch shaped doors (used for shading and texture mapping only).

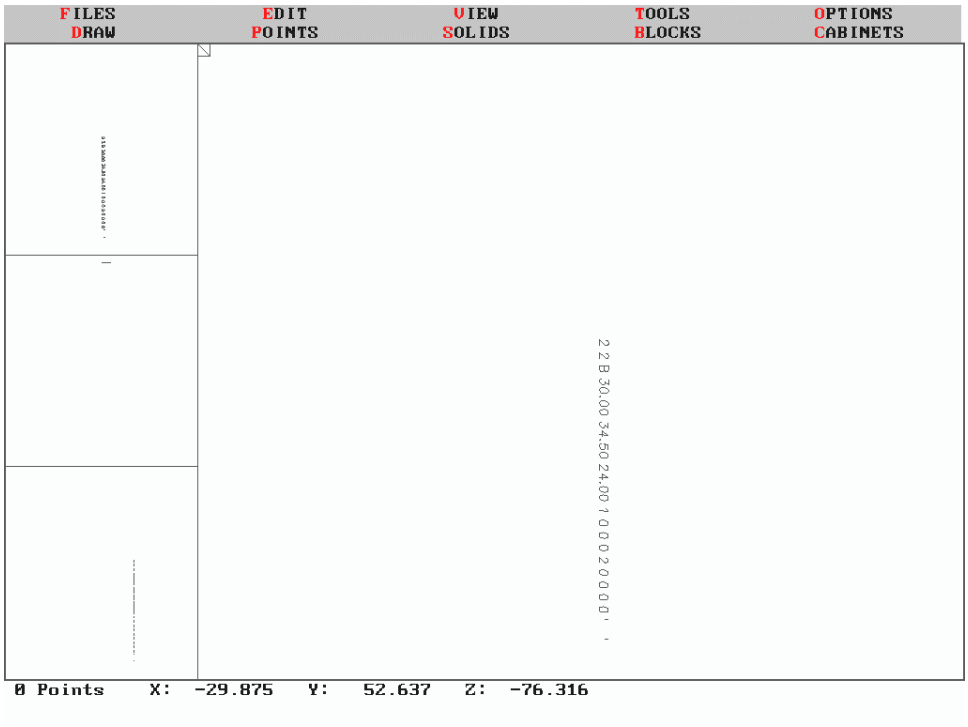


Layer 25: Contains the panel area of the styled doors.

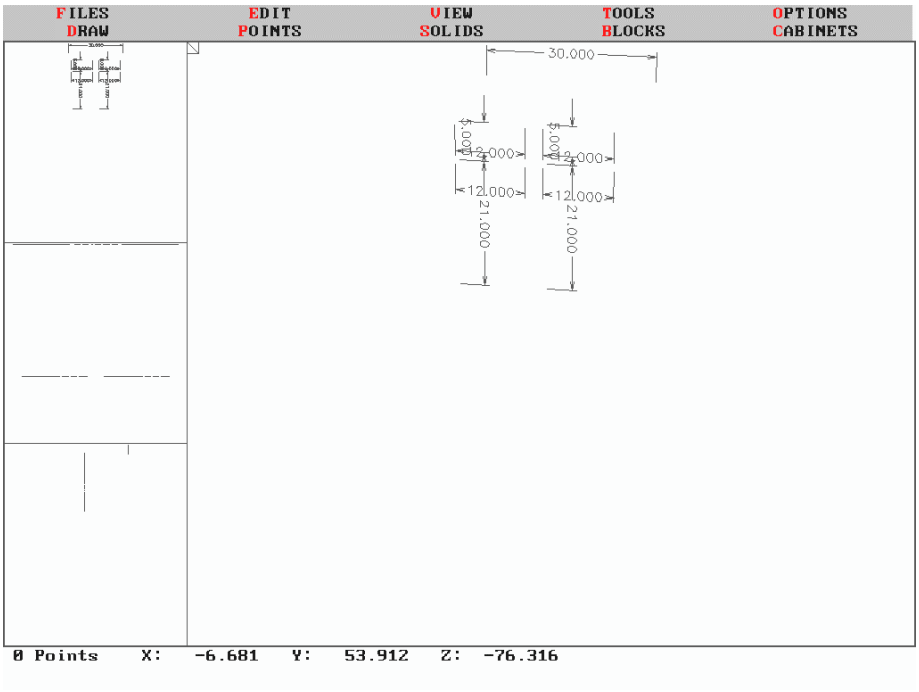
Layer 26: Contains the panel plains of arch shaped doors (used for shading and texture mapping only).



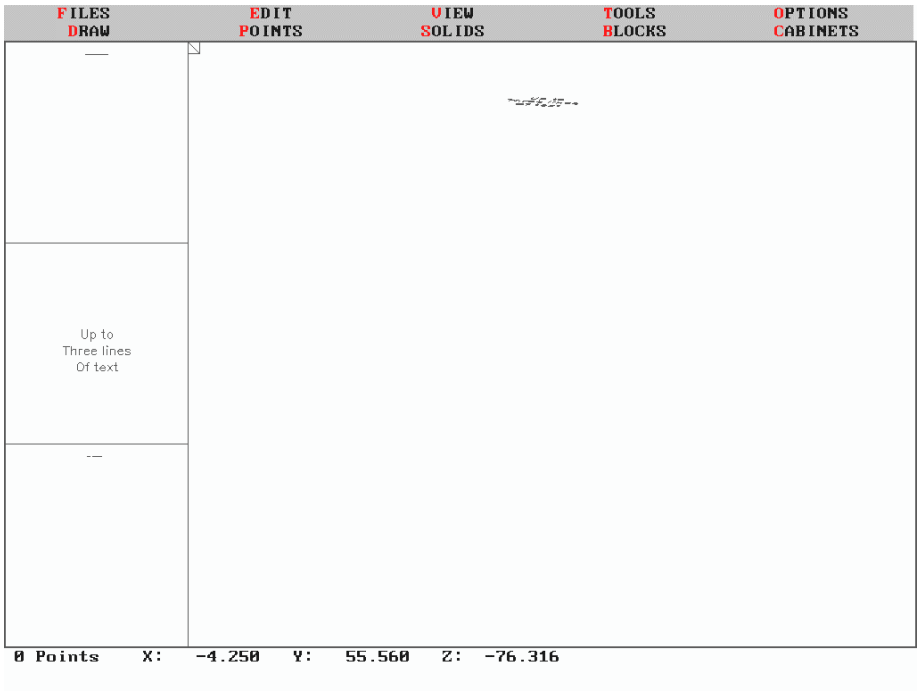
Layer 27: Contains the part list attributes used for creating the parts list. After it is posted to the drawing, you edit this list by selecting an item to remove and using the ‘E’ key to erase the item. To add an item place a point at the extreme left of the text press ‘$’ (dollar sign) and type the new attribute item. Press enter to add it to the drawing. The reports made by Designer Plus read attributes from only the layer in which a specific attribute belongs. If you are editing an attribute part list be sure you are using the correct layer (L).



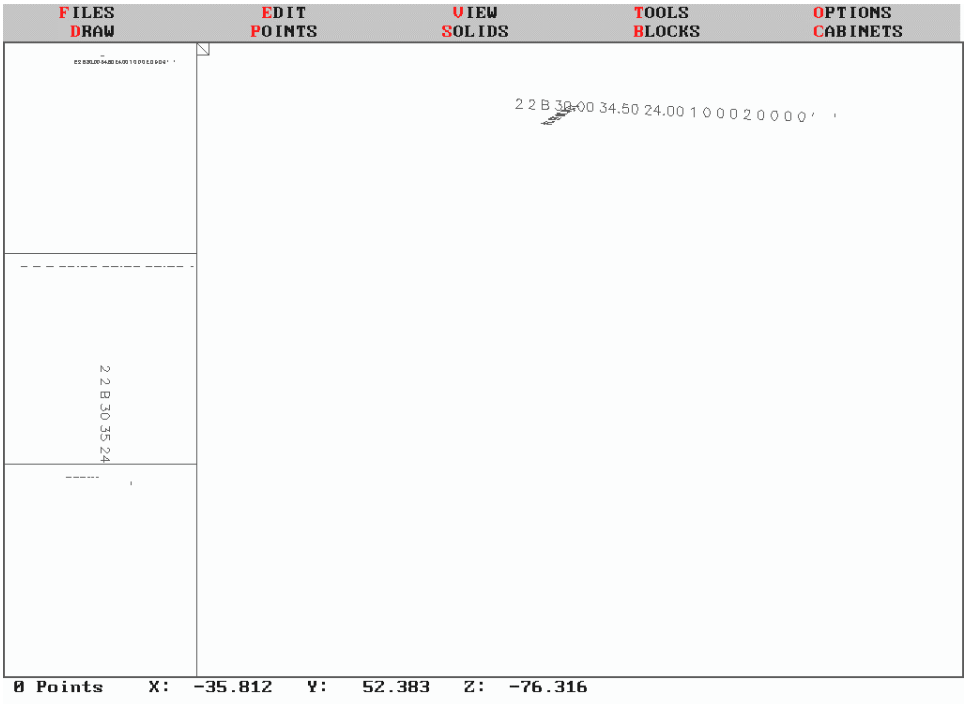
Layer 28: Contains the elevation nomenclature text.



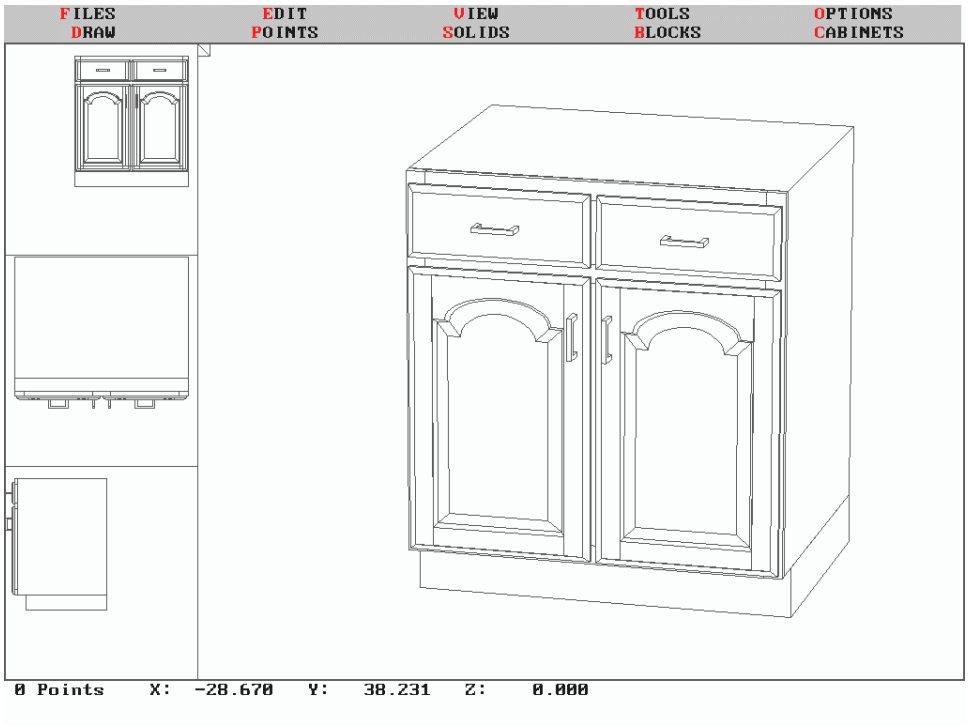
Layer 29: Contains Designer Plus generated dimensions. If the flush door overlay blank (layer 10) is not drawn then the opening dimensions are not made.



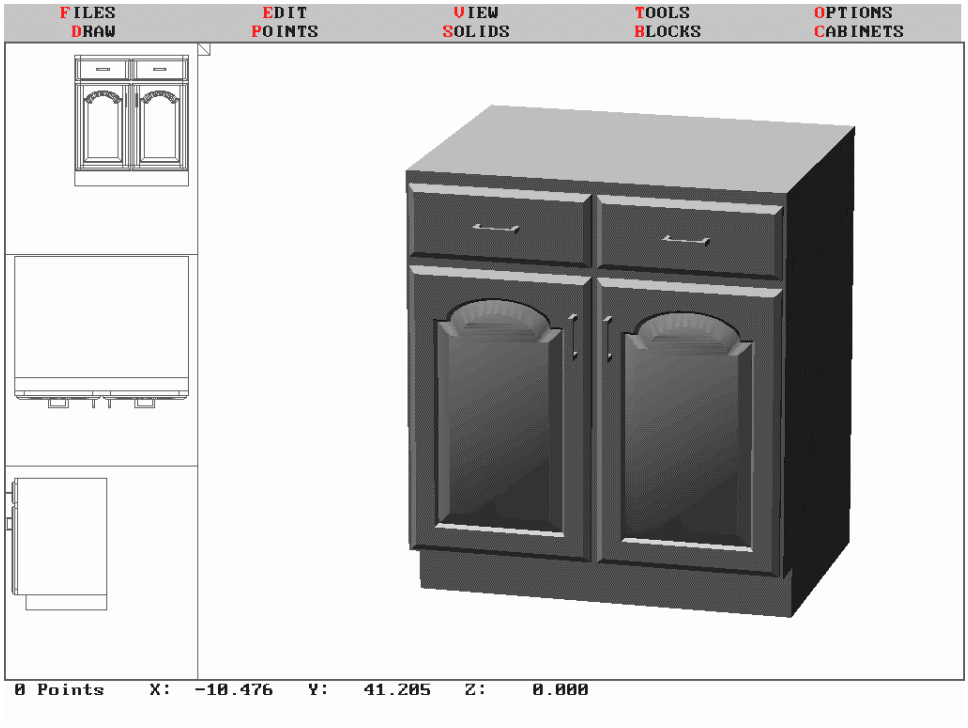
Layer 30: Contains the user entered text. This text is placed, centered in the front 12″ of the cabinet by Designer Plus.



Layer 31: Contains the cabinet plan nomenclature text and the cabinet attribute for making a cabinet list.



This is a hidden line drawing using layers 4, 5, 7, 18, 22, 23, and 25. The rest of the layers are turned off (hidden).



This is a shaded drawing using layers 4, 5, 7, 18, and 22 - 26.

Designer Plus program short cuts:

BASE cabinets found in the Base menu (accessed directly by **BASES**) program

Standard / and Peninsula
Blind corner / and Peninsula
Inverted (drawer on bottom)
Diagonal corners
Pie-Cut corners (including lazy susans)
Base open shelf
Open corner shelves (radiused, and diagonal
Faceted cabinet (any number faces / 90 degree)
Drawer base (including custom sizes)
Knee hole drawer
Knick knack shelves /and Peninsula
Base fillers (including corner)

VANITY cabinets found in the VANITY menu (accessed directly by **VAN**) program

Standard / and Peninsula
Blind corner / and Peninsula
Inverted (drawer on bottom)
Diagonal corners
Pie-Cut corners (including lazy susans)
Open shelf
Open corner shelves (radiused, and diagonal
Faceted cabinet (any number faces / 90 degree)
Drawer base (including custom sizes)
Knee hole drawer
Knick knack shelves /and Peninsula
Fillers (including corner)

WALL cabinets are found in the Wall menu (accessed directly by **WALLS**) program

Standard / and Peninsula
Open shelves / and Peninsula
Corner open shelves (radiused and diagonal)
Blind corner / and Peninsula
Standard over roll up bottom
Standard over drawer
Diagonal corners (including roll up bottom section) / and Peninsula
Pie-Cut corners (including lazy susans) / and Peninsula
Faceted cabinet (any number faces / 90 degree)
Knick knack shelves /and Peninsula
Micro cabinet (built in type)
Micro shelf
Micro cabinet drawers under
Extended stile hood cabinet
Fillers (including corner)

TALL cabinets are found in the Tall menu (accessed directly by **TALLS**) program

Standard
Blind corner
Diagonal corners
Corner open shelves (radiused)
Pie-Cut corners (including lazy susans)
Open shelf (bookcase)
Faceted cabinet (any number faces / 90 degree)
Standard base (lower section)
Drawer base (including custom sizes)
Knick knack shelves /and Peninsula
Oven (drawer under)
Oven (doors under)
Oven (two openings)
Refrigerator
Fillers (including corner)

DOOR styles are found in the Door (**DOORS**) program.

Slab
Continuos pull (“C”--style, simple edge 1 or 2 side)
Frame and panel (flat, raised, and glass)
Frame and MULTI-panel (flat, raised, and glass)
Unequal framed, frame and panel (flat, raised, and glass)
Vertical V grooved random plank
Vertical V grooved slab panel
Horizontal V grooved slab panel
Vertical V-Grooved Plank (with headrail)
Horizontal V-Grooved Plank (capped)
Cathedral frame and panel (double section, flat, raised, and glass)
Double cathedral frame and panel (flat, raised, and glass)
Roman arched frame and panel (double section, flat, raised, and glass)
Double roman arch frame and panel (flat, raised, and glass)
French arched frame and panel (double section, flat, raised, and glass)
Double French arc frame and panel (flat, raised, and glass)
Beaded corner frame and panel (double section, flat, raised, and glass)
True radius arc frame and panel (double section, flat, raised, and glass)
Doubled true radius arc frame and panel (flat, raised, and glass)
True half radius arc frame and panel (double section, flat, raised, and glass)
Doubled true half radius arc frame and panel (flat, raised, and glass)
Victorian frame and panel (double section, flat, raised, and glass)
Double Victorian frame and panel (flat, raised, and glass)
True oval arc frame and panel (double section, flat, raised, and glass)
Doubled true oval arc frame and panel (flat, raised, and glass)
True half oval arc frame and panel (double section, flat, raised, and glass)
Doubled true half oval arc frame and panel (flat, raised, and glass)
Vertical V-grooving only (apply to any area)
Horizontal V-grooving only (apply to any area)
Vertical V-grooving flute lines only (apply to any area)
Horizontal V-grooving flute lines only (apply to any area)
Radiused corners (can modify most door styles)
Edge detail only (apply to any area)

Miscellaneous programs (**MISC**), (**Where**) to find them and (***SHORT CUT***)

Saving a drawing using a description (**CAB**), (***DPSave***)
Opening a drawing using a description (**CAB**), (***DPOpen***)
Curved cabinets (**Misc programs**), (***RCAB***)
Counter top and back splash (straight only) (**Counter top**)
Crown molding (**Parts & Molding**), (***MOLD***)
Spindle rail (**Parts & Molding**), (***MOLD***)
Scribe molding (**Parts & Molding**), (***MOLD***)
Table legs (**Parts & Molding**), (***MOLD***)
Paneling (**Panels**)
Door end panels (**Panels**)
Valances (straight, French, and arched) (**Parts & Molding**), (***MOLD***)
All layers off (speeds up selecting layers to view) (**Misc programs**), (***LF***)
All layers on (speeds up selecting layers to edit) (**Misc programs**), (***LN***)
Four (4) view screen (main, elevation window, plan window and end window views on screen at same time) (**Misc programs**), (***4V***)
One (1) view screen (main view only) (**Misc programs**), (***CV***)
Cathedral Roman and Oval patterns creates custom sized cathedral patterns (**Misc programs**), (***PAT***)
Modify door/drawer configurations on an existing cabinet, (**Misc programs**), (***DORMOD***)
Remove the next to last point set without removing the last point, (**Misc programs**), (***MOVE***)
Draw parts from a data file for optimizing purposes, (**Misc programs**), (***OPT***)
Start a new drawing, set Designer Plus up and helps with the first wall, (***Main menu*****)**
Isolate a cabinet, allows a subassembly to be created and manipulated as a single unit. (***Main menu***)
Reports, makes a material report file from the current drawing. (***Main menu*****)**

Macro items require the prefix **ME** be entered at the command line before they are executed.

Elevation view (**Misc programs**), (**ME** ***ELEV***)
Plan view (**Misc programs**), (**ME** ***PLAN***)
3-D view (**Misc programs**), (**ME** ***RETURN***)

Appliance symbols are accessed in the (**apl**) program.

Symbols are pre-drawn 3-D drawings that can be inserted as desired they can be accessed from (**Misc - Appliances and fixtures**). Refer to the table in the section ***.APL & DLR FILES** for handle location points and file names. To load any of these drawings directly, use the DesignCAD 3D command LOAD (**F9**) or the BLOCK LOAD (**BLO**) command, followed with the file name and extension, (file name.APL or name.DLR for shadable drawings).

Ranges (free standing, combination, drop and slide ins)
Refrigerator (33x69" top, and bottom freezers, and 33, 36x69" side by side)
Sinks (double, offset L and R, single, bar, round and oval lavatories)

Faucets (2 handle kitchen, goose neck, lavatory)
Laundry (washer and dryer)
Ovens (micro built in, free standing, single wall, double wall)
Hoods (30″, 36″, 42″ standard, and micro)
Counter top brace 9″
Dishwashers (18 and 24″)
Compactors (15 and 18″)
Several door and window options
Table legs 4 types (cabriole, square and round Sheraton, and colonial)

Textures

With version 3 several textures are supplied to help get you going, using DesignCAD 2000's texture mapping capability. There are appliance pictures attached to pre-drawn boxes, wallpaper, laminate colors, wood textures, tile, and flooring. These images were collected from the Internet and scaled at about 72 pixels /inch.

4 TUTORIAL

There are four drawing methods covered in this section. ***Section one*** is drawing a single cabinet and saving it for use with DesignCAD v4 or a Windows version of DesignCAD as a pre-drawn symbol or component. This section should be completed first, regardless of your planed usage, because it is a quick instruction on the use of Designer Plus. ***Section two*** is a kitchen drawn within DesignCAD 3D v4, then both editing and printing from v4. ***Section three*** is a small hutch designed for use with the demo. In ***section four*** a fourth method uses pre-drawn cabinet symbols to assemble the same hutch as drawn in section three.

To use any of these sections start here and follow the instructions to the section when directed.

You will not learn this program unless you spend time just playing with it. Draw single cabinets/styled doors etc. in different configurations until you understand what the effect of a selection is.

In this tutorial:

BLUE - is DesignCAD 3D related.

GREEN - is Designer Plus related

CAPITAL ITALIC lettering denotes a *COMMAND NAME.*

UNDERLINED CAPITAL ITALIC lettering denotes a *WINDOW TITLE*

"Title Case Italic" lettering denote a *"Menu Item"*.

The following are for the keystrokes you will perform to enter commands and values.

BOLD lettering will denote **DesignCAD 3D command** keystrokes.

BOLD lettering will denote **Designer Plus command** keystrokes.

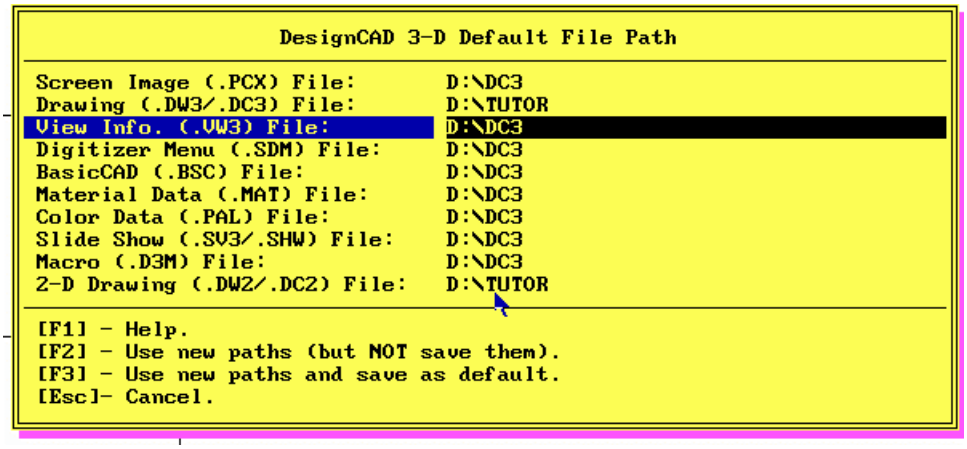
BOLD lettering will denote **data value** keystrokes.

SET UP TO START DRAWING

1. Create a directory so you will have some place to store your work. I use a directory called "clients" on my hard drive and create a subdirectory for each customer within this directory. For this learning session create a directory called "tutor" somewhere close to the drive letter to make entering the destination easier. As with any work you do on a computer, save your work often by using the F10 key (DesignCAD SAVE command shortcut) and following the instructions. Also remember that DesignCAD 3D does not keep track of the file path for your

drawing, but uses the default path unless instructed otherwise. It is imperative that you set the path for DesignCAD to operate with Designer Plus.

2. Start DesignCAD 3D by logging onto the drive and directory where the DesignCAD 3D files are and typing **DC3**.



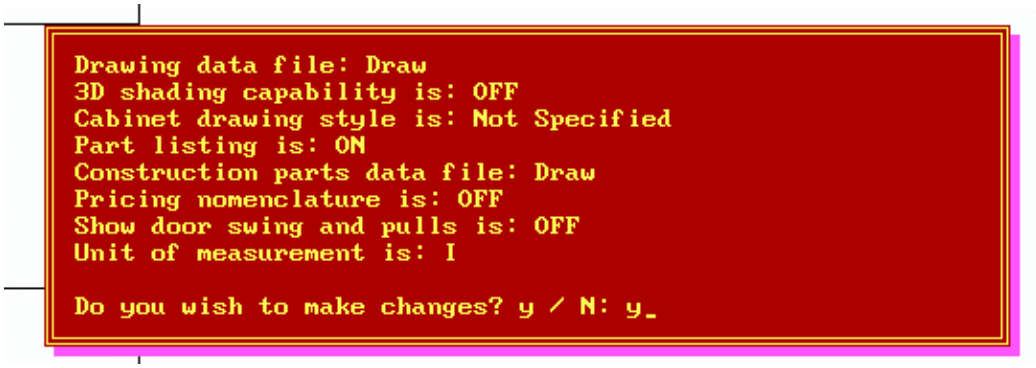
3. Use the *SETPATH* command (under *FILES* or space bar and type *PATH*) to direct DesignCAD 3D where to find Designer Plus and other features. In each of the paths that need to be changed, double clicking the left mouse button removes the text (pointer) and enters the current path to DC3.exe. This is the path needed for all features, except 2D and 3D drawings. Enter the path to where you want to store your drawing for these two drawing paths. Set these paths as the default paths (**F3**) until you have completed this tutorial. Until you change the paths, when you start DesignCAD 3D you will have instant access to the drawings you are working on.

START A NEW DRAWING

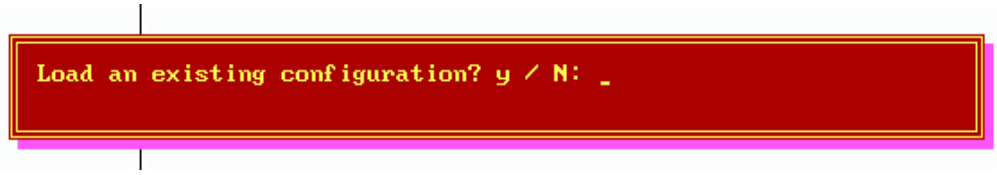
Setting up Designer Plus for a job

1. Press the **SPACE BAR**, type **CAB** and press **RETURN**. The first time Designer Plus is run you will be asked to enter your name. Follow the instructions until you are at this screen.

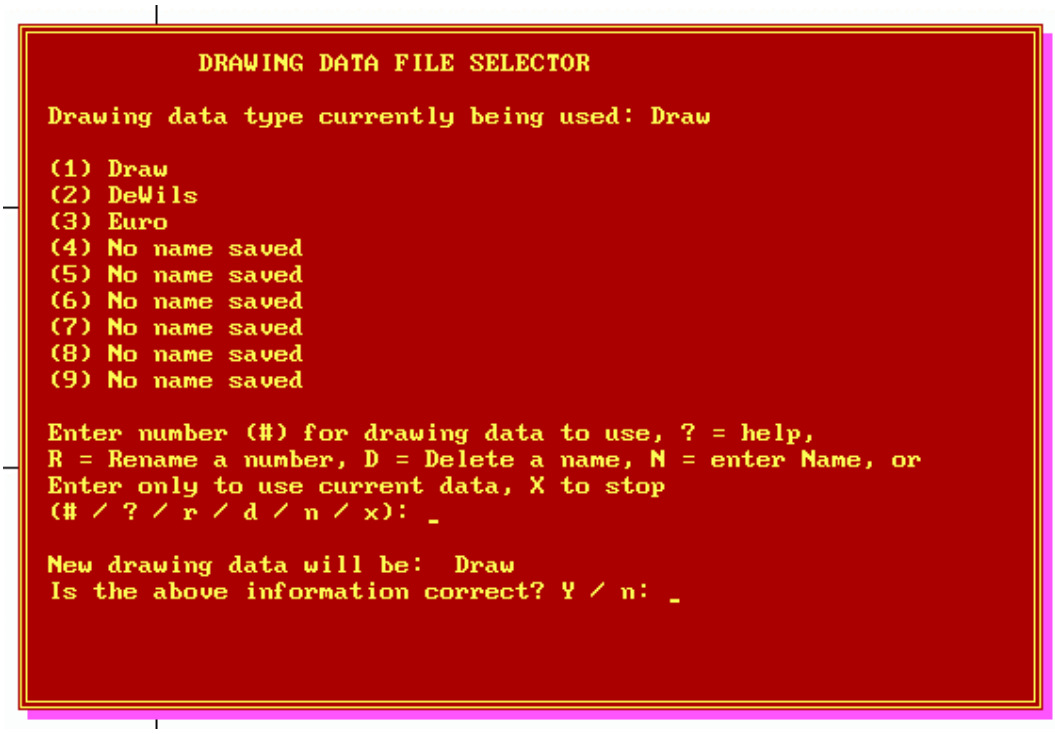
2. Enter the **number (10)** for *"Start New Drawing"* from the menu and press **RETURN.**



3. The current drawing option list is displayed. Because this is the first time that the *"Start New Drawing"* option is used for this drawing job enter **y**, and press **RETURN**. (The kitchen tutorial is going to use multiple starts, all using the same settings.)



4. You are asked if you wish to load an existing configuration. (You can use previously saved configurations). Press **RETURN** to use the default to change or create configurations.

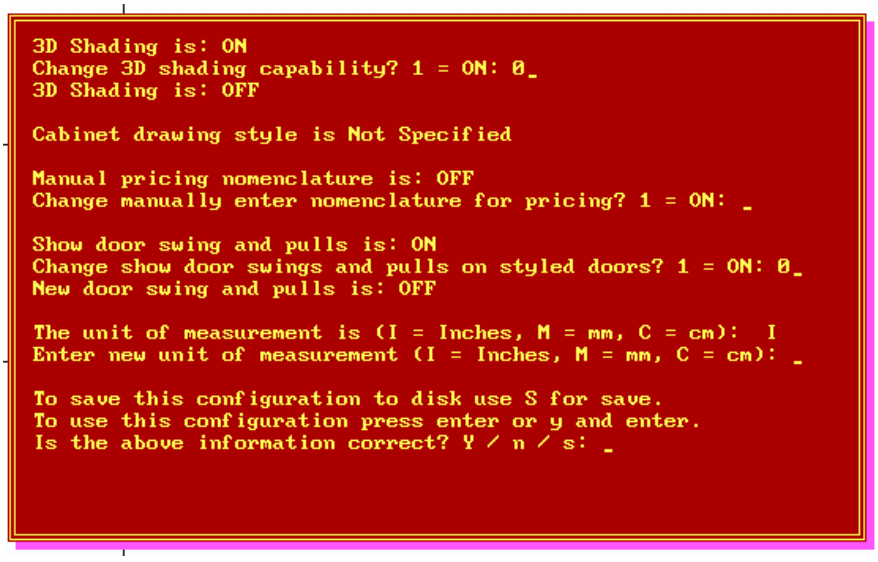


5. You will be asked for the drawing data file to use, *Press **RETURN** to use the current data “Draw”, and **RETURN** again to accept the entries. This program will draw an infinite number of construction configurations; you must setup the program for the data necessary for each construction type. The current and default data file is “DRAW” and sample data is supplied ***DO NOT** change this file name until you are ready to create your own data files. You should change the data in the ‘Draw’ file name later to meet your needs.

*For the Demo: metric users note that millimetric metric sample data has been included and is named Mdraw. Follow the instructions on screen to change the drawing data files and enter Mdraw for the data name. The unit of measurement must be designated ‘M’ millimeters to use this data for drawing or the drawing will be unintelligible.

6. Press **RETURN** to use the part listing default of off. –**OR**- If you will be using Designer Plus for part listing enter **n** and **RETURN.** This turns part listing on, enters "Draw" as the data source and returns to step 3 above. *'Draw' is the default data file name and sample data is supplied. Note that if part listing is enabled, when it is drawn each cabinet will display an editable list of parts before the list is posted to the drawing. Press enter to accept, or edit the list, until the data is posted and the program ends. These steps are not included in this tutorial but must be followed. See the section in Notes and Tips on the parts listing feature of Designer Plus if you need further information. Press **RETURN** until the 3D Shading query is displayed.

*For the Demo: metric users note that millimetric metric sample data has been included and is named Mdraw. Follow the instructions on screen to change the drawing data files and enter Mdraw for the data name. The unit of measurement must be designated 'M' millimeters to use this data for drawing or the drawing and/or part list data will be unintelligible. The sample cabinet construction type for part listing is face framed.



7. If Shading is not already off, turn it off by entering a **0** then press **RETURN** for the SHADING CAPABILITY option. This will leave this option off for this training period. Shading capability adds other layers to the styled door drawing which allows the door style to be visible when shaded or texture mapped, using the DesignCAD 3D commands for shading. By using the Designer Plus off default two things happen:

- Your computer will draw much faster because of less data to manipulate, and
- The DesignCAD 3D shade command, if used, will hide the frame and panel detail of a styled door.

See the section on tips for shading details.

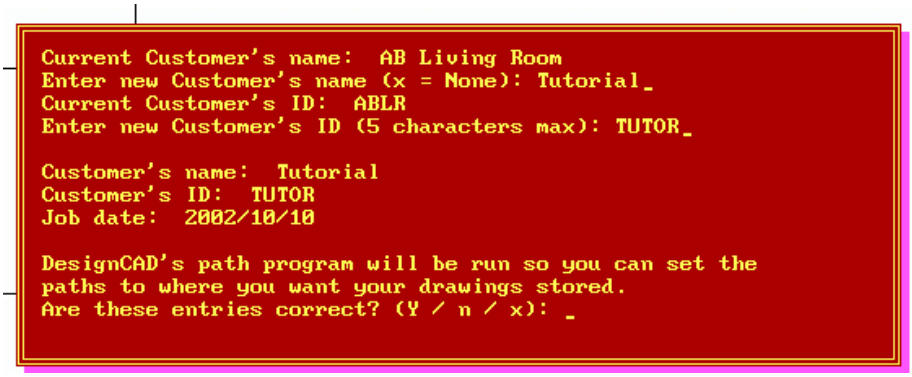
8. The option of MANUALLY ENTERING PRICING NOMENCLATURES is used primarily for using some other database such as ViaGrafix's Estimator to price a job. If you will be using Designer Plus to draw cabinets for a manufacturers line of cabinets you will want to use this option. You will be asked for the drawing and attribute nomenclatures for each cabinet. The nomenclatures you enter will be used in the drawing, rather than the cabinet nomenclature created by Designer Plus. If you do not enter a nomenclature when asked, the nomenclature created by Designer Plus will be the default used.

9. If you need to show the swing of doors (Architectural drawings) you can turn this option on. You will be asked for pull location and hinge side of each styled door. Press **RETURN** to use the existing value, or change it to off for now.

10. Enter **I** for inches for the TYPE OF UNITS Designer Plus will use when drawing (I is the default if you do not enter a letter). Designer Plus uses whole number units to draw items regardless of what those units are. This option changes the output of automatically done operations such as text and scaling of Designer Plus inserted drawings. For example text size for inch units is 1.5 units, which is 1.5/36 of a normal base cabinet's height. However, if the same value of 1.5 were used with metric units, the size would now be 1.5/91 cm or 1.5/914 mm, so small it would be unreadable. This tutorial will be done in inches because the data supplied is in inches. For metrics to use millimeters as the unit of measurement use "M"*. To use centimeters as the unit enter "C".

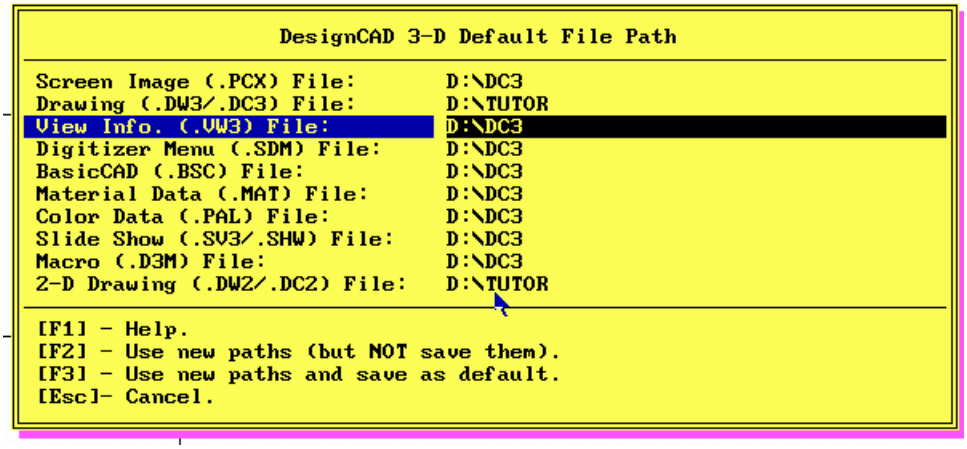
    *For the demo metric users note that millimetric metric sample data has been included and is named Mdraw. Follow the instructions on screen to change the drawing data files and enter Mdraw for the data name. The unit of measurement must be designated 'M' millimeters to use this data for drawing or the drawing will be unintelligible.

11. Press **Return** to accept these setup values.



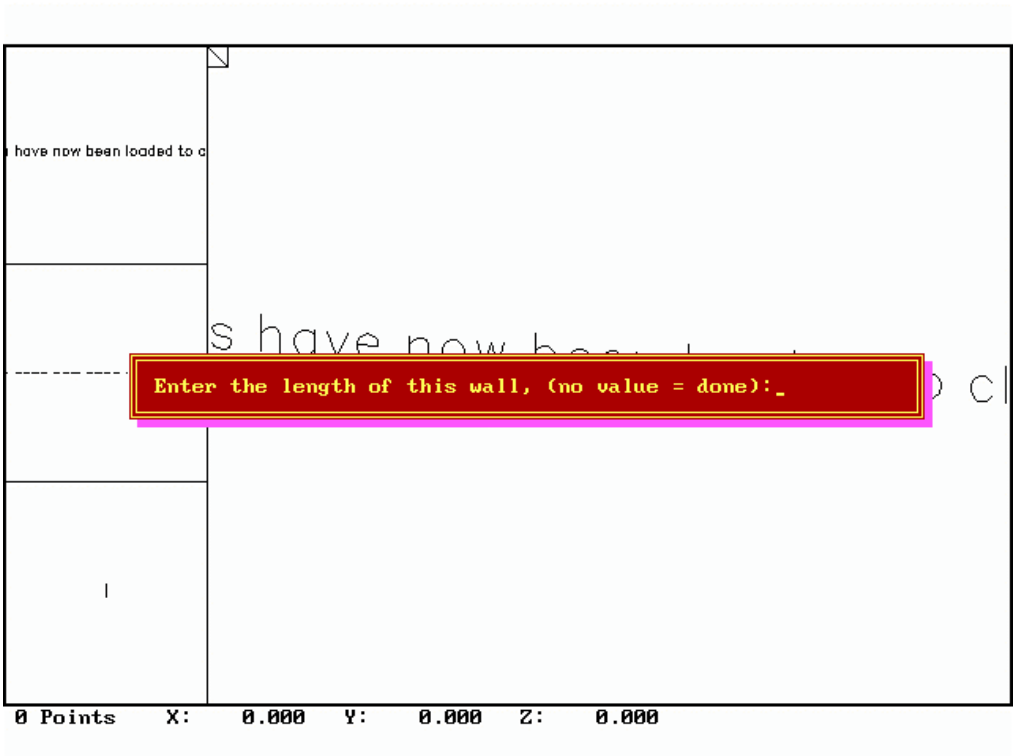
12. Enter the customer's name as **TUTORIAL.**

13. Enter the customer's identification as **TUTOR**. This is the default DOS file save name, if you don't enter one using DPSave. And press **RETURN** to use the new configurations.



14. The **SETPATH** command is executed. Enter the path to where you want to store or access the drawings created. The demo uses the subdirectory 'Samples' for the pre-drawn subassemblies used in Section 4 of the Tutorial. Use **F3** to save as default.

15. At this point the setting up for starting a drawing job has been completed.



The drawing *start.apl* is loaded, this drawing contains the layer names, system and drawing parameters that make Designer Plus easier to use. The message that the layer labels have been loaded will be displayed on the screen, and * a query for drawing a wall. This query will be used only for section two in this tutorial. If you are using any of the other sections for this drawing do not use the wall query. Press **ENTER** without entering any value to exit the query.

(To see what happened here, clear the screen by pressing ENTER, and "Y" twice, press "L" and observe the blank layer name spaces. Exit the layer command by "ESC" and repeat steps 1 through 15 and press "L" again. Use the escape key to exit the layer command without making changes.)

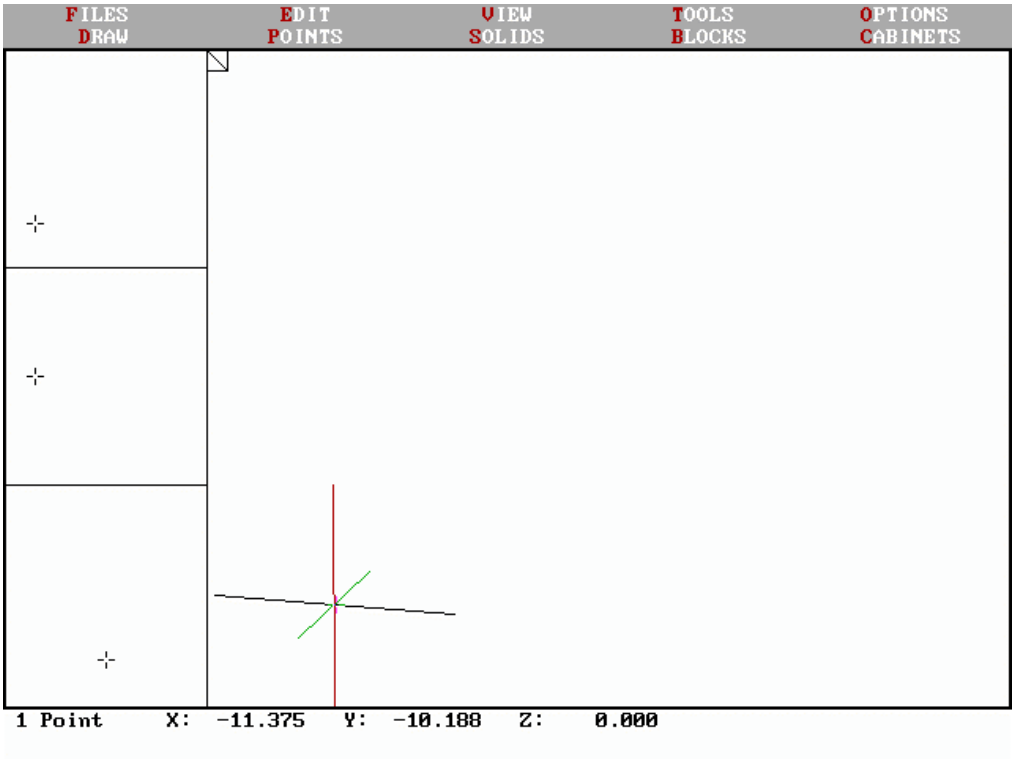
*(Note if your screen appears blank, and you are running in 256k colors, color number one is the same color as the background. Under *SHADE* choose *Color Edit* and set it to a color different than the screen background color. You will also need to save the Start.Apl drawing using the new colors set as the default.)

Section 1

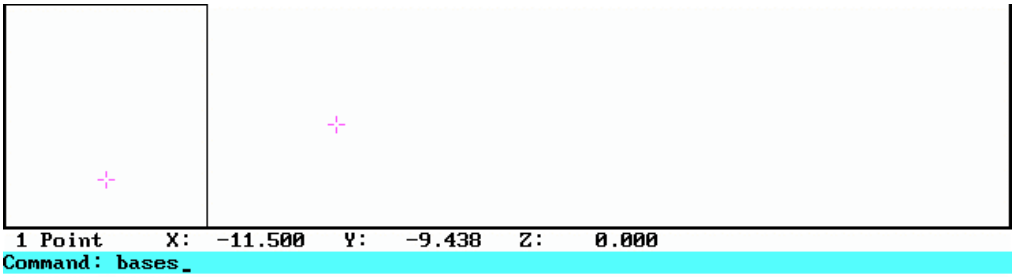
Single Cabinet with Counter top

We are now ready to begin drawing of the sample component cabinet. The unit of measurement for all of these exercises will be in inches (to convert inch units to millimeters multiply the inch value given by 25.4).

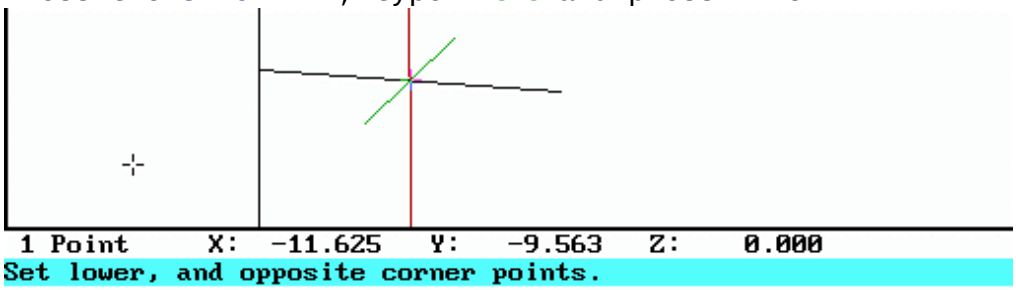
If you haven't already done so remove the text message from the screen with the *Undo* command (press the **Escape** key). If the screen does not appear as pictured below with 4 views press the space bar and type 4V (Designer Plus' 4 window view) on the command line, and press enter.



1. Use the mouse and left-click a point anywhere in the lower left quadrant of the screen.

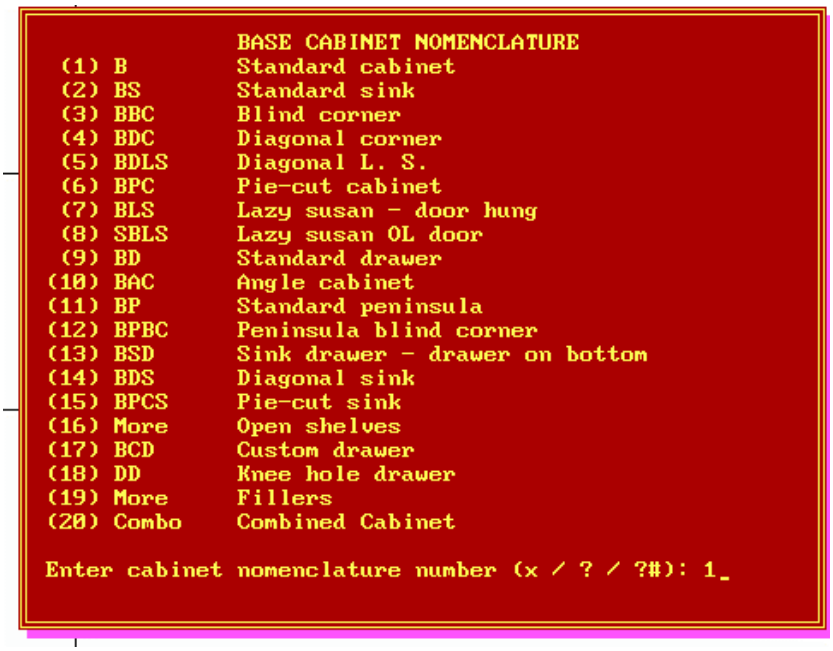


2. Press the **SPACE BAR**, type **BASES** and press **RETURN**.



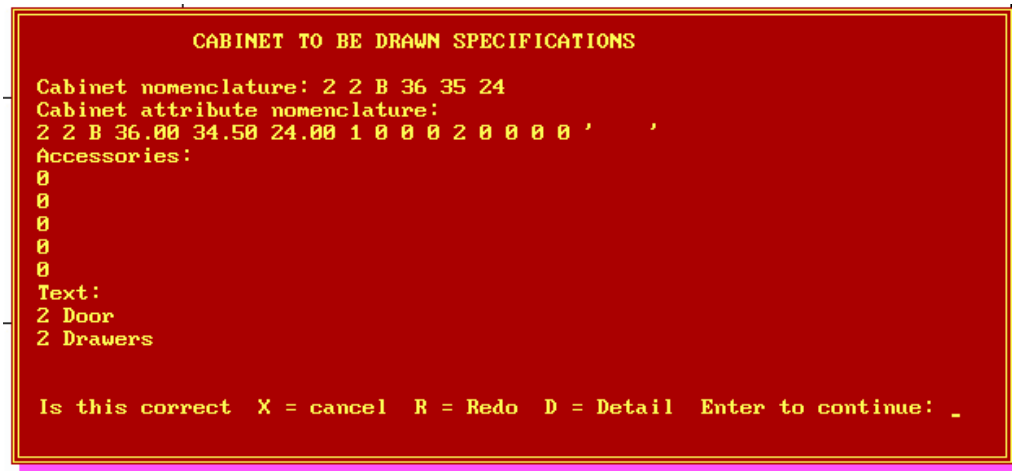
3. You will be asked to set points for the lower rear corners. For this exercise do not place points, just Press **Enter**.

4. Because there is only one point on the screen, Designer Plus needs to know which side of the cabinet the point represents and the width of the cabinet. These values are calculated automatically if there are two points on the screen and these two (3 and 4) steps are omitted. The first point is the anchor point that the cabinet will be built from in all planes x, y, and z. The second point is used for direction and width, the width is the difference on the x-axis between the two points set. Press **Enter** for left side (the CAPITAL letter in all Designer Plus queries is the default if no value is entered), and enter **36** as the width of the cabinet.



5. Enter the **number** (**1**) for ‘Standard Cabinet’, and Press **Enter.**
6. No modification is desired, Press **Enter** at the modification window.
7. No accessories are desired, Press **Enter** at the accessory window.

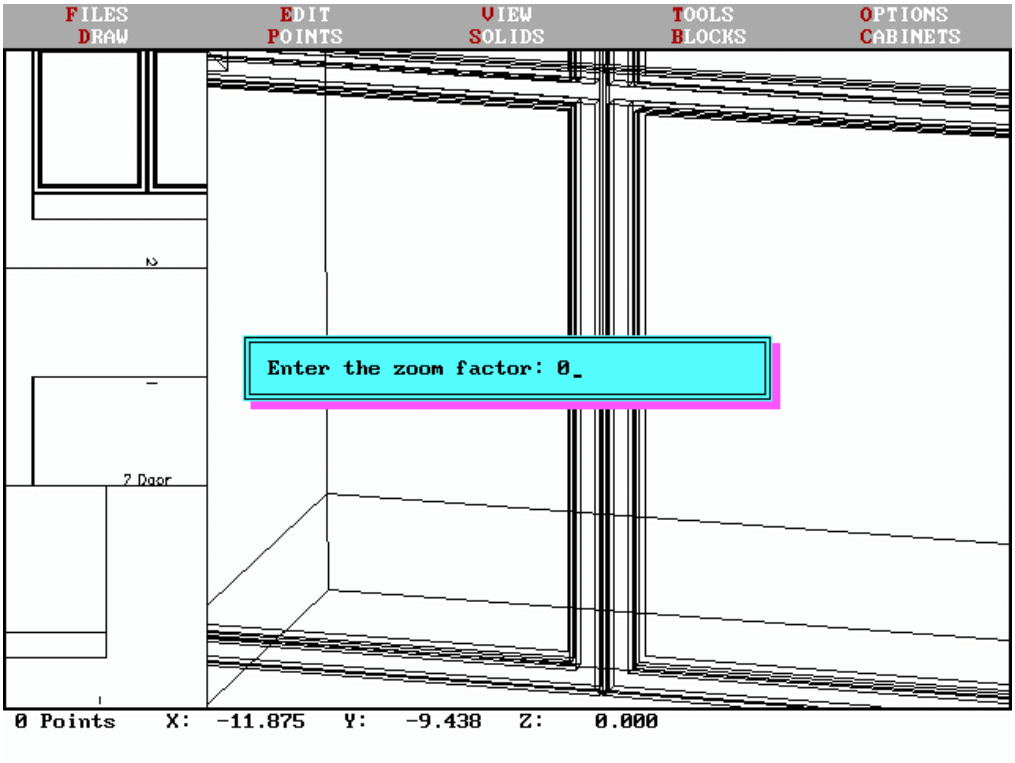
8. Enter the **text** as shown in the window above and press **ENTER** to accept each line.



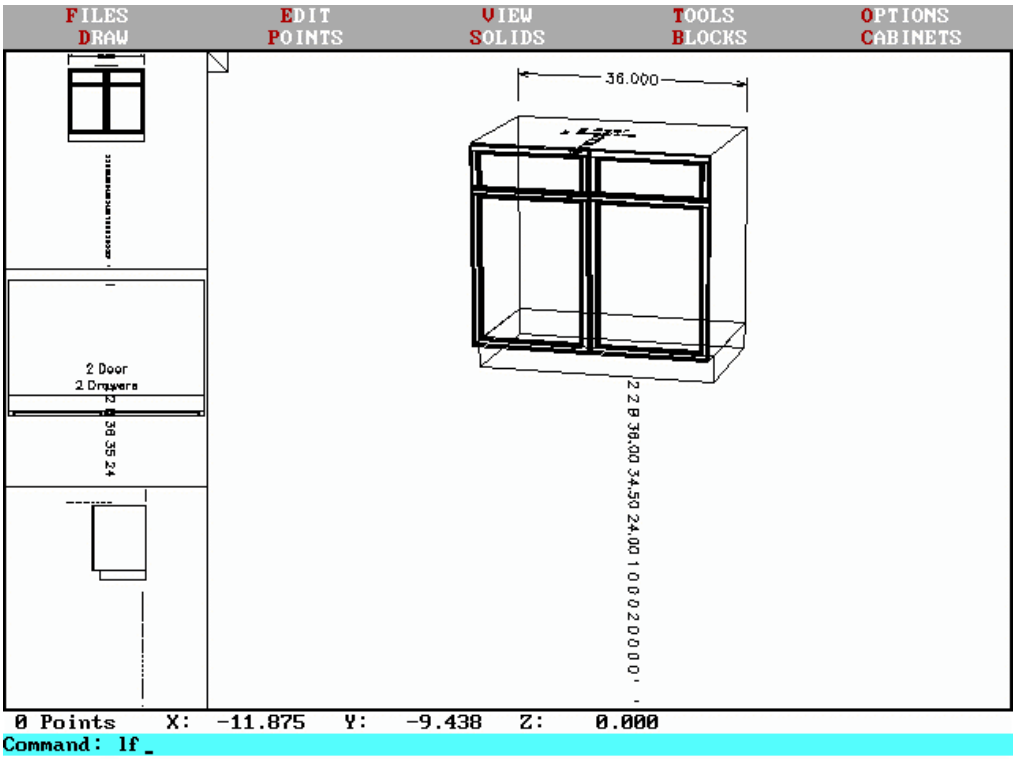
9. In the screen figure above you will check the cabinet to be drawn. Designer Plus creates a nomenclature from the information that it found in the construction data files, and from the instructions you have entered during these steps. Notice that there are two nomenclatures shown, the *Cabinet nomenclature* and the *Cabinet* ***attribute*** *nomenclature*. The Cabinet nomenclature is text that will be drawn in the drawing and can be seen in the plan view and printed. The Cabinet attribute nomenclature is a DesignCAD 3D ATTRIBUTE. Attributes are used to create lists, such as a materials list, that are used for other purposes. You will see how to access the materials list created by Designer Plus later. Attributes are not normally visible (to make them visible, from the *PARAMETER MENU,* “System Parameter” turn *Display Attributes* on by entering a “Y” and “F2” to use the new parameter). The cabinet attribute nomenclature is also printed as text for construction elevation drawings and can be viewed or printed.

   The cabinet that we are drawing should match the above screen. Reading the nomenclature you should have: 2 (door), 2 (drawer), B (type of cabinet), 36 (width), 34.5 (height), 24 (depth). If this is correct press **ENTER** to continue. (To view the details

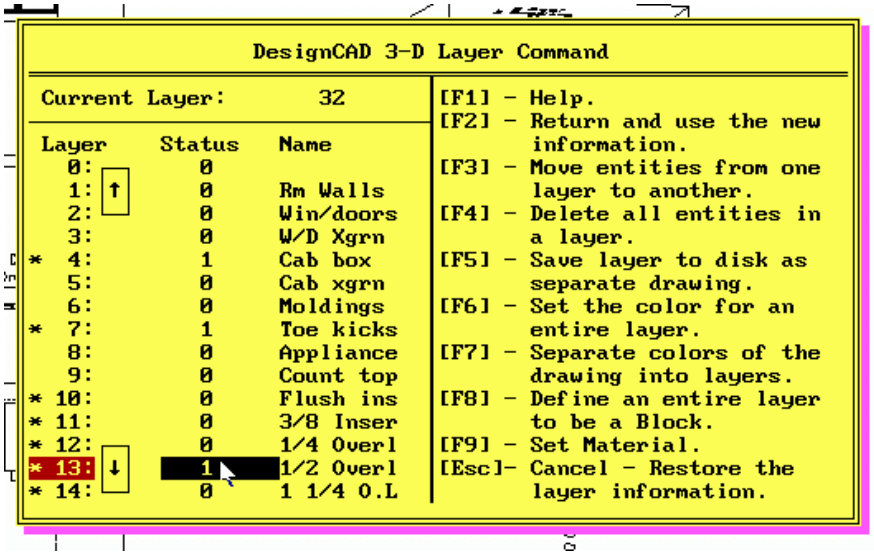
of the attribute nomenclature press **D.** To redo the menu system without resetting the points press **R.** To quit Designer Plus press **X.** Then press **ENTER**.) Do not press escape or other keys while Designer Plus is drawing. If the cabinet is in the wrong place, or if something else is wrong with it, wait until the drawing is complete. The last step in the program is to block the cabinet just drawn and to set a block handle. On a base cabinet the block handle is the lower left rear corner. You can move it as a unit, or delete it as a unit, once it has been designated as a solid.



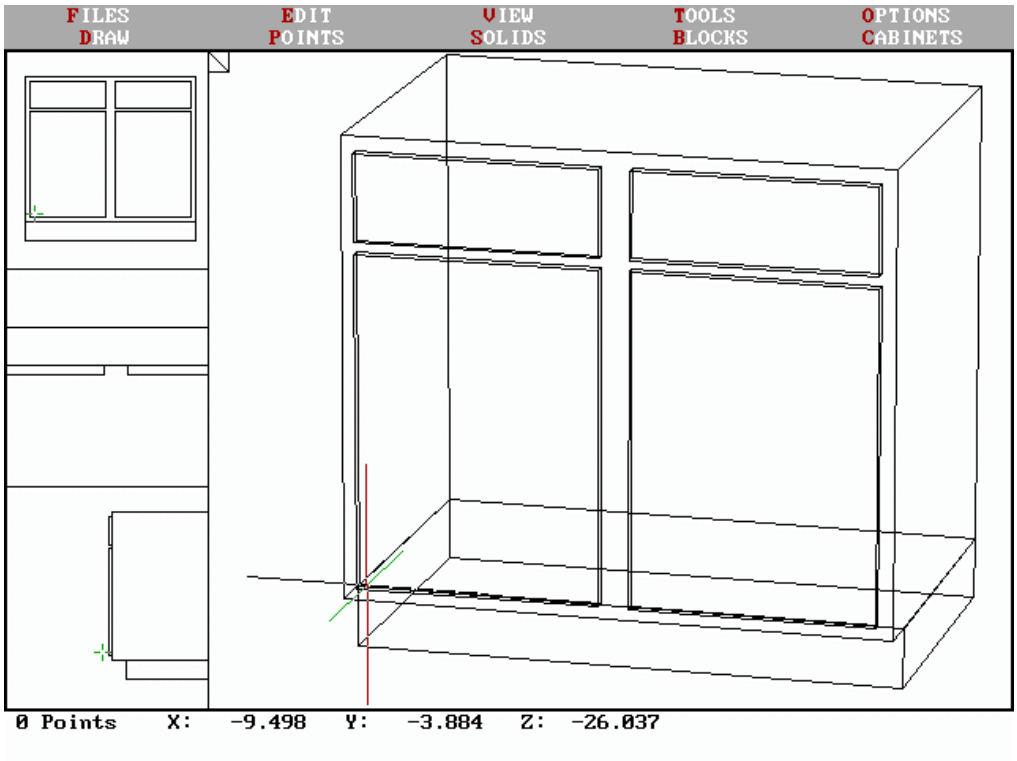
10. The cabinet is too large to be viewed on screen, to reduce the viewing size of the drawing, so that it can be seen, use the *ZOOM* command (**Z**) with a factor of **0** to center and fill the screen with the drawing.



11. Notice that all of the door blank layers are visible. For the convenience of placing points for the styled doors the extra door blank layers should be turned off. To do this use the *LAYERs OFF* command; Press the **SPACE BAR,** enter **LF** and press **ENTER**.

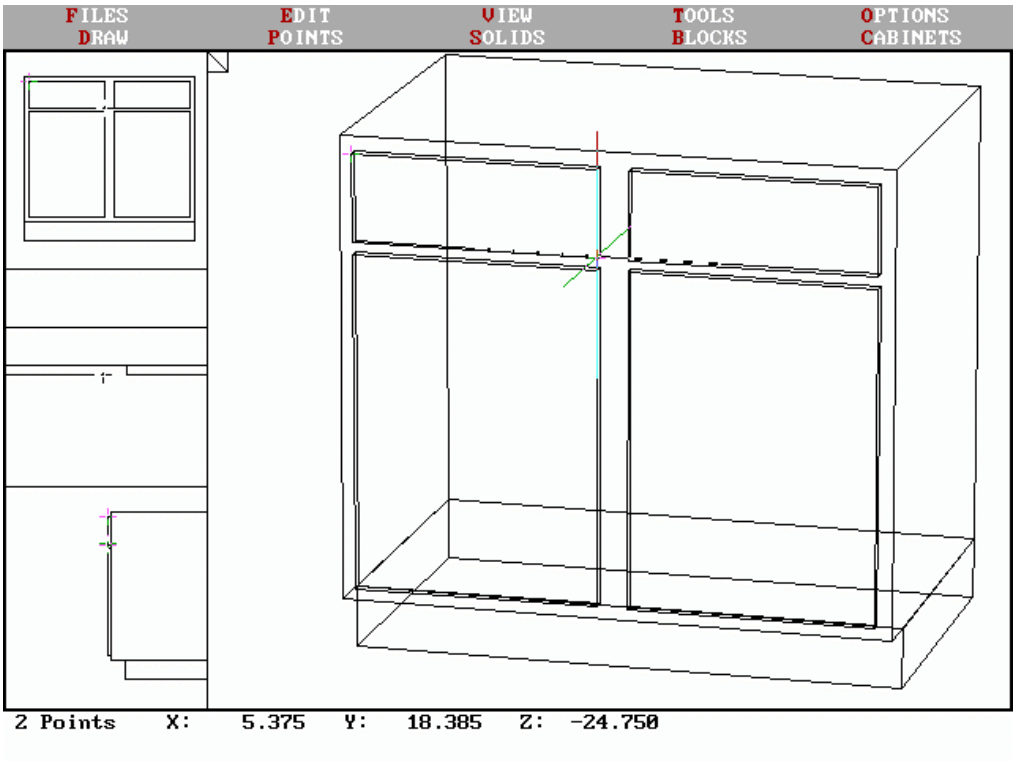


12. In the Layer window the layers are made visible by entering a ‘1’ in the status column (pointer). Make the layers noted in the figure above visible by left clicking the mouse pointer on the status number of the layer. Press **F2** to return and use the layer information.



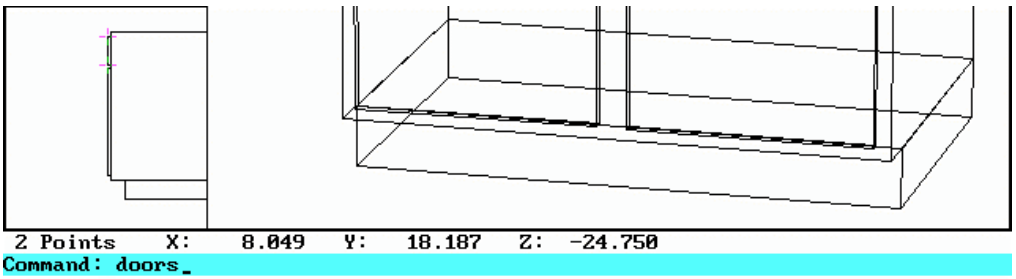
13. Zoom the view so that the cabinet is centered and fills most of the screen. To center the cabinet place a point with the left mouse button near the center of the cabinet front. Then use the ZOOM (**Z**) command with a factor of **2.25**. The point set becomes the reference and is centered on the screen. The multiplier factor (2.25) establishes the size of the view. If the cabinet is not centered you can return to full screen by zooming again with a factor of 0 and trying again.

14. Pull the cursor beyond the front of the cabinet by holding down the **Ctrl** and the **Shift** keys while **moving** the **mouse.** Watch the cursor position in the left lower window view (right end) or the z: coordinate value. The z depth should be approximately as shown in the figure above (less than –24.75). (Because we started drawing with a z axis of 0 the –24.75 is the depth of the cabinet + thickness of the door coming towards you on the z axis.)



15. Move the cursor to the upper left FRONT corner of one of the drawer fronts, and snap a point on it using the GRAVITY POINT command (**right mouse button** –or- (**.**) key). When working in 3D space it is important that you notice the z depth after a snap. Because the gravity point command snaps to the nearest point to the cursors position in 3D space the snapped point may be on the back corner of the door, yet will appear to be correctly placed. In the figure above, this (-24.75) is the correct z depth of this cabinet because we started with 0 as the z depth.)

16. Move the cursor to, and snap a point on, the lower right corner of the same drawer front, using the same steps as above.



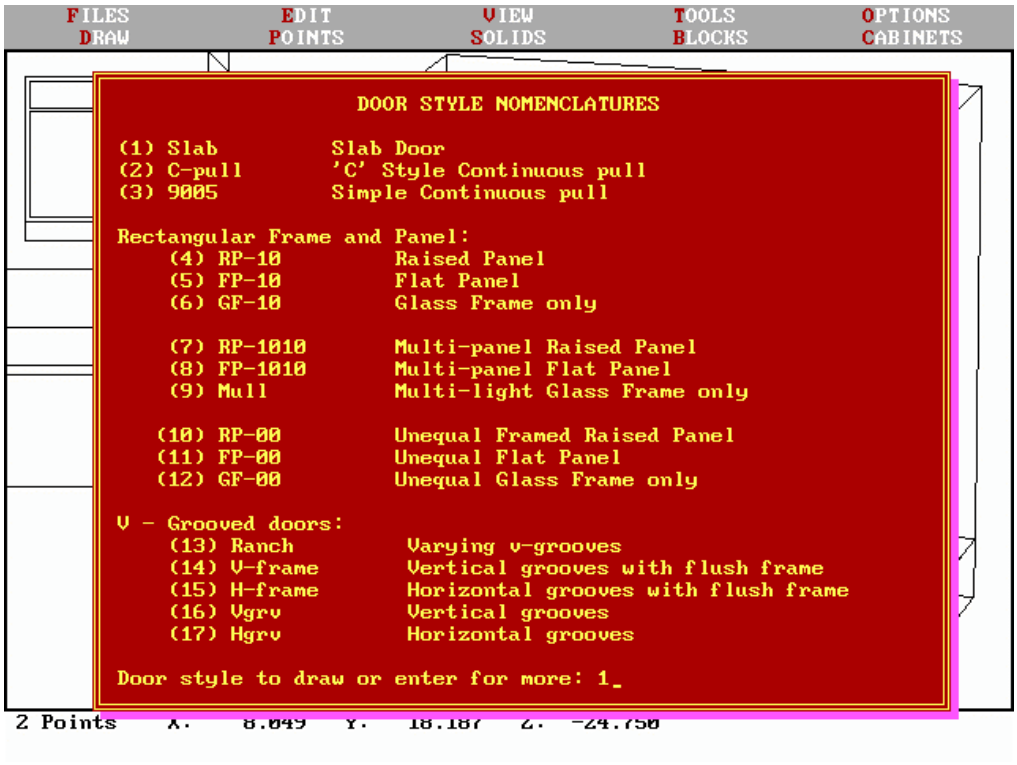
17. To draw a styled drawer front using the two points set: press the **SPACE BAR,** type **DOORS** and press **ENTER**.

18. The query for the data file to use is displayed. Because many construction types can use the same styled door drawing data this features allows only one styled door setup to be used with many

drawing detail setups. If no drawing data name is entered the default data 'DRAW' is used. *Press **ENTER** to use the default.

If part listing is turned on, a similar query will be displayed for the part listing data files to use.

*For the demo: metric users note that millimetric metric sample data has been included and is named Mdraw. Enter ***Mdraw*** here to use the metric values.

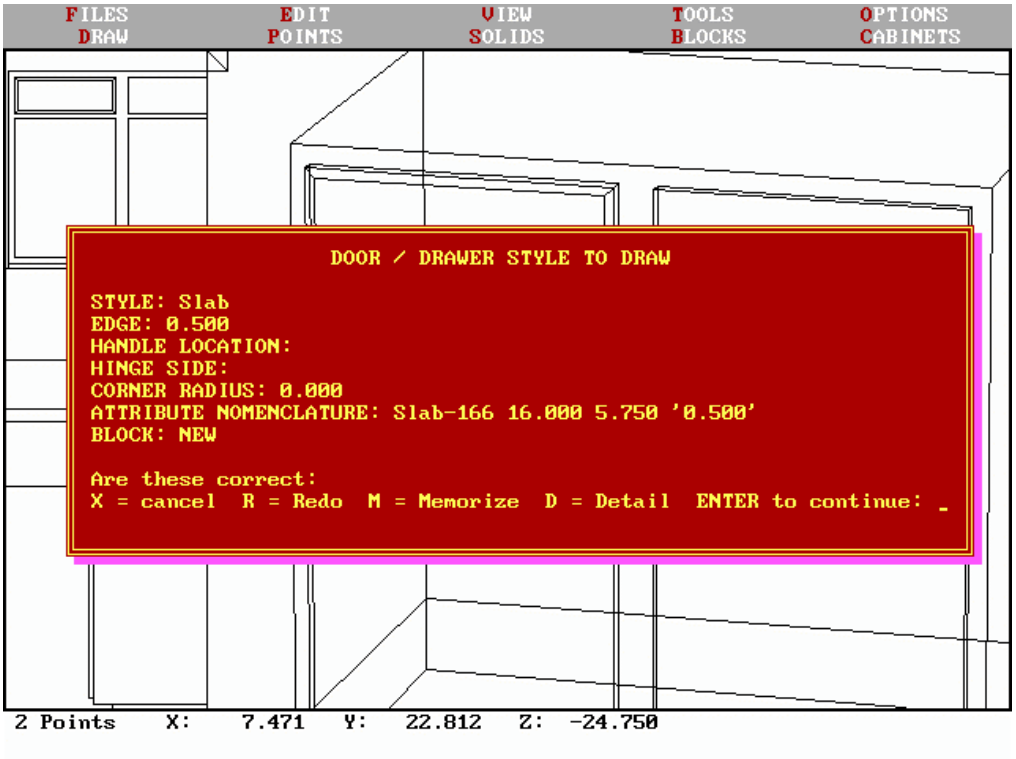


19. A styled drawer front is being drawn with these steps enter the **number** for the "*SLAB*" style (**1**), and press **ENTER**.

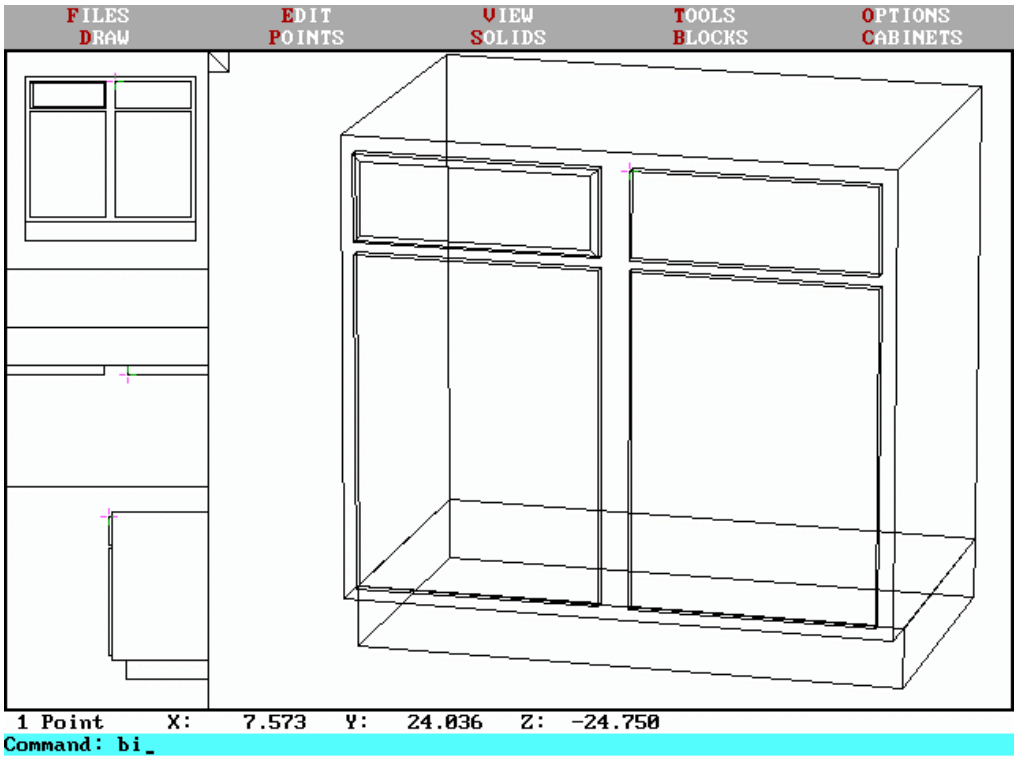
20. Enter the amount of **.5** (1/2") for the edge detail, and press **ENTER**.

21. Press **ENTER** as these corners will not be radiused. This option is available only if shading is turned off.

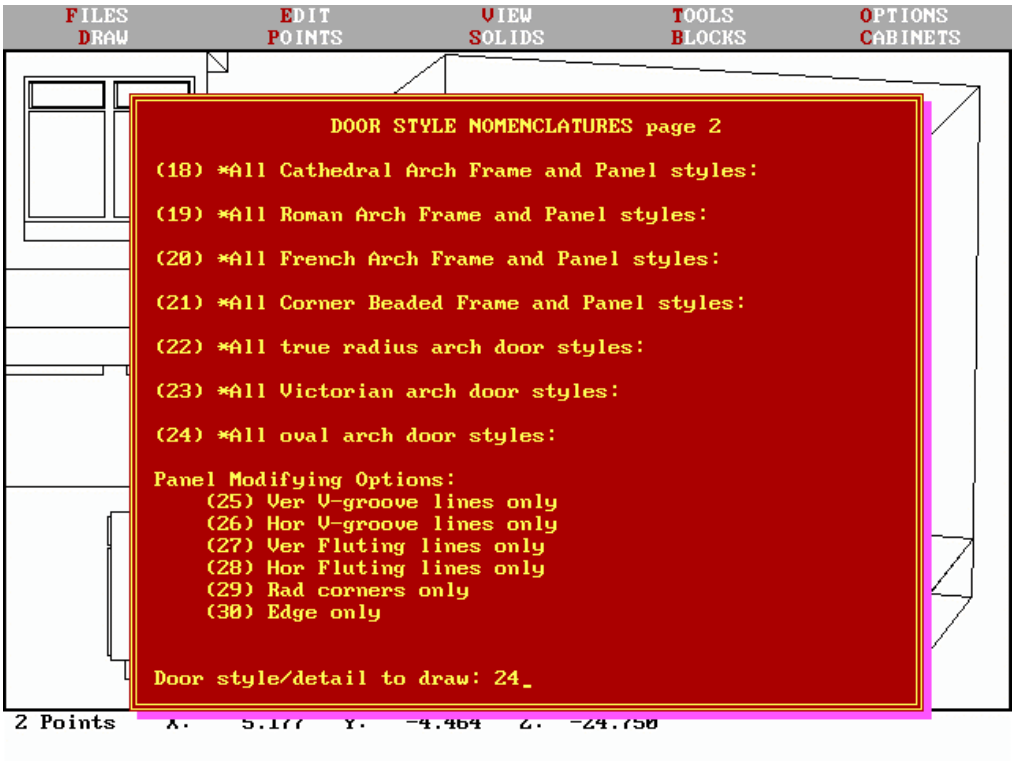
22. Press **ENTER** to use the default of making a new block of this styled door. This feature is used for items like angled corners where you want to include the styled doors in rotating the drawing etc.



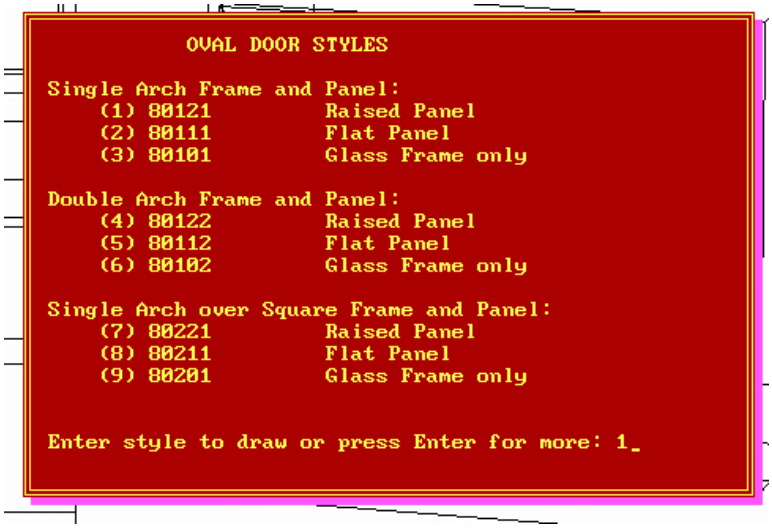
23. This screen lets you check the styled door that will be drawn. The attribute nomenclature Slab-166 (= door style-width height), 16.000 (= width), 5.750 (= height), “05.00’ (= edge width). Press **ENTER** to draw the styled door if this is correct. The option to memorize the style is used to avoid answering most of the option questions. Three styled door configurations can be memorized. The detail option is used to view or change the normal construction information for this door only.



24. Place a point on the top left corner of the second drawer front using the gravity point command. If needed refer to step 15 for how to use the gravity point command. When the styled drawer front was drawn it was blocked, and the upper left front corner of it was set as the block handle. Press the **SPACE BAR** and enter **BI** (Block Insert), and press **ENTER**. A copy of the styled drawer front is inserted, referenced on the block handle location.
25. Using the steps you have learned, place a gravity point on the front upper left and lower right corners of a door blank.
26. To draw a styled door using the two points set press the **SPACE BAR** type **DOORS** and press **ENTER**.
27. Press **ENTER** to use the default data files of ‘DRAW’ or enter the correct data file name. Refer to step 18 if needed.
28. The first *Styled Door Menu* is not going to be used. Press **ENTER** without entering a number to open the second window.

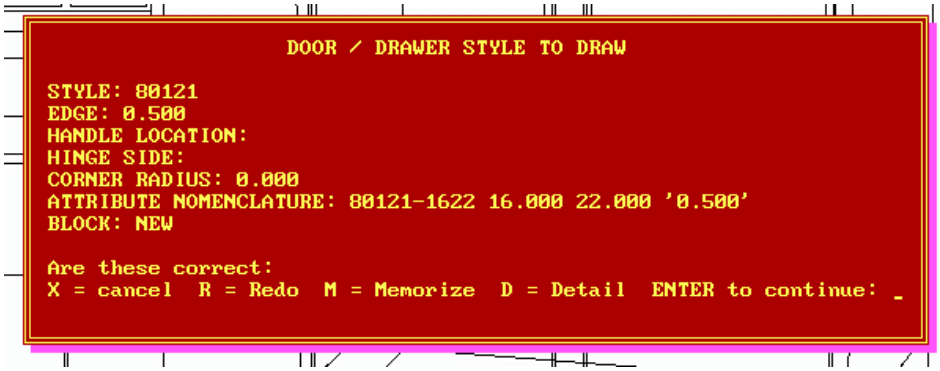


29. An oval arch door style is desired for this styled door enter the **number** for the *Oval Arch Style* menu (**24**), and press **ENTER**.

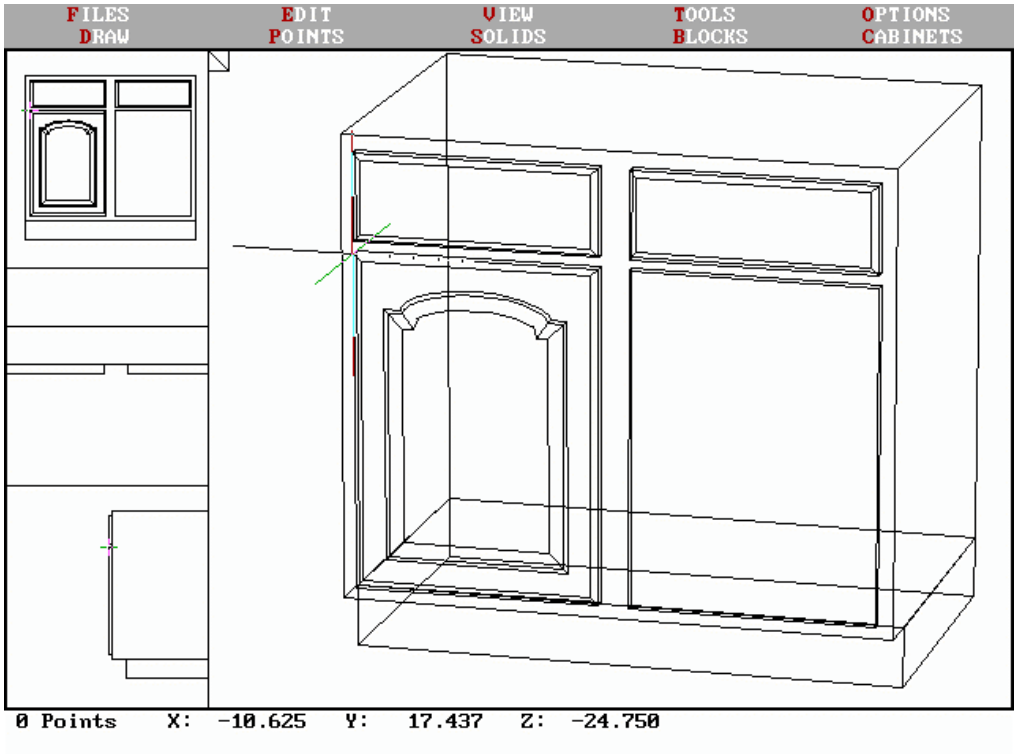


30. Enter the **number** for *Single Arch Raised Panel* (**1**) for the door style and press **ENTER**.
31. Enter the amount of **.5** (1/2″) for the edge detail, and press **ENTER**.
32. Press **ENTER** to use the default of making a new block of this styled door. This feature is used for things like angled cabinets where you want to include the styled doors in rotating the drawing etc.

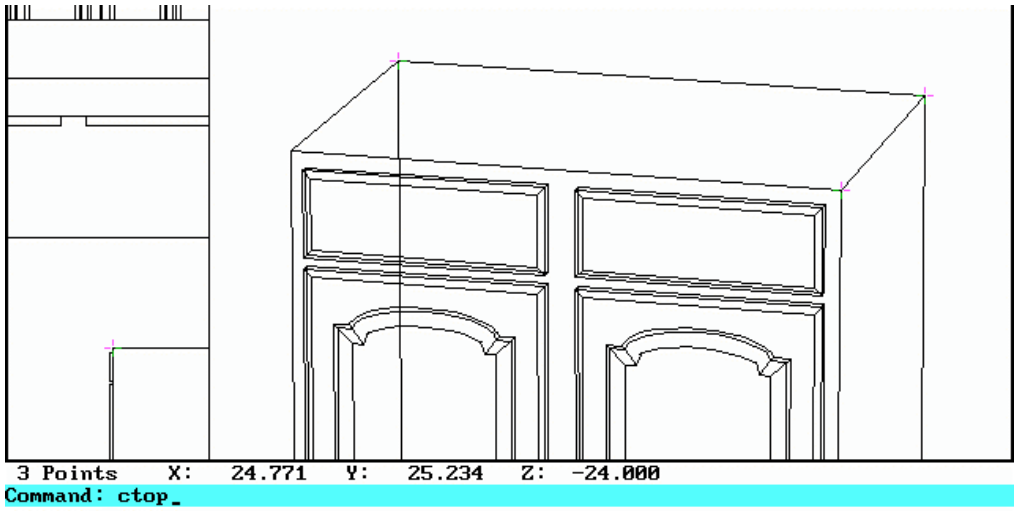
33. Because this door cannot be inverted, handing (hinge boring) may be important. If architectural handing is on, this question is asked for every styled door. For this drawing, because we are not going to use any data generated, press **ENTER** to leave the door unhanded.



34. This screen lets you check the styled door that will be drawn. If the door detail is correct press **ENTER** to draw the styled door. The option to memorize the style is used to avoid answering most of the option questions. Three styled door configurations can be memorized. The detail option is used to view or change the normal construction information for this door only.



35. Use the steps learned in step 24 above to BLOCK INSERT (**BI**) a styled door on the second door blank.

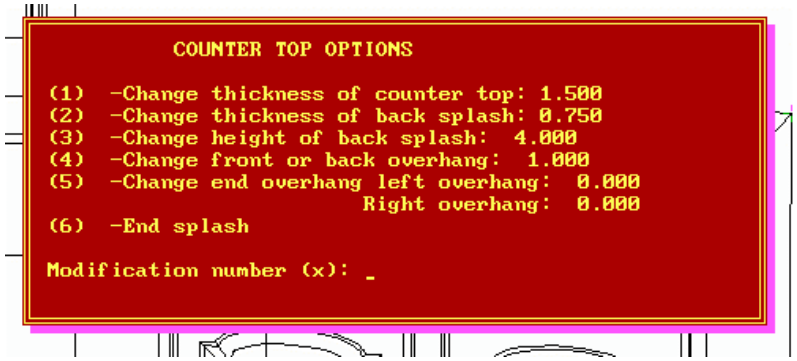


36. Use the steps you learned above in steps 10 and 13 to ZOOM (**Z**) the drawing for drawing the counter top.

37. Use the GRAVITY POINT command (. or right mouse button) you learned above to set points on the top rear left, right, and a front corner of the cabinet. The first point is used to set the anchor point (x,y and z) for the top, the second point sets the width (x-axis), and the third point sets the depth (z-axis).

38. To draw a counter top using the three points set, press the **SPACE BAR,** type **CTOP** and press **ENTER**.

39. This is a straight counter top so enter the **number** (**1**) for "*Straight Top*" and press **ENTER**.



40. No modifications are going to be done to this top. Press **ENTER** without entering a value.

41. Press **ENTER,** when asked to draw another top, to exit this program.

42. Use the ZOOM command (**Z**) to see all of the drawing.

43. Set a point on the lower left rear corner of the cabinet. This will be the locating handle when this drawing is called from memory in the future.

44. To save the drawing press **F10** and enter **B36** for the name and press **ENTER** to save the drawing.

45. You can hide the hidden lines if desired with the HIDE command.

USING THE SAVED DRAWING

This drawing can now be used in any DesignCAD program with 3D capability.

- In version 4, set a point where you want the reference point you set in step 43 above, press the **space bar** and enter **BLO** (Block Load) space and the **DRAWING NAME** (the drawing path (setpath) must be correct or you also need to enter the path), and press **ENTER**.

- Later versions of DesignCAD do not have blocks. Drawings loaded into another drawing are called SYMBOLS and the command to load a symbol is found under FILES in the main menu. Load the drawing as a symbol. The loaded drawing is selected but there is no specific reference handle on the loaded drawing. Under tools find *selection* and *set handle* by snapping a point on the handle location. The symbol drawing can now be dragged to where it needs to go and anchored by snapping a point on the anchor location.

- To use this drawing in other CAD programs with 3D capabilities: load it into DesignCAD 97 or later, and export it as a dwg or dfx drawing.

Section 2

Three Wall Kitchen

Use pages 4-3 to 4-8 set up to start a new drawing, we are now ready to begin the drawing of the sample kitchen. The unit of measurement for this exercise is in inches.

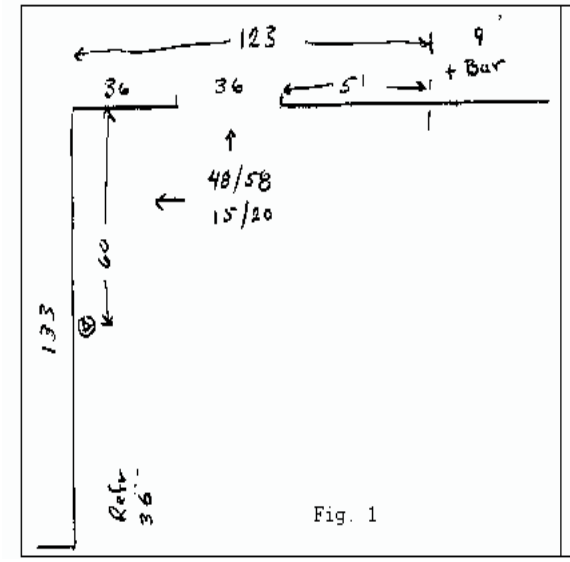


Fig. 1

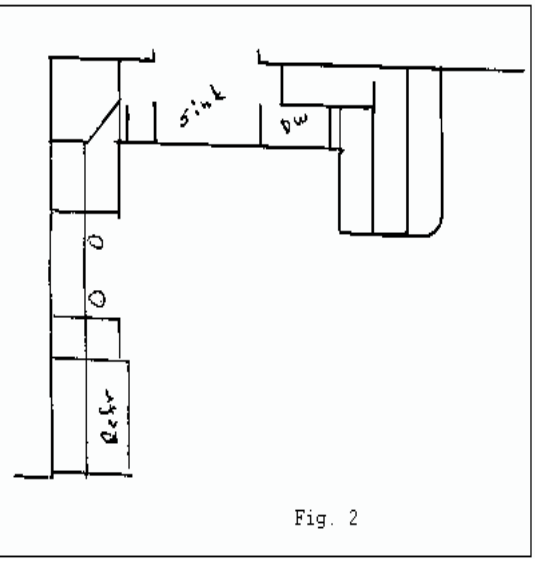


Fig. 2

Figure 1, has the dimensions for the sample room, as I would normally take them, without outlets. I then rough out the kitchen to scale on graph paper (figure 2) so that when I get to the computer I will not have to make any more changes than necessary. While computers let you edit a drawing much faster than redrawing it by hand, the single drawing steps take longer to perform than by hand. So if you make an error, or draw a cabinet in the wrong place, you will spend time editing the drawing while you are drawing it.

DRAW THE FIRST WALL

1. From the setup, to start a new drawing there is a query left on the screen for wall length. Enter the wall length amount: **160**, and **RETURN**. The cabinets and counter top total 132 inches. Use 160 for the length of the wall in inch units, so that vertical end line of the wall can be deleted when editing the finished 2D perspective. Designer Plus will always start at coordinates 0,0,0.
2. Enter the starting side reference. The left side is the default, so press **RETURN**. This wall will be drawn from left to right, to draw the wall from right to left: use “r”, then “return”.
3. Enter the height of this wall: **96** and **RETURN**. The 96 is the height in inch units.

DRAW A WINDOW

1. Enter **1** to enter information for a window, and **RETURN**.
2. Enter the width of the window, measured to the outside of the molding: **39.25**, and **RETURN**.
3. Enter the height of the window, measured to the outside of the molding: **35.25**, and **RETURN**.
4. Enter the distance from the wall corner to the nearest window side, **34.375** and **RETURN**.
5. Enter the height from floor to the lower window molding, **46.375** and **RETURN**.
6. *Enter the molding width **1.625** and **RETURN**. This is the width of a normal modern molding.
7. Press **RETURN** if you have entered the correct values, or enter "n" and RETURN to redo steps 1-6.

*If you are using the 3D shadable option, Designer Plus will ask you for a window style, then cut a hole in the wall and place a pre-drawn 3D symbol into that hole. When DesignCAD 3D cuts a hole in the wall it breaks the plane, so you will have extra lines in the wall part of the drawing. These lines cannot be removed until you are finished with the 3D drawing and are editing in 2D.

DRAW THE PLUMBING ROUGH IN AREA BOX (optional)

1. Enter **3** to enter information for a plumbing rough in area, and **RETURN**.
2. Enter the width of the rough in area, measured to the outside: **10**, and **RETURN**.
3. Enter the height of the rough in area, measured to the outside: **5**, and **RETURN**.
4. Enter the distance from the wall corner to the nearest rough in side, **48** and **RETURN**.
5. Enter the height from floor to the lowest point for the rough in area: **15** and **RETURN**.
6. Do not enter a molding width press **RETURN**. There is no molding on a rough in area, you could enter 0 but it is not needed.
7. Press **RETURN** if you have entered the correct values, or enter "n" and RETURN to redo steps 1-6.
8. Press **RETURN** when asked if you want to add a window, door, or plumbing rough in area. Not entering a value instructs Designer Plus to use the default, in this case it is to exit Designer Plus.

DRAW WINDOW MOLDING MITERS

(Not needed if shading option is on)

1. To make the drawing screen maximum size, change the screen view to a one (1) window view

   A) Menu

      1.Press the **SPACE BAR**, type **CAB** and press **RETURN**.

      2.Enter the **number** for *"Miscellaneous Parts"* from the menu and press **RETURN.**

      3.Enter the **number** for *"Misc Programs"* from the menu and press **RETURN**.

      4.Enter the **number** for "One Window View" from the menu and press **RETURN**.

   B) This program could also have been reached from the command line by the short cut, space bar, CV, and return.

2. Change the active *LAYER* (**L**), set layer #2 as the active layer by typing **2**. This is the layer labeled for windows.

3. Press **F2** to return and use the new active layer.

4. Use the *ZOOM* command (**Z**) with a factor of **0** to center the drawing.

5. Use the mouse to move the courser to the lower left exterior corner of the window molding just drawn (Z = 0). To change the value in the Z plane move the mouse while holding down the CTRL & SHIFT keys. If you lose sight of the courser press CTRL & H and the courser will be returned to the center of the screen.

6. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.

7. Use the mouse to move the courser to the lower left interior corner of the window just drawn.

8. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.

9. Draw a *LINE* (**V**), the miter line has been entered.

10. Repeat the last 5 steps for the 3-remaining corners.

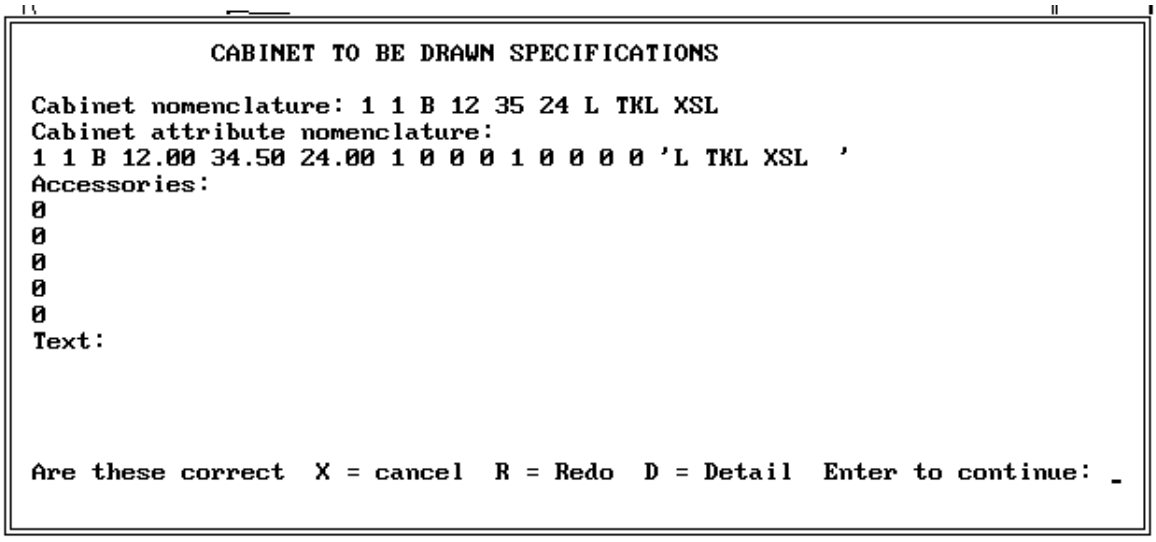
The wall is finished.

DRAW A CABINET (11B1234 extended stile)

Standard base cabinet

Starting the cabinet placement from the left wall. Because the left-hand corner cabinet has a blind area on the Z plane, the point is set away from the left wall the depth of a standard base cabinet, 24 inches. When drawing cabinets, the front must be facing you on the X - Y plane.

1. Set a *POINT XYZ* (**:**), enter coordinates **24,0,0** and **RETURN**. These are the coordinates from the corner, allowing 24 inches for the blind corner cabinet.
2. Set a *POINT XYZ* (**:**), enter coordinates **36,0,0** and **RETURN**. This is the lower right rear corner of the cabinet to be placed to the left of the sink cabinet.
3. Press the **SPACE BAR**, type **CAB** and press **RETURN**. This accesses the general menu for all Designer Plus programs.
4. Enter the **number** for *"Base Cabinets"* from the menu and press **RETURN.** *(This program could also have been reached from the command line by space bar, BASES, and return.)*
5. Enter the **number** for "*Standard Base Cabinet*" and press **RETURN**.
6. At the *CABINET MODIFICATION* window enter the **number** for "*Extend Cabinet Stile*", and **RETURN.** This modification will add a filler to the left stile.
7. Enter **3** and **RETURN** for how much to extend the left stile. The two points you placed above established the overall width of the cabinet. This modification adds the entered amount to the standard stile.
8. When asked how much to extend the right stile enter **0** and **RETURN**. You are not changing the right side of the cabinet. (Notice that you are returned to the modification menu. You can enter several modifications, however only four can be listed in the nomenclature).
9. At the *CABINET MODIFICATION* window enter the **number** for "*Toe Kick on End*", and **RETURN**. This modification will let you match the toe kick to the blind corner cabinet to the left.
10. Enter **-3** for the amount of toe kick to add to the left cabinet end and **RETURN.** The negative number will extend the toe kick beyond the cabinet side and 3 inches is the depth of the standard toe kick.
11. Enter **0** for the amount of toe kick to add to the right cabinet end and **RETURN.** You are not changing the right side.
12. There will be no more modifications or accessories and the hinge side is the left side, which is the default. Press **RETURN** at each query, until the *CABINET TO BE DRAWN SPECIFICATIONS* window is displayed.



13. In the screen figure above you will check the cabinet to be drawn. Designer Plus creates a nomenclature from the information that it found in the construction data files, and from the instructions you have entered during these steps. Notice that there are two nomenclatures shown, the *Cabinet nomenclature* and the *Cabinet* ***attribute*** *nomenclature*. The Cabinet nomenclature is text that will be drawn in the drawing and can be seen in the plan view and printed. The Cabinet attribute nomenclature is a DesignCAD 3D ATTRIBUTE. Attributes are used to create lists such as a materials list that are used for other purposes. You will see how to access the materials list created by Designer Plus later. Attributes are not normally visible (to make them visible, from the *PARAMETER MENU,* "System Parameter" turn Display Attributes on by entering a "Y" and "F2" to use the new parameter). The cabinet attribute nomenclature is also printed as text for construction elevation drawings and can be viewed or printed.

    The cabinet that we are drawing should match the above screen. Reading the nomenclature you should have: 1 (door), 1 (drawer), B (type of cabinet), 12 (width), 34.5 (height), 24 (depth), L (hinge side), TKL (the side to extend the toe kick), XSL (the side to extend stile). If this is correct press **RETURN,** to continue. (To view the details of the attribute nomenclature press **D.** To redo the menu system without resetting the points press **R.** To quit Designer Plus press **X.** Then press **RETURN**.) Do not press escape or other key while Designer Plus is drawing. If the cabinet is in the wrong place or if something else is wrong with it, wait until the drawing is complete. The last step in the program is to block the cabinet just drawn and to set a block handle. On a base cabinet the block handle is the lower left rear corner. For now use the *BLOCK DELETE* (BD) command from the *BLOCKS MENU* if needed to remove a misplaced cabinet. Then repeat the steps 1 - 13 for drawing the cabinet to this point. When you are more familiar with DesignCAD 3D you will use the *Block Move* (BM) command.

DRAW A CABINET (22BS3634)

Sink base cabinet

1. Use the mouse to move the courser to the bottom right rear corner of the cabinet just drawn.
2. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
3. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **36,0,0** and **RETURN**. The 36 is the width of the cabinet.
4. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
5. Enter the **number** for *"Base Cabinets"* from the menu and press **RETURN**. *(This program could also have been reached from the command line by the short cut; space bar, BASES, and return.)*
6. Enter the **number** for "*Standard Sink*" and press **RETURN**.
7. Press **RETURN** at each query, until the *CABINET TO BE DRAWN SPECIFICATIONS* window is displayed. The cabinet to be drawn should be 2 (door), 2 (drawer), BS, 36 (width), 34.5 (height), 24 (depth). If this is correct press **RETURN,** to continue.

INSERT AN APPLIANCE (Dishwasher)

1. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
2. Enter the **number** for *"Miscellaneous Parts"* from the menu and press **RETURN**.
3. Enter the **number** for *"Appliances And Fixtures"* from the menu and press **RETURN**. *(This program could also have been reached from the command line by space bar, MISC, and return.)*
4. Use the mouse to move the courser to the lower right rear corner of the cabinet just drawn. (The location handle for most appliance drawings is the lower left rear corner. See the appendix for the specific location handle for each appliance.)
5. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
6. Press **RETURN**.
7. Enter the **number** for the "Dishwasher" and press **RETURN**.

DRAW A FILLER

1. Use the mouse to move the courser to the lower right rear corner of the dishwasher just loaded.
2. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
3. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **3,0,0** and press **RETURN.** The 3 is the width of the filler.
4. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
5. Enter the **number** for *"Bases"* from the menu and press **RETURN**. *(This program could also have been reached from the command line by space bar, BASES, and return.)*
6. Enter the **number** for *"Fillers"* and press **RETURN**.
7. Enter the **number** for the "*Standard Filler*" and press **RETURN**.
8. Enter the **number** for *"Toe Kick On End"* from the *CABINET MODIFICATION* window and press **RETURN**.
9. When asked how much toe kick for the left side enter **0** and press **RETURN.**
10. Enter **-3** for the amount of toe kick to add to the right side. A negative amount adds toe kick to the out side of a cabinet.
11. Press **RETURN** at all of the windows. Base cabinets on this wall are now finished.

DRAW A CABINET (10WDC2430)

Wall diagonal cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0,84,0** and **RETURN**. This is the top left corner of the cabinet to the left of the window. 0 on the X axis, 84 is the Y height value, and 0 the Z depth
2. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **24,0,0** and **RETURN**.
3. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
4. Enter the **number** for *"Wall Cabinets"* from the menu and press **RETURN**. *(This program could also have been reached from the command line by space bar, WALLS, and return.)*
5. When asked for the cabinet height enter **30** and press **RETURN**.
6. Select the **number** for "*Wall Diagonal Corner*" and press **RETURN.**
7. Press **RETURN** at the *WALL CABINET MODIFICATION* window.
8. At the *ACCESSORIES* window enter the **number** of "Loose Finished End Panels". Press **RETURN** then enter the number **1** for quantity and **RETURN** two times to complete this menu item.

9. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 1 (door), 0 (drawer), WDC, 24 (width), 30 (height), 12 (depth), L (hinge side). If this is correct press **RETURN,** to continue, *or* **X** then **RETURN** to quit, (redo the cabinet locator points and rerun the cab program (last 9 steps). Do not press escape or other keys while the cabinet program is running. If the cabinet is in the wrong place or has something else wrong with it wait until the drawing is complete. The last step in the program is to block the drawing and to set the block handle. On a wall cabinet the block handle is the upper left rear corner. For now use the *Block Delete* command from the blocks menu if needed. Then repeat the steps for drawing the cabinet to this point.

DRAW A CABINET (20W3330)

Standard wall cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **78,84,0** and **RETURN.** The 78 is the distance from the left corner of the wall to the right window casing plus a 6-inch reveal.
2. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **33,0,0** and press **RETURN**. The 33 is the width of the cabinet.
3. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
4. Enter the **number** for *"Wall Cabinets"* from the menu and press **RETURN**.
5. When asked for the cabinet height enter **30** and press **RETURN**.
6. Select the **number** for "*Standard Wall Cabinet*" and **RETURN.**
7. In the *CABINET MODIFICATION* window enter the **number** for "*Extend Cabinet Stile*", and **RETURN**.
8. When asked how much to extend left stile enter **0** and press **RETURN.**
9. When asked how much to extend right stile enter **1.5** and press **RETURN**. This modification is used for framed cabinets only. It adds the amount entered to the standard frame width.
10. At the *CABINET MODIFICATION* window press **RETURN**.
11. At the *ACCESSORIES* window enter the **number** of *"Loose Finished End Panels"* press **RETURN, and** then enter the number **1** for quantity and **RETURN** two times.
12. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 2 (door), 0 (drawer), W, 33 (width), 30 (height), 12 (depth), XSR3 (the amount and side to extend stile). If this is correct press **RETURN** to continue, *or* **X** then **RETURN** to quit. All wall cabinets on this wall are now complete.

SET UP TO DRAW A CABINET DOOR

Wall cabinet door (W3330)

1. Press the **SPACE BAR**, type **CAB** and **RETURN**.
2. Enter the **number** for "*Miscellaneous Parts*" from the menu and press **RETURN**.
3. Enter the **number** for "*Misc Programs*" from the menu and press **RETURN**.
4. Enter the **number** for "*All Layers Off*" from the menu and press **RETURN**. This program can also be access by typing "LF" at the command prompt line
5. Enter **13** and press **RETURN**. The door Layer 13, (1/2 inch overlay), is now the only layer on.
6. Press **F2** to return and use the new active layer.
7. You will be centering the drawing area with these next steps. Use the mouse to move the courser to the center of the wall cabinet to the right of the window,(20W3330).
8. *POINT SET* (**0**), (Press the number 0 *or* use the left mouse button).
9. *ZOOM* (**Z**) enter a factor of **3** and **RETURN.** If the door's corners cannot be easily seen repeat the *ZOOM* entries until they are.
10. Use the mouse to move the courser so that the Z coordinate is approximately -12.75 or a little smaller. Do this by moving the mouse while holding down the CTRL & SHIFT keys. If you lose sight of the courser press CTRL & H and the courser will be returned to the center of the screen.
11. Use the mouse to move the courser to the upper left front corner of a door. The location of this point is important, if it is placed at the back corner (z = 12) of this door, Designer Plus will draw the new door behind this door without deleting it. It will appear to be drawn correctly until you ask DesignCAD 3D to hide lines, then the styled door will not be visible. If you can catch this type of error when it happens you can block move, or block delete the door and redraw it. However if several doors have been drawn in the wrong position, you will have to delete them manually if you want the door list to be accurate.
12. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button. This snaps a point on the nearest existing point. If the point set's Z value is incorrect press ESC (this removes the last item entered) and try again.
13. Use the mouse to move the courser to the lower right front corner of the same door (Z = -12.75).
14. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
15. Press the **SPACE BAR**, type **CAB** and press **RETURN**.

16. Enter the **number** for *"Doors"* from the menu and press **RETURN.**
17. If you are asked to use a preset door style enter "c" and **RETURN** for clearing a preset door style, then "a" and **RETURN** to clear all preset door styles. Otherwise press **RETURN** at each query, until the *DOOR NOMENCLATURE* window is displayed.
18. Enter the **number** for door style "RP10" (raised panel) from the menu and press **RETURN**.
19. Enter **.5** when asked for the size of edge detail and press **RETURN**.
20. Press **RETURN** at each query, until the *DOOR STYLE TO DRAW* window is displayed.

Creating First Preset Door style

(Square Raised Panel)

21. Press **M** and **RETURN** to save the door style just created as a preset style.
22. Press **1** and **RETURN** to save this door style as the primary door style. The preset style can be used on all future doors. This feature allows up to 3 preset door styles so that you can use different door styles in the same kitchen without repeating steps.

DRAW A CABINET DOOR from Preset Steps

Wall cabinet (W3330)

1. Press **RETURN** to use the primary (1) preset door style information created above.
2. Press **RETURN** at each query to draw the preset styled door. The DOOR program of Designer Plus requires a door or panel be present in order to draw a styled door. If you want to change the style of a door previously drawn, draw it over the existing door. Designer Plus will delete the existing door and draw the new one in its place. If you want to change the *overlay door type* for all styled doors drawn, delete layers 16 to 26 (the styled door and edge layers), then redraw the styled doors using the correct door blank.

DRAW A CABINET DOOR USING PRESET STYLE

Wall cabinet(W3330)

1. Use the mouse to move the courser to the upper left front corner of the other door.
2. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
3. Use the mouse to move the courser to the lower right front corner of the same door.
4. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
5. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
6. Enter the **number** for *"Doors"* from the menu and press **RETURN.**
7. Press **RETURN** to use the primary preset door style information.
8. Press **RETURN** at the *DOOR STYLE TO DRAW* window to draw the door.
9. *ZOOM* (**Z**) with a factor of **0**, to view all of the drawing.

DRAW A CABINET DOOR

Base cabinet

1. Use the mouse to move the courser to the center of a base cabinet's doors.
2. *POINT SET* (**0**), (Press the number 0 *or* use the left mouse button).
3. *ZOOM* (**Z**) enter a factor of **3** and **RETURN.** If the door corners cannot be easily seen repeat *ZOOM* entries, or if the view is not centered well enough use a single point and *ZOOM* with a factor of 1.
4. Use the mouse to move the courser so that the Z coordinate is -24.75 or a little less. Do this by moving the mouse while holding down the CTRL & SHIFT keys. If you lose sight of the courser, press CTRL & H, and the courser will be returned to the center of the screen.
5. Use the mouse to move the courser to the upper left front corner of a door.
6. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
7. Use the mouse to move the courser to the lower right front corner of the same door.
8. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button. There should be two points on one door.
9. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
10. Enter the **number** for *"Doors"* from the menu and press **RETURN.**

11. Press **RETURN** to use the primary preset door style information.
12. Press **RETURN** at each query to draw the door.

DRAW CABINET DOORS

Base cabinet

1. Repeat the last 12 steps for each of the remaining base doors. Use the *ZOOM* (**Z**) command with a factor of **0** to view the whole drawing, and other factors and points to move around the screen so you can see the doors easily.

DRAW A DRAWER FRONT

1. Use the mouse to move the courser to the upper left front corner of a drawer.
2. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
3. Use the mouse to move the courser to the lower right front corner of the same drawer.
4. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button. There should be two points on this front.
5. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
6. Enter the **number** for "*Doors*" from the menu and press **RETURN**.
7. Enter **n** when asked, not to use the preset information, and press **RETURN**.
8. Press **RETURN** to use the default "**draw**" for the drawing file to use. (This feature allows you to use door styles not related to the data files that the body of the cabinet is using.)
9. If part listing is on you are asked for the construction data file to use. Press **RETURN** to use the default "**draw**" for the construction data file. (This feature allows you to use door styles not related to the data files that the body of the cabinet is using.)
10. Enter the **number** for "*Slab*" (flat board) from the *DOOR NOMENCLATURE* menu and press **RETURN**.
11. Enter **1.25** when asked for the size of edge detail and press **RETURN**.
12. Press **RETURN** at each query, until the DOOR STYLE TO DRAW window is displayed.

Creating Second Preset Door style

(Slab drawer front)

13. Press **M** and **RETURN** to memorize this door style.
14. Press **2** and **RETURN** to memorize this door style as the secondary preset door style.
15. Press **2** and **RETURN** to use the secondary preset door style.
16. Press **RETURN** at the *DOOR STYLE TO DRAW* window to draw the drawer.
17. Repeat steps 1-6, and 15-16 for each of the remaining drawers. Use the *ZOOM* (**Z**) command with a factor of **0** to view the whole drawing, and other factors and points to move around the screen so you can see the drawers easily.

ROTATE THE DRAWING

Diagonal wall cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN.**
2. Press the **SPACE BAR** and type **R Y -45** and **RETURN.** The rotate command is found under the DesignCAD 3D menu item “DISPLAY” and rotates the drawing around the point set (0,0,0) on the Y axis a negative 45 degrees. The diagonal wall cabinet's door is now in the X plane and can have the door style added.
3. *ZOOM* (**Z**) with a factor of **0**.

DRAW A CABINET DOOR

Wall cabinet

1. Use the steps you have learned above to draw a preset door style on the diagonal cabinet. Hint: to get the Z-depth for the front of the door, use the mouse, the right button, and ESC keys. Pull the courser beyond the front and snap a point. A point will be set on the nearest existing point, if this is the wrong spot press ESC and try again, until the point set is on the front corner of the door. The Z-depth (approximately -26.25) is now correct to continue.

ROTATE THE DRAWING

Back

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN.**
2. Press the **SPACE BAR** and type **R Y 45** and **RETURN.** The rotate command is found under the DesignCAD 3D menu item “DISPLAY” and rotates the drawing around the point set (0,0,0) on the Y axis

45 degrees. The drawing has been returned to its original position.

SAVE THE DRAWING

1. Press the **SPACE BAR**, type **CAB** and **RETURN**.
2. Enter the **number** for *"Miscellaneous Parts"* from the menu and press **RETURN**.
3. Enter the **number** for *"Misc Programs"* from the menu and press **RETURN**.
4. Enter the **number** for *"All Layers On"* from the menu and press **RETURN**. This program can also be accessed by typing "LN" at the command prompt line
5. Press **F2** to return. All layers are now visible.
6. *ZOOM* (**Z**) with a factor of **0** to see all of the drawing.
7. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN**. DesignCAD 3D will use this point when the drawing is reloaded as a locating point.

standard

8. Save the drawing by using the **F10** key. And enter the **path** and **name** (TUTEast) for this wall of cabinets.

-or-

DPSave

8. Press the **SPACE BAR**, type **DPSave** and **RETURN**. Designer Plus looks in the directory you have set as the path for saving drawings. If there is a file named 'files.rld' it is opened and the descriptive names are read into the program. If a list of file names appears, press return until the 'SAVE FILE in *Path*' screen appears.
9. Enter **TUTEAST** as the DOS name.
10. Press **RETURN** to use the default dw3 file format.
11. Enter a **description** of this drawing (less than 42 characters long).

THE PENINSULA WALL

START A NEW DRAWING

1. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
2. Enter the **number** for *"Start New Drawing"* from the menu and press **RETURN**.
3. The current option list is displayed; we are still drawing the same kitchen so we are going to use the same options. Press **RETURN** to use the same option group.
4. We are working on the same job so the names we used for the east wall are still valid. Press **RETURN** to accept each of the existing values.
5. Press **ESC** to exit the path screen because we are making no changes.
6. Press **RETURN** to exit Designer Plus without drawing a wall.
7. Press **ESC** to remove the layer name message.

DRAW A CABINET (31BPBC4834)

Base peninsula blind corner cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN**. This will be the left rear corner.
2. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **48,0,0** and **RETURN**.
3. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
4. Enter the **number** for *"Base Cabinets"* from the menu and press **RETURN.**
5. Enter the **number** for "*Peninsula Blind Corner*" and press **RETURN**.
6. Enter **1** for the number of doors on the front of this cabinet.
7. Enter **1** for the number of drawer fronts on the front of this cabinet.
8. Enter **27** for the amount of blind set back. This is the depth of the cabinet plus 3 inches of filler to clear the dishwasher. Designer Plus does not include the standard face frame stile as part of this filler, the stile is added to the filler. On frameless cabinets this number is the exact amount of blind setback less 1/2 of the frameless reveal value entered in the setup programs.
9. At the *MODIFICATION* window enter the **number** for "Change *number horizontal drawer fronts*" and **RETURN**.
10. Enter **1** when asked for the number of horizontal drawer fronts, and press **RETURN**.

11. Enter **1** when asked for the number of drawer boxes, and press **RETURN**. The default is the same as the number of fronts.
12. At the *MODIFICATION* window press **RETURN** for no further modifications.
13. At the *ACCESSORIES* window enter the **number** of "*loose finished end panels*", press **RETURN, and** then enter the number **1** for quantity and **RETURN** two times.
14. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 3 (door), 1 (drawer), BPBC, 48 (width), 34.5 (height), 24 (depth), L (hinge side). Press **RETURN** if correct, exit or redo if necessary.

DRAW A CABINET (40WPBC4830)

Wall peninsula cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0,84,0** and **RETURN**. Wall cabinets are placed at 84 inches high in this tutorial.
2. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **48,0,0** and **RETURN**. The 48 is the width of this cabinet. A faster method of entering the width, if this cabinet aligns with something already in the drawing is to snap (gravity point) to that item. Since this cabinet aligns with the cabinet below it, snap a point (gravity point) on the end of the base cabinet. Designer Plus uses the first point set to establish the starting point. Other points set are used for (2) width only, and (3) height only.
3. Press the **SPACE BAR,** and type **CAB** and press **RETURN**.
4. Enter the **number** for "*Wall Cabinets*" from the menu and press **RETURN.**
5. When asked for the cabinet height enter **30** and press **RETURN**.
6. Enter the **number** for "*Wall Peninsula Blind Corner Cabinet*" and press **RETURN**.
7. Enter **2** for the number of doors are on the front of this cabinet, and **RETURN**.
8. Enter **13.5** (this is the depth of the adjacent cabinet plus 1.5 inches of filler, the setback is in addition to the standard frame member width. On frameless cabinets this number is the exact amount of blind setback), and **RETURN**.
9. Press **RETURN** for no modifications.
10. At the *ACCESSORIES* window enter the **number** of "*Loose Finished End Panels*" press **RETURN**, and then enter the number **1** for quantity and **RETURN** two times.

11. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 4 (doors), 0 (drawer), WPBC, 48 (width), 30 (height), 12 (depth), L (hinge side). Press **RETURN** if correct, exit or redo if necessary.

SET LAYERS TO DRAW A CABINET DOOR

1. Press the **SPACE BAR,** and type **CAB** and press **RETURN**.
2. Enter the **number** for *"Miscellaneous Parts"* from the menu and press **RETURN**.
3. Enter the **number** for *"Misc Programs"* from the menu and press **RETURN**.
4. Enter the **number** for "*All Layers Off*" from the menu and press **RETURN**. This program can also be access by typing "LF" at the command prompt line
5. Enter **13** and press **RETURN.** Layer 13 is now the only layer on.
6. Press **F2** to return and use the new active layer.

DRAW CABINET DOORS and DRAWERS

1. Use the steps you have learned above to draw preset door styles on the fronts of both peninsula cabinets. To get the Z-depth for the front of the door use the mouse, the right button, and ESC keys. When the Z-depth is correct, continue. For the drawers use the manual configuration steps as done on the previous drawer fronts.

ROTATE THE DRAWING

Peninsula backs

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN.**
2. Press the **SPACE BAR,** and type **R Y 180** and **RETURN.** The rotate command is found under the DesignCAD 3D menu item "DISPLAY" and rotates the drawing around the point set (0,0,0) on the Y axis 180 degrees. The peninsula cabinet's doors are now in the X plane and can have the door style added.

DRAW CABINET DOORS and DRAWERS

1. Use the steps you have learned above to draw preset door styles on the fronts of both peninsula cabinets. To get the Z-depth for the front of the door use the mouse, the right button, and ESC keys. When the Z-depth is correct, continue.

ROTATE THE DRAWING

Peninsula counter top

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN.**
2. Press the **SPACE BAR,** and type **R Y 90** and **RETURN.** The rotate command is found under the DesignCAD 3D menu item “DISPLAY” and rotates the drawing around the point set (0,0,0) on the Y axis 180 degrees. The peninsula cabinet's end is now facing you.

SET UP TO DRAW A COUNTER TOP.

1. Press the **SPACE BAR,** and type **LF**. This runs the Designer Plus program Layers OFF, without using the menus.
2. Enter **4,** and turn on layer 5 and press **RETURN.** Layers 4 and 5 are now the only layers on.
3. Press **F2** to return and use the new active layer.

DRAW A COUNTER TOP

1. Use the mouse to move the courser to the top left rear corner of the base cabinet as it faces you. (This is actually the left front of the cabinet).
2. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (**.**). Check that the Y-axis (height) position is 34.5.
3. Use the mouse to move the courser to the opposite rear corner against the wall of the peninsula cabinet (33BPBC4834).
4. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (**.**).
5. Use the mouse to move the courser to a front corner of the peninsula base cabinet as it faces you.
6. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (**.**).
7. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **0,0,-8** and **RETURN**. There is a 9-inch overhang on the end of the cabinet currently facing you. The DRAW drawing data calls for a standard 1 inch counter top overhang on the front of a cabinet so the -8 is the result of 9 inch overhang desired less the 1 inch standard over hang, in a negative direction, (toward you). There should be 4 points on the screen.
8. A Press the **SPACE BAR**, type **CAB** and press **RETURN**.
9. Enter the **number** for *“Miscellaneous Parts”* from the menu and press **RETURN**.
10. Enter the **number** for "*Miscellaneous programs*" and press **RETURN.**

11. Enter the **number** for "*Remove A Point*" and press **RETURN**. This Designer Plus program deletes the next to the last point set. It can also be run from the space bar by entering MOVE.

12. Press the **SPACE BAR**, type **CTOP** and press **RETURN**.

13. At the OPTION window enter the **number** for "*Change End Overhang*" (for the front and bar) and **RETURN**.

14. When asked how much to extend left overhang enter **1** and **RETURN**. This is the normal front edge counter overhang.

15. When asked how much to extend right overhang enter **9** and **RETURN** twice. This is the bar width.

16. Press **RETURN** for no new top.

17. You are going to radius the corners of the counter top with these next steps. Use the mouse to move the courser to the top (y = 36), right front corner of the counter top just drawn (this is on the rear overhang closest to you). Move the courser down approximately .75 inches.

18. Set a point on the edge of the corner using the *LINE SNAP* (**K**) command, found under the DesignCAD 3D menu POINTS. This point must be on the edge and not a corner.

19. Fillet the edge of the counter top with *FILLET EDGE* (**FE**) command and use **4** for both radius' entries, and **4** for the number of faces. The fillet edge command is found under the DesignCAD 3D menu EDIT.

20. Repeat steps 18 - 20 for the front corner.

SAVE THE DRAWING

1. Press the **SPACE BAR** and type **LN**. This runs the Designer Plus program All Layers ON, without using the menus.

2. Enter **7** (the toe kick layer) and press **RETURN**. This makes layer 7 the active layer.

3. Press **F2** to return and use the new active layer.

4. *ZOOM* (**Z**) with a factor of **0** to see all of the drawing.

5. Set a point on the left front toe kick. This will be behind the dishwasher when the drawings are combined. This point is the locator, when this drawing is loaded into the finished drawing the point set then will be where this point will be.

   A) *POINT XYZ* (**:**), enter coordinates **-21,0,0** and **RETURN**.

   B) Use the mouse to move the cursor to this point and use the right mouse button or gravity point.

standard

6. Save the drawing by using the **F10** key. And enter the **path** and **name** (TUTPenn) for this wall of cabinets.

-or-

DPSave

6. Press the **SPACE BAR**, type **DPSave** and **RETURN**. Designer Plus looks in the directory you have set as the path for saving drawings. If there is a file named 'files.rld' it is opened, and the descriptive names are read into the program. If a list of file names appears, press return until the 'SAVE FILE in *Path*' screen appears.
7. Enter **TUTPENN** as the DOS name.
8. Press **RETURN** to use the default dw3 file format.
9. Enter a **description** of this drawing (less than 42 characters long) and press **RETURN** until the drawing is saved.

THE SECOND WALL

START A NEW DRAWING

1. Press the **SPACE BAR**, type **CAB** and press **RETURN**.
2. Enter the **number** for *"Start New Drawing"* from the menu and press **RETURN.** You will be asked for the drawing data files to use.
3. The current option list is displayed; we are still drawing the same kitchen so we are going to use the same options. Press **RETURN** to use the same option group.
4. We are working on the same job so the names we used for the east wall are still valid. Press **RETURN** to accept each of the existing values.
5. Press **ESC** to exit the path screen because we are making no changes.

DRAW THE SECOND WALL

1. Enter the wall length amount: **133**, and **RETURN**. The 133 is the length of the wall in inch units. Designer Plus will always start at coordinates 0,0,0.
2. Enter the starting side reference. The left side is the default so press **R** and **RETURN**. This wall will be drawn right to left.
3. Enter the height of this wall: **96** and **RETURN**. The 96 is the height in inch units.

4. Press **RETURN** to exit Designer Plus.
5. *ZOOM* (**Z**) with a factor of **0** to see all of the drawing.

DRAW A CABINET (11BBC4534)

Base blind corner cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN**.
2. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **-45,0,0** and **RETURN**. This cabinet will be 45 inches wide, drawn right to left.
3. Press the **SPACE BAR** and type **BASES** and press **RETURN**. This is the short cut to access the Base cabinet program without using the menu. Other wise type CAB and enter the number for Bases from the selection.
4. Enter the **number** for "*Blind Corner*" and press **RETURN.**
5. Enter **25.5** this is the depth of the adjacent cabinet plus 1.5 inches of filler, the setback is in addition to the standard frame member width, (on frameless cabinets this number is the exact amount of blind setback less a 1/2 of the reveal), and **RETURN**.
6. Press **RETURN** at each query, until asked which side is blind. Then enter **R** and **RETURN**.
7. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 1 (door), 1 (drawer), BBC, 45 (width), 34.5 (height), 24 (depth), R (blind side). If this is correct press **RETURN**. Otherwise X to exit, or R to redo the cabinet.

INSERT AN APPLIANCE (Free standing range)

1. Press the **SPACE BAR**, type **LF** and press **RETURN**. This is the short cut for ‘ALL LAYERS OFF’ which is in the miscellaneous programs menu.
2. Enter **4** and press **RETURN**, *turn on layers 5, 7 & 8*, and press **F2** to use the new layer information.
3. Use the mouse to move the courser to the bottom left rear corner of the cabinet just drawn. This is the right rear corner of the range location.
4. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.)
5. Set a *POINT RELATIVE* (**'**), enter the movement amount (X, Y, Z) **-30,0,0** and **RETURN**. This is the block handle location necessary to place the range. There are two points in the drawing.

6. Press the **SPACE BAR**, type **MOVE** and press **RETURN**. This runs the Designer Plus program which deletes the next to the last point set, without using the menus. This program is under the miscellaneous programs menu. There should be only 1 point at X = -75, Y = 0 and Z = 0.
7. Press the **SPACE BAR**, type **MISC** and press **RETURN**. This is the shortcut for the miscellaneous program.
8. Enter the **number** for *"Appliances And Fixtures"* from the menu and press **RETURN**.
9. Enter the **number** for the "*Range*" and press **RETURN**.
10. Enter the **number** for the "*Free Standing Range*" and press **RETURN**.

DRAW A CABINET (04BD1534)

Base four-drawer cabinet

1. Use the mouse to move the courser to the bottom left rear corner of the range just loaded.
2. Use the right mouse button to set a *GRAVITY POINT* (.).
3. Set a *POINT RELATIVE* ('), enter the movement amount (X, Y, Z) **-15,0,0** and **RETURN**. The 15 is the width of the drawer cabinet and the negative amount tells Designer Plus this cabinet is drawn right to left.
4. Press the **SPACE BAR**, type **BASES** and press **RETURN**.
5. Enter the **number** for "*Standard Drawer*" and press **RETURN**.
6. Enter **4** as the number of vertical drawers desired, and press **RETURN**.
7. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 0 (door), 4 (drawer), BD, 15 (width), 34.5 (height), 24 (depth). Press **RETURN** if this is correct; otherwise X to exit, or R to redo the cabinet.

INSERT AN APPLIANCE (36-inch Refrigerator)

1. Press the **SPACE BAR**, type **LF** and press **RETURN**. This is the short cut for 'ALL LAYERS OFF' which is in the miscellaneous programs menu.
2. Enter **4** and press **RETURN,** *turn on layers 5, 7 & 8*, and press **F2** to use the new layer information.
3. Use the mouse to move the courser to the bottom left rear corner of the cabinet just drawn. This is the right rear corner of the refrigerator location.

4. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.)
5. Set a *POINT RELATIVE* ('), enter the movement amount (X, Y, Z) **-36,0,0** and **RETURN**. This is the block handle location necessary to place the refrigerator. There are two points in the drawing.
6. Press the **SPACE BAR**, type **MOVE** and press **RETURN**. This runs the Designer Plus program which deletes the next to the last point set, without using the menus. This program is under the miscellaneous programs menu. There should be only 1 point at X = -126, Y = 0 and Z = 0.
7. Press the **SPACE BAR**, type **MISC** and press **RETURN**. This is the shortcut for the miscellaneous program.
8. Enter the **number** for *"Appliances And Fixtures"* from the menu and press **RETURN**.
9. Enter the **number** for the "*Refrigerator*" and **RETURN**.
10. Enter the **number** for the "*3669 Double Door"* Refrigerator. and **RETURN**.

DRAW A CABINET (10W2130)

Wall cabinet

1. Set a *POINT XYZ* (**:**) enter values X = **-24**, Y = **84**, Z = **0** and **RETURN**. The -24 is the distance out from the wall that will be occupied by the diagonal wall cabinet drawn with the first wall. The 84 is the height to the top of the cabinet, and 0 is the rear plane depth.
2. Use the mouse to move the courser to the upper right rear corner of the range.
3. Use the right mouse button to set a *GRAVITY POINT* (.). This point tells Designer Plus how wide, and the direction, to make this cabinet.
4. Press the **SPACE BAR**, type **WALLS** and press **RETURN**. This is the shortcut for the wall cabinet program.
5. Enter **30** for the height when asked and press **RETURN**.
6. Enter the **number** for "*Standard Wall Cabinet*" and press **RETURN**.
7. Press **RETURN** for no modifications.
8. At the *ACCESSORIES* window enter the **number** of "loose finished end panels" press **RETURN**, and then enter the number **1** for quantity and **RETURN** two times.
9. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 1 (door), 0 (drawer), W, 21 (width), 30 (height), 12 (depth), L (hinge side). Press **RETURN** if correct.

DRAW A CABINET (20W3018)

Wall cabinet

1. Use the mouse to move the courser to the top left rear corner of the wall cabinet just drawn.
2. Use the right mouse button to set a *GRAVITY POINT* (.).
3. Set a *POINT RELATIVE* ('), enter the movement amount (X, Y, Z) **-30,0,0** and **RETURN**. Or *GRAVITY POINT* (.) to the left side of the range.
4. Press the **SPACE BAR**, type **WALLS** and press **RETURN**. This is the shortcut for the wall cabinet program.
5. Enter the height of **18** when asked and press **RETURN**.
6. Enter the **number** for "*Standard Wall Cabinet*" and press **RETURN**.
7. Press RETURN at each query, until the CABINET TO BE DRAWN window is displayed. The cabinet to be drawn should be 2 (door), 0 (drawer), W, 30 (width), 18 (height), 12 (depth). If correct press RETURN.

INSERT AN APPLIANCE

(Hood)

1. Press the **SPACE BAR**, type **LF** and press **RETURN**. This is the short cut for 'ALL LAYERS OFF' which is in the miscellaneous programs menu.
2. Enter **4** and press **RETURN,** *turn on layers 5 & 8*, and press **F2** to use the new layer information.
3. Press the **SPACE BAR**, type **MISC** and press **RETURN**. This is the shortcut for the miscellaneous program.
4. Enter the **number** for *"Appliances And Fixtures"* from the menu and press **RETURN**.
5. Use the mouse to move the courser to the bottom left rear corner of the cabinet just drawn over the range (20W3018). Use the right mouse button to set a *GRAVITY POINT* (.).
6. Press **RETURN**.
7. Enter the **number** for "*Hood*" and **RETURN**.
8. Enter the **number** for the "*Standard 30 in*." and **RETURN**.

DRAW A CABINET (10W1530)

Wall cabinet

1. Use the mouse to move the courser to the top left rear corner of the wall cabinet last drawn (20W3015). Use the right mouse button to set a *GRAVITY POINT* (.).
2. Use the mouse to move the courser to the top right rear corner of the refrigerator. Use the right mouse button to set a *GRAVITY POINT* (.).
3. Use the mouse to move the courser to any bottom corner of the far right wall cabinet (10W2130). Use the right mouse button to set a *GRAVITY POINT* (.). You are entering the height with this step, which lower corner you choose does not matter. Designer Plus establishes the starting point by the first point set; the second point is used only for width, and the third for height on wall cabinets.
4. Press the **SPACE BAR**, type **WALLS** and press **RETURN**.
5. Enter the **number** for "*Standard Wall Cabinet*" and press **RETURN**.
6. Press **RETURN** for no modifications.
7. At the *ACCESSORIES* window enter the **number** of "*Loose Finished End Panels*" and press **RETURN**, then enter the number **2** for quantity and **RETURN** two times.
8. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 1 (door), 0 (drawer), W, 15 (width), 30 (height), 12 (depth), L (hinge side). If this is correct press **RETURN**.

DRAW A CABINET (20W3615)

Wall cabinet

1. Use the mouse to move the courser to the top left rear corner of the wall cabinet last drawn (10W1530). Use the right mouse button to set a *GRAVITY POINT* (.).
2. Use the mouse to move the courser to the top left rear corner of the refrigerator. Use the right mouse button to set a *GRAVITY POINT* (.).
3. Press the **SPACE BAR**, type **WALLS** and press **RETURN**.
4. Enter the height of **15** when asked and press **RETURN**.
5. Enter the **number** for "*Standard Wall Cabinet*" and press **RETURN**.
9. Press **RETURN** for no modifications.
6. At the *ACCESSORY WINDOW* add 1 finished end.
7. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 2

(door), 0 (drawer), W, 36 (width), 15 (height), 12 (depth). If correct press **RETURN**.

SET UP TO DRAW A CABINET DOOR

1. Press the **SPACE BAR**, type **LF** and press **RETURN**. This is the short cut for 'ALL LAYERS OFF' which is in the miscellaneous programs menu.
2. Enter **13** and press **RETURN**. Layer 13 is now the only layer on.
3. Press **F2** to return and use the new active layer.

DRAW CABINET DOORS and DRAWERS

1. Use what you have learned above to draw styled doors. But use the short cut and type **SPACE, DOORS** and **RETURN** instead of using the main menu CAB. As Designer Plus draws a door the first step is to delete the door that was there first. This is necessary because you may be changing door styles, and the old doors attribute information has to be removed. If this is not done there would be errors in the door list. Note that the door blanks are still present on the cabinets, this is because the door blanks on the cabinet are part of the cabinet solid, you must free the solid (SF) to remove these blanks.

SET UP TO DRAW A COUNTER TOP.

1. Press the **SPACE BAR**, type **LF** and press **RETURN**. This is the short cut for 'ALL LAYERS OFF' which is in the miscellaneous programs menu.
2. Enter **4** and turn on 5 press **RETURN**. Layers 4 and 5 are the cabinet box layers and are now the only layer on.
3. Press **F2** to return and use the new active layer.

DRAW A COUNTER TOP

1. Move the courser to the wall with the mouse and position it at the top left rear corner of the drawer base cabinet to the left of the range (04BD1534). Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.). Check that the Y-axis position is 34.5.
2. Use the mouse to move the courser to the right side of the same cabinet. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.).
3. Use the mouse to move the courser to the front of the same cabinet. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.).

4. Press the **SPACE BAR**, type **MISC** and press **RETURN**.
5. Enter the **number** for "*Counter Top*" and press **RETURN.**
6. Press **RETURN** at the *COUNTER TOP OPTION* window.

DRAW A COUNTER TOP

1. Use the mouse to move the courser to a position at the top left rear corner of the base cabinet to the right of the range (11BBC4534). Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.). Check that the Y-axis position is 34.5.
2. Use the mouse to move the courser to the right side of the same cabinet. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.).
3. Use the mouse to move the courser to the front of the same cabinet. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.). Do not worry about where the adjacent cabinet will be.
4. Press the **SPACE BAR**, type **CTOP** and press **RETURN**.
5. Press **RETURN** at the *COUNTER TOP OPTION* window.
6. Press **RETURN** for no new top window.

SAVE THE DRAWING

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN**.

   DesignCAD 3D will use this point when the drawing is reloaded as a locating point.

Standard

2. Save the drawing by using the **F10** key. And enter the **path** and **TUTNorth** (file name) for this wall of cabinets.

–or-

DPSave

2. Press the SPACE BAR, type DPSave and RETURN. Designer Plus looks in the directory you have set as the path for saving drawings. If there is a file named ‘files.rld’ it is opened and the descriptive names are read into the program. If a list of file names appears press return until the ‘SAVE FILE in *Path*’ screen appears.
3. Enter **TUTNORTH** as the DOS name.
4. Press **RETURN** to use the default dw3 file format.
5. Enter a **description** of this drawing (less than 42 characters long) and press **RETURN** until the drawing is saved.

Assembling the Finished Kitchen

ROTATE THE DRAWING

Working from where we left off with the last step, we are going to rotate this drawing to form the left wall of this kitchen.

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN**.
2. Press the **SPACE BAR** and type **R Y 90** and **RETURN**. The Rotate command can be found in the DesignCAD 3D menu *DISPLAY.*

LOAD THE EAST WALL'S CABINETS

1. Set a *POINT XYZ* (**:**), enter coordinates **0,0,0** and **RETURN**. This is the location of the point you placed when saving the first wall's cabinets.

Standard

2. Press the **SPACE BAR** and type **blo** (block load) **PATH,** and **TUTEast** (file name) for the first drawing to load, and **RETURN**.

-or-

DPOpen

2. Recently accessed files are listed first then drawings in the directory you have specified with the Path statement. Because the drawing needed is a recent drawing, select it from the first screen by entering the **number** of the file wanted: TUTEast, the first drawing made in this tutorial, and **RETURN.**
3. The next screen is a check screen, if it is correct enter **B** to load the drawing as a block and **RETURN.**

You can move, copy etc. the block, the same as any other block in DesignCAD 3D. If it was not placed properly because you forgot to put a point on the drawing before it was saved, place a point on the lower left corner of the wall. Make it the block handle with the block handle (BH) command, next set a point where the wall should be and use the block move (BM) command to move the wall to the proper location.

LOAD THE PENINSULA'S CABINETS

1. Use the mouse to move the cursor to the bottom right rear corner of the toe kick extension on the filler. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.).

Standard

2. Press the **SPACE BAR** and type **blo** (block load) **PATH,** and **NAME** (TUTPenn) for the peninsula drawing to load, and **RETURN**.

–or-

DPOpen

2. Recently accessed files are listed first, then drawings in the directory you have specified, with the Path statement. Because the drawing needed is a recent drawing, select it from the first screen by entering the **number** of the file wanted, TUTPenn, the second drawing made in this tutorial, and **RETURN.**
3. The next screen is a check screen, if it is correct enter **B** to load the drawing as a block and **RETURN.**

SAVE THE DRAWING

Standard

1. Save the drawing by using the **F10** key. And enter the **path** and **name** (TUTOR) for the combined drawing.

–or-

DPSave

1. Press the **SPACE BAR**, type **DPSave** and **RETURN**. Designer Plus looks in the directory you have set as the path for saving drawings. If there is a file named 'files.rld' it is opened and the descriptive names are read into the program. If a list of file names appears, press return until the 'SAVE FILE in *Path*' screen appears.
2. Enter **TUTOR** as the DOS name.
3. Press **RETURN** to use the default dw3 file format.
4. Enter a **description** of this drawing (less than 42 characters long) and press **RETURN** until the drawing is saved.

After you have combined the kitchen and saved it, any time you want to save the drawing you can use the standard save command, F10, and the descriptive name will not be changed.

SET UP TO DRAW A COUNTER TOP.

1. Press the **SPACE BAR**, type **LF** and press **RETURN**. This is the short cut for 'ALL LAYERS OFF' which is in the miscellaneous programs menu.
2. Enter **9** and press **RETURN**. *Turn on layers 4, 5 & 8*.
3. Press **F2** to return and use the new active layer.

DRAW A COUNTER TOP

1. Use the mouse to move the courser to a position at the bottom right front corner (against the wall) of the counter top last drawn (this is the left side of this top), over the 11BBC4534. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.). Check that the Y-axis position is 34.5.
2. Use the mouse to move the courser to the back corner against the counter top on the peninsula cabinet (33BPBC4834). Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.).
3. Use the mouse to move the courser to a front corner of the filler next to the peninsula cabinet. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.). Check that the Z-axis position is -24.
4. Press the **SPACE BAR**, type **CTOP** and press **RETURN**.
5. At the OPTION window enter the **number** for "*Change Height of Back Splash*" and **RETURN**.
6. Enter **0** for the new back splash height, and press **RETURN**.
7. Press **RETURN** to end the modifications.
8. Press **RETURN** for no new top.

CORRECT THE BACK SPLASH

1. Set the active layer to the counter top layer, layer **9** via the *LAYER* (**L**) command.
2. Use the mouse to move the courser to a position at the top right front corner of the back splash, on the counter top on the left side. This is at the wall corner over the blind corner cabinet (11BBC4534). Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.). Remember that the back splash has depth. (X = .75, Y = 40, Z = 0)
3. Use the mouse to move the courser to the bottom right front corner of the back splash, on the peninsula’s counter. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.). (X = 132, Y = 36, Z = -0.75)
4. Draw a *BOX* (**]**). This makes a new back splash, filling in the empty space and overlapping the partial back splash on the peninsula cabinet.
5. Use the mouse to move the courser to the top left front corner of the partial back splash on the peninsula. Use the right mouse button to set a point on a previous point *GRAVITY POINT* (.).
6. *ERASE* (**E**), this removes the partial back splash.

INSERT A SINK

1. Set a *POINT XYZ* (**:**), enter coordinates **54,36, -23.5** and **RETURN**. The 54 is the distance from the wall corner to the center of the window and the center of the sink cabinet. The 36 is the height of the finished counter top, and the –23.5 is the distance from the wall out to the front edge of the sink.
2. Press the **SPACE BAR**, type **MISC** and press **RETURN**.
3. Enter the **number** for *"Appliances And Fixtures"* from the menu and press **RETURN**.
4. Enter the **number** for "*Sink*" and **RETURN**. (Note you can load a 3D sink by entering 3D before the item number. When a 3D sink is placed, an area is cut out of the counter top and whatever is under it, and a *.dlr sink drawing is inserted.)
5. Enter the **number** for the "*2233 DBL*." and **RETURN**.

The kitchen is more or less complete at this point, but let's put a crown molding around the top.

MOLDING

1. Press the **SPACE BAR**, type **LF** and press **RETURN**. This is the short cut for 'ALL LAYERS OFF' which is in the miscellaneous programs menu.
2. Enter **4** and press **RETURN**. *Turn on layer 1 & 5*. Layers 1, 4 and 5 are now the only layers on.
3. Press **F2** to return and use the new active layer.
4. Press the space bar and type **ME PLAN** and press **RETURN.** The ME part of this command is the DC command for macro execute. Any time you use a macro you will need to use this command. This executes the macro "PLAN" that will change the "VIEW" to a top or plan view.
5. Hold down the **CTRL** and **SHIFT** key while dragging the mouse, to bring the **Y** value to **84** (this is the elevation of the top of the cabinets).
6. Starting at a wall on a run of adjacent cabinets, use the right mouse button *GRAVITY POINT*(.). Place points at each change of direction corner, until you are at the other wall, or end of the molding. Because the molding will draw and measure from the first to the last point, do not include areas not receiving molding.
7. Pick ***PARTS and MOLDINGS*** from the *MISCELLANEOUS PARTS* (**MISC**) menu.
8. Pick ***"2 1/4 Crown Moldings"*** from the *MOLDINGS* menu.
9. Repeat for the other section of cabinets.

10. Save your drawing.

You are now ready to extract some useful information and drawings from your efforts.

MATERIALS & PART LISTS

1. You are finished drawing. Now let's extract useful data from the drawing. Press the **SPACE BAR**, type **CAB** and press **RETURN.**
2. Enter the **number** for "Reports".
3. Enter the **number** of one of the options.
4. You can enter the **path** where you want to store the report and the **name** for the file, or just the file name. Designer Plus will add the extension "txt" to the file name; and if no path is designated, use the same path as your drawing directory. Press **RETURN** to create and save the report.

   This file is an ASCII text file, and it is ready to be used in a word processor or a spreadsheet.

DRAWINGS

FLOOR PLAN

1. Press the **SPACE BAR**, type **LF** and press **RETURN**.
2. Select the layers you want to see in a plan view, usually layers **1**, **2**, **3**, **4, 5**, **8, 9, 20**, **30**, and **31**.
3. Press **F2** to return and use the new layer information.
4. Arrange the drawing on the screen and check it carefully. If you miss something that should be included in the finished drawing, you will have to return to this point to correct it.
5. Press the **SPACE BAR** and type **4V** and press **RETURN**. This runs the Designer Plus program for setting the screen to four windows. This program can be found under "Miscellaneous Programs". This step is to help you remember which view you want to save.

Standard Save Option

6. From the DesignCAD 3D *FILE* menu select **save 2-D.**
7. Enter the **path** and name this drawing **PLAN** with the extension ***.DW3**. Even if the path set is correct for 3D drawings, DesignCAD 3D requires a separate path for 2-D drawings. The SET PATH command sets this path, and press **RETURN**. (If you are going to edit this drawing in another DesignCAD 2D program instead of using the DW3 extension use the proper extension for

the program you will use; or no extension, and the default DW2 will be used.)

–or-

DPSave Save

6. Press the **SPACE BAR**, type **DPSave** and **RETURN**. Designer Plus looks in the directory you have set as the path for saving drawings. If there is a file named 'files.rld' it is opened and the descriptive names are read into the program. If a list of file names appears, press return until the 'SAVE FILE in *Path*' screen appears.
7. Enter **TUTPLAN** as the DOS name.
8. Enter DW2 for 2D-file format and Press **RETURN**.
9. Enter a **description** of this drawing (less than 42 characters long) and press **RETURN** until the program ends and DesignCAD's save 2-D begins.
10. Save the small window view, which is more accurate than the full screen view, VIEW number **3,** and press **RETURN**.
11. Save with Hidden lines REMOVED **N**.

PERSPECTIVE

1. Press the **SPACE BAR**, type **LF** and press **RETURN**.
2. Select the layers you want to see in a perspective view: usually layers, **1-9**, and **20-21** (or 21-26 if shading is on). Note that when you are drawing with the shading option on layer 20 which is used as a reference for editing the drawing must be turned off at this point, or the door styles will disappear when shading or hiding lines.
3. Press **F2** to return and use the new layer information.
4. Press the **SPACE BAR**, type **VIEW** and press **RETURN**. The view command can be found under the view menu of DesignCAD 3D.
5. Press **F4** to change the view angle.
6. Enter **35** for the *HORIZONTAL* view angle, and press **RETURN.** DesignCAD 3D uses degree measurements for view angles: 0 degrees being straight on, and positive (+) values moving the viewing position to the right.
7. Enter **3** for the *VERTICAL* view, and press **RETURN.** Again 0 degrees will be straight on and positive (+) values moving the viewing position upwards.
8. Enter **45** for the *viewing DISTANCE*, and press **RETURN**. The larger the value entered here the less angular distortion displayed. This is because as you move closer to the object viewed, the field of view is increased to include the entire object. Consequently items near the viewer will appear very large whereas items farther away will be disproportionately smaller. Practically, in a kitchen view larger distance values

make vertical corners appear closer to vertical, regardless of where they are in the drawing.

9. Press **F2** to use the new view information.

10. Arrange the drawing on the screen and check it carefully. If you miss something that should be included in the finished drawing you will have to return to this point.

Standard Save

11. From the *FILE* menu select **save 2-D**.

12. Enter the **path** and **name** this drawing **TUTPER1** with the extension ***.DW3**, even if the path set is correct for 3D drawings DesignCAD 3D will not remember when saving 2-D drawings, and press **RETURN**. (If you are going to edit this drawing in another DesignCAD 2D program, instead of using the DW3 extension, use the proper extension for the program you will use.)

-or-

Using DPSave to Save

11. Press the **SPACE BAR**, type **DPSave** and **RETURN**. Designer Plus looks in the directory you have set as the path for saving drawings. If there is a file named 'files.rld' it is opened and the descriptive names are read into the program. If a list of file names appears press return until the 'SAVE FILE in *Path*' screen appears.

12. Enter **TUTPer1** as the DOS name.

13. Enter DW2 for 2D-file format and Press **RETURN**.

14. Enter a **description** for this drawing (less than 42 characters long) and press **RETURN** until the program ends and DesignCAD's save 2-D begins.

15. Save VIEW **1** (this is the screen view) and press **RETURN**.

16. *Save with Hidden lines removed* **Y**, and press **RETURN**.

EDIT THE 2D DRAWINGS

DesignCAD 3D

If you are using a different version DesignCAD for 2D editing, skip these sections and go to "Edit 2D drawings for DesignCAD 2000".

1. If you have made changes since the drawing was saved last, save it again now! The next step will erase the screen.

2. To clear the screen press **Y** twice.

3. *Press **F9** and enter the **path** and **PLAN** to load the 2D drawing saved above. If you omitted the DW3 extension when a 2D drawing was saved, DesignCAD 3D will automatically assign it a

DW2 extension. You can change the extension in the select file window of the LOAD command to help find a lost drawing.

*If you used DPSave to save this file then you can use DPOpen to open it.

4. Press the **SPACE BAR**, type **ME ELEV** and press **RETURN.** This runs the Macro named Elev that sets the screen to view an elevation.
5. Set points on 2 previous points a known distance apart, (for instance a base cabinet's depth) with the *GRAVITY POINT* (.) command. Press **U** (*UNIT* command sets scale). If the displayed value is incorrect enter the **known distance amount** (**24**) and press **RETURN**.
6. To edit this drawing use the "E" key to remove all of an extra line. Place a point on the line or *GRAVITY POINT* (**.**) to a point on the line and press the *ERASE* (E) key. Use one point at a time to minimize removing too much. If you do remove too much, press ! until your mistake is undone.
7. Use the *SECTION DELETE* command (CTRL-D) to remove parts of lines. If you make a mistake with this one it cannot be undone, so be careful about what is inside the box defined by the 2 points you enter when selecting the area to be deleted. This may be easier for you if you keep the box very small, only large enough to break the line, so that you can use the *Erase* command (E) to remove the rest of the line.
8. At this stage you can also add text, dimension, and add to the drawing. Be sure you keep the Z-axis = to 0, remember this is a 2D drawing. A note of caution here: do not use the auto dimension layer (29) with a CAD program other than DesignCAD 3D for DOS v4. This layer will create conflicts in the drawing.
9. When you are satisfied with the drawing *SAVE* it, press **F10** (or use dpsave) and enter the **path**, **PLAN** and press **RETURN**. The drawing is saved as a 3D drawing with the extension *.DW3, iIf it was not previously saved as a DW3 drawing.
10. Clear the screen by pressing **Y** twice.
11. Follow steps 2 - 9 to edit the perspective drawing.

PRINTING in DOS

1. After you have saved the perspective drawing, press **F5** to print. This exits DesignCAD 3D and starts DC3Print. All layers are to be printed on the perspective, so press **RETURN** to print the drawing in memory.
2. Be sure the printer is on and loaded.
3. Select **2** for printer density, 1 is very rough but fast and 3 is very clear but slow.
4. Skip Drawing units on the perspective drawing (this is used for scale drawings).

5. Skip drawing size.
6. Enter the **size of paper** you are going to use.
7. At the Rotate drawing, watch the “size of drawing” figures and press **Y** if the drawing size increases. Leave it, if it gets smaller reenter **N**.
8. Center Drawing = **Y**.
9. Press **F2**. The drawing will now print.
10. After the drawing has been printed you are returned to the main screen. Select *LAYER* and **turn off** either the nomenclature or text layer, otherwise both will print.
11. Select PRINT A DesignCAD DRAWING. Enter the **path** and **PLAN**, to load the plan drawing.
12. Select **2** for printer density again.
13. Enter **24** for the plan drawing. (24 units / inch is equal to 1/2 inch scale, 12 units / inch would be 1 inch scale)
14. Repeat Steps 5 through 9 for the plan view.
15. At the opening screen select STOP THE PROGRAM. You are finished with the drawing. Go to “Changing the drawing below”.

EDIT THE 2D DRAWINGS

DesignCAD 2000

1. If you have DesignCAD 97 or later, you can open the *.DW3 drawing file directly in the newer DesignCAD but you still need to convert the drawing view to 2D. Saving the drawing as a 2D projection with the “Save As” command does this.
2. Open the 2D drawing and edit it to remove unneeded lines. Short lines for facets on a counter top’s radiused corner can be removed by using the **D** (delete area) key then placing points at each end of the line. Longer lines should only be broken with this command, then use the point move (***** key) command to move the end of the line back to where it started.
3. Print as for any other Windows application.

CHANGING THE DRAWING

You have made your presentation and your client would like to see what glass doors on the back of the wall peninsula would look like.

1. Start DesignCAD 3D and load the peninsula drawing (TUTPENN) you have completed in the previous steps. Save it again with a new name. This will be the new edited drawing.
2. Turn on the 4-window screen view **SPACE BAR,** type **4V** and press **RETURN**.
3. Remember to keep 0,0,0, the reference point. Rotate (**R Y amount of rotation**) the drawing so that you face the back of the peninsula cabinets. You can use the macro for elevation (me elev), or 3D view (me return) if you are not sure of the view angle. Use the **VIEW** command to change the view of the drawing so that the corners of the wall peninsula cabinets can be seen. But remember the view command does not change the drawing angle, only the view. Designer Plus requires the drawing be done on the X-Y plane.
4. Turn on all the layers in the drawing, **SPACE BAR** type **LN**, press **RETURN**, and press **F2** to use the new layer information.
5. Designer Plus groups each cabinet into a separate solid. This allows quick removal of whole cabinets. Set a *GRAVITY POINT* (right mouse button) point on any spot on the wall peninsula cabinet (40WPBC4830) box. (Use the nomenclature for the spot this time).
6. *ERASE* (**E**) the cabinet by pressing the E key. The cabinet box is removed, but the styled doors are still in the drawing. Make a mistake? Use the *UNERASE COMMAND* (*!*) to restore the erased item, and try again.
7. Remove both doors on the back of the cabinet by placing a *GRAVITY POINT* (right mouse button) point on each, then pressing **E**. We are going to leave the styled front doors as they are.

DRAW A CABINET (new 40WPBC4830)

Wall cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0,84,12** and **RETURN**. This is the top right rear corner of the cabinet. The first time you drew this cabinet it was drawn from the other side, with the back at 0 on the Z-axis. Because the new front will be where the old back was we have to move the cabinets back corner. You can see this by snapping a point on one of the doors left from the old cabinet and observing the Z value at the bottom of the screen. 0 on the X axis, 84 is the Y height value, and 12 the Z depth, moving away from 0.
2. Set a *POINT RELATIVE* (**'**), **-48,0,0**. The 48 is the width of the cabinet from right to left.

3. Press the **SPACE BAR**, type **WALLS** and press **RETURN**.
4. Enter **30** for the height of the cabinet.
5. Enter the **number** for "Standard Wall Cabinet" and press **RETURN**.
6. At the MODIFICATION window enter the **number** for “Door(s) cut for glass” and **RETURN**.
7. Enter the **number** for “Special Nomenclature” and **RETURN** two times.
8. When asked for the nomenclature for this cabinet enter **Y** to enter all of a nomenclature and press **RETURN**.
9. At the ACCESSORIES window enter the **number** of “loose finished end panels”, and press **RETURN,** then enter the number **1** for quantity and **RETURN** 2 times.
10. Press **RETURN** at each query, until the screen to enter the nomenclature is displayed. Enter the new nomenclatures by copying and changing the parts of the nomenclature that are different, number of doors (**4**) and the letter code (**WPBC**). Even though the cabinet that is about to be drawn has only 2 doors on it there are actually 4 doors on this cabinet. Remember you did not delete the two doors on the front of cabinet in step 7 of ‘edit a cabinet’ above.
11. Press **RETURN** at each query, until the CABINET TO BE DRAWN window is displayed. The cabinet to be drawn should be 4 (door), 0 (drawer), WPBC, 48 (width), 30 (height), 12 (depth), GD (Glass door). Press **RETURN** if this is correct.
12. Press **RETURN**. To use the default value of Y (yes). This is a face-framed cabinet.
13. Press **RETURN** for no other attributes.

DRAW CABINET DOORS

1. Turn off all the layers in the drawing and set layer 13 as the only one on. (**SPACE BAR LF** press **RETURN**).
2. Over one of the doors blanks just drawn draw a glass framed door, using the same steps you used to create a preset door style. Use **GF10** for the door style and **.5** for the edge detail but do not memorize the door style.
3. Repeat for the second door.
4. Save your drawing.

When you hide lines, the glass doors will let you see the interior of the wall cabinet. You could also rotate the drawing and replace the styled doors on the front with the glass frame door style, then you could see through the cabinet. To complete the editing go back to page 32 where the kitchen drawing was compiled from the different segments. Re-do those steps and you have a new

drawing of the modified kitchen. With experience you can edit the finished and compiled drawing.

Exit DesignCAD 3D. You have completed the kitchen tutorial.

Section 3

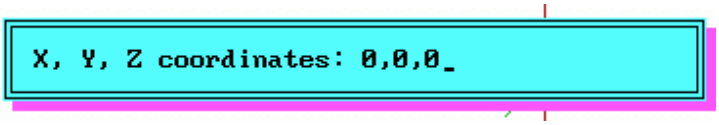
SHORT DEMO TUTORIAL

START A NEW DRAWING

From the setup to start a new drawing there is a query left on the screen for wall length. To clear the query press **ENTER** and then press **ESC** (Escape) to clear the text from the screen, a wall is not going to be drawn.

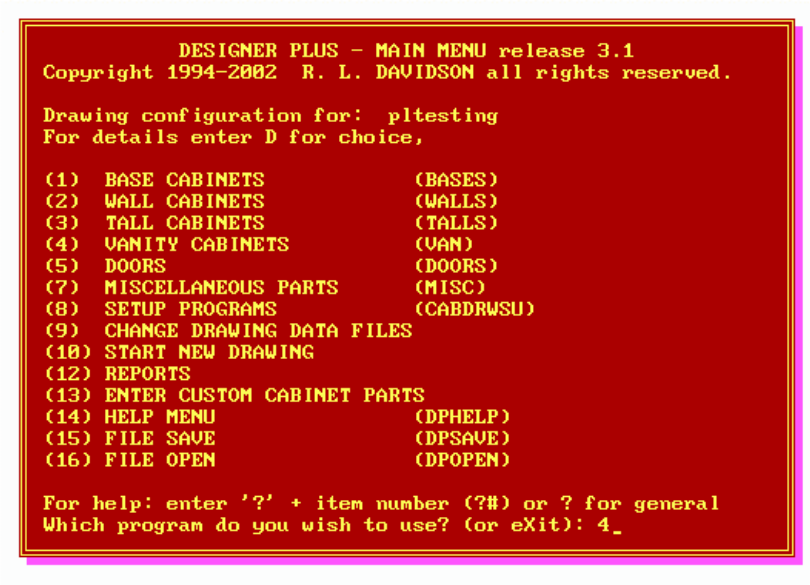
DRAW A CABINET (20VB3031)

Base cabinet

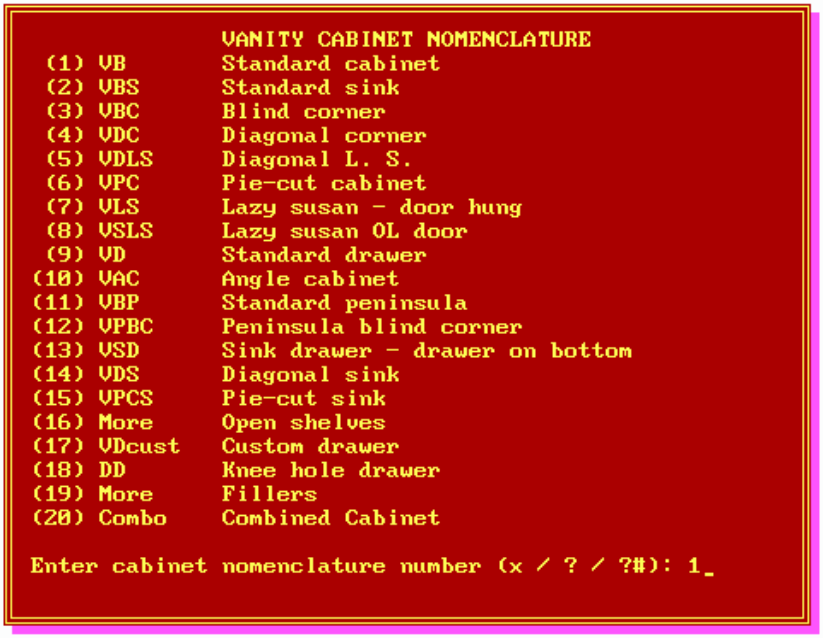


1. Set a *POINT XYZ* (**:**), enter coordinates **0**,**0**,**0** and **RETURN**. This is the corner where you will begin drawing cabinets. When drawing cabinets, the front must be facing you on the X - Y plane.

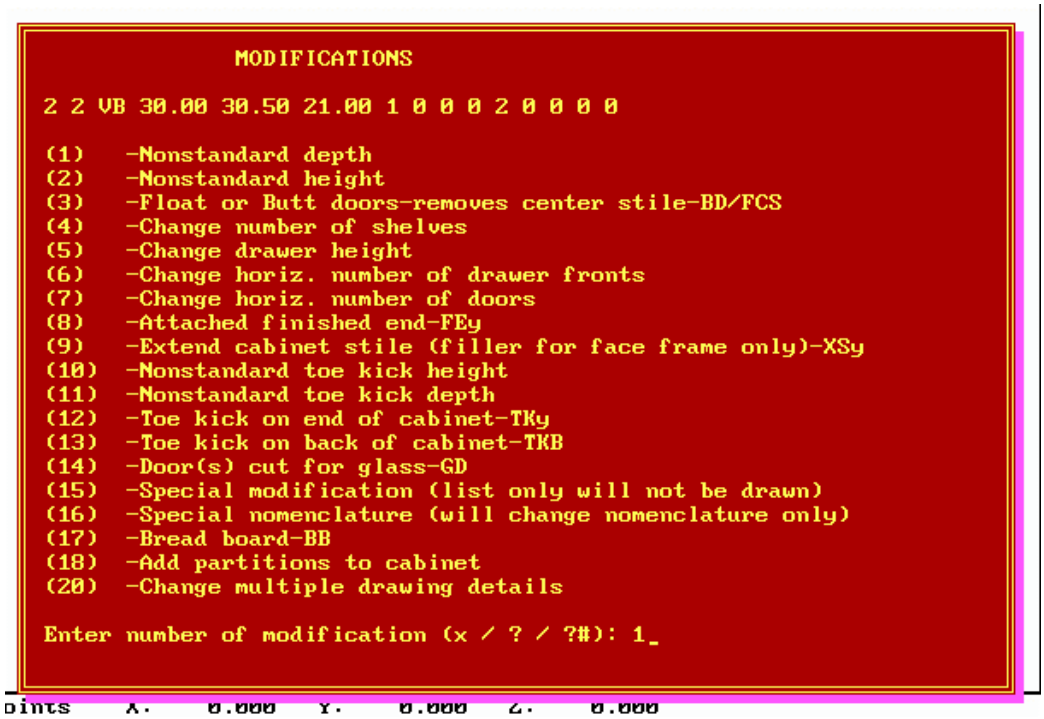
2. Set a *POINT RELATIVE* (**'**), enter x coordinate **30** (width) and **RETURN**. This is the lower right rear corner of the base cabinet.
3. Press the ***SPACE BAR***, type ***CAB*** and press **RETURN**. This accesses the general menu for all Designer Plus programs.



4. Enter the **number** for "*Vanity Cabinets*" from the menu and press **RETURN.** (This program could also have been reached from the command line by "*space bar, VAN*, and *enter*".)

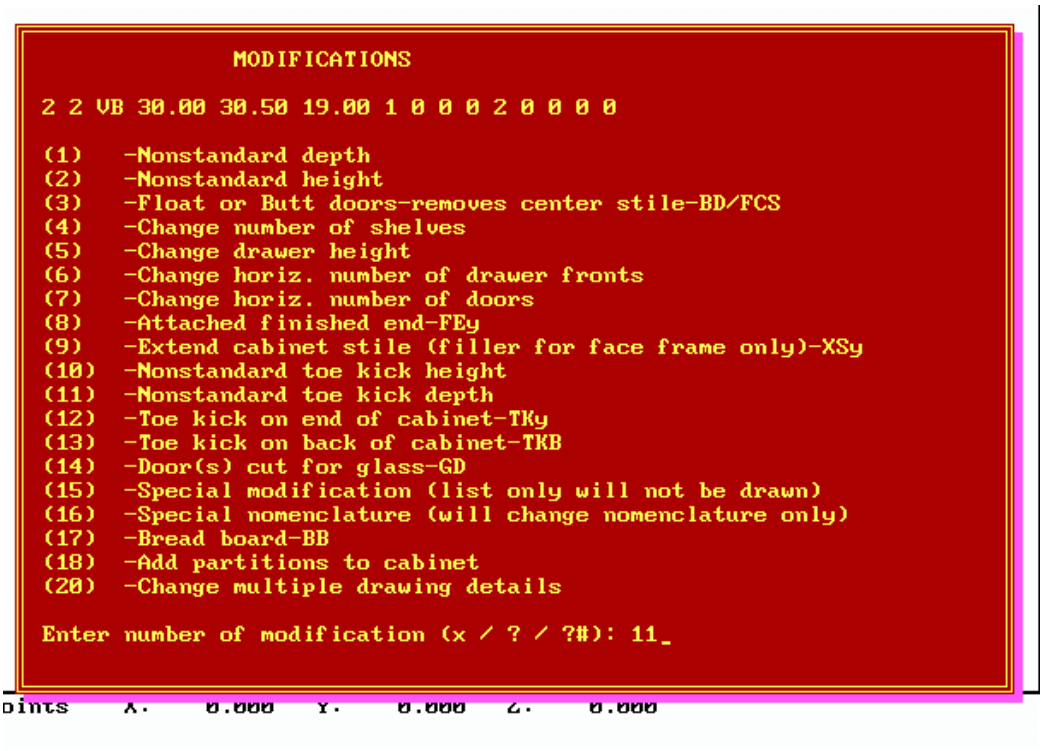


5. Enter the **number** for "*Standard Cabinet*" and press **RETURN.**



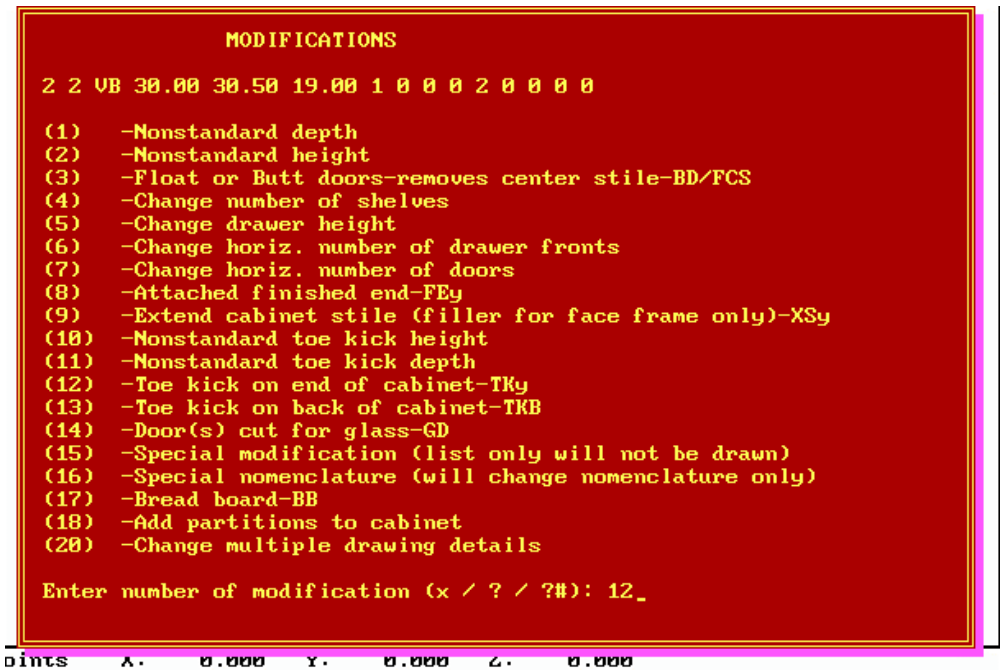
6. In the *CABINET MODIFICATION* window enter the **number** for "*Nonstandard Depth*", and **RETURN.**

7. Enter **19** for the new depth and **RETURN**.



8. Enter the **number** for "*Nonstandard Toe Kick Depth*", and **RETURN**.

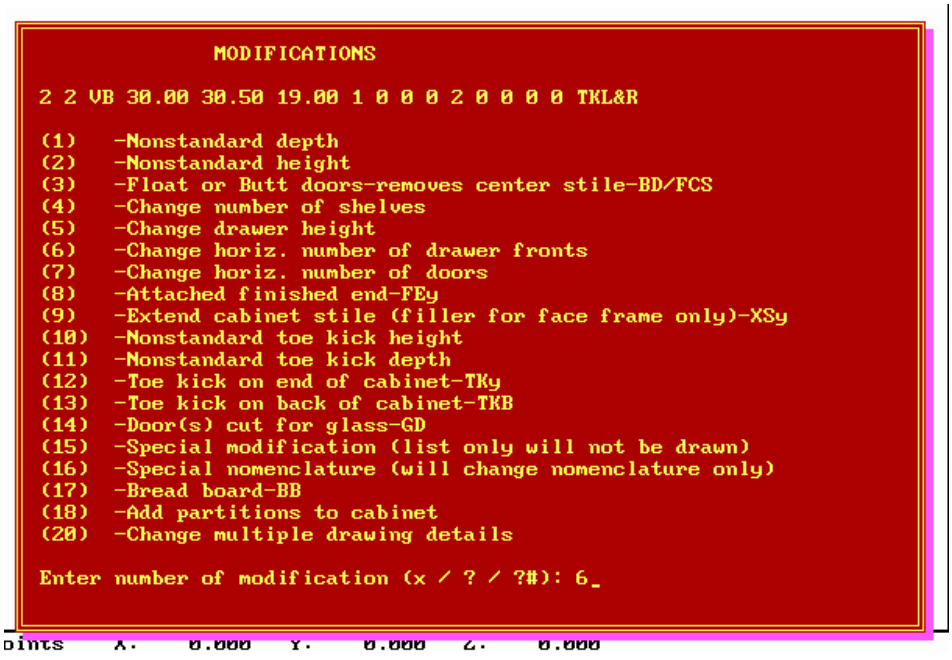
9. Enter **-1** for the new toe kick depth and **RETURN**. Designer Plus subtracts the toe kick depth from the depth of the cabinet. By using a negative (-) amount Designer Plus will actually add the depth to the cabinet.



10. Enter the **number** for "*Toe Kick On End Of Cabinet*", and **RETURN**.

11. Enter **-1** for the amount of toe kick, to add to the left cabinet end, and **RETURN.** The negative number will extend the toe kick beyond the cabinet side.

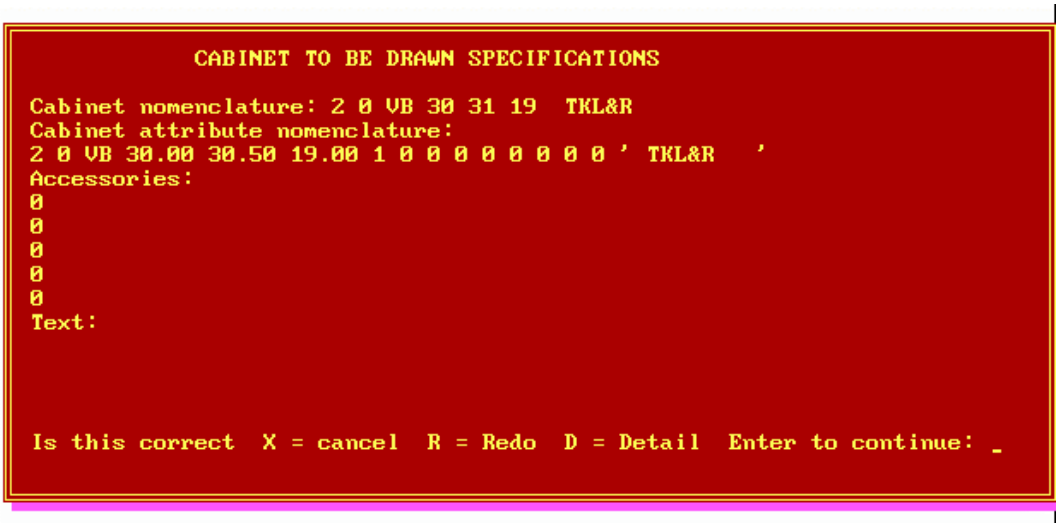
12. Enter **-1** for the amount of toe kick, to add to the right cabinet, end and **RETURN.**



13. Enter the **number** for "*Change Horizontal Number of Drawers*", and **RETURN**.

14. Enter **0** for the number of drawer fronts and number of drawer boxes and **RETURN**.

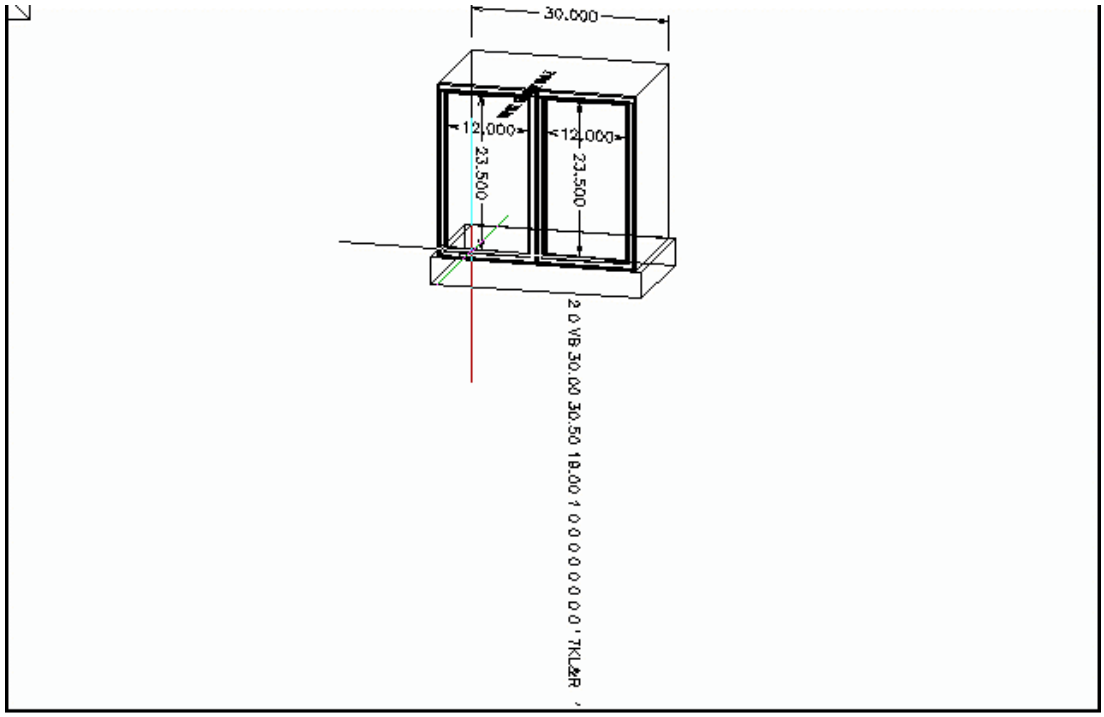
15. Press **RETURN** at each query, until the *CABINET TO BE DRAWN SPECIFICATIONS* window is displayed.



16. In the screen figure above you will check the cabinet to be drawn. Designer Plus creates nomenclatures from the information that it found in the construction data files, and from the instructions you have entered during these steps. Notice that there are two nomenclatures shown, the *Cabinet nomenclature* and the *Cabinet **attribute** nomenclature*. The Cabinet nomenclature is text that will be drawn in the drawing and can be seen and printed. The Cabinet attribute nomenclature is a DesignCAD 3D ATTRIBUTE. Attributes are used to create lists such as a materials list that is used for another purpose. Attributes are not normally visible (to make them visible, from the *PARAMETER MENU*, "*System Parameter*" turn "*Display Attributes*" on by entering a "Y" and "F2" to use the new parameter).

    The cabinet we are drawing should match the above screen. Reading the nomenclature you should have 2 (door), 0 (drawer), VB (type of cabinet), 30 (width), 31.25 (height), 19 (depth). If this is correct press **RETURN** to continue, *or* **X** then **RETURN** to quit, (redo the cabinet locator points and rerun the cab program (steps 1-15)). Do not press escape or other keys while Designer Plus is running. If the cabinet is in the wrong place or if something else is wrong with it, wait until the drawing is complete. The last step in the program is to block the cabinet just drawn, define it as a solid and to set a block

handle. On a base cabinet the block handle is the lower left rear corner. For now use the block delete command from the *BLOCKS MENU* if needed to remove a misplaced cabinet. Then repeat the steps 1-15 for drawing the cabinet to this point. When you are more familiar with DesignCAD 3D you will use the Block Move command.



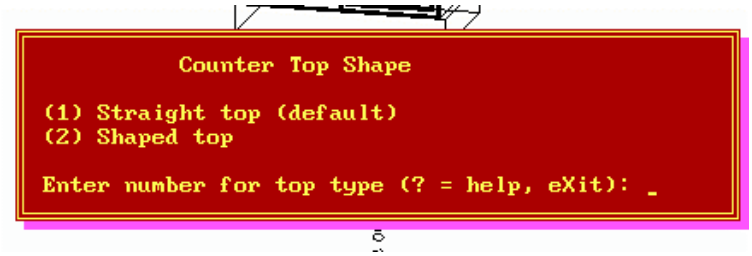
17. To view all of the drawing use the *ZOOM* command (**Z**) and enter a value of **0**, then **RETURN**.

DRAW A COUNTER TOP

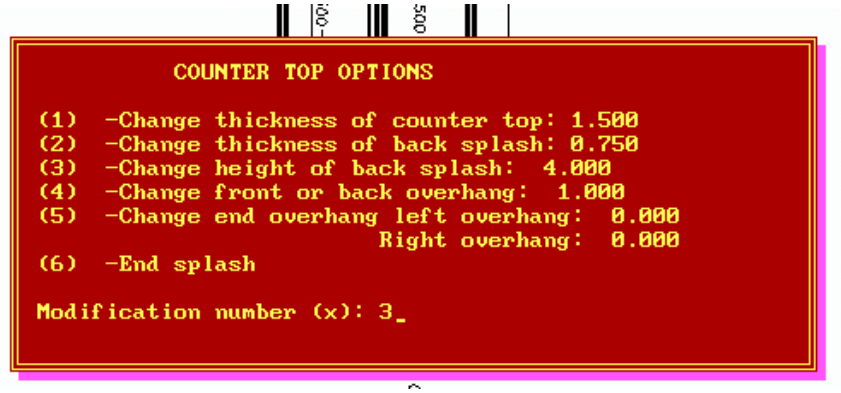
1. Using the mouse, move the courser to the top left rear corner of the cabinet.

2. Set a point on a previous point *GRAVITY POINT* (**.**) or use the right mouse button. Check the coordinate values in the lower left of the screen, the Y-axis (elevation) needs to be 30.5.
3. Use the mouse to move the courser to the right side of the same cabinet.
4. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.

5. Use the mouse to move the courser to the front of the cabinet. To change the Z-value (depth = 19) drag the mouse while holding down the control and shift keys.
6. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.
7. Press the **SPACE BAR**, type **CTOP** and press **RETURN**.

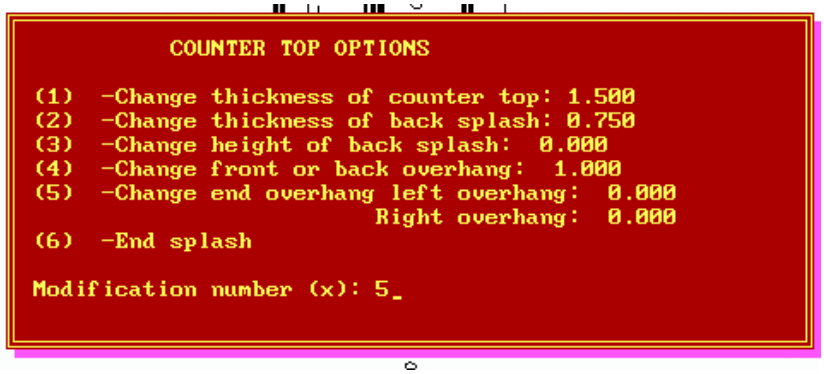


8. Press **RETURN** to use the default top.



9. At the *COUNTER TOP OPTION* window. Enter the **number** for "Change height of back splash" and press **RETURN**.

10. Enter **0** for the new height of back splash and press **RETURN.**



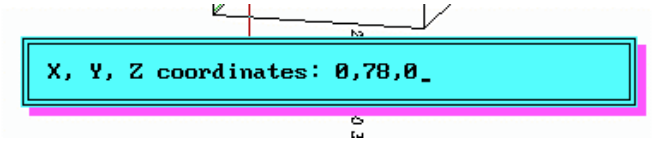
11. Enter the **number** for "*Change End Over Hang*" and press **RETURN**.

12. Enter **1** for the left overhang and press **RETURN.**
13. Enter **1** for the right overhang and press **RETURN.**

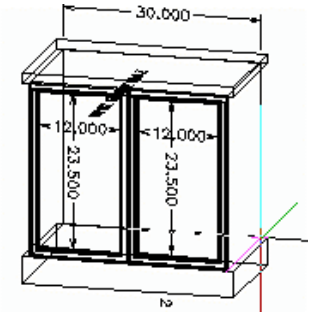
14. Press **RETURN** to draw the top.
15. **Return** for no second top.

DRAW A CABINET (20W3046)

Wall cabinet

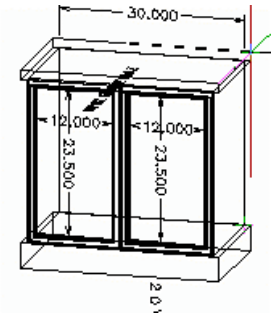


1. Set a *POINT XYZ* (**:**), enter coordinates **0**,**78**,**0** and **RETURN**. The hutch will be 80 inches tall. The 78 is to the top of the cabinet, the crown molding will finish the height.
2. Use the mouse to move the courser to a right corner of the base cabinet. Whether you use a front, rear, top or bottom corner does not matter.



3. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button. This established the width of the cabinet.

4. Use the mouse to move the courser to any top corner of the counter top.



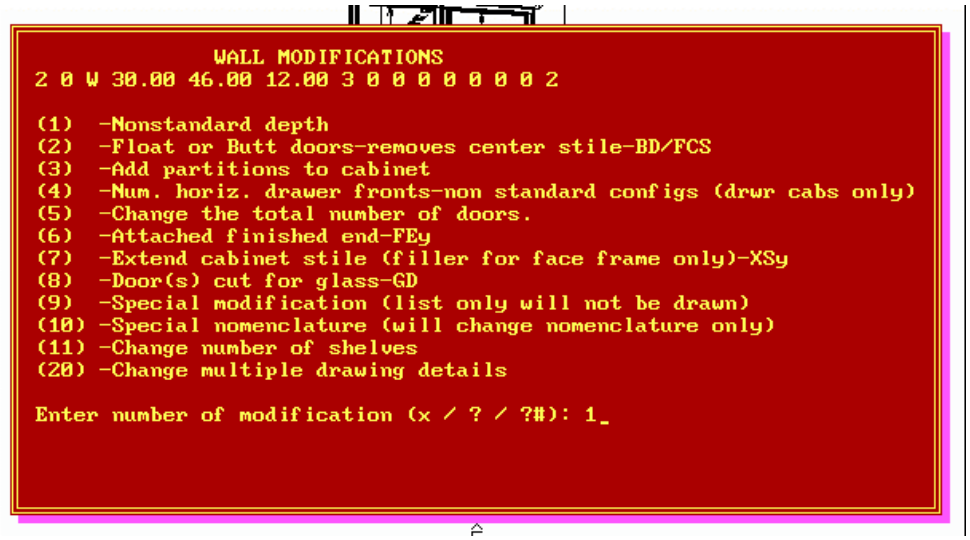
5. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button. This established the height of the cabinet.

6. Press the **SPACE BAR** and type **WALLS** and press **RETURN**.

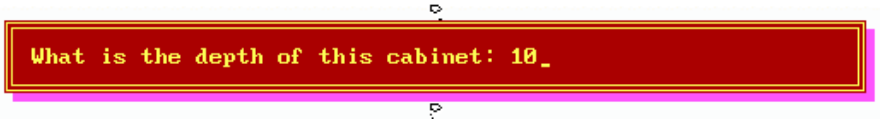
```
                WALL CABINET NOMENCLATURE
 (1) W          Standard Wall Cabinet
 (2) WOS        Wall Open Shelves
 (3) WBC        Wall Blind Corner
 (4) WDC        Wall Diagonal Corner
 (5) WPC        Wall Pie cut
 (6) WDAG       Wall Diagonal Appliance Garage
 (7) WAG        Wall Cabinet Appliance Garage under
 (8) WCD        Wall Counter Drawer
 (9) WAC        Wall Angle Cabinet
(10) More       Wall Corner Open Shelf Cabinets
(11) WP         Peninsula Cabinet
(12) WPOS       Wall Peninsula Open Shelves
(13) WPBC       Wall Peninsula Blind Corner
(14) WPDC       Wall Peninsula Diagonal Corner
(15) WPPC       Wall Peninsula Pie cut Corner
(16) More       Wall Micro Oven Cabinets
(17) CAG        Counter Appliance Garage
(18) CDAG       Corner Appliance Garage
(19) More       Knick Knack Shelves
(20) WH         Hood cabinet
(21) More       Wall Filler
(22) Combo      Combined Cabinet

Enter cabinet nomenclature number (x / ? / ?#): 1_
```

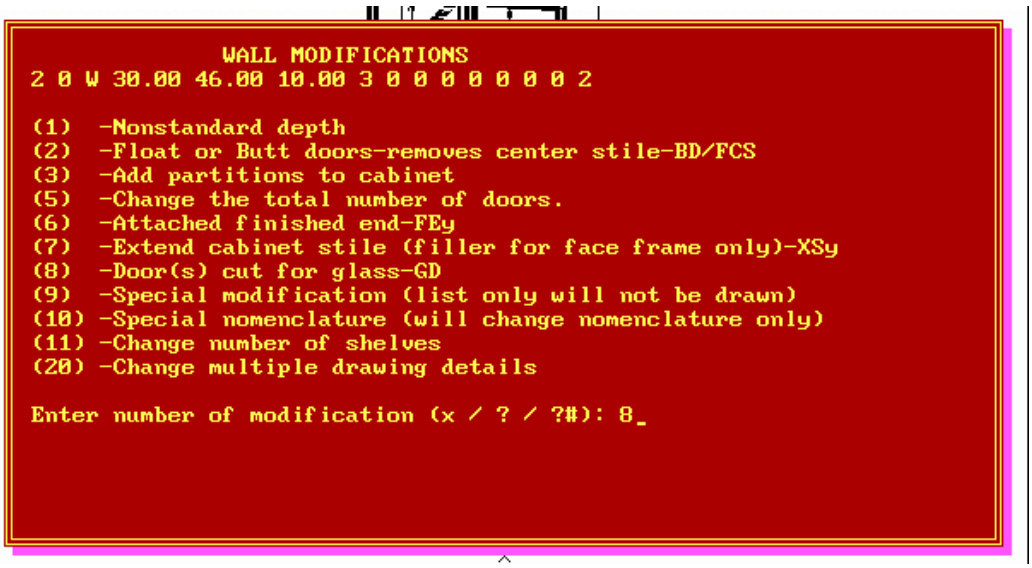
7. Enter the **number** for "Standard Wall Cabinet" and press **RETURN**.



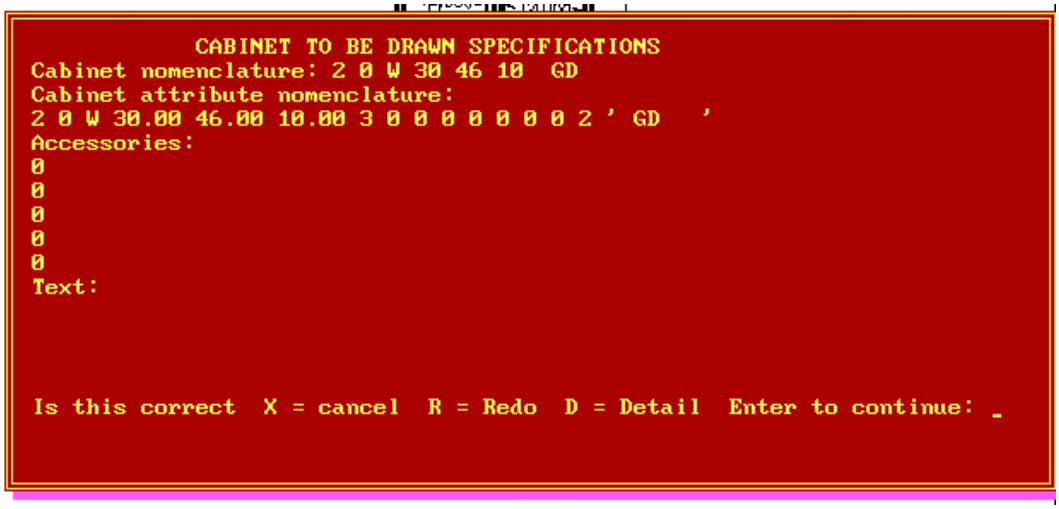
8. In the *CABINET MODIFICATION* window enter the **number** for "*Nonstandard Depth*", and **RETURN**.



9. Enter **10** for the new depth and **RETURN**.

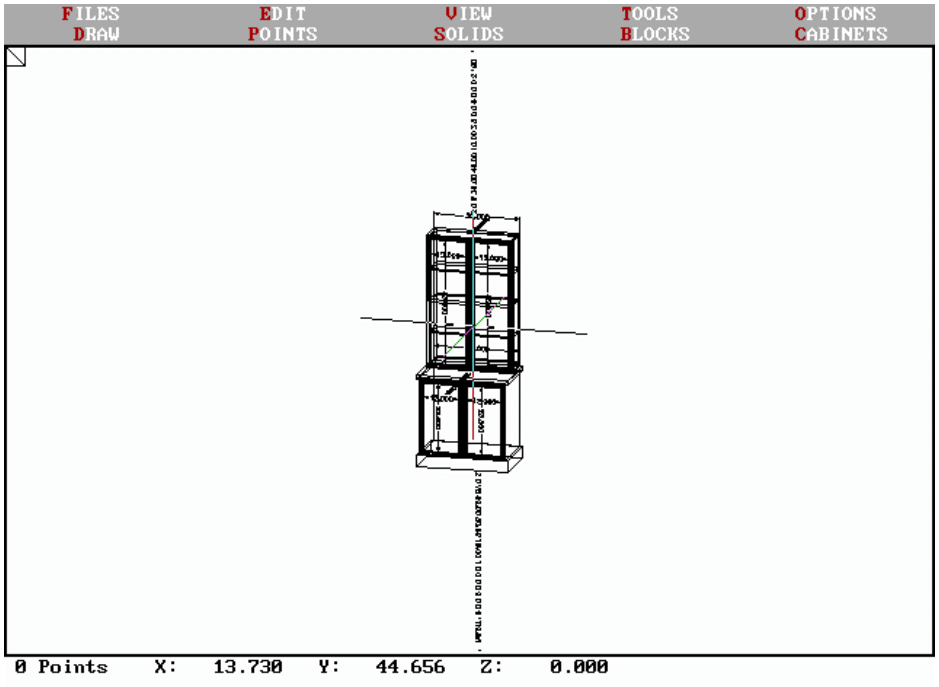


10. Enter the **number** for "*Doors Cut For Glass*", and **RETURN**.



11. Press **RETURN** at each query, until the *CABINET TO BE DRAWN* window is displayed. The cabinet to be drawn should be 2 (doors), 0 (drawer), W, 30 (width), 46.00 (height), 10 (depth). Press **RETURN** to draw the cabinet if this is correct.

12. Enter **Y** (or return) for a framed cabinet and **RETURN**.

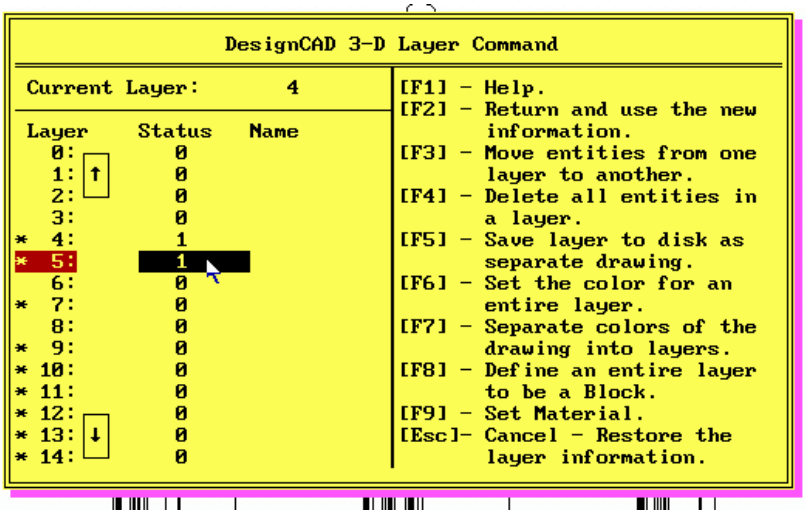


13. To view all of the drawing, use the *ZOOM* command (**Z**) and enter a value of **0** then **RETURN**.

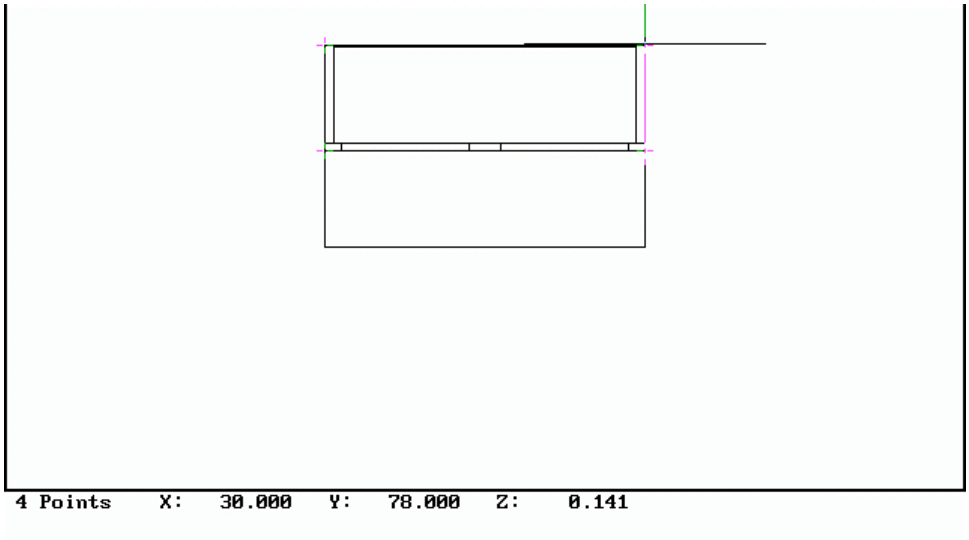
MOLDING

1. Press the **SPACE BAR**, type **CAB** and **RETURN**.
2. Enter the **number** for "*Miscellaneous Parts*" from the menu and press **RETURN**.

3. Enter the **number** for *"Misc Programs"* from the menu and press **RETURN**.
4. Enter the **number** for *"All Layers Off"* from the menu and press **RETURN**. This program can also be access by typing "LF" at the command prompt line

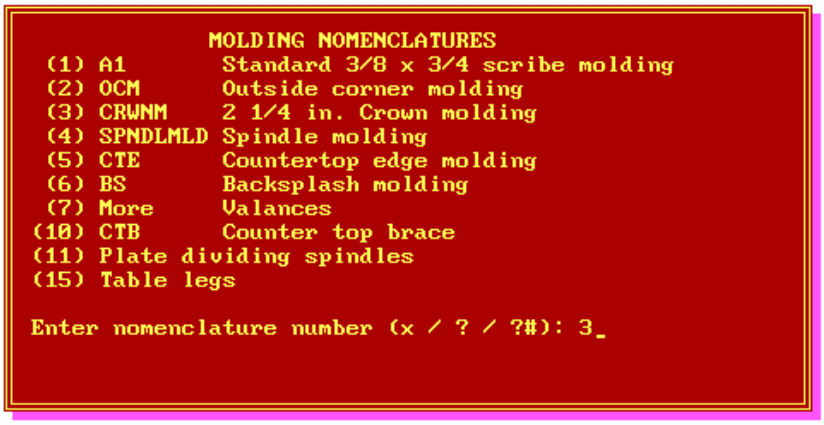


5. Enter **4** and **RETURN** to set the active layer. Turn on layer 5 (status = 1) by double clicking the 0, and press **F2.** Layer 4 & 5 are now the only layers on.
6. Press the space bar and type **ME PLAN** and press **RETURN.** The ME part of this command is a DesignCAD command for 'macro execute'. Any time you use a macro you will need to use this command. This executes the macro "PLAN" which will change the "VIEW" to a top or plan view.
7. To view all of the drawing and center it, use the *ZOOM* command (**Z**) and enter a value of **0** then **RETURN**.
8. Hold down the **CTRL** and **SHIFT** key while dragging the mouse, to bring the **Y** value to **78** (this is the elevation of the top of the cabinets).

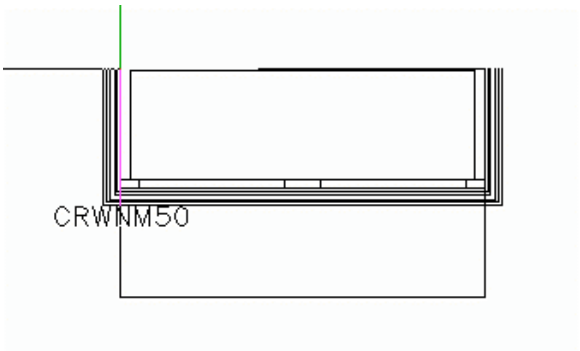


9. Starting at the wall on the left of the cabinet, use the *GRAVITY POINT* (**.**) *or* use the right mouse button. Place points at each change of direction corner until you are at the other wall, or end of the molding. Because the molding will draw and measure from the first to the last point, do not include any space that does not have molding.

10. Press the **SPACE BAR**, type **MOLD** and **RETURN**.



11. Pick *"2 1/4 Crown Moldings"* from the *MOLDINGS* menu. You will be asked to set the points for this molding, which you have already done, press **RETURN** to draw the molding.



12. Press the space bar and type **ME RETURN** and press **RETURN.** The ME part of this command is a DesignCAD command for macro execute. Any time you use a macro you will need to use this command. This executes the macro “RETURN” that will change the “VIEW” to a 3D view.

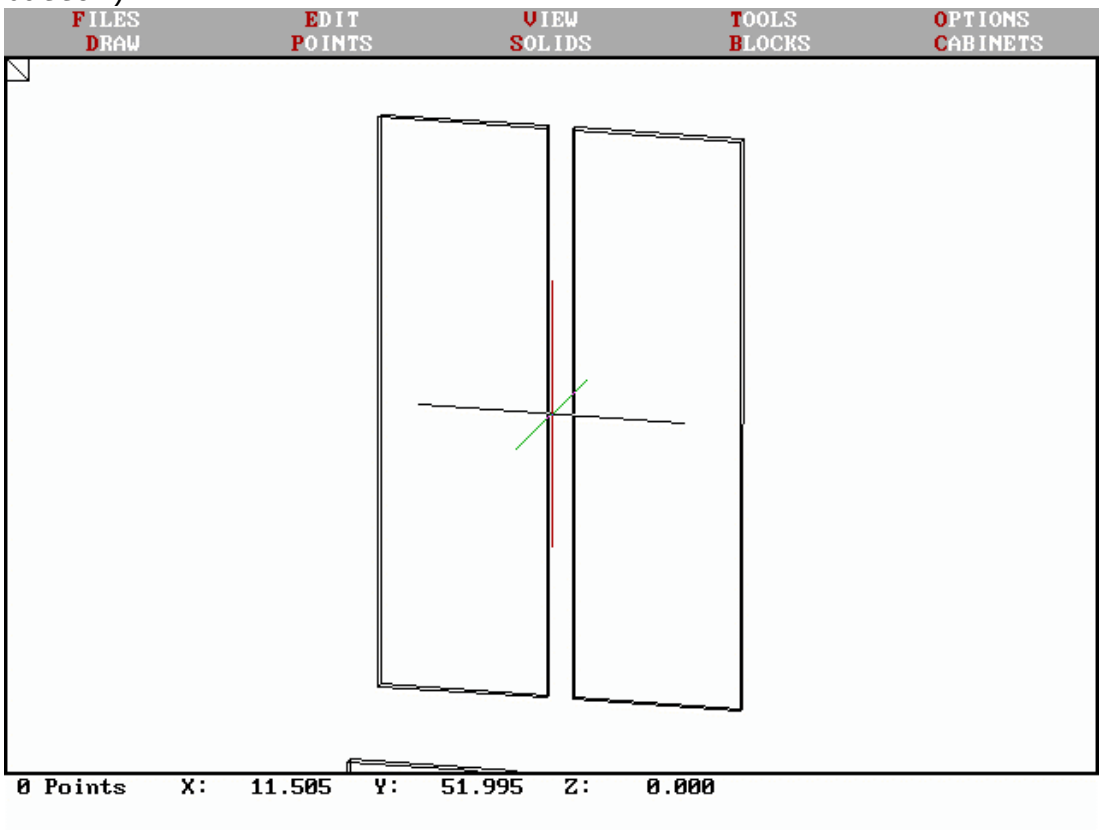
SET UP TO DRAW A CABINET DOOR

Wall cabinet door

1. Press the **SPACE BAR**, type **CAB** and **RETURN**.
2. Enter the **number** for “*Miscellaneous Parts*“ from the menu and press **RETURN**.
3. Enter the **number** for “*Misc Programs*“ from the menu and press **RETURN**.
4. Enter the **number** for “*All Layers Off*” from the menu and press **RETURN**. This program can also be access by typing “LF” at the command prompt line –or- using the pull down menu.
5. Enter **13** and press **RETURN.** Layer 13, (1/2 inch overlay), is now the only layer on.
6. Press **F2** to return and use the new active layer.

   You will be centering the drawing area with these next steps. Use the mouse to move the courser to the center of the wall cabinet.

7. *POINT SET* (**0**), (Press the number 0 *or* use the left mouse button).

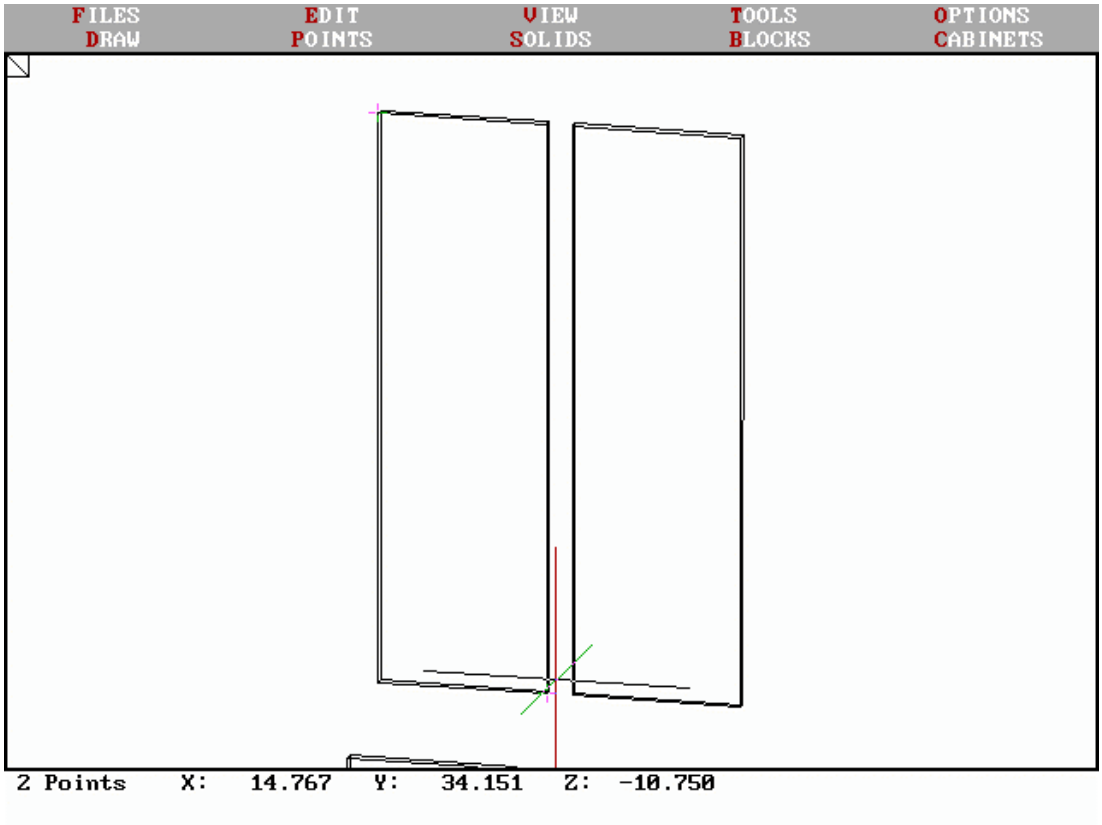


8. ZOOM (**Z**) enter a factor of **1.75** and **RETURN.** If the door's corners cannot be easily seen repeat the *ZOOM* entries with different values until they are.

DRAW A CABINET DOOR

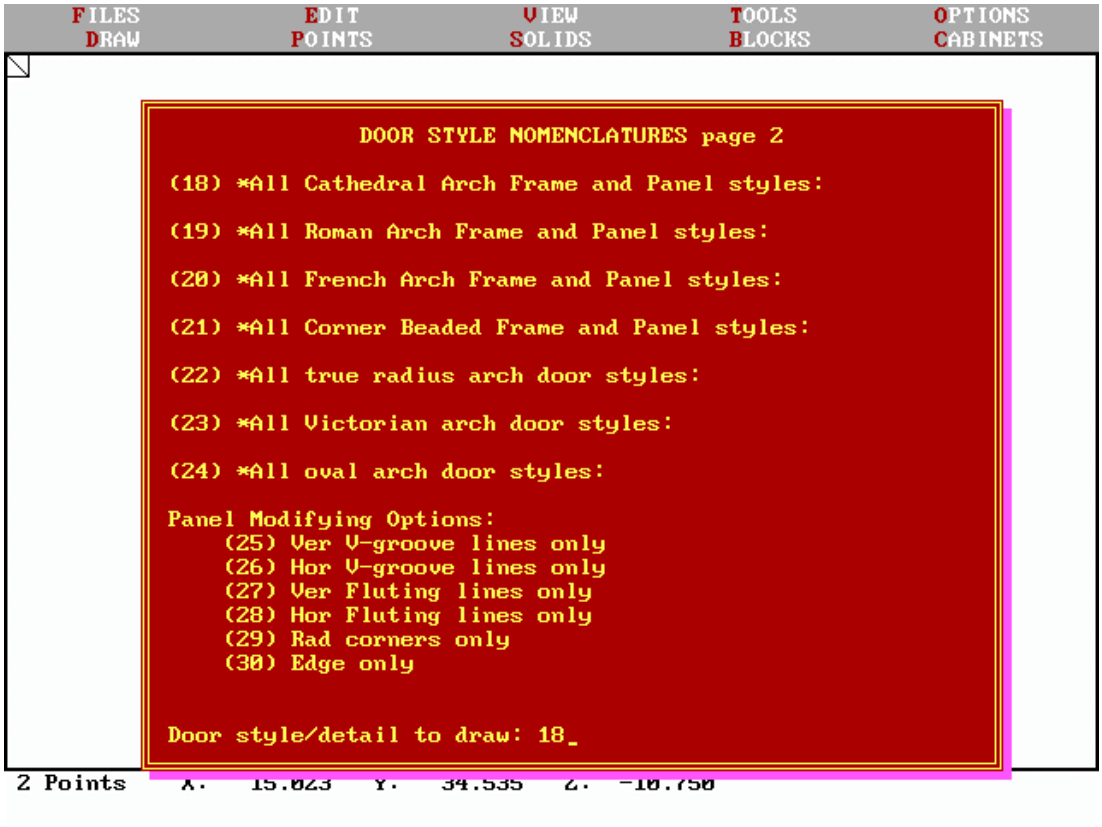
Wall cabinet

1. Use the mouse to move the courser so that the Z coordinate is approximately -10.75 or a little smaller. Do this by moving the mouse while holding down the CTRL & SHIFT keys. If you lose sight of the courser press CTRL & H and the courser will be returned to the center of the screen.
2. Use the mouse to move the courser to the upper left front corner of a door. The location of this point is important, if it is placed at the back corner of this door Designer Plus will draw the styled door behind the blank door. It will appear to be drawn correctly until you ask DesignCAD 3D to hide lines, then the styled door will not be visible. If you can catch this type of error when it happens you can block move or block delete the door and redraw it. However if you want the door list to be accurate and several doors have been drawn in the wrong position you will have to delete them manually.

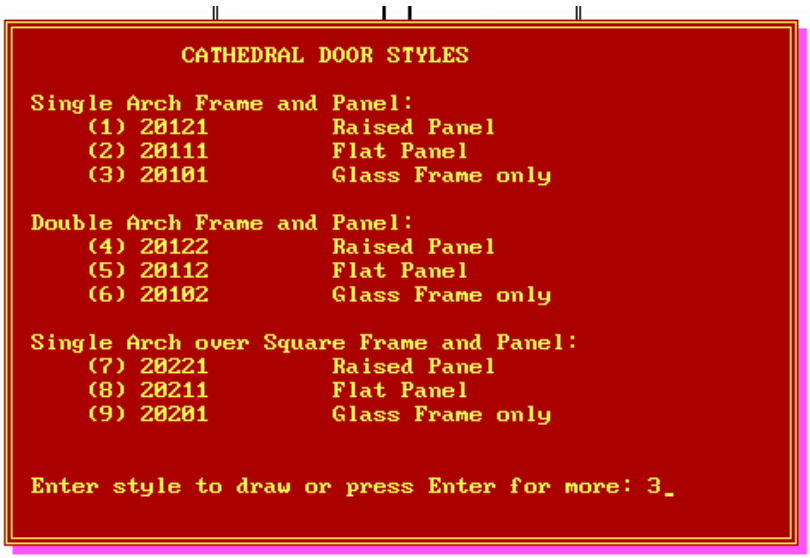


3. Set a point on a previous point *GRAVITY POINT* (.) *or* use the right mouse button. This snaps a point on the nearest existing point. If the point set's Z value is incorrect press ESC (this removes the last item entered) and try again.
4. Use the mouse to move the courser to the lower right front corner of the same door (Z = -10.75).
5. Set a point on a previous point *GRAVITY POINT* (.) *or* use the right mouse button.
6. Press the **SPACE BAR**, type **DOORS** and press **RETURN**.

7. Press **RETURN** at each query, until the second screen of the *DOOR STYLE NOMENCLATURE* window is displayed. The query shown above is used to enter a common data file for drawing doors on cabinets drawn using other datas. DRAW is the default data type that will be used if no text is entered.



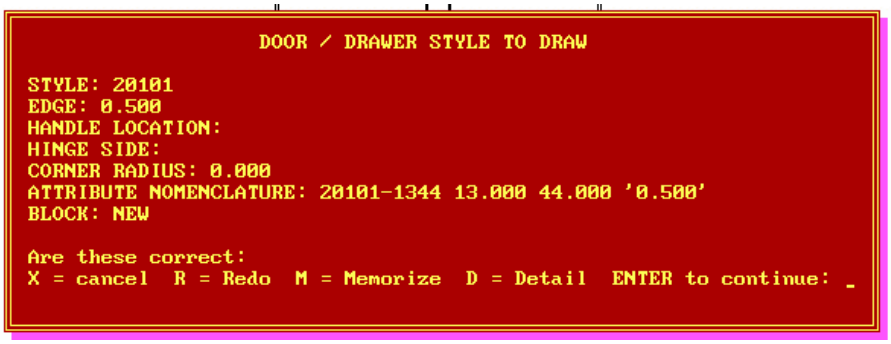
8. Enter the **number** for "All Cathedral Styles" from the menu and press **RETURN**.



9. Enter the **number** for "Single arch glass frame only" (*20101*) from the menu and press **RETURN**.

10. Enter **.5** when asked for the size of edge detail and press **RETURN**.

11. Press **RETURN** at each query, until the *DOOR STYLE TO DRAW* window is displayed.

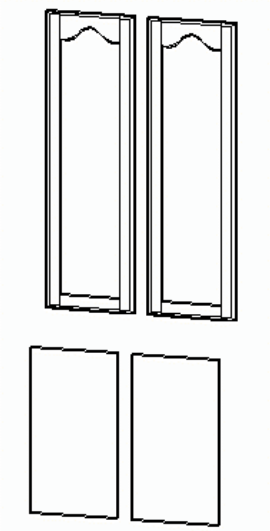


12. Press **RETURN** at the *DOOR STYLE TO DRAW* window to draw the styled door. The DOOR program of Designer Plus requires a door or panel be present in order to draw a styled door. If you want to change the style of a door previously drawn, draw the new door over the existing door. Designer Plus will delete the existing door and draw the new one in its place. If you want to change the overlay door type for all styled doors drawn, delete layers 16 - 26 (the styled door and edge layers), then redraw the styled doors using the correct door blank. However you cannot go back and reuse the deleted overlay type again. Move layer 20 to another layer if there is any possibility you will need that door overlay again.

13. Use the mouse to move the courser to the top left front corner of the other door on this cabinet.

14. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.

15. Press the **SPACE BAR**, type **BI** (for *BLOCK INSERT*) and press **RETURN**. You could have repeated the steps above, but if the doors are the same size this is faster.

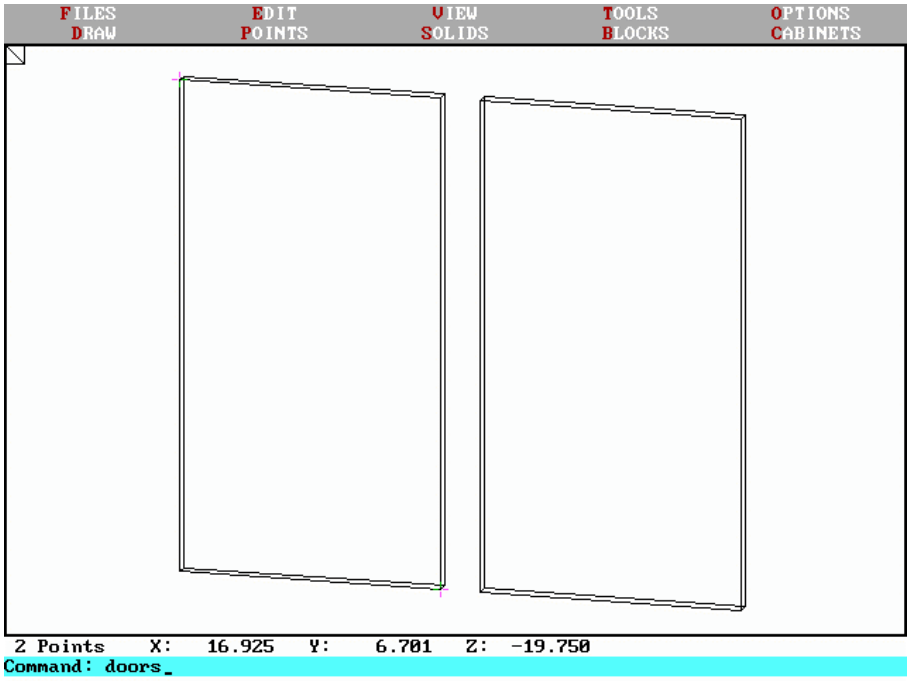


16. To view all of the drawing use the *ZOOM* command (**Z**) and enter a value of **0**, then **RETURN**.

DRAW A CABINET DOOR

Base cabinet

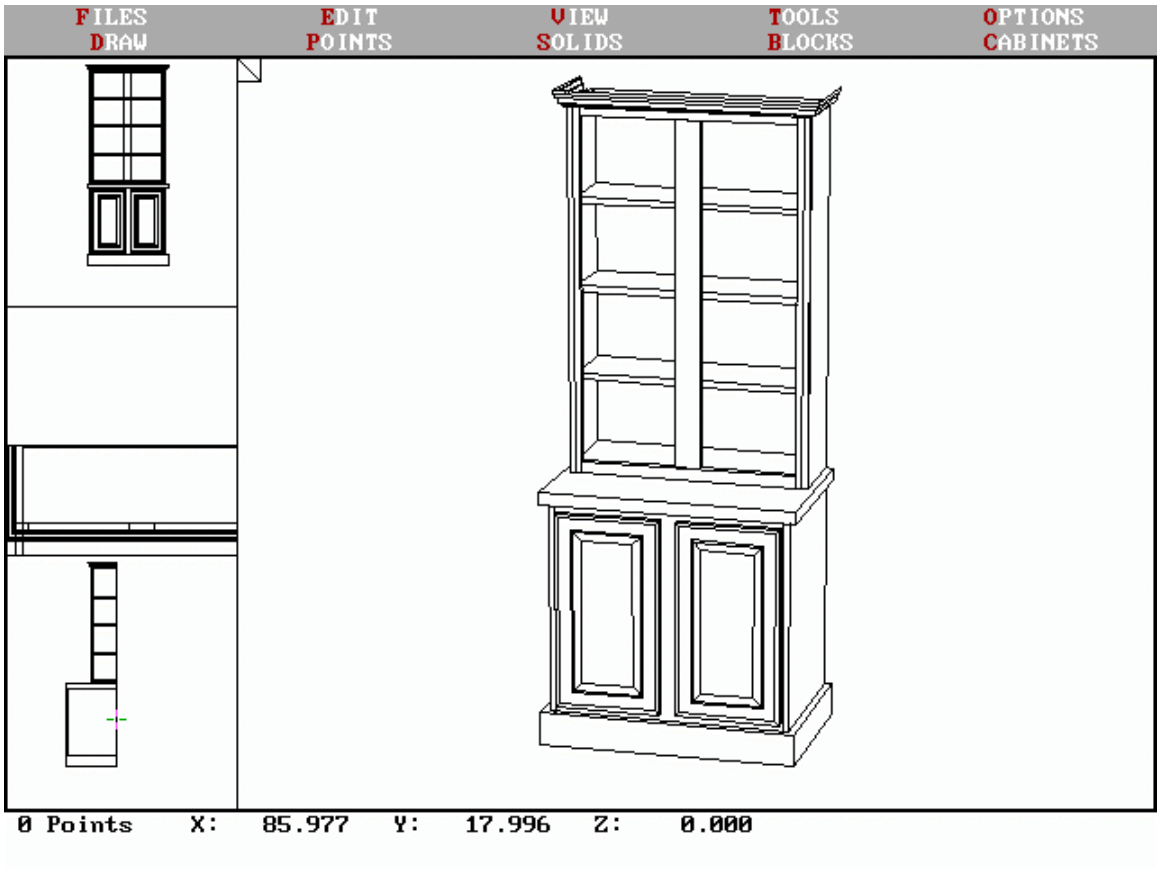
1. You will be centering the drawing area with these next steps. Use the mouse to move the courser to the center of the base cabinet.
2. *POINT SET* (**0**), (Press the number 0 *or* use the left mouse button).
3. *ZOOM* (**Z**) enter a factor of **3** and **RETURN.** If the door's corners cannot be easily seen repeat the *ZOOM* entries until they are.
4. Use the mouse to move the courser so that the Z coordinate is approximately -19.75 or a little smaller (toward you on the screen). Do this by moving the mouse while holding down the CTRL & SHIFT keys. If you lose sight of the courser press CTRL & H and the courser will be returned to the center of the screen.
5. Use the mouse to move the courser to the upper left front corner of a door. The location of this point is important, if it is placed at the back corner of this door Designer Plus will draw the new door behind this door without deleting it. It will appear to be drawn correctly until you ask DesignCAD 3D to hide lines, then the styled door will not be visible. If you can catch this type of error when it happens you can block move or block delete the door and redraw it. When several doors have been drawn in the wrong position you will have to delete them manually if you want the door list to be accurate.
6. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button. This snaps a point on the nearest existing point. If the point set's Z value is incorrect press ESC (this removes the last item entered) and try again.
7. Use the mouse to move the courser to the lower right front corner of the same door (Z = -19.75).
8. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.



9. Press the **SPACE BAR**, type **DOORS** and press **RETURN**.
10. Press **RETURN** at each query, until the *DOOR STYLE NOMENCLATURE* window is displayed.
11. Enter the **number** for "RP10" (Raised panel) from the menu and press **RETURN**.
12. Enter **.5** when asked for the size of edge detail and press **RETURN**.
13. Press **RETURN** at each query, until the *DOOR STYLE TO DRAW* window is displayed.
14. Press **RETURN** at the *DOOR STYLE TO DRAW* window to draw the styled door. The DOOR program of Designer Plus requires a door or panel be present in order to draw a styled door. If you want to change the style of a door previously drawn, draw it over the existing door. Designer Plus will delete the existing door and draw the new one in its place. If you want to change the overlay door type for all styled doors drawn, delete layers 20 and 21 (the styled door and edge layers), then redraw the styled doors using the correct door blank. However you cannot go back and reuse the deleted overlay type again. Move layers 20 and 21 to another layer if there is any possibility you will need that door overlay again.
15. Use the mouse to move the courser to the top left front corner of the other door on this cabinet.
16. Set a point on a previous point *GRAVITY POINT* (**.**) *or* use the right mouse button.

17. Press the **SPACE BAR**, type **BI** (for *BLOCK INSERT*) and press **RETURN**. You could have repeated the steps above, but if the doors are the same size this is faster.

18. To view all of the drawing use the *ZOOM* command (**Z**) and enter a value of **0** then **RETURN**.



19. To view your drawing use the *LAYER* (**L**) command and turn on layer numbers 4,5,6,7,9,20 and 21 and **F2** to use the new layer information. Hide lines with the *HIDE LINES* command from the "*VIEW*" menu of DesignCAD 3D. You can change the view with the view command and shade the drawing with the shade command.

MATERIALS & PART LISTS

1. You are finished drawing, now let's get useful data from the drawing. Press the **SPACE BAR**, type **CAB** and press **RETURN.**
2. Enter the **number** for "Reports".
3. Enter the **number** of one of the options.
4. You can enter the **path** for where you want to store the report and the **name** for the file, or just the file name. Designer Plus will add the extension "txt" to the file name, and if no

path is designated use the same path as your drawing directory. Press **RETURN** to create and save the report.

This file is an ASCII text file, and it is ready to be used in a word processor or a spreadsheet.

Exit DesignCAD 3D by using the F8 key.

You can edit the drawing by replacing the styled doors, and applying glass frames to the upper section sides to see into the cabinet. To replace the styled doors all layers related to the styled doors must be on, see the layer names in the Layer (L) command. Using layer 20 as the active layer draw new styled doors over the old just like you did over the blank. For putting glass frames on the end of the cabinet it must be rotated so that the end panel is in the x-y plane and have the cabinet solid freed (SF). For framed cabinets the door locator points are on the corners of what would be the paneled section of the end panel; and for frameless cabinets the points are the corners of the end panel.

Section 4

SHORT TUTORIAL using SYMBOLS

START A NEW DRAWING

1. Because we are going to use drawings found in the samples sub-directory when the *PATHS* window is displayed set the path for where DesignCAD looks for 3D drawings to: ***YOUR PATH/SAMPLES*** and use **F2** as the exit option to use but not save the paths. Refer to starting a new drawing page 4-3
2. From the setup to start a new drawing there is a query left on the screen for wall length. Press **ENTER** and then press ***ESC*** (escape key) (for *UNDO*) to clear the text from the screen, a wall is not going to be drawn.

ADD A CABINET (Hutbase)

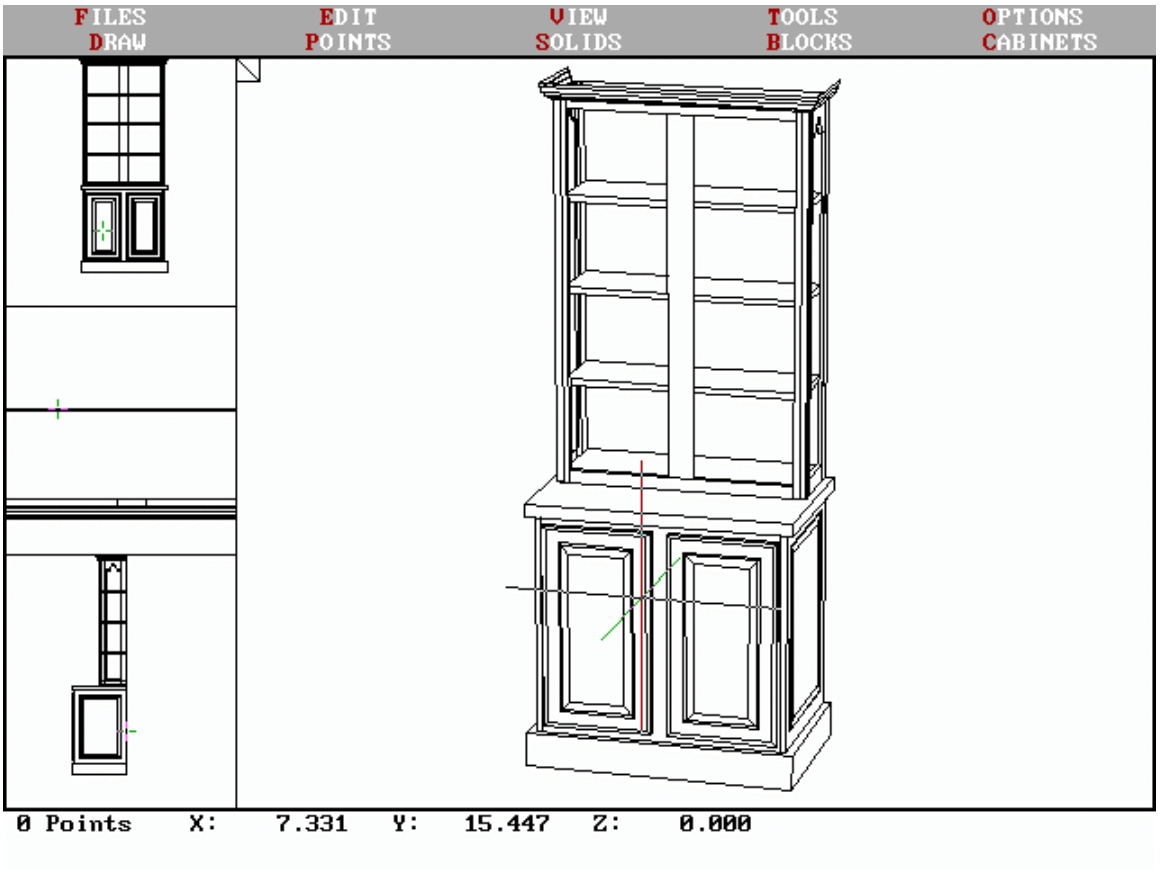
Base cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0**,**0**,**0** and **RETURN,** this is the left rear corner of the cabinet because the cabinet was saved with a point on this spot.
2. *Block Load* the hutch base cabinet. Press the ***SPACE BAR***, type **BLO** (*Block Load*) **space** and **HUTBASE** (drawing name) and press **RETURN**. The path is not required because it was set with the path statement when starting this section. The counter top was drawn and attached to the base cabinet.

ADD A CABINET (Huttop)

Wall cabinet

1. Set a *POINT XYZ* (**:**), enter coordinates **0**,**78**,**0** and **RETURN**. The hutch will be 80 inches tall. The 78 is to the top of the cabinet box, the crown molding will finish the height. This handle location point corresponds to the point set when the drawing was saved.
3. *Block Load* the hutch top section. Press the ***SPACE BAR***, type **BLO** (*Block Load*) **space** and **HUTTOP** (drawing name) and press **RETURN**. The path is not required because it was set with the path statement when starting this section. The molding was drawn and attached to the upper cabinet.



To view your drawing use the Layer (L) command and turn on layers 4,5,6,7,9,20 and 21 and F2 to use the new layer information. Hide lines with the Hide lines command from the VIEW menu of DesignCAD 3D. You can change the view with the view command and shade the drawing with the shade command.

5 NOTES ON THE CABINETS

MISCELLANEOUS USED FOR ALL CABINETS

Saving and Opening Drawings using Designer Plus:

DPOpen and DPSave are used to create and open drawings incorporating a description of what the drawing is. The description information is stored in the directory in a file called '*FILES.RLD*'. When starting a new drawing the path is set and Designer Plus will look in the directory specified for '*files.rld*'. If this file does not exist then DPSave will create it when you save a drawing using this program, or give a message that there are no descriptive names saved in DPOpen.

To delete files from the list, delete the drawing file from the directory using a file manager such as Windows Explorer. When DPSave is executed next, any files not found in the directory are deleted from the list in '*files.rld*'. The name will not be displayed with DPOpen but it remains in the file list. To make deleting more secure in a Windows environment: open '*files.rld*' using DPOpen, then switch between DC3 and Windows Explorer using alt-tab, and delete the DOS named drawing file matches desired.

Changing drawing or part-listing data files:

When you select the option to change drawing data files the first screen displayed is the *Drawing data selection* menu. Unless you have changed the name of an option number "No name saved" is displayed for each option. To change one of these options to a drawing data you have created, select "*Rename*" and enter the number to change, then the new name, for the option number you wish to change. An old or incomplete data type can be erased with "*Delete*"; this will remove the name from the list but it does not alter the data files. "*Enter a New*" name will not add it to the saved list but uses the name entered for the drawing data files only. Pressing Enter without entering a value uses the current values without any changes.

To turn part listing on or off you must be starting a new drawing. Enter *Y* to make changes. Then, if you have saved a configuration enter Y, otherwise press enter. Enter the new drawing data file or press enter twice to reuse the current data. If part listing is 'ON' enter 10 to turn it "OFF". This turns off part listing and sets the data file to "OFF". If part listing is currently 'OFF' enter 'N' for the current option not being correct, this changes Part listing to 'ON'

and part listing data files to "Draw" which is the default. It then returns the operation to the beginning of the sequence at the *Drawing data selection* menu. Where you can change or accept the data file choice.

Custom Windows used with the shading option:

You can draw and save up to six windows that can be loaded as custom windows when starting a new drawing using Designer Plus. Create your window and save it in the DesignCAD 3D directory. Name it "*win1.dw3*", "*win2.dw3*", "*win3.dw3*", "*win4.dw3*", "*win5.dw3*" or "*win6.dw3*". Then when you are asked for the window to use, enter the number for the window you have saved. Window width for making the drawing are based on the unit width given for the file name, the height is 40. One point is set at the upper left inside corner. Metric users remember to scale the drawing so that Designer Plus will enlarge it to the proper size. See section 7 on the *.apl drawings.

Custom House Doors used with the shading option:

You can draw and save up to three house doors that can be loaded as custom doors when starting a new drawing using Designer Plus. Create your door and save it in the DesignCAD 3D directory. Name it "door1.dw3", "door2.dw3" or "door3.dw3". Then when you are asked for the door to use enter the number for the door you have saved. Doors are 36 x 82 units with block handle at the floor on the left side. Metric users remember to scale the drawing so that Designer Plus will enlarge it to the proper size. See section 7 on the *.apl drawings.

Plane of drawing:

With Designer Plus all drawing is done on the XY plane. The depth is always a negative (-) distance (toward you), on the Z plane. The only exceptions to this are the molding and door end panel drawings, which could be either.

Pie-cut, diagonal and angle cabinets locating:

To set points for these cabinets the first point set is the back corner diagonally opposite the front. The second point is the width on the x-axis. The length on the adjacent (z-axis) wall is automatically computed as being the same as the width. Pie-cut cabinets allow a third point for base, vanity, or tall cabinets or a fourth point for a wall cabinet, used to calculate the adjacent wall length for unequal cabinet wings.

Blind Corner cabinet, Frameless construction only:

Layer 15, the frameless door layer, includes a panel flush with the door. This allows the use of Blum 95-degree blind corner hinges without any drawing editing. If you use some other construction method for these corners you will need to delete this panel.

Modification window descriptions:

You can use as many modifications as you need. However only four will be included in the nomenclature.

- Change Height - Changes the height from the default.
- Change Depth - Changes the depth from the default.
- Change number of doors - Changes the number of doors from the default.
- Change number of drawer fronts - Changes the number of drawer fronts from the default.
- Change drawer front height - Changes the drawer front height from the default, 0 height = 0 number of fronts.
- Float or Butt doors - Butt removes center stile, and Float only affects part listing.
- Extend cabinet side frame member (face frame only) - adds a filler to the width of the standard stile, a negative (-) value subtracts from the stile.
- Change toe kick depth - Changes the depth of the toe kick from the default. A negative (-) value extends the toe kick beyond the front of the cabinet.
- Change toe kick height; Changes the toe kick height from the default.
- Add toe kick to back - adds a toe kick to the back of a cabinet, not available on pie cut, angle, or diagonal cabinets. A negative (-) value extends the toe kick.
- Add toe kick to end - adds a toe kick to one or both ends. A negative (-) value extends the toe kick beyond the side of the cabinet.
- Change nomenclature - Changes the letter group of the nomenclature or you can enter all of the nomenclature. The default is to change the letter group only, does not change the drawing.
- Cut doors for glass - adds text to the nomenclature designating doors cut for glass. For standard, peninsula and diagonal wall cabinets the cabinet box is changed to the open shelf box, with doors. This is done so that the interior of the cabinet will be visible when hiding lines.
- Change number of shelves - changes the number of shelves in the cabinet. This option is also available in the accessories window if you are short modification space. Note when a roll out is specified, one shelf is

automatically deducted from the total number of shelves for each roll out shelf.

- Add partitions - enters a number in the nomenclature and adds a partition to the parts list.
- Pie-cut cabinets allow you to change the length on the adjacent wall from the default of both being equal.
- The last option allows multiple drawing dimension changes but only use this if you need more than four (4) modifications. Pressing enter without entering data uses the current value. This is used only for this cabinet and will not change the data files.

Door number:

Use this option to add dividers to open shelf cabinets.

Butt doors:

This modification is not available for all cabinets.

Normally you are asked if this modification is for butt doors or floating center stile. The differences are that the butt door option removes the dividing stile from the drawing and the part list. The floating center stile does not change the drawing but will change the part list, specifically for rollouts.

If butt doors are selected for peninsula cabinets remember that the dividing stile is removed from both sides, so your choice of door quantity should reflect this.

*Using this modification with open shelf cabinets removes any vertical divider that would have been placed otherwise.

The Cabinet Modification program DORMOD.BSC, can be used to change the doors/drawer fronts to other configurations.

ACCESSORY WINDOW

Lazy Susans:

At the accessory window by selecting the type of lazy susan you will be asked for the size. Enter the ordering number if you wish.

Add shelves:

This accessory adds the number entered to the number of shelves listed by default by Designer Plus. This is different from the modification option where the new *total* number of shelves is entered.

Accessory sizes:

Designer Plus assigns sizes for accessories by equivalent cabinet size. For instance a cutlery drawer insert in a 3 drawer wide cabinet will be equivalent to a single drawer cabinet 1/3 of the cabinet's width.

Drawing data files:

When the option to change data files is asked for, a file name must be entered or the default data files "draw" will be run. If you enter a name that has not been setup and try to run a drawing program you will get a "file could not be opened" message. This is because the data file does not yet exist. To create data files for other construction types or practices see the section on drawing file setups, Section eight (8).

Drawing cabinets right to left:

When drawing a cabinet right to left, the block handle will always be placed as noted for each cabinet type. You can change the location of the block handle by placing a point where you want the new block handle and entering *BH* (block handle) at the command line or use the Blocks menu. The new block handle is set at the new location.

Part Listing:

Parts are listed vertically above wall cabinets and below others. To view and edit this list in the drawing, at the Sys Parameter menu set "Show Attributes" to "Y". One gravity point (GV) set at the extreme left of the attribute can be used to move or delete the item. Working a drawing left to right will make reading these attributes easier. Because of where the part listing attributes are placed, when you delete a cabinet other than just after it is drawn, you should have the "Show Attributes" set to "Y" until you are done deleting items.

Text:

Text that is placed by Designer Plus can be moved if not in an easy to see place, this is common on blind corners. Move text by:

- Clear any block in memory, at the BLOCK menu use Block Reset (BRE).
- Place a gravity point (GV) on each line of text at its extreme left or right end.
- Use the BLOCK ADD command from the BLOCKS menu.
- Place point at an easy to use reference place.
- Assign a BLOCK HANDLE (BH).
- Place a point at the new handle location for the text and use BLOCK MOVE (BM).

Pricing nomenclature:

To turn on manual pricing nomenclatures at the "Start a new drawing" from the CAB menu, enter a "1" at the manual pricing nomenclatures option. A window will appear just before the cabinet check window for entering the nomenclature. Pressing Enter without entering text in this window uses the default nomenclature created by Designer Plus. To use the drawing nomenclature as the attribute nomenclature use the equal (=) key to copy it.

Copying the data files:

To save time for custom drawing applications you can copy the current drawing and construction data files. To do this at the Data Set Up main menu (CABDRWSU) choose Copy Data Files. Enter the new name for the file. Data file names must be less than five (5) characters long.

Interrupting Designer Plus:

After the program finishes drawing the cabinet wait for the courser to reappear. When Designer Plus finishes drawing it then adds each component of the cabinet just finished to a block, then puts a block handle on the block. If you start using the keyboard before the cursor is returned, the keyboard commands will override the Designer Plus commands and cause a collapse of Designer Plus and return to DesignCAD 3D. The drawing will not be finished or blocked.

Correcting errors in cabinet placement:

Keep track of where you are when snapping points for cabinets, especially on the wall cabinets. The dimension point is very close to the top of a cabinet. It is very easy to snap to the dimension rather than the cabinet. The cabinet is then drawn too high. For any cabinet placement problem, wait until the drawing is complete and use the block move command to move it. Do this by placing a point where the handle of the cabinet should be, then use the *BLOCK MOVE* (BM) command.

Crashing the system:

Be careful when entering sizes. You will hang the system if you enter mathematical symbols (+, -, *, /).

Attribute errors:

If you get an Attribute input window displayed on the screen when the program is supposed to be entering it for you, the nomenclature created from the data entered to draw the cabinet is too long. When this happens enter the order or pricing nomenclature by hand at the window that is displayed, dropping some of the precision place holders, keeping it less

than 50 characters and spaces long. If you press enter without text in the window, the program will end and the cabinet will not be blocked. If you can duplicate the sequences used to receive this error please email them to me at support@kitchen-consultants.com.

Block Define Errors:

If you are trying to draw a single cabinet only, and are getting a "block define error" you need to have some other element drawn before starting Designer Plus. You can do this with a simple line, and delete it when you are finished.

Cabinet modification error messages:

If you select a modification not allowed for that cabinet an error message will appear and the application will terminate. You will need to rerun the program and not use that modification.

SYMBOL SPACE ERROR message:

Occasionally an "*out of symbol space*" error message will occur and be displayed on the screen. What has happened is DesignCAD 3D can only keep track of 150 variables. You and Designer Plus have asked for more than 150 variables. If you keep the number of modifications/accessories lower for any problem cabinet, you should be able to avoid this happening. Unfortunately the Designer Plus program is terminated at this point and the cabinet will not be blocked. If you need some of the drawing that was not completed you will have to use the DELETE command to remove what has been drawn, and redraw the cabinet using less options. If you find this happening with a predictable set of steps please let me know what they are so I can correct this problem.

MODIFYING CABINETS ALREADY DRAWN:

When Designer Plus finishes drawing a cabinet it is then blocked and defined as a solid. This makes editing a drawing easier because all of a cabinet is treated as a single entity. You can put a single point anywhere on the cabinet and remove all of it with the erase command. Should you need to edit part the cabinet (for parts lists) you will need to 'undefine' the solid. This is done by placing a point on the cabinet and using the solid free command from the solids menu or by entering SF on the command line.

Styled doors are separate solids and must be treated individually.

WALL CABINETS

Points:

Points to set to draw a wall cabinet are:

1. - top rear corner to fix the Y and the Z values,
2. - horizontally opposite rear corner, used to calculate the width of the cabinet, (the left most point is the starting X value for drawing the cabinet),
3. – bottom, used to calculate the height.

If you have not entered enough points you will be asked for the missing information. A fourth point can be set to compute the length of the adjacent side, only for pie-cut cabinets with unequal side lengths.

Block handle location:

The normal block handle for wall cabinets is the upper left rear corner. Pie-cut, angle, and diagonal cabinets block at the back corner opposite the front.

Wall counter drawer cabinet:

Wall counter drawer cabinet face frame overlays, in order to align the doors with any cabinet next to it, and have the flush inset door layer (10) be usable as a construction drawing, the extra wide divider is used between the upper and lower sections. If you use part listing so that the part list will be accurate you will be asked which divider to use. Drawing using the standard divider is possible, by using the multiple data change modification (20) option and changing the extra wide divider size to the same as the standard divider.

Combination cabinet:

Wall combination cabinets are all the same height but allow you to combine different section widths, blind corner, or standard cabinets only into a single cabinet.

Cut for glass modification:

If using the cut for glass modification on the standard, peninsula, or diagonal cabinets, the cabinet drawn is the standard open shelf version with doors added. This is so you can use the frame door styles and view the interior of the cabinet after hiding lines.

BASE AND VANITY CABINETS

Points:

Points to set to draw a base cabinet are:

1. - lower rear corner to fix the Y and the Z values
2. - horizontally opposite rear corner used to calculate the width of the cabinet.

The left most point is the starting X value for drawing the cabinet. If you have not entered enough points you will be asked for the missing information. A third point can be set to compute the length of the adjacent side for pie-cut cabinets only.

Block handles:

The normal block handle for base and vanity cabinets is the lower left rear corner. Pie-cut, angle, and diagonal cabinets block at the back corner opposite the front.

Desk drawer:

The first point to set is at the floor level. You will be asked for the distance to the bottom of the counter top. The block handle is also the left side at the floor. This point placement is much easier to use than one on the cabinet. If you need to enter the starting point at the top of the unit, place the point at a top rear corner and tell Designer Plus that the distance from the floor to the bottom of the counter top is 0.

Combination cabinet:

Base combination cabinets are all the same height and depth but allow you to combine different section cabinets and widths, blind corner, standard, sink bases, and drawer cabinets into a single cabinet.

Changing the default drawer height or number:

When changing the default drawer height or number, a 0 in any height spot will cause the number of drawers to change to 0 on the cabinet. This will affect some accessories. If you specify the number of drawers = 0 then ask for a drawer based accessory Designer Plus will give a divide by 0 error and stop the program.

Diagonal corners and angle cabinets:

Diagonal corners and angle cabinets cannot have any end, back, or toe kick modifications.

Lazy susan door hung cabinet:

This cabinet is the type where the doors rotate into the cabinet therefore it cannot have unequal door sizes. The cabinet is assumed to be square, so the extend stile option creates a smaller door. Also if you change the length of the adjacent side the doors will be the same as the smaller side and a wide stile will be drawn. When setting the size keep this in mind. There are no doors drawn in full overlay (layer 15).

Cabinets with drawers:

Sizes for drawer accessories are computed by dividing the width of the cabinet by the number of drawers. If you choose accessories for drawers, be sure there is a drawer. Some accessories will give a divide by 0 error if you try using them without a drawer. The size listed is not the actual size of the accessory, but the size of a one drawer wide cabinet.

Standard and Custom drawer bank:

If the modification for changing horizontal number of drawers is used, it affects only the top drawer(s).

Roll out shelves:

You are asked for the number of rollouts. The value you enter is also deducted from the number of shelves in the cabinet. If you want to keep the number of shelves the same and add rollouts also you also need to choose Add Shelves and enter a value to correct this operation. Nothing is changed in the drawing but the nomenclature is changed to reflect the number of rollouts, and the part list will list the parts necessary.

Vanity sinks with shading on:

When Shading is on, a hole is cut in the countertop and base cabinet under it. Generally the section delete command is used to cut this hole, however for vanity sinks which are not rectangular the base cabinet and the countertop are 'drilled'. This is a much slower process for DesignCAD. To make a drawing with shadable vanity sinks you should place the cabinet box and countertop, then the sink, to speed up this process. Pressing enter when it has stopped for a long time will move DesignCAD along somewhat. If you are drawing a shaped vanity top, to avoid DesignCAD getting stuck, draw a standard box type top and apply the shaped edges to it after you have added the sink.

TALL CABINETS

Points:

Points to set to draw a tall cabinet are:

1. - lower rear corner to fix the Y and the Z values,
2. - the opposite rear corner used to calculate the width of the cabinet.

The left point is the X value for drawing the cabinet. If you have not entered enough points you will be asked for the missing information. A third point can be set to compute the length of the adjacent side for pie-cut cabinets only.

Block handle location:

The normal block handle for tall cabinets is the lower left rear corner. Pie-cut, angle, and diagonal cabinets block at the back corner opposite the front.

Drawer banks and drawers under oven cabinets:

You can change the number of drawers in the modification menu, however, that change will change the vertical number only. This cabinet is only one drawer wide. Also the height of drawers on the oven cabinet cannot be specified. The space is evenly divided.

Doored cabinets:

When changing the number of doors enter 0 if there is no door on this section. The total number of doors is calculated by adding the upper and lower sections.

Drawer cabinets:

Sizes for drawer accessories are computed by dividing the width of the cabinet by the number of drawers. If you choose accessories for drawers, be sure there is a drawer. Some accessories will give a divide by 0 error if you try using them without a drawer.

Upper height changes at modification window:

To quickly set the upper section of a tall cabinet to equal the lower when asked for the height of the upper section, enter =. Designer Plus will automatically calculate the size making it equal to the lower.

DOORS & DRAWER FRONTS

Points:

Points to set to draw a styled door or drawer front are:

1. - upper left front corner, sets the X, Y, Z values for the upper left front corner of this door,
2. - lower right front corner.

If you have not entered enough points you will be asked for the missing information.

Designer Plus requires a drawing element 'door blank' be in place in order to draw styled doors. Because cabinets are defined as a solid as they are drawn, unless you have undefined the cabinet solid, the door blank drawn with the cabinet will not be deleted. Normal styled doors will be deleted but 'block added' doors will not. You must *undefine* a cabinet with styled doors which were created using the block add option, before changing door styles.

It is **very** important that the points are on the front of the existing blank. If they are on the back Designer Plus will draw the styled door without removing any existing styled door. Consequently, when hiding lines the styled door will not be visible because it is behind the blank that was not removed.

Doors drawn behind another:

Should *a* styled door be drawn behind the blank, use *the Block Delete* or *Block Move* commands to remove or move it to the proper location immediately after it is drawn. However, if several styled doors have been drawn behind the blanks they must be removed manually. If you merely redraw the styled doors in the proper locations the attributes from the doors that are still in the drawing will render the door list inaccurate. Make Attributes visible until you are familiar with what is happening here.

Door attribute locations:

As a cabinet is being drawn, when each door or drawer front is completed an attribute is added to the inside of the cabinet drawing. This attribute is near the back of the cabinet well away form the doors. This is done so that the door blanks can be over written without changing the list of door sizes created by Designer Plus. From the SYSTEM PARAMETER option, turn on the "Attributes visible" by changing the N to a Y. You can now see where the attributes are placed by Designer Plus. Keep this in mind when editing

drawings if you are going to be using these attributes for parts lists or pricing. The attribute location for styled doors is inside the door so that it will be deleted with the door, when a new one is drawn.

Changing door styles / overlays:

If you want to replace or change a door do not delete it, just draw over the unwanted door. If you are using Shading (Shading = 1) a blank is drawn in layer 20 so that you will have a place to set the necessary points. A shaded drawing takes the edge detail and creates a bevel on the edge of the door; consequently, without this blank you would not have a place to snap a point to. (This layer (20) must be turned off in order for shading to work properly.)

If you have used the wrong overlay door blank, delete that door and redraw over the correct overlay blank. To change *all* the doors from one overlay size to another:

> Delete all styled doors layers 16-26 and redraw the styled doors over the proper overlay sized door blanks. Only the information on styled door sizes is saved in layers 20. If there is any possibility you will need the door overlay sizes you are going to change, move all of the layers affected (or at least layer 20) to other layers.

All door sizes drawn with a cabinet are stored in their respective layers. The attributes for these doors are placed in locations safe from being deleted by drawing a styled door over the plain blank. However, even if you do not delete the doors, the door size attribute will be deleted if you delete the cabinet box.

Block handle:

The block handle for doors is the upper left front corner.

Horizontal v-grooved in frame door styles:

The number of v-grooves is determined by an evenly divisible size based on the parameter of maximum space established in the setup program. Horizontal v-grooved doors' groove spacing includes the top and bottom frames and the door is flush, no recessed panel.

V-groove and H-groove:

If you want to v-groove a panel only, use the V-groove or H-groove selection. The V-groove and H-groove options do not delete the area covered. If you are changing from horizontal to vertical, over previously drawn lines, or changing spacing, you will need to delete the first ones. This can be

done via *Block Delete* (BD) if the lines have just been drawn, or 2 point area *Delete* (D) if not.

These lines are not visible when shading.

Radiused corners:

Using radiused corners with a new block will cause a block failure, because only the frame that is radiused is blocked, and cannot be deleted. Use the add block with radiused corners if you wish to have the finished door blocked when complete. The radiused corners option does not trim the edge detail lines (layer 21). If using an edge detail with a radiused corner, after drawing and before copying, trim the protruding lines back to the radiused door edge. This has to be done manually using the section delete (CTRL-D) command. If you are using shading (Shading = 1) the radius corners option is turned off; because a shadable door is a hollow shell, not a solid object. When radiusing a corner (edge) only one of the two planes will be radiused, by DesignCAD 3D.

Door and drawer front sizing:

Door and drawer sizes recorded for material lists are the actual sizes of the doors drawn. You should check these carefully to make sure you understand how sizes are computed before ordering doors from a list generated with this program. Layers 10, 11, and 12 are simple. From the front width of the cabinet, the left and right stiles are subtracted. Then the number of dividers is multiplied by the width of a divider. The result is subtracted from the width balance from the previous step. The resulting balance is then divided by the number of horizontal drawer/doors used. The resulting measurement is listed as the width size for layer 10. Layers 11, and 12 each add 0.5 inches (1.27 cm) to that width size. This allows for 1/4 inch (0.635 cm) overlay. For the height, the top and bottom values are used to replace the left and right stile in the computation above.

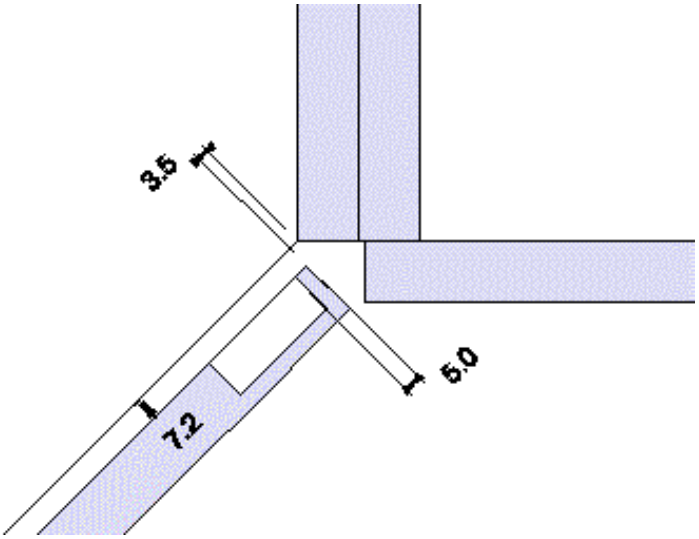
Layer 13 is similar to layers 11 and 12. On most applications the amount added is 1 inch (2.54 cm) (1/2 inch (1.27 cm) overlay). However, for drawers used over another drawer or door, this is reduced to 3/4 inches (1.9 cm), or 1/4 inch (0.635 cm) overlay on the lower side only, except where a wide divider is used.

Layer 14, the 1 1/4 inch (3.175 cm) overlay follows the rules of layer 13, with the exception that the overlay at the top of the cabinet is 1/2 inch (1.27 cm).

Layer 15, the full overlay, size is computed by dividing the width by the number of doors/drawers across and subtracting the amount of reveal specified in the setup program. Height values are similarly arrived at. Wall and

Tall cabinet tops, and all cabinet bottoms use 1/2 of the reveal. Base and Vanities use the full reveal between the counter top and the upper door or drawer.

ALL diagonal cabinet door sizes have the same height value as a standard cabinet placed next to it. In layers 10 - 13 the width value is computed to produce the same reveal from the edge of the cabinet to the edge of the door as a standard cabinet. Layer 14, the distance is measured from door to door, the hinge used to base these values is a 1/2 inch (1.3 cm) overlay faceframe hinge. Layer 15 uses a BLUM Modul 95 degree cross corner hinge with 3/4 inch (1.9 cm) thick doors. The measurements are below.



Again, until you have double-checked the accuracy of these measurements for your use, ***DO NOT*** *order doors on faith. After you are familiar with how Designer Plus works and are proficient with the program, the door size list feature is very handy.*

Default door size work arounds:

The door size in relation to the cabinet front can be manipulated via the drawing set up files. If you want the 1 1/4 inch (3.175 cm) overlay style to cover the top section of frame, create a drawing data file and tell the setup program that the top frame width is 0.5 inch (1.27 cm). This will trick Designer Plus into drawing the door all the way to the top of the cabinet. Be sure to use the correct frame width in the part listing setup or you will get errors in the parts lists.

Pull location and handing:

Hinging, swing and pulls are spread over three layers.

The default location for a pull, if no location is specified, is the top right.

A center pull location is considered a drawer and no hinge side is requested.

Modifying door drawing details:

In the "Door to be drawn" window there is an option to Detail the door. Entering a "D" at the input accesses this feature. A list of the current values is displayed, by pressing "Y" or enter you will enter the modification window. The existing value is displayed and you have the option of changing it. Pressing enter without entering a new value reuses the old.

Use this option to make house doors and other occasional items. Using this only effects this door.

Knobs:

When architectural handing is on, Designer Plus block loads and places '*pull.dw3*'. If the pull location is centered it is also rotated on the z-axis. *Pull.dw3* is a simple handle with the block handle centered on the back. You can change the *pull.dw3* drawing to anything you want to draw. Keep the block handle centered in the back when you save it and Designer Plus will load your drawing.

MOLDINGS

Points:

If you go through the main menu "CAB" points must be set after selecting molding, otherwise the points can be set before entering "MISC" or "MOLD" on the command line. Start at any end (back splash moldings require that the starting side be square to the drawing plane) and place points at every change in direction, including vertical or horizontal arcs up to 15 points. If you need more points to complete the molding, do it in sections of up to 15 points each. Break the molding in the center of straight flat areas so that the ends will align.

Simple moldings:

Very simple moldings such counter top edges, and outside corner moldings are not drawn. This is because they would appear only as an edge on an edge already in place. The length of a line drawn through all points set is recorded and added to the materials list, set up to 16 points.

Counter top edge molding:

Counter top edge molding and back splash molding will be the same as the default counter top settings. If you are using different sizes run the miscellaneous setup program and change the countertop thickness and back splash height.

Moldings that are drawn:

Set points on the top of the cabinet, the bottom of the molding is drawn 0.5 inch (1.3 cm) down from the top of the cabinet. Only the back splash is drawn directly at the starting height.

Crown molding:

Crown molding is approximately 2 inches (5.1 cm) high.

Spindle molding:

The first part of drawing spindle molding is to draw the upper and lower frame parts of the molding, without spindles. Because the spindles are drawn only in the X - Y plane, and the two running frame parts can be continuous. The locator points for the spindles are the front corners, left then right, at the top of the lower section of molding. Once the program begins drawing spindles it will loop until you option

to quit. The drawing in most cases must be rotated to complete.

Molding drawing failures:

The reason why a molding fails to draw, or is not what is expected, is unclear. A cabinet in the drawing that has been rotated so that a dimension is angled is one of the items most often related to a failure, but not always. If you have this problem; and shading is on, in the layer menu block the cabinet box layers (4 & 5) then save the cabinet box layers blocked with the *Block Save* as a separate drawing, otherwise, save the cabinet box layer (4) with the layer save command. Clear the screen "Y" "Y" then reload the drawing of the cabinet box layer(s). Draw the molding on this drawing, then save the molding layer. Return to the main drawing and block load the molding layer.

Another method of avoiding some molding drawing surprises is to draw the molding early in the drawing, as soon as the wall cabinets have been placed and before doors.

COUNTER TOPS & PANELS & OTHER FEATURES

COUNTER TOPS

Points:

Straight tops

If you go through the main menu "CAB" points must be set after selecting countertop, otherwise the points can be set before entering "MISC" or "CTOP" on the command line. To set the points for a counter top:

1. - at the top left rear cabinet corner (bottom of top), if you want an overhang add it at the modification window. As with all Designer Plus programs the first set establishes the elevation (Y value).
2. - at the opposite end of the run (the right cabinet corner),
3. - at any front corner of the cabinet. The location on the X - Y plane does not matter

Shaped tops

There are two methods of doing these:

1. - create a plane in layer 0 that is the shape of the top in plan view.
2. - enter points to form the perimeter of the counter top.

See Tips for other methods of drawing counter tops.

PANELS

If you go through the main menu "CAB" points must be set after selecting countertop, otherwise the points can be set before entering "MISC" on the command line. Points for panels are set at *top left* and *lower right* corners. For end panels place points *top rear*, and *bottom front*.

Door end panel drawing failures:

The reason for why a door end panel fails to draw is unclear. A cabinet in the drawing that has been rotated so that the dimension is angled is one of the items that may be related to a failure, but not always. If you encounter this problem rotate the drawing so that you are working on the X - Y plane (the normal working plane of Designer Plus).

OTHER FEATURES

Creating Cathedral, Oval and Roman arch shop patterns:

Under MISC and MISCELLANEOUS PROGRAMS is a program called 'Cathedral pattern program' (PAT). This program can be used to create Cathedral, Roman and oval arch types. The Cathedral pattern is a sine wave using the parameters of height of arch, the amount of straight run before the arch begins, and a modifier value to increase or decrease the acuteness of the arch. The Roman pattern is an arc with radius listed. The oval pattern is a true oval with straight setbacks. To use this program, set points for the actual length of the usable pattern or a single point at the center of the pattern, and run the program. If you need extended ends for standard lengths of patterns for a jig add straight lines the proper length onto the ends of the pattern drawn. Print full size.

Drawing inside or outside curved cabinets:

In miscellaneous programs is a limited program for drawing curved cabinets. You need to know any two of the following dimension parameters for Designer Plus to draw the cabinet:

1. Cord length, at the back of the cabinet. A cord is a straight line drawn from point to point.
2. Amplitude of arc, the amount of rise in the curve above the line of the cord.
3. Radius, measured to the wall of the circle that would include the cabinet.
4. Arc, the number of degrees that the cabinet is to cover.

No parts list or door list is generated, there are no styled doors, architectural handing is reduced to the handle, and only a maximum of 2 door/drawer fronts may be used. Add the door swing 'V' after you save a 2D projection for editing, and block insert, copy, or move as necessary for your needs.

Modify Door/Drawer front option:

In the Misc. Programs menu is a program option called "Cabinet Modification" directly accessed by "DORMOD". This program will change the vertical or horizontal number and sizes of doors or drawer fronts on an existing cabinet. This modification can be used on only one door layer at a time, nor will it change the door list. You must change the door layer attributes manually.

Turn off all layers except the one (10-15) you are working on, make this layer the active layer. Set points at top left and lower right front corners of the area to be changed. At the command line enter DORMOD and enter, you are then asked

for which direction the changes are to take, vertical or horizontal. Enter the space of reveal between the fronts. Then the thickness of the front, for layer 10 the thickness is 0, and for layer 11 the thickness is one half (1/2) of the standard door thickness. Enter the new number of fronts in this space, and if equally sized. If not equally sized you will be asked to input each front's size.

MATERIALS & PART LISTS

Very valuable features of Designer Plus are the materials and part listing features, but to use these requires another program.

Making reports:

In the main menu is an option for making reports. This program searches the open drawing entity by entity, and adds all entities of the type selected to a *.TXT file that you have named. This file is an ASCII text file, it is not sorted, nor are like items combined and totaled.

You can also make a report from DesignCAD 3D. Save the layer, which contains the proper data as a separate drawing then run DesignCAD's materials program. This program is in the same directory as the rest of DesignCAD 3D's files, run it by entering "material" at the DOS prompt. The output of the DesignCAD 3D materials program is an ASCII text file without extension unless you give it one. For instance a file you saved as "tutor" appears in the file directory as "***tutor***".

Working with reports:

To access and use the information created by either of the above methods you need a spreadsheet that can parse (separate a line of data into columns), sort (sort the lines of text by referencing a column), copy, and paste.

Start your spreadsheet and find the data tools. Open one of material files you created. Then parse it into columns using your spreadsheet's tools.

If you are going to make a cutting list for the shop you need to sort the data in order to get all of the parts using the same type of material together. For example shelves, face frames and drawer sides are probably cut from different material. By sorting the data by the item column, all of a specific item can be grouped together, usually alphabetically. You then copy those lines of data to another spreadsheet page, and delete them from the first. Repeat these steps until all the parts you want are posted to separate pages, then each page will be a cutting list because all of the parts in each page use the same material.

To make labels of your cutting list for the shop (a necessity), use your spreadsheet's mailing label feature (if it has one) or your Word processor with the spreadsheet used as the data source. You will need to consult your software's 'instructions' for how to do this.

By reordering the columns and exporting an ASCII file a cutting list made this way can be used with a panel-optimizing program. However if you don't use expensive material, don't keep records of your scrap, and use the same materials for most jobs. Panel optimizing may be of little value to you. For example:

1. If you optimized a job using standard 4 x 8-ft (122 x 244 cm) panel stock, you would have the best possible use of the material at hand, but say you have 10 - 15 pieces of scrap left from other jobs in the shop. If you have not kept track of this scrap and optimized using it, then you use the scrap; the optimizing plan is no longer valid. You would have to edit your cutting list and optimize again. (Or you can make some more scrap to add to the pile.)
2. Panel optimizing assumes each sheet is perfect, so if you get damaged stock the optimizing plan would have to be modified. In effect, treat the damaged sheet as scrap for optimizing.

Shop optimizing drawing aid:

There is a program in Designer Plus called optimize (OPT) found under "misc" and "programs". While this program does not optimize it will make drawing all of the necessary parts easier. This program takes (or adds) data from/to the file you specify. Then it will automatically draw all of the pieces listed. You then draw the panel to optimize, and block-move the pieces to fill the panel.

To save a cutting list from your spreadsheet in a format that this program can use, you must use fixed length, and store it is the same directory as the DesignCAD program. Format your column widths as follows:

Qt	Cabinet ID	Part ID	Width	Length
2	20 spaces	20 spaces	8	8

The first line above is the item and the second is the size of the column in space units. You then save the file as "formatted text" or "fixed width", your spreadsheet may call it something else, but this is the same as a print *.prn file.

To draw the pieces, put a point where you want to start drawing parts. Enter OPT on the command line and enter, enter the path and file name you saved above. You will be asked if you want to use or add to this file, enter u, and a decimal value for the saw kerf. Designer Plus will then draw and label each piece in the list vertically.

Note that Designer Plus groups each piece into a solid. This makes blocking easier because you only have to set one point on the piece and use the block-add command and block-reset between pieces. However, for smaller parts the text will not all be inside of the part, if you want to move the text you will need to *undefine* the solid with the *solid-free* command. Then *block* the text you want to move, and *block-move* it.

Partitions:

When a partition is added at the modification window the nomenclature is changed to reflect this, and the part list includes a partition panel. It also takes the number of shelves in the nomenclature and treats them as if they ran the whole width of the cabinet. Since a shelf is cut by the partition Designer Plus computes how much space is available in the cabinet for a shelf, then asks that a value be entered for one of the spaces. If a value is not entered Designer Plus will compute all of the shelf lengths to be equal. The number of shelves and lengths recorded are the actual number and length that will be cut.

Blind Corner cabinet Frameless construction only:

Layer 15, the frameless door layer includes a panel (listed with the cabinet) that is flush with the door. This allows the use of Blum 95-degree blind corner hinges without any drawing editing. If you use some other construction method for these corners you will need to delete this panel and attribute.

How Parts are Sized:

When drawing a cabinet the size, type of cabinet, and modifications are entered, the specific sizes for height, drawer size, depth, etc. are taken from the drawing data that was created with the drawing data setup programs. After Designer Plus finishes drawing the cabinet and before it is blocked, the part listing program is started. The construction data made by the parts setup program is accessed and used. Each part of a cabinet is referenced to a size established by the drawing part of Designer Plus. For instance the width of the bottom of a cabinet is directly associated with the depth of the finished cabinet. By taking the depth of the cabinet and subtracting a 'construction value' comprised of the back and front set back values, we know what the width of the bottom is. Any part of a cabinet can be thus calculated. Designer Plus uses this method of creating a list of parts. The value you entered in the part listing setup program is deducted from the cabinet size established by the drawing program.

NOTE!!

Take some time and be sure Designer Plus is going to give you an accurate list of parts. With a clean screen and the attributes visible draw one of the cabinet types and check the part list carefully. You can zoom around to view all of the detail. If you find an error, run the Parts Data setup program and check that the values you have entered are correct. Repeat this for all of the cabinet types. These steps are important because Designer Plus will produce the same results each time it is run. If you find you cannot get Designer Plus to list a part to your construction method, please detail what part you need and how you build, then send it to me. I will try to make Designer Plus work for you. While you are waiting, make notes of which cabinets have the problem and edit the attribute list when you are drawing, to correct the error.

Lumber is expensive!!!! Do not take a list from Designer Plus and start cutting until you are sure Designer Plus is producing accurate lists for you.

PRICING

The nomenclature normally generated by Designer Plus contains an infinite number of variables. For a database program, such as the Instant Estimator, to work it has to be able to find an exact match for the item being priced. That means for the normal Designer Plus generated nomenclature to be priced by an off the shelf program you would have to price every possible configuration and size, which is not practical.

With the pricing option of Designer Plus you change the nomenclature of the cabinet to a generic value such as a B-12. This allows you to take the materials list saved from layer 31 and use it with an estimating program such as Instant Estimator.

When the Pricing option is on you will be asked for the nomenclature for each cabinet drawn. Because some cabinets will need more than one value entered to cover modifications, Designer Plus will loop when recording the nomenclature until you do not enter a value. If no entry is made for the nomenclature, Designer Plus will use as the default the nomenclature created by Designer Plus. All of these entries will be included in the materials list made from layer 31.

6 TIPS

Drawing tile/bricks:

For drawing wall or floor tile use the horizontal and vertical groove options from the *DOOR* menu. Do not worry about making the area to be tiled fit exactly. Let the tile run up under the wall cabinets as necessary to cover all open spaces on the wall. The extra tile will be hidden when you remove hidden lines. Enter the tile size for groove spacing. For floor tile rotate the drawing on the X-axis and do it the same as the wall. Use the SECTION DELETE (Ctrl-D) command to remove areas of tile for text. If you add tile before drawing door styles you can move the tile, which is in layer 20, to another layer via the *LAYER* (L) command. This will make editing easier later.

Construction elevation drawings:

If your drawing is a multi-sided room drawing, to make elevations of the completed drawing, after completing a normal 3D kitchen drawing, block one wall of cabinets with a block handle in an easy to remember location. Save the block as a separate drawing. Repeat for the other walls. Clear the screen and run the macro to view as elevations (ME ELEV). Set a point at 0, 0, 0, and load (F9) one of the views saved above. Set a point at the offsets you would like the next wall section placed at, and from the BLOCKS menu choose FILES, then choose LOAD; you can also do this by entering BLO on the command line (SPACE). Rotate and move the block until it faces you squarely in the proper place. Repeat for the rest of the views. If you have a peninsula and need both sides of it drawn, it is easier to keep track of it if you load the peninsula twice; the first time as the front view, then again as the back. When you load the block for the back of the peninsula it will be faced the wrong way. Use the *BLOCK ROTATE* (BRO Y 180) command to reverse it.

Use the dimension and text commands to enter the information you will need.

Construction elevation drawings and part listing:

In most cases by the time you have sold the job there have been several versions of the project created. To save time drawing for selling purposes have Part Listing turned off. The drawing will be smaller so that both DesignCAD 3D and Designer Plus will run faster. Start a new drawing with Part Listing ON and redraw the cabinets in elevation using the information for the finished job. This will take very little extra time; and will be more reliable and safer than editing a large drawing several times. You do not

need to have counter top or sinks etc. in the drawing for the shop.

SHADING & COLOR VIEWS

Shading:

When starting a new drawing with Designer Plus turn on shading by entering a 1 at the shading query. With shading 'on' a styled door is drawn as a hollow solid similar to an empty egg shell spread over several layers (22 – 26). Shading requires planes or solid surfaces in order to show depth. Curved door styles use layers 24&26 for the faceted planes of the arched section of the drawing. Drawing the door in multiple layers is done so that a line drawing without the plane facets can be done, and to make it easier to add textures to the drawing. The door edge is a tapered plane, because of this taper layer 20 is used for keeping point locations in order to change a door style. To change a styled door with the shading feature on all door parts layers 16 - 26 must be turned on.

To shade a drawing made with Designer Plus turn off all layers that are not needed: of the door layer section only layers 22 - 26 should be on.

Texture Mapping:

For texture mapping to be practical you must have DesignCAD 97 or a later version. The texture (material) command of DesignCAD 3D will work but is very cumbersome, unpredictable, and takes a lot of time. Designer Plus splits the drawings into layers so that you can apply textures easily to cross grain areas of cabinets, doors and windows. Textures are *.JPG picture files, and any JPG picture can be used. There are a collection of *.JPG textures that should cover most needs in the TEXTURES folder on your Designer Plus CD. Also on the CD are appliances with textures already applied for use with DesignCAD 97 or later (remove the line drawings from DOS and insert the textured drawing in the 97+ version). To apply a texture, use the *Layer* command (**L**) and select a layer to apply a texture to. Under the tools menu select *Apply Textures*. A dialog screen is displayed. Select *load texture*. When you get to the directory that has the textures in it you will see a thumbnail picture of the file. Select the one you want to use. The only thing critical in mapping is how the mapping is applied, spiral, and box mapping, have no use in kitchens as far as I can tell. In most cases choose grid and plane mapping. Set tiling to approximate the scale of the image you are using (the samples are 72 pixels/ inch). Choose the preview and when you are happy select another layer and repeat.

Don't worry if the picture does not shade perfectly on screen, a printed drawing is much better than the screen rendered view. Use

one of the two higher resolution renderings for on screen viewing, as quick shading will not apply textures.

If you have DesignCAD 97 or later, the next two items should be ignored, as they both are more complicated than using the newer version.

On the monitor:

Color views of a proposal will help explain why some things look better than others do. To show a client a shaded color monitor's view of a project, if you are running DesignCAD 3D in mono mode, or a low resolution color display, you will want to change the setup, exit DesignCAD 3D and change the monitors video card setup values to the highest resolution video card you have, DesignCAD 3D requires 256k colors for color shading (SETUP3D), and save. DesignCAD 3D uses a file named DCAD4.SYS to keep track of screen settings. Save a copy of the existing DCAD4.SYS file with another name, before you make a new setup. Then you can swap files rather than running all of the setups again. Restart DesignCAD 3D. To setup the screen colors under the display menu reset the screen display settings, then reload your saved drawing.

To set the colors for the parts of a drawing set the color of a layer, then block entities as necessary to get the colors and view desired. You will need to redraw parts of the appliance layer drawings to set parts of the appliances to other colors. Use the SHADE command to shade the drawing.

On paper:

You can also print the color drawings if you have a color printer, using the color edit, layers, etc., find the view on the screen that you want to print. Use the SCREEN IMAGE command to make a "picture" of the screen, this will be a *.PCX file of the screen image. Close DesignCAD 3D and start a drawing program, load the *.PCX drawing that was just made and print. To edit the drawing a paint program will be easier to use. Edit the drawing, save and print. If you are running DesignCAD 3D in a DOS window of Windows 3.1 or later you can copy the screen image with Alt-Print Screen, and Ctrl-V to past it into a Windows graphics program.

You can also print a shaded drawing from DesignCAD 3D. When this works it is very nice; however, it takes a lot of trial and error experimenting to get a good drawing. I use the paint program approach because I can see the finished product before it is printed, and it takes very little time, after getting the picture I want.

DRAWING AN ANGLED FRONT CABINET:

1. When drawing a cabinet that will have an angled front, view your drawing so you can see the true length of the front, in this example from point 1 to point 2 of figure 1. This would normally be in plan view (used here), but may be in elevation as for the side view of a hood cabinet.
2. To determine the width (or height) of the angled front place a point at each front corner (points 1 and 2), figure 1. Using the *UNITS* (**U**) command obtain the true length of the cabinet front and record it on paper, press escape or enter, but do not enter any values. The *UNIT* command is used to set the scale of a drawing, if you enter a value you may change your drawing scale.
3. Use the *DIMENSION ANGLE* command to determine the cabinet front angle, figure 2, and record it on paper. Points indicated are for this dimension.

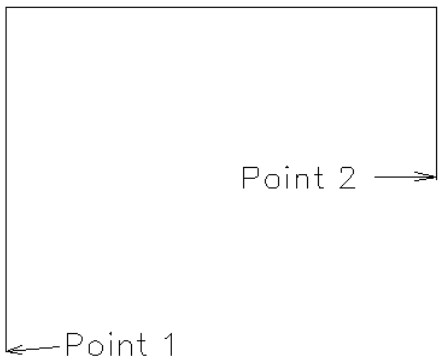


Figure 1

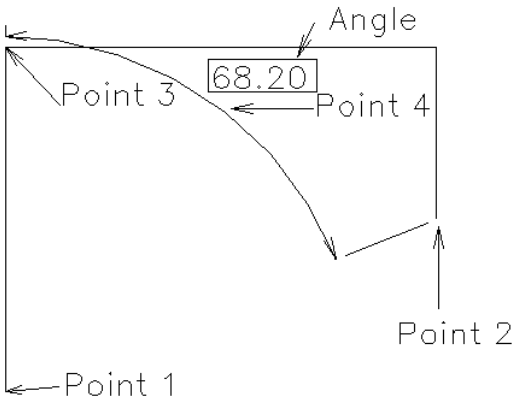


Figure 2

4. Starting from a FRONT corner set the cabinet width (or height) equal to the value found by the *UNIT* command in step 2, figure 1.
5. Select the cabinet type desired, then modify the depth to equal **0**. Draw the cabinet. (Note* If you have shading 'on' and this is a framed cabinet there is a face frame thickness that you will need to allow for, or it may cause problems with hiding lines or shading of flush inset door overlays.)
6. If there are to be styled doors/drawer fronts, add them now with the **BLOCK** option set to **add**, figure 3. You may need to change the view in order to see the door fronts for this step. If you wait to add the styled doors you will have to rotate the drawing in order for the doors to be drawn on the X-Y plane.

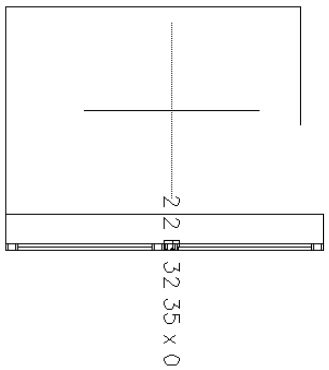


Figure 3

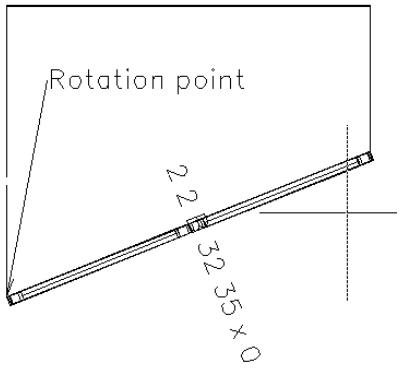


Figure 4

7. *ROTATE* the cabinet front into position using the cabinet front angle determined in step 2, figure 2. Because Designer Plus blocks items as they are drawn, this cabinet front and styled doors are a single block. Use the *BLOCK ROTATE* command under the Block menu or **BRO** (the **axis X** for horizontal or **Y** for vertical rotation axis,) (**the amount of rotation**, **the value obtained from step 3 above**) at the command line. For this cabinet at the command line you would enter **BRO Y -21.8**. The 21.8 degrees was determined by subtracting 68.2 from 90, the negative is a direction value. If you use the wrong direction value + or - merely press F3 and reverse the sign and enter, the cabinet will be rotated back to where it started from. Reuse the F3 key and enter to move the cabinet the same amount again. (Note* to save time you can add styled doors to this front before it is rotated. After the cabinet front is drawn, run DOORS and set 'block' to 'add' this will add the styled door to the existing front block.)
8. Figure 5 is the completed cabinet after deleting the toe kick. The toe kick will need to be added to match the side units using the *PLANE* (**P**) command. Set points at all corners of the toe kick and one more at the starting point to close the plane.

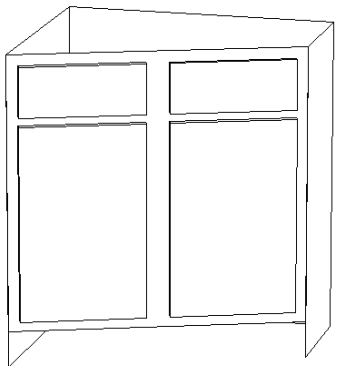


Figure 5

NON STRAIGHT COUNTER TOP SHORT CUT

1. Here is a faster method of drawing counter top for odd shaped cabinets / kitchens. In plan view, turn off all unnecessary layers for these steps (except 0, 4, 5, and appliances if necessary). Make layer **0** the active layer, and draw a *LINE* (**V**) through all points on sides that will have the counter overhung. (Figure 6)
2. Make a *PARALLEL LINE* (**=**) to this one at the amount and direction of overhang. (Figure 7)
3. Turn off all layers but **0**.
4. *ERASE* (**E**) the line made in step 1 (the cabinet front line).
5. Turn on the layers needed to draw the counter top again.

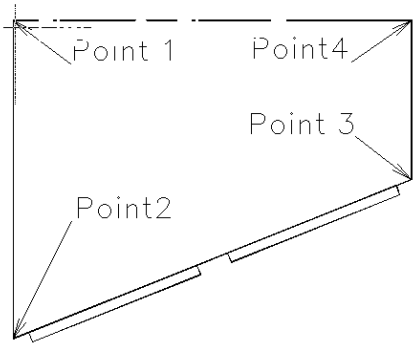


Figure 6

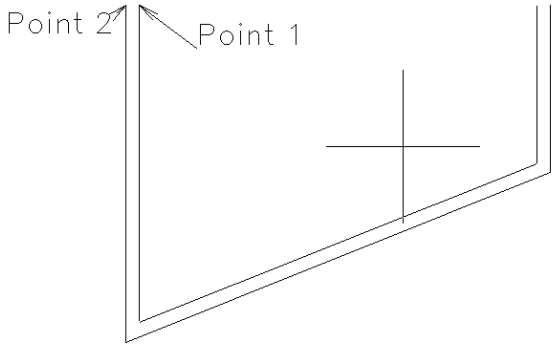


Figure 7

3. Set points at all changes in direction around the entire countertop, and use the *PLANE* (**P**) command to create a plane, figure 8. Radius outside corners if desired now. The *FILLET CORNER* command is found under the EDIT menu.

   You can use the program CTOP.BSX to complete the top from this point.

4. Using the *BLOCK LAYER* command under the *LAYER* menu (**L**), block layer **0** and return to the drawing.
5. Set a point on one of the corners and create a *BLOCK HANDLE* (**BH**).
6. Set another point at the same spot.
7. Set a point vertically *RELATIVE* (**'**) to the last point, the thickness of the countertop.
8. Use the *EXTRUDE BLOCK* command under the BLOCKS menu to extrude the top to its finished height, figure 9.

9. Using the *BLOCK LAYER* command under the *LAYER* (**L**) menu block layer **0**, then use the *MOVE LAYER* command to move layer 0 to the countertop layer (layer **9**) and return to the drawing.

10. For the back splash, use the *BOX* command. Or use Designer Plus' molding program, set points at every change in direction and use the back splash option. This will not make a box type solid because the top is open, but if your splash thickness is not great it will be hard to notice this.

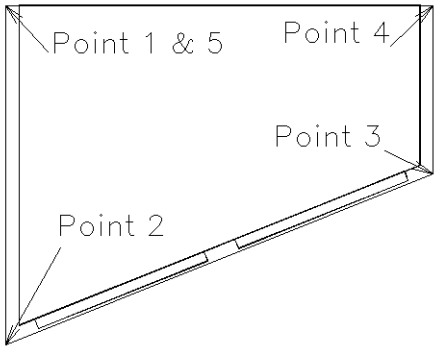


Figure 8

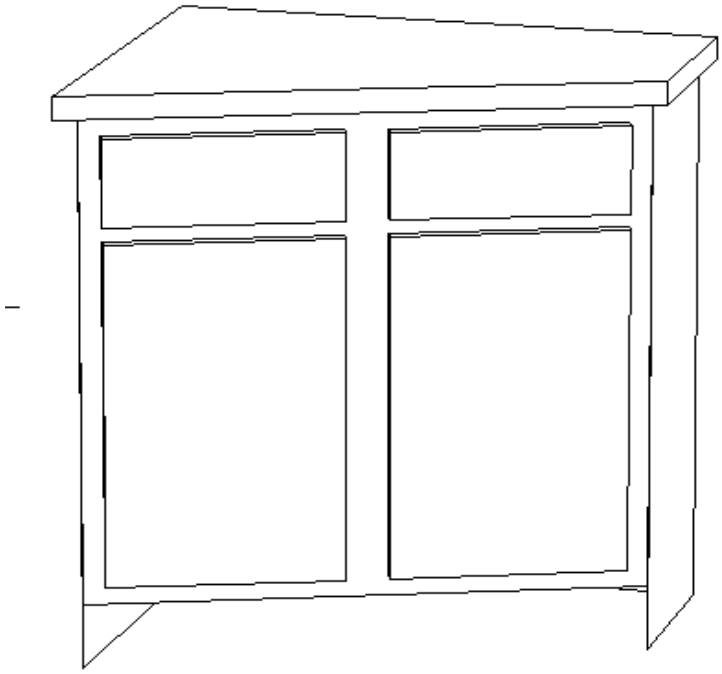


Figure 9

CUSTOM MOLDING:

To draw a special molding profile you need to remember that DesignCAD 3D draws curves as facets along the curve. To minimize the number of lines drawn in the final drawing, straighten curved areas into a single plane. Notice in figure 1 how the X section curves have been simplified on the right. If you want a more accurate shaded drawing try using both, with the drawing separated to layers not used by Designer Plus.

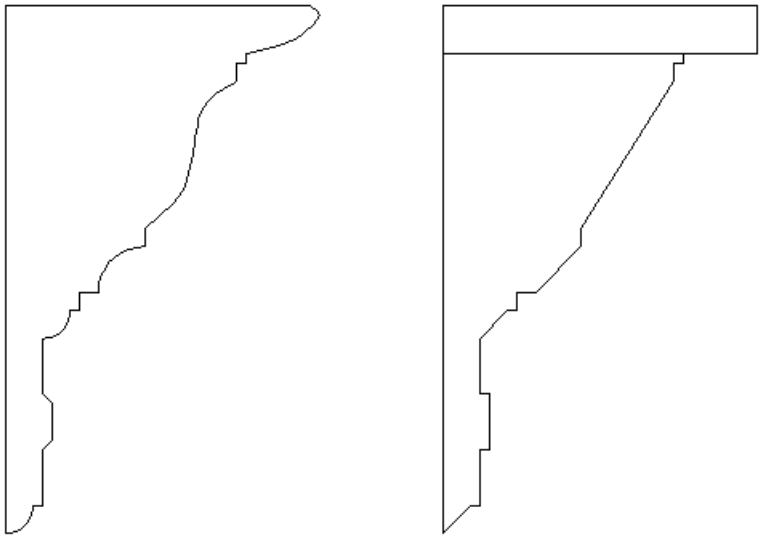


Figure 1

To create the x-section profile for the molding, use layer 6 and working in the x-y plane, place points at every change in direction working all around the drawing then create a plane with the *PLANE COMMAND* (**P**). This plane will be extruded into a shaped solid. Place a *BLOCK HANDLE* point at a convenient spot and block the entire drawing (**BA**). Place a point at the block handle and *SAVE THE DRAWING* (**F10**), this will be the drawing used to make all future drawings using this profile.

Make Out Side Corners:

By extruding the molding you can apply molding everywhere but outside corners. To make the outside corners, load the drawing saved above, the shaped area must be to the right. Place points at (1) the top, and (2) the bottom left corners. From **MISC** programs select make '*Custom Molding Corners*'. You will be asked for the axis of rotation (**Y**) and the amount of rotation (**90**) for this example.

The molding corner created is in figure 2. Place a block handle point and save the corner.

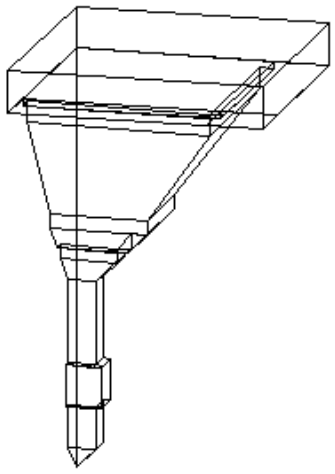


Figure 2

Drawing molding in a drawing:

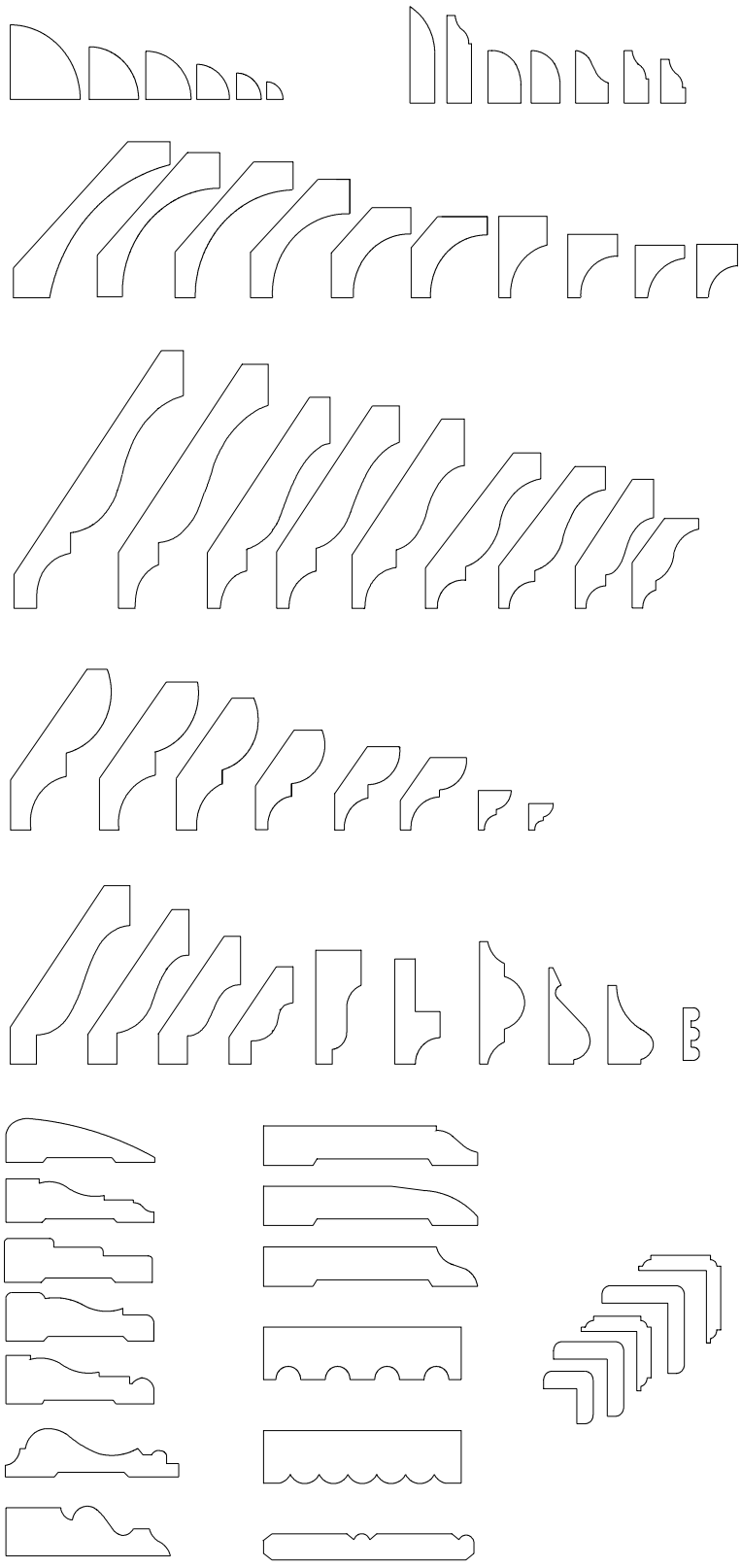
To use the above parts to draw molding in a kitchen draw the cabinets, and make layer 6 the active layer. Set a point on a starting corner, and block load the molding x section you made above. The molding section will load, referenced on the handle point you set when the x section drawing was saved. If necessary, rotate the block on the y-axis so that the profile is oriented correctly to the cabinet box. Place points at the starting and ending block handle locations, and extrude the molding for one run, repeat for the other runs.

Place a point for the block handle location of an outside corner, and block load the outside corner. Block insert, rotate, and move as necessary to place corners at all outside corner locations.

After you save the drawing in 2D you can remove the joint lines between the molding runs and the corners. The easiest method is to point move (*) the joint between the run and the corner to the outside of the corner.

This method will work for any kind or angle of molding.

The next page is the molding profiles contained in the file "molding.dw3". You can use these standard profiles to buildup larger moldings or 'as is'. To free a single profile from the master file, block the profile then block save it as a new drawing. You can then block load it and use it. These drawings are full sized in inch units. To convert them to metric units load the drawing, then 'block all' (BA) of the drawing then block scale it by (cm = 2.54, mm = 25.4) in both x and y axis, and save the drawing (F10).



SPEEDING UP MACHINE DRAWING TIME:

The more memory occupied by the drawing the slower DesignCAD 3D operates. So, when it comes time to save with hidden lines removed, you may try deleting all the layers you are not going to use for the immediate job. Save your drawing before deleting anything! Save 2D with lines hidden, clear the screen and reload the drawing for any more work.

- **DOS**

DOS only users should get a print spooling utility if you do not already have one. By editing and printing one drawing at a time you can be editing the next drawing in DesignCAD 3D while printing the first.

- **WINDOWS 3.X**

Windows users: if you are using Windows for Work Groups 3.1 (this will probably also work with Windows 3.1), and have at least 8 megs ram, run DesignCAD 3D (low video resolution only) in a DOS Window. This will allow you to run more than one program at a time and you can switch between them with the ALT-TAB or CTRL-ESC keys. Also when DesignCAD 3D is hiding lines or you are printing a drawing, you can change the Tasking Options setting at the MS DOS Icon to give 100% background operation. DesignCAD 3D seems to run as fast as normal and you can work on another job while you wait. DesignCAD 3D beeps when finished hiding lines, so you can go back to DesignCAD 3D and continue. However, do not try to print from Windows while you are printing with DC3PRINT.

Windows 3.1 limits the size of a DesignCAD 3D drawing to 1 Meg. regardless of how much RAM you have. The 1 meg. is large enough for most drawings, but will force you back to DOS occasionally.

If you have the 8 megs of ram but DesignCAD 3D says there is not enough memory available, try running a memory manager to optimize the critical 640K of base memory. If DesignCAD 3D still will not run in a DOS window, you may have to get rid of some of your TSRs (small programs that run in the background and 'pop up' on demand). If you have MS DOS 6.x or some other utility that allows you to choose from multiple Config.sys and Autoexec.bat files during boot up, create configurations optimized for each major application you use. This last suggestion can be a lot of work.

- **WINDOWS 95/8/XP**

No special configurations are needed to run DesignCAD 3D v4 in any of these versions. When you can afford it, the newer versions of DesignCAD (2D for line drawings only or Pro for 3D) are worth the price of the upgrade. This will give you much faster 2D editing, printing, and shading (3D). Designer Plus will not run in newer versions of DesignCAD, but the drawings produced in DesignCAD 3D are transferable.

SPEEDING UP YOUR DRAWING TIME:

Making your own cabinet symbols

Creating pre-drawn cabinets will substantially speed up drawing a kitchen. However, you need a lot of storage space to hold pre-drawn cabinet drawings. If you are short storage space, only pre-draw those cabinets you use that take longest to draw. Also remember if you use the stretch or scale commands on pre-drawn items, the accuracy of the drawing and any part list will be lost. For instance, if you load a 30" wide pre-drawn cabinet, then scaled it to 33" width, each section of the cabinet will be enlarged by 10%, without changing any recorded attribute. For this reason, if you are going to use Designer Plus to draw shop construction plans, ***DO NOT*** change the cabinet size with these commands.

1. Create a directory in which to save your drawings.
2. Start a new drawing with Designer Plus, (if you are going to use multiple door styles on each cabinet see item 3, and the first subsection under it, below) draw and edit the cabinet to the desired configuration.
3. If you are only going to use 0 - 1 door style, add the door style normally and go on to step 4. Designer Plus can draw a styled door over the doors of pre-drawn cabinets also. For multiple door styles, completely draw all of the styled doors for this cabinet in a single style, using the block add feature of Designer Plus.

    - You should change the *STARTUP.APL* drawing to include the names for each of the styles of doors you are going to use. Do this in the LAYER command, (L) key, pick a layer that is unused by Designer Plus and label it for the door styles you are going to draw. Do this by moving the mouse to the label area you wish to use and typing in the new name. Save the modified *STARTUP.APL* drawing, be sure the *.APL extension is included in the file name or Designer Plus will be unable to load this drawing from the menu. This way whenever you start a new drawing using Designer Plus your *STARTUP.APL* drawing will be the one accessed by Designer Plus. (The label names will already be in place.
    - If you have an edge detail drawn, you need to move and combine the edge detail layer with the styled door layer. Do this in the Layer command.
    - Make all of the layers you are not going to be working with inactive (0) or invisible, including all of the layers you are going to put door styles in. Then return to the drawing.

- Reset the block handle location by placing a point at any easy to remember location. Use the BLOCK HANDLE command from the BLOCKS menu or BH at the command line. Return to use the new block handle.
- Place a point at the same place that you have just established as the block handle, in the last step above.
- Use the BLOCK INSERT command under the Block menu, or BI at the command line. This inserts a copy of the block exactly on top of the one that is here. You should see no change in the drawing.
- Move the block to a new layer. Use the BLOCK LAYER command from the BLOCKS menu, or BL at the command line. Enter the layer number for the layer you want this door style located and return. Since the layer is turned off visibly, the styled doors will disappear. Regenerate the drawing by using the ZOOM command equal to 1. The *copy* of the block will then become visible.
- Repeat for as many door styles as you want to save.
- When you finish drawing a kitchen, and are ready to save the drawing in 2D in order to speed up DesignCAD 3D, try deleting all of the door style layers you are not going to use.

4. Set a point at the normal location for Designer Plus to block handle the cabinet. (On a wall cabinet this is the upper left rear corner.)
5. To SAVE the drawing to disk, use the F10 key or SAVE command under the FILES menu. Enter the path and the name of the cabinet. If you are doing a lot of these in one session, set the PATH (under Files menu) to the directory location so you do not have to repeat entering the path.
6. To use a pre-drawn cabinet in a drawing, set a point where you want the cabinet to be placed, using the location you established by the point that was placed when the drawing was saved.
7. Use the BLOCK LOAD command from the BLOCKS menu under FILES, or BLO at the command line. Enter the path and name of the drawing, and it will be placed almost instantly. If you have made a mistake with the location of the cabinet called back, assign it a new handle and manipulate it with any of the BLOCK commands.

Another method of making your own cabinet symbols

Another method, of getting a pre-drawn cabinet saved, is to use the blocking feature of Designer Plus. After Designer Plus draws a cabinet it is blocked and handled. You can also add a styled

door using the *block add* option of the *Door* menu to the cabinet block. Then save the block as a separate drawing. This can be done in the middle of another drawing. Use the BLOCK SAVE command found under the *FILES* menu, or FILES under the BLOCKS menu. Something to remember is that any drawing can be loaded as a block.

Running multiple copies of DesignCAD

If you are running DesignCAD in a DOS window of Windows, you can actually run several windows of DesignCAD at the came time.

You can then build components in one window, save them, and block load them into the other. Use this method if you want to draw in DesignCAD 2000 also.

Layer note

Be sure all layers relating to the job at hand are turned on and the "Manipulate Current Layer Only" System Parameter option is turned to "N". If over drawing doors to change door style, be sure all relevant door layers are on or the hidden layers will not be erased.

Hiding lines

When hiding lines while working on a drawing, when the section you are working on is hidden, you may stop the hiding process by pressing ESC. You can then work on the drawing; you do not need to wait for the entire drawing to be hidden.

Drawing data files

You probably use the same nomenclatures for all your work and only need to change the variable values. Copy all drawing data files to a new file name by using the "COPY FILES" option (10) in the "Drawing Data Files Setup" main menu. This option will copy the current data files in use to a new name. Change the "data files to use" to the new name(s), and you can edit them rather than starting from scratch.

BasicCAD programming

What will make this program and DesignCAD the most valuable to you is for you to learn and use all of its features. One of the most important, as mentioned in the history is BasiCAD programming. With this you can create your own solutions to problems you have without waiting for a programmer to do it. Below is a very brief description of how to use BasicCAD with DesignCAD 3D. A more detailed and complete reference is the BasicCAD manual that came with your program. Below is a line by line description of a routine to draw a box a specific size, referenced on either a point or coordinates.

To write a BasicCAD routine you write a document in a word processor and save it as ASCII text, (8-letter maximum) file name and "BSC" extension. For example, to name this routine 'box test', because there can be no spaces in a DOS file name we will save it as 'BOXTEST.BSC', and place it in the same directory as the DesignCAD program. This program has already been typed and is in the directory with the Designer Plus files, open it and see below for how the program reads.

```
'Box test
```
The ' tells DesignCAD that the rest of the line is a note.

```
'9/17/00
```
The ' tells DesignCAD that the rest of the line is a note.

```
Setpoint "Place a point for lower left rear box corner:" 1
```
Setpoint asks you to place a point; the 1 at the end of the line is the number of points expected. Pressing enter will end this command without a point.

```
If sys(1) > 0 then
```
An IF STATEMENT is opened with the 'IF', if the test statement is true then the 'THEN' actions are carried out. Sys(1) comes from the system function table of the manual and means 'number of points set'. And the > is a mathematical symbol meaning 'greater than'.

```
    Pointval x1 y1 z1 1
```
Pointval gets the coordinate values of the point and assigns them to variables named x1, y1, and z1 for point number 1 (first point set if multiple points are set).

```
    Sys(1) = 0
```
Uses the system variable [sys(1)] to set the number of points to 0. I.e. erases all points set.

```
Else
```
Is part of the IF STATEMENT meaning that if the test statement is no, then do what is below.

```
      Window 5 52
            Opens a window centered on the screen 5 lines tall, and 52
            spaces wide.

      Print "For the placement of the lower left rear box corner"
                  Prints the line of text within the “”.

            Print
                  Prints a blank line.

            Input "Enter x coordinate: " ,x1
                  Request for information to be assigned to the variable
                  ‘x1’.

            Print
                  Prints a blank line.

            Input "Enter y coordinate: " ,y1
                  Request for information to be assigned to the variable
                  ‘y1’.

            Print
                  Prints a blank line.

            Input "Enter z coordinate: " ,z1
                  Request for information to be assigned to the variable
                  ‘z1’.

      Wclose
            Closes the open window.

End if
      This closes the IF STATEMENT.


Window 3 35
      Opens a window centered on the screen 3 lines tall, and 35 spaces
      wide.

      Input "Enter the width of the box: " ,width
            Request for information to be assigned to the variable
            ‘width’.

      Print
            Prints a blank line.

      Input "Enter the height of the box: " ,height
            Request for information to be assigned to the variable
            ‘height’.

      Print
            Prints a blank line.

      Input "Enter the depth of the box: " ,depth
            Request for information to be assigned to the variable
            ‘depth’.
```

Wclose

Closes the open window.

>Pointxyz [x1, y1, z1]

The > at the beginning of a line tells DesignCAD that this is a drawing command. The command POINTXYZ is the same command you could enter on the command line. The use of the shortcut single keystrokes will also work for many commands, i.e. >: is the same as >pointxyz. The values inside of the brackets [] are the computations for the point placement separated by commas. The first computation is the x-coordinate, second is the y, and the third is the z.

>Pointxyz [x1 + width, y1 + height, z1 - depth]

See above.

>Box

See above.

End

This ends the program and returns to DesignCAD, which will wait for further instructions.

7 *.APL & DLR FILES

DISHWASHER OPTIONS

Name of item	*.APL file name	Block handle location
Dishwasher 18 inch	DW18.APL/DLR	Lower left rear corner
Dishwasher 24 inch	DISHW.APL/DLR	Lower left rear corner

COMPACTOR OPTIONS

Name of item	*.APL file name	Block handle location
Compactor 15 inch	COMP15.APL/DLR	Lower left rear corner
Compactor 18 inch	COMP18.APL/DLR	Lower left rear corner

RANGE OPTIONS

Free standing range	FSRANGE.APL/DLR	Lower left rear corner
Drop in range	DIRANGE.APL/DLR	Upper front right corner of left adjacent cabinet
Slide in range	SIRANGE.APL/DLR	Lower left rear corner
HiLo stacked range	HILO.APL/DLR	Lower left rear corner

COOKTOP OPTIONS

Standard cook top	28CT.APL/DLR	Front center
28 inch down draft top	28DWNCT.APL/DLR	Front center
33 inch down draft top	33DWNCT.APL/DLR	Front center

OVEN OPTIONS

Free standing micro	MICRO.APL/DLR	Lower left rear corner
Wall single oven	SOVEN.APL/DLR	Upper left, lower right cutout corner
Wall double oven	DOVEN.APL/DLR	Upper left, lower right cutout corner
Built in micro oven	MOVEN.APL/DLR	Upper left, lower right cutout corner

HOOD OPTIONS

Standard 30 in.	H30.APL/DLR	Upper left rear corner
Standard 36 in.	H36.APL/DLR	Upper left rear corner
Standard 42 in.	H42.APL/DLR	Upper left rear corner
Combo micro hood	COMBO.APL/DLR	Upper left rear corner

SINK OPTIONS

2233 Double sink	DBL.APL/DLR	Front center
2225 Single sink	SBL.APL/DLR	Front center
2233 ODLP-L Unequal bowl sink	ODPL-L.APL/DLR	Front center
2233 ODLP-R small bowl right	ODLP-R.APL/DLR	Front center
Corner Sink	CORNER.APL/DLR	Front center
19 round vanity	RNDVAN.APL/DLR	Center counter level
19 x 17 oval vanity	OVVAN.APL/DLR	Center counter level
Bar sink	BAR.APL/DLR	Center counter level
Goose neck valve	GOOVAL.APL/DLR	Center counter level
Kitchen sink valve	VALVE.APL/DLR	Center counter level
Vanity valve	VANVAL.APL/DLR	Center counter level

Name of item	*.APL/DLR file name	Block handle location
REFRIGERATOR OPTIONS		
3367 Top freezer	TOP.APL/DLR	Lower left rear corner
3367 Bottom freezer	BOT.APL/DLR	Lower left rear corner
3369 Double door	3369.APL/DLR	Lower left rear corner
3669 Double door	3669.APL/DLR	Lower left rear corner
3683 Double door	SUB0-36.apl	Lower left rear corner
LAUNDRY OPTIONS		
27 in. top load washer	WASHER.APL/DLR	Lower left rear corner
27 in. front load dryer	DRYER.APL/DLR	Lower left rear corner
MISCELLANEOUS OPTIONS		
Starting setup drawing	START.APL	None
Counter top brace	9X9CTB.APL	Top center rear
Trimmed passage-door	passage.dlr	Bottom left on the wall
Solid flush slab-door	slab.dlr	Bottom left on the wall
Single panel in frame-door	pnldoor.dlr	Bottom left on the wall
Four panels full width door	4pnldor.dlr	Bottom left on the wall
Six raised panels-door	6pnldor.dlr	Bottom left on the wall
Single light over 2 raised panels-door	1lite.dlr	Bottom left on the wall
Nine lights over 2 raised panels-door	9lite.dlr	Bottom left on the wall
Picture or trimmed opening-window	wind60.dlr window.dlr	Top left on the wall
Horizontal slider-window	slide60.dlr slide36.dlr	Top left on the wall
Picture over slider-window	split48.dlr	Top left on the wall
Double hung-window	dblhng.dlr	Top left on the wall
Cabriole leg	leg1.apl	Top OS corner & 20 units down
Square Sheraton leg	leg2.apl	Top OS corner & 20 units down
Turned Sheraton leg	leg3.apl	Top OS corner & 20 units down
Colonial turned leg	leg4.apl	Top OS corner & 20 units down

NOTES ON APPLIANCE DRAWINGS

When placing appliance drawings using Designer Plus, you can save time editing built in ovens for size. By placing extra points, the oven drawing can be scaled as it is placed. For instance, a double oven can be made to fit the exact opening of a customer specified unit by using points at: 1) the primary handle location, upper left rear and, 2) the diagonally opposite corner

If you have selected metric units, and have used only 1 point set at the primary block handle, Designer Plus scales the drawing from inch units to metric by the DesignCAD 3D command *BLOCK SCALE* and multiplying each XYZ value by (cm = 2.54, mm = 25.4). If you wish to modify a drawing used by Designer Plus and you are using the metric system, **after completing the drawing in full scale and before you save it**, block it and block scale it by (cm = 0.39, mm = .039) for each of the XYZ values. This is equivalent to reducing the size of the drawing by (cm = 2.54, mm = 25.4). When recalled, if only one point is set, it will be re-scaled (cm = 2.54, mm = 25.4) times larger.

When you ask Designer Plus to load a drawing while shading is 'on', The drawing used will be the *.DLR version of the drawing. The *.DLR drawing is a 3D appliance with different colors in the drawing. The primary color for the box is color 1. Color 2 is used for knobs, handles and other items. Color 3 is the toe kick, and color 4 is used for chrome items. You can edit these colors so they will shade, as you want. Use the color edit command to change these values.

Using custom drawings you have the option of using Designer Plus to automatically place some custom items: windows and doors when starting a drawing, and valances and table legs while drawing.

Windows:

Draw your symbol using one of the width options in the startup menu, the height is 40" (102 cm). Block scale the drawing smaller if you are using metrics. Place a point at the top left corner of the window and save it with the window file name relating to the width. Designer Plus will scale and place when you are starting a new drawing.

Doors:

Doors are handled the same way as the window, basic width is 36" (91 cm) and height is 82" (208 cm). Block handle location is the top left corner.

Table legs:

Draw your leg (any size), place a point at the top outside corner and another directly (point relative) below the first at the bottom of the leg. When it is inserted DesignCAD will scale the leg between the points set. Save it with one of the available file names.

Valances:

Valances are not scaled on insertion; they are block sliced (cut off) at the points set designating the width, the same way as a stock valance from a manufacturer is 'cut to fit' in the field. Draw your valance full size, place a point centered (midpoint under points) on the top front of the valance. And save it with one of the available file names.

Naming Symbols:

You may create a descriptive name to aid in working with Designer Plus and your custom symbol drawing above. To do this in the setup menu 'CABDRWU.BSX' select 'name a symbol' and follow the instructions.

8 DRAWING DATA FILE SET UPS

This Section is not available to the demo version of Designer Plus.

The *.PCX help drawing files can only be accessed if you are using a low-resolution monitor. If you are using any other monitor resolution enter 'n' when asked if you want to use the screen image aids.

The following sections are the reference materials for the setup files. By running these programs you can create data files for as many cabinet construction configurations (manufacturers) as you want. You should run the set up program for each cabinet menu type, e.g., BASES, WALLS, TALL, VAN, DOOR, and MISC. If you do not and you have set the drawing data file to a data source that has not been created, when you run a Designer Plus program you will get the error message "file could not be found".

NEW FILES

At one of the menus change the "drawing data files to use" to the **NEW** name up to 5 characters long for the data file (does not yet exist). Proceed to the "*Cabinet Drawing Setup*" menu either from the CAB menu or directly via typing **CABDRWSU** at the command line. Select a cabinet item type to set up and follow the instructions. Save the file at the end of the program, you will be returned to the set up menu. Repeat for each of the cabinet types. Note that door configurations can be accessed without regard to the drawing data file selected for the main part of the program.

COPY FILES

To save time if a lot of the size detail, or all of the nomenclatures of a new construction desired is the same, use the "*Copy Drawing Data Files*" found in the ***Cabinet Drawing Setup*** menu. At any of the menus change the "drawing data files to use" to the name of the data file you want to copy. At the ***Cabinet Drawing Setup*** menu select "*Copy Drawing Data Files*". Enter the name (up to 5 characters long) for the new data files. Designer Plus will copy all of the data files using the new name. Change the active data files to the new name and edit each file from the ***Cabinet Drawing Setup*** menu. If you wish to change any nomenclature of a cabinet type you will have to reenter all of the nomenclatures. This is because the text used for the nomenclature is the nomenclature, nothing ( ) is considered text. However the sizes for setting up size details are carried over unless you enter a new value. For instance if the size of a part is listed as 3 units and you do not enter a new value the size is still 3 units.

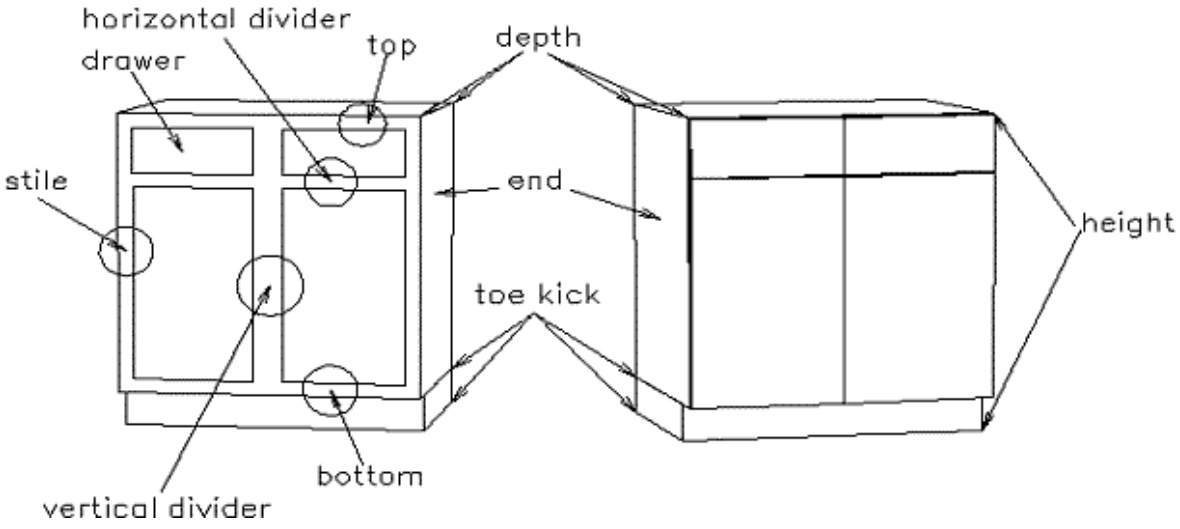
PARTS LISTS

There are no *.PCX files in the program for the part listing feature of Designer Plus. All reference materials for this feature are included in this section. To create or modify a construction data file, enter the name of the new construction data file to use at one of the "drawing data files to use" options. Then follow the format for setting up a drawing data file above.

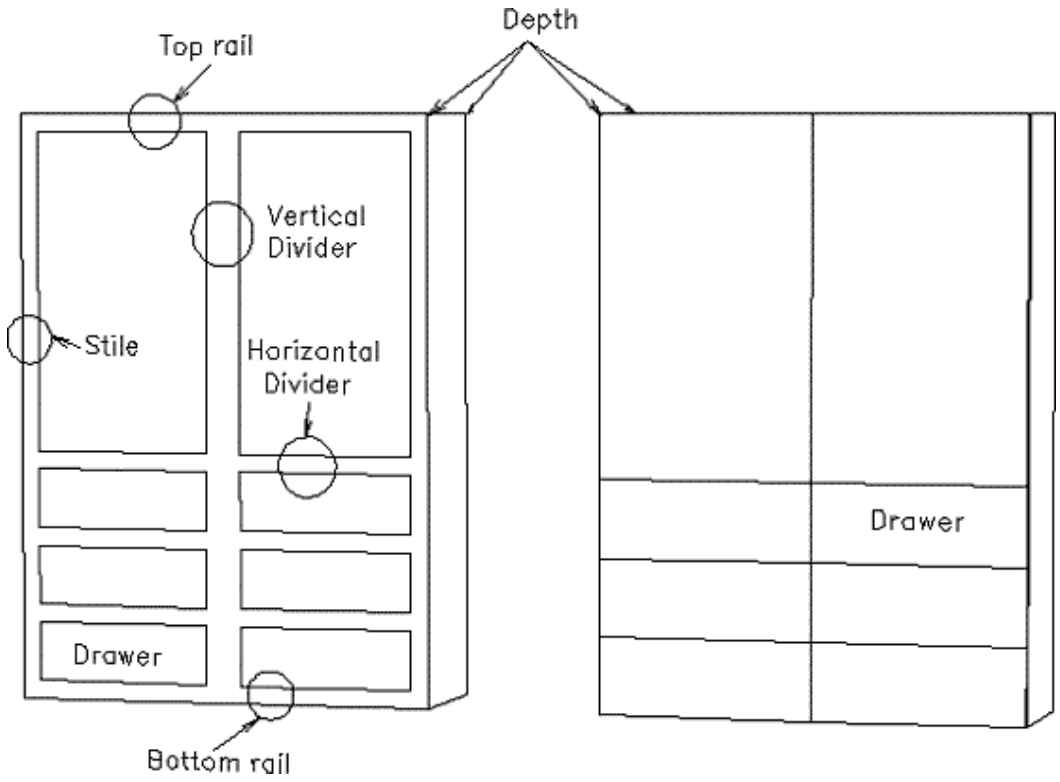
DIMENSIONS FOR ALL CABINETS

Turn door drawing overlays off or on:

Layer 10 - Flush inset 1 = draw 0 = skip (use this layer for construction drawings.)
Layer 11 - 3/8″ inset 1 = draw 0 = skip
Layer 12 - 1/4″ overlay 1 = draw 0 = skip
Layer 13 - 1/2″ overlay 1 = draw 0 = skip
Layer 14 - Faceframe 1 1/4″ overlay 1 = draw 0 = skip
Layer 15 - Frameless full overlay 1 = draw 0 = skip
Thickness of end panel (0.75 inch is normal).
Thickness of door panel (0.75 inch is normal).
Desk drawer opening height. (This is for face framed cabinets, frameless drawer fronts will include the top frame)



Toe kick height.
Toe kick depth.
If L15 = 1 then
  Amount of reveal between doors on frameless cabinets.



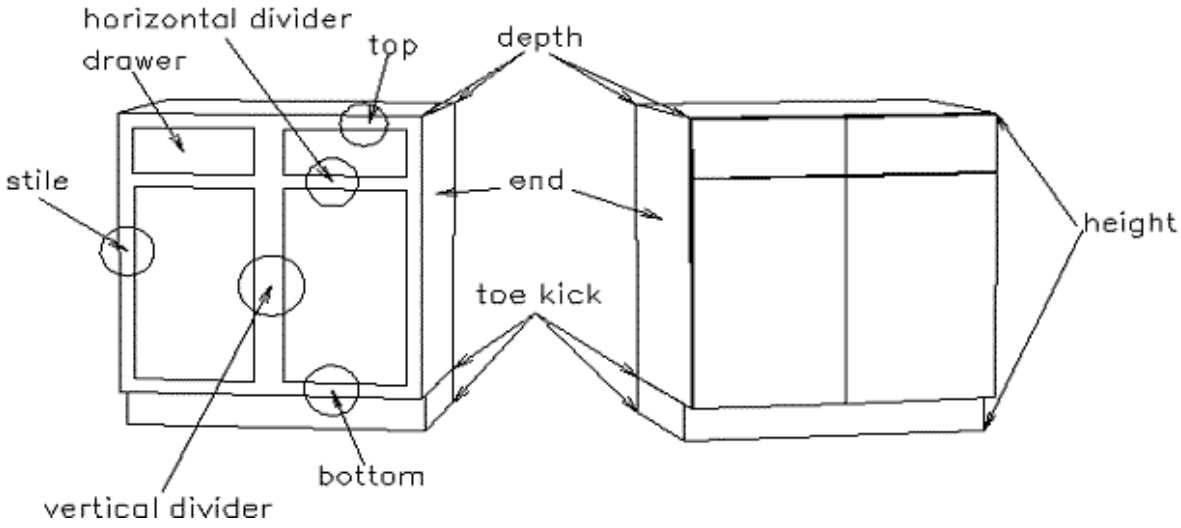
If any frame construction door overlay is on (1) then
Cabinet stile frame member width.
Size of cabinet drawer / door horizontal divider.
Size of vertical divider.

WALL CABINET DIMENSIONS

Standard depth of wall cabinet.
If L15 = 1 then
Wall Frameless counter micro drawer front height.
If any frame layer = 1 then
Drawer opening height.
Wall cabinet top horizontal rail size. (This is used for both WALL and TALL cabinets.

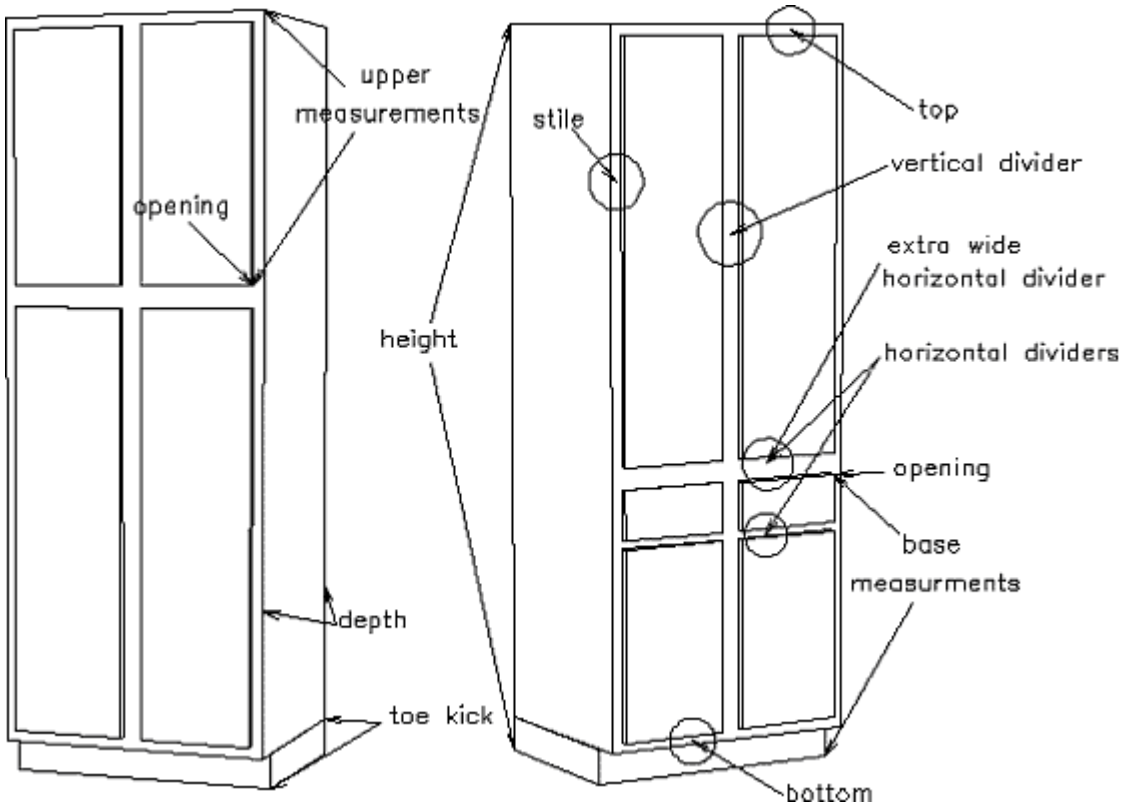
Bottom wall horizontal rail member size.
Size of extra wide horizontal dividers.

BASE AND VANITY CABINET DIMENSIONS



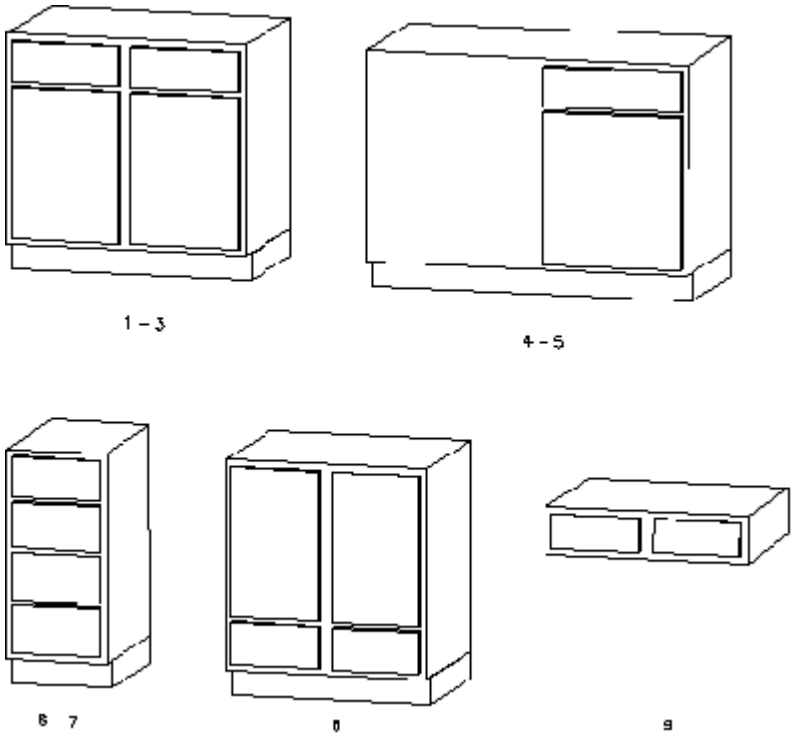
Standard depth of cabinet.
Standard height of cabinet.
If L15 = 1 then
    Frameless top drawer front height. (This is used for both TALL and BASE cabinets.
If any frame door used then
    Drawer opening height. (This is used for both TALL and BASE cabinets.
    Cabinet top horizontal rail size (exposed).
    Bottom horizontal rail member size. (This is used for both TALL and BASE cabinets.
    Size of extra wide horizontal dividers.

TALL CABINET DIMENSION

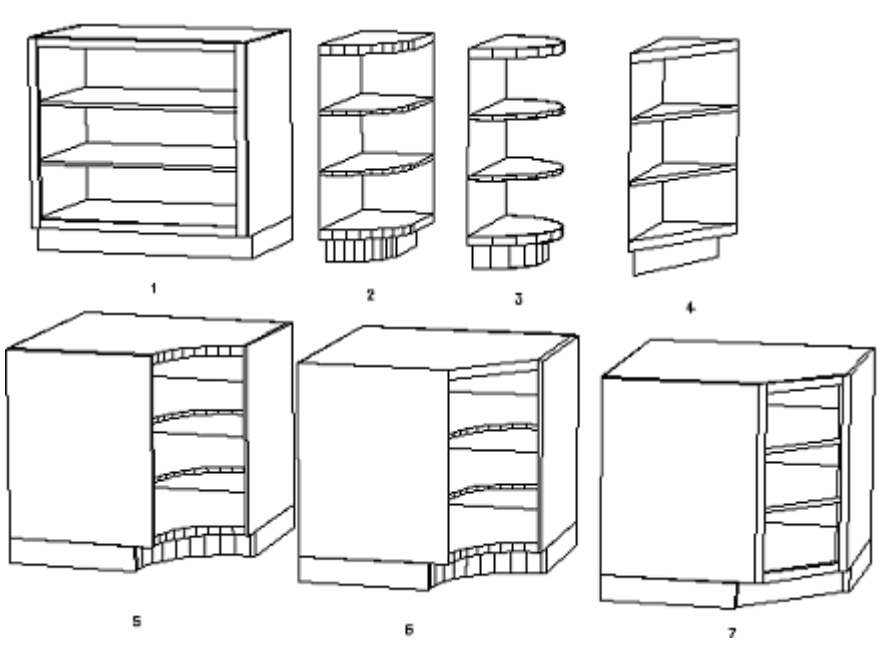


Standard depth of cabinet.
Standard height of cabinet.
Standard height of upper section from top to top of divider.
Size of extra wide horizontal dividers / filler. (This value is used for fillers and spacers in frameless construction.)

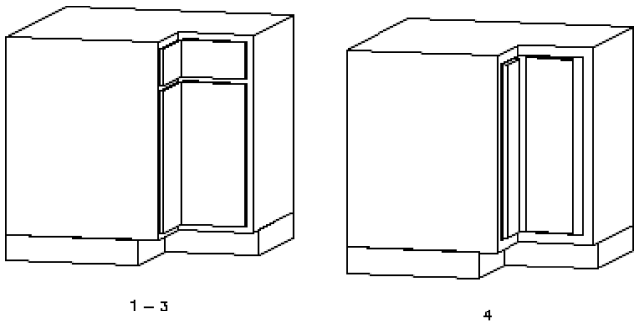
BASE AND VANITY CABINET NOMENCLATURES



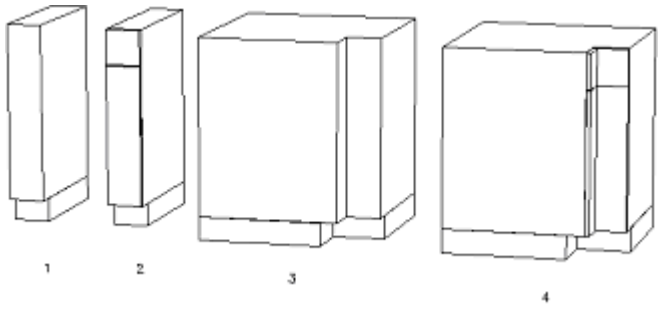
Standard cabinet (1)
Standard sink cabinet (2)
Peninsula cabinet (3)
Blind corner cabinet (4)
Peninsula blind corner cabinet (5)
Drawer cabinet (6)
Custom drawer cabinet specified drawer heights (7)
Sink drawer cabinet (8)
Knee hole drawer cabinet (9)



Standard open shelf cabinet (1)
Quarter circle open shelf cabinet (2)
Wedge open shelf cabinet (4)
Peninsula end open shelf cabinet (3)
Radiused corner open shelves (5)
Radiused corner with diagonal top open shelves (6)
Diagonal open shelves (7)

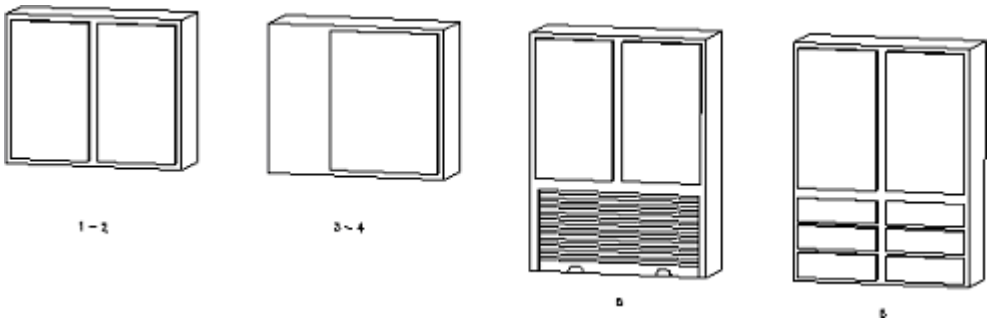


Pie-cut cabinet (1)
Overlaid door lazy susan cabinet (2)
Pie-cut sink cabinet (3)
Door hung lazy susan (4)
Diagonal cabinet (5)
Diagonal lazy susan cabinet (6)
Diagonal sink cabinet (7)
Angle cabinet (8)

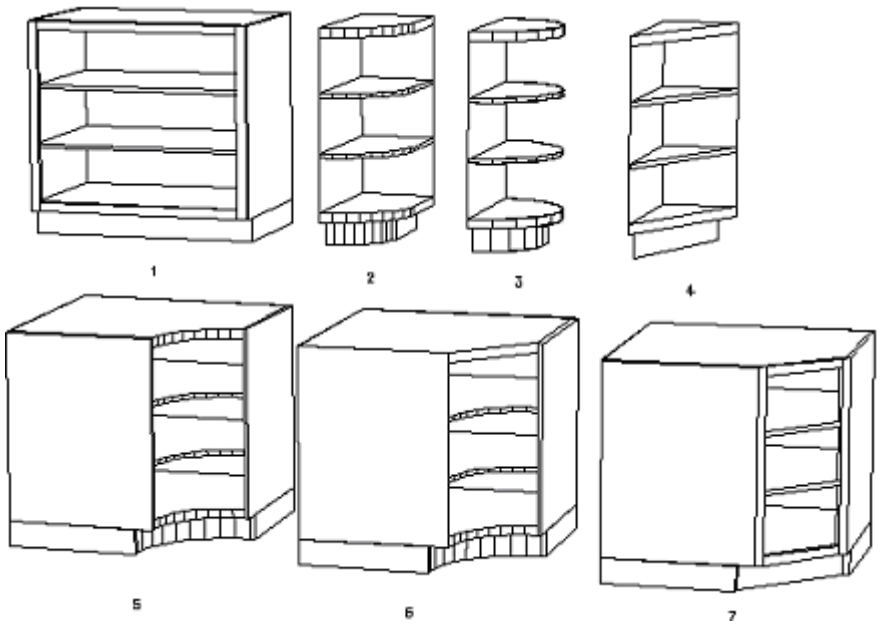


Standard filler (1)
Corner filler (2)
if Layer 15 = 1
    Standard filler with overlay (3)
    Corner filler with overlay (4)

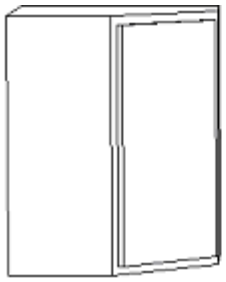
WALL CABINET NOMENCLATURES



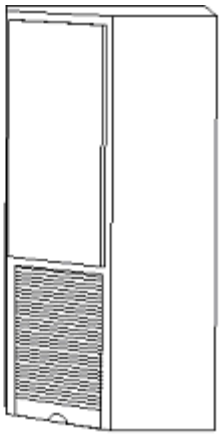
Standard cabinet (1)
Peninsula cabinet (2)
Hood cabinet (1 with sides extended down to cover hood sides)
Blind corner cabinet (3)
Peninsula blind corner cabinet (4)
Standard + appliance garage cabinet (5)
Drawer cabinet (6)



Standard open shelf cabinet (1) less toe kick
Peninsula open shelf cabinet no back (1) less toe kick
Open 1/4 round shelves less toe kick (2) less toe kick
Open pen. 1/2 round shelves less toe kick (3) less toe kick
Wedge open shelves less toe kick (4) less toe kick
Corner open shelf cabinet (5) less toe kick
Corner open shelf cabinet with diagonal top (6) less toe kick
Corner diagonal open shelf cabinet (7) less toe kick

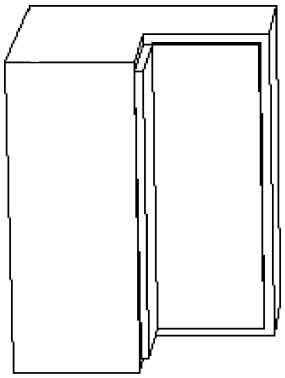


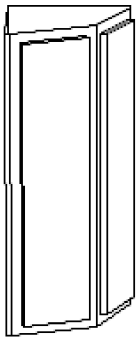
1. Standard cabinet
2. Peninsula has doors both sides

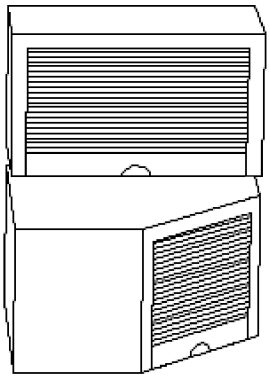


3. Standard cabinet
4. Peninsula version has doors on both sides

Diagonal cabinet (1)
Peninsula diagonal cabinet (2)
Diagonal + appliance garage cabinet (3)







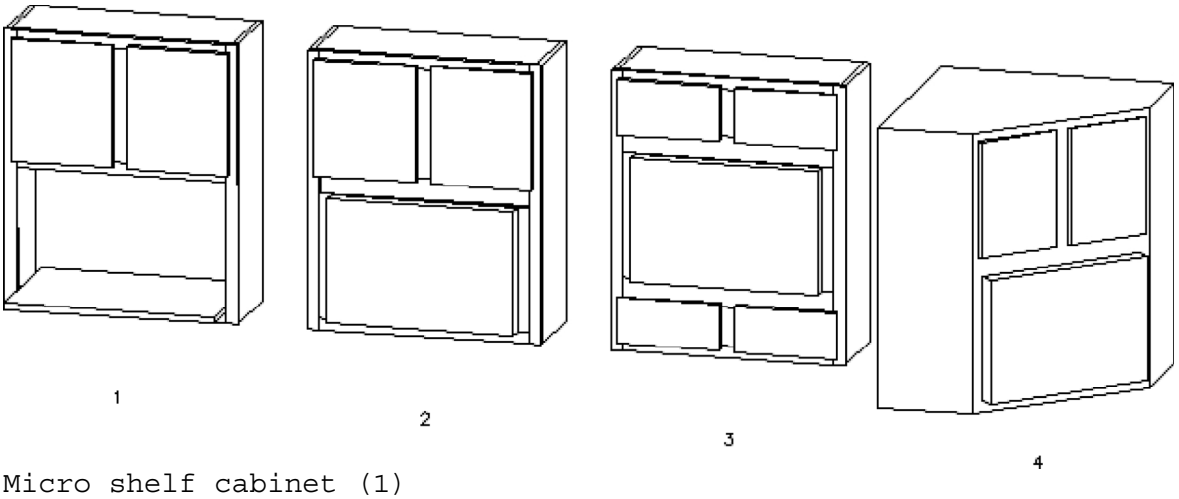
4.

5.

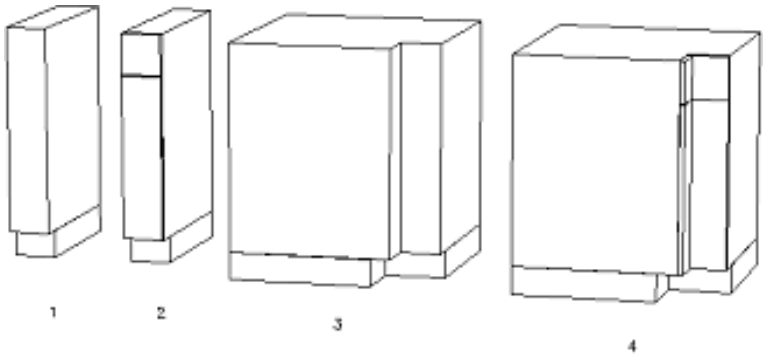
1. Standard cabinet
2. Peninsula version

3.

Pie-cut cabinet (1)
Peninsula pie-cut cabinet (2)
Angle cabinet (3)
Appliance garage cabinet (4)
Corner appliance garage cabinet (5)

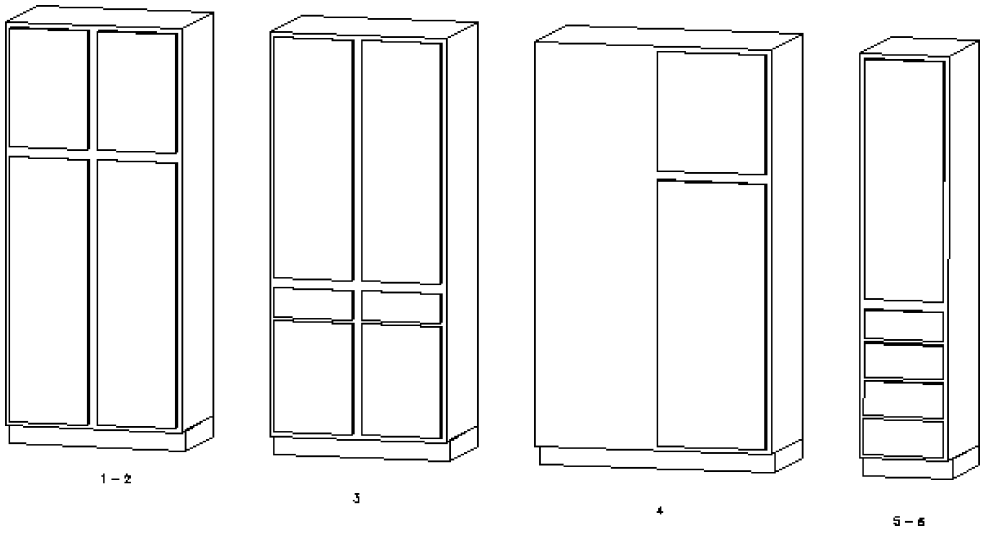


Micro shelf cabinet (1)
Micro cabinet (2)
Micro + drawer cabinet (3)
Corner micro oven cabinet (4)

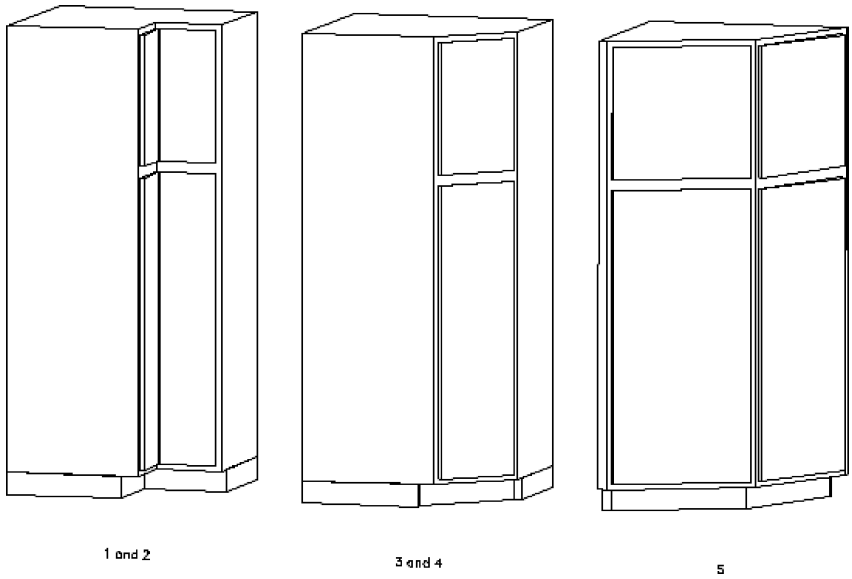


Standard filler (1) less toe kick
Corner filler (3) less toe kick
Standard filler with styled overlay (2) less toe kick and drawer
Corner filler with styled overlay (4) less toe kick and drawerS

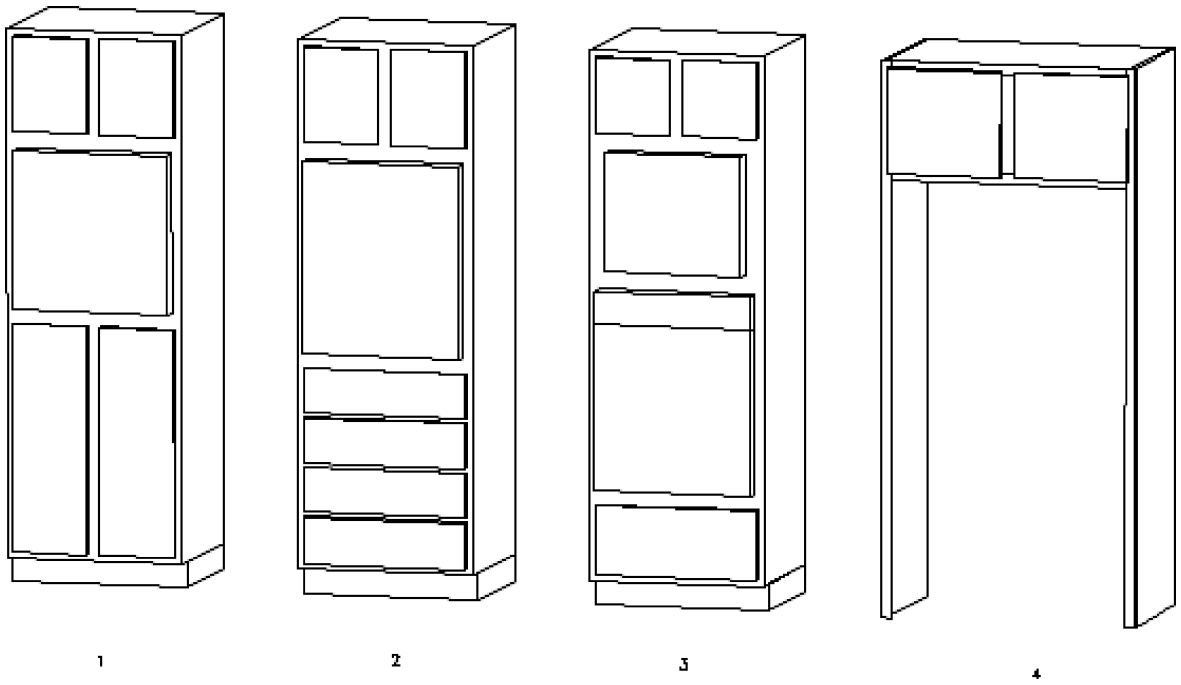
TALL CABINET NOMENCLATURES



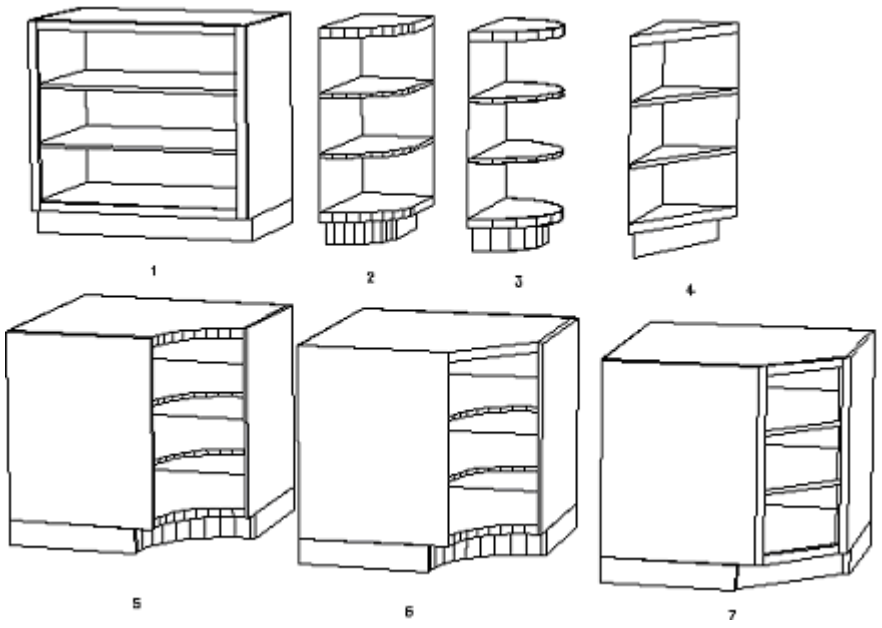
Standard cabinet (1)
Broom cabinet (2)
Center drawer cabinet (3)
Blind corner cabinet (4)
Drawer cabinet (5)
Custom drawer cabinet (6)



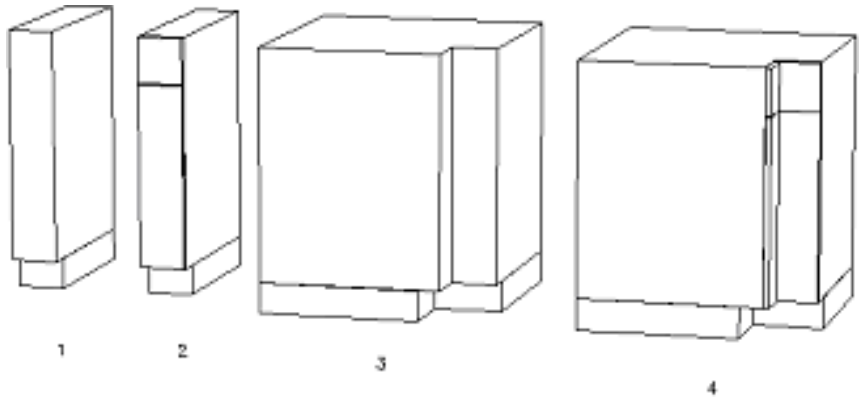
Pie-cut cabinet (1)
Overlaid door lazy susan cabinet (2)
Diagonal cabinet (3)
Diagonal lazy susan cabinet (4)
Angle cabinet (3)



Oven with door under cabinet (1)
Oven with drawer under cabinet (2)
Two opening oven cabinet (3)
Refrigerator cabinet (4)

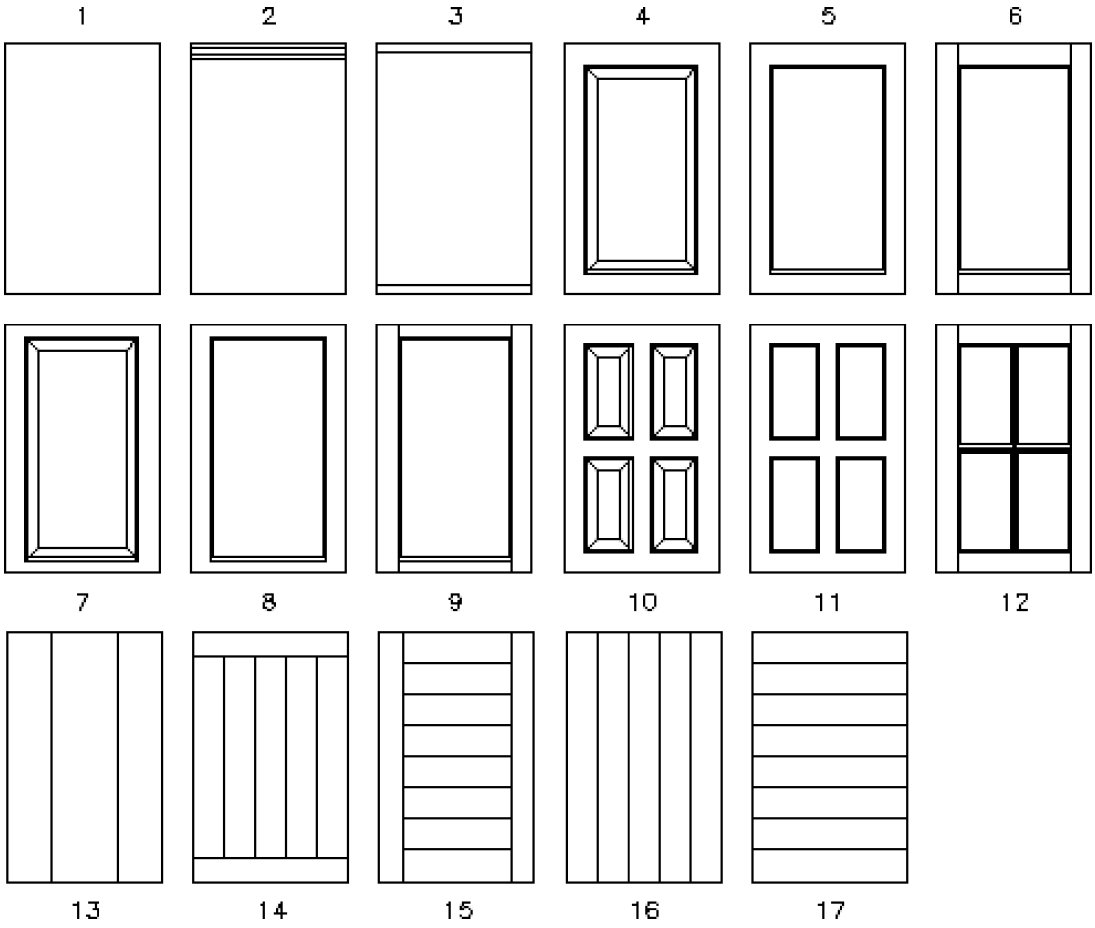


Standard open shelf cabinet (1)
Quarter circle open shelf cabinet (2)
Peninsula end open shelf cabinet (3)
Wedge open shelf cabinet (4)
Radiused corner open shelf cabinet (5)
Diagonal open shelves (6)
Diagonal open shelves (7)

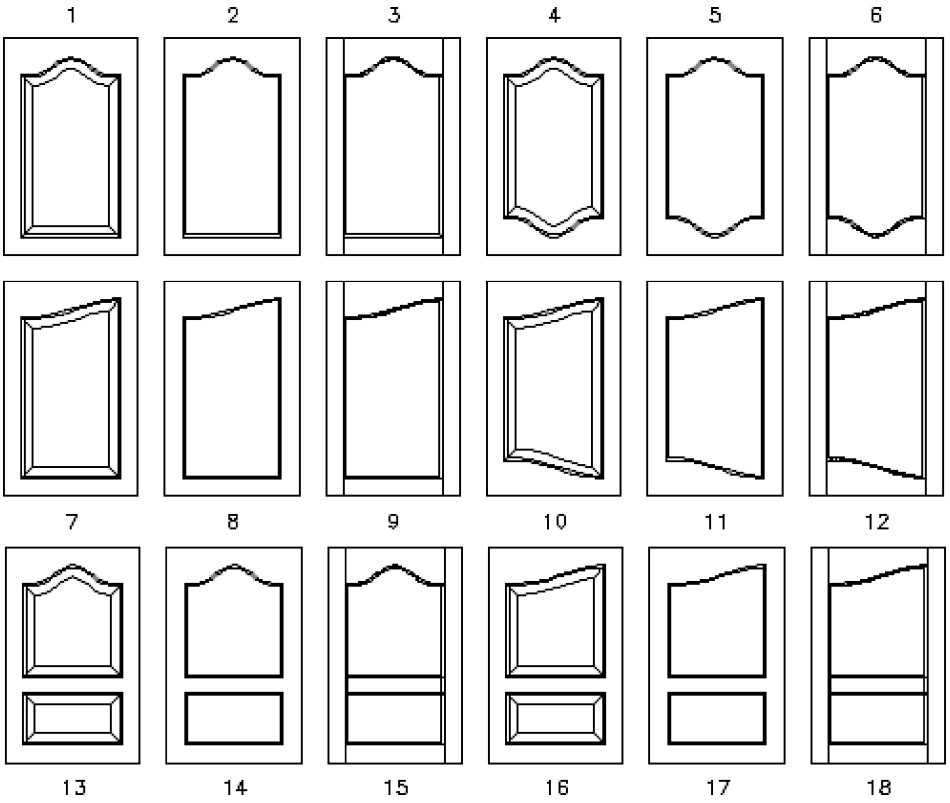


Standard filler (1)
Corner filler (3)
Standard filler with styled overlay (2)
Corner filler with styled overlay (4)

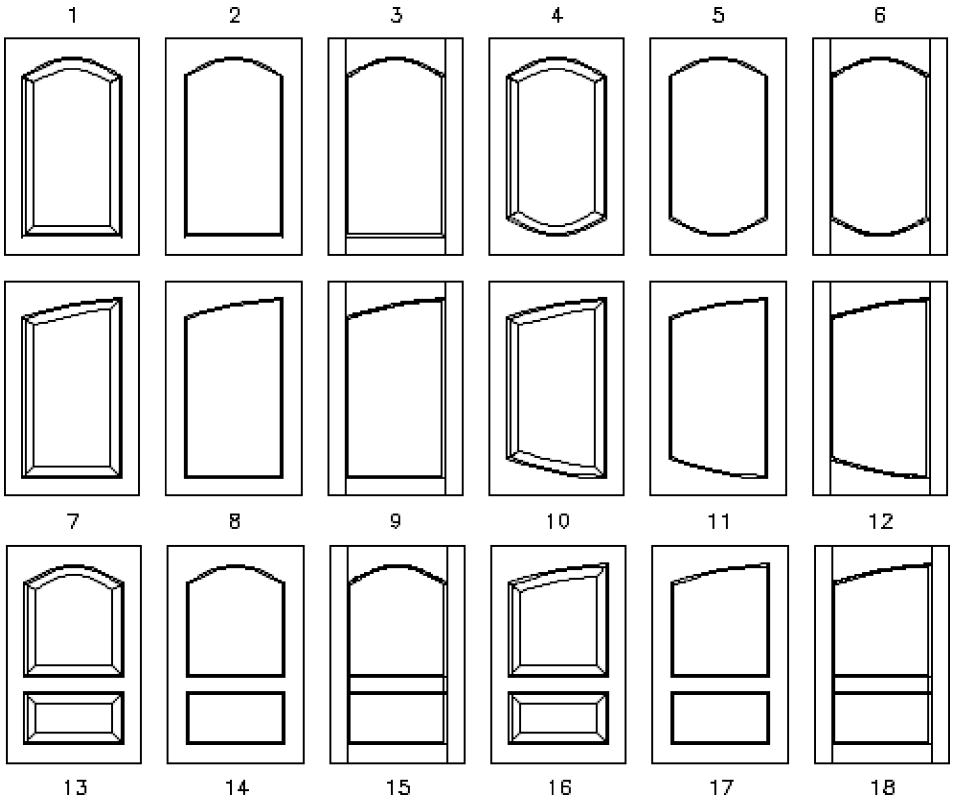
DOOR NOMENCLATURES



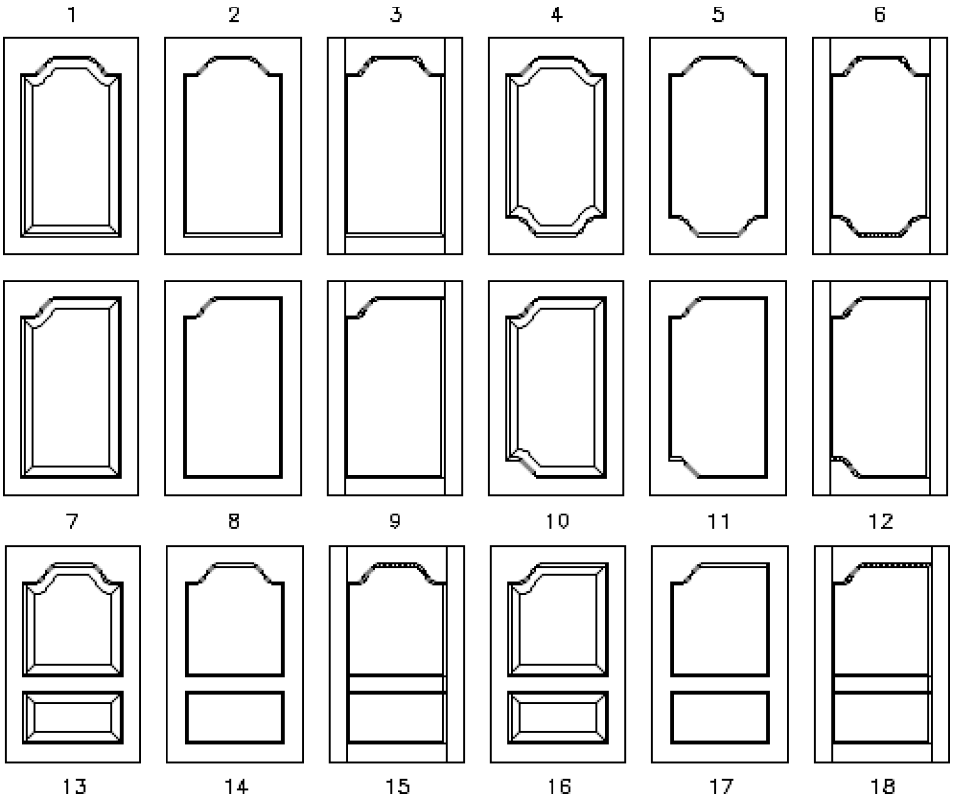
Flat slab door (1)
Continuous 'C'-Style pull (2)
Small continuous pull (single or double) (3)
Rectangular frame and raised panel (4)
Rectangular frame and flat panel (5)
Rectangular glass frame (6)
Unequal frame (7)
Unequal frame and raised panel (8)
Unequal frame only (9)
Multi sectioned frame (10)
Multi sectioned frame and raised panel (11)
Multi sectioned frame only (12)
Vertical varying v-groove (13)
Vertical v-groove with header frame (14)
Horizontal v-groove with frame (15)
Vertical v-groove (16)
Horizontal v-groove (17)



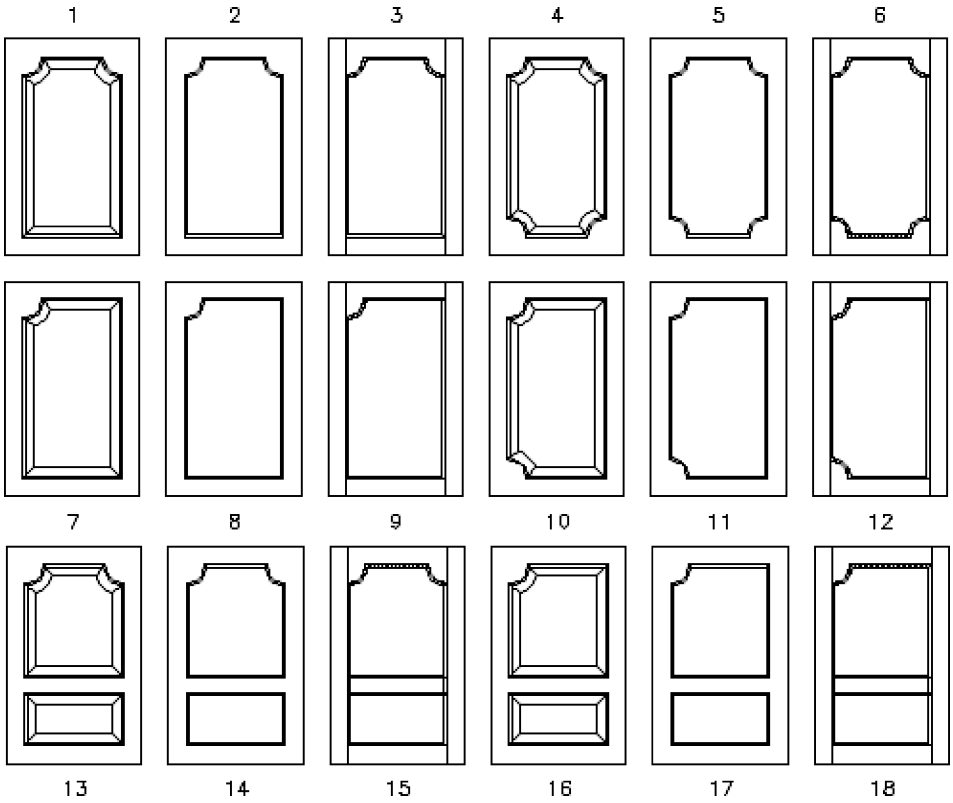
Cathedral frame and raised panel (1)
Cathedral frame and flat panel (2)
Cathedral glass frame (3)
Double cathedral frame and raised panel (4)
Double cathedral frame and flat panel (5)
Double cathedral glass frame (6)
Half-cathedral frame and raised panel (7)
Half-cathedral frame and flat panel (8)
Half-cathedral glass frame (9)
Double half-cathedral frame and raised panel (10)
Double half-cathedral frame and flat panel (11)
Double half-cathedral glass frame (12)
Cathedral frame and raised panel over square (13)
Cathedral frame and flat panel over square (14)
Cathedral glass frame over square (15)
Half-cathedral frame and raised panel over square (16)
Half-cathedral frame and flat panel over square (17)
Half-cathedral glass frame over square (18)



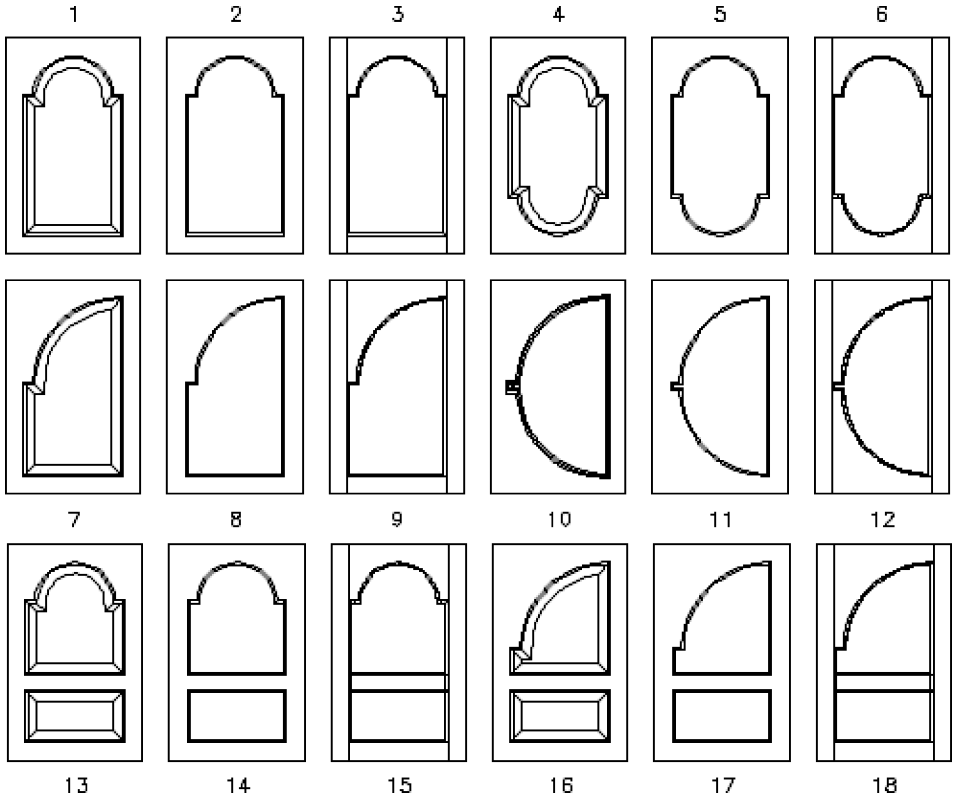
Roman frame and raised panel (1)
Roman frame and flat panel (2)
Roman glass frame (3)
Double roman frame and raised panel (4)
Double roman frame and flat panel (5)
Double roman glass frame (6)
Half-roman frame and raised panel (7)
Half-roman frame and flat panel (8)
Half-roman glass frame (9)
Double half-roman frame and raised panel (10)
Double half-roman frame and flat panel (11)
Double half-roman glass frame (12)
Roman frame and raised panel over square (13)
Roman frame and flat panel over square (14)
Roman glass frame over square (15)
Half-roman frame and raised panel over square (16)
Half-roman frame and flat panel over square (17)
Half-roman glass frame over square (18)



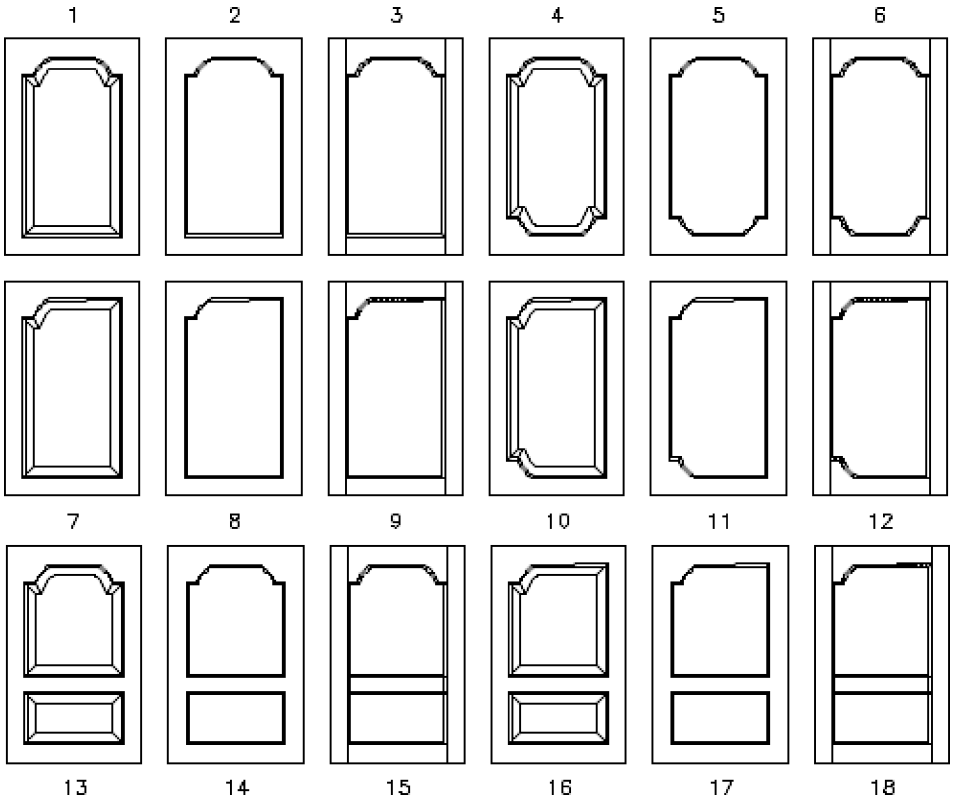
French frame and raised panel (1)
French frame and flat panel (2)
French glass frame (3)
Double French frame and raised panel (4)
Double French frame and flat panel (5)
Double French glass frame (6)
Half-French frame and raised panel (7)
Half-French frame and flat panel (8)
Half-French glass frame (9)
Double half-French frame and raised panel (10)
Double half-French frame and flat panel (11)
Double half-French glass frame (12)
French frame and raised panel over square (13)
French frame and flat panel over square (14)
French glass frame over square (15)
Half-French frame and raised panel over square (16)
Half-French frame and flat panel over square (17)
Half-French glass frame over square (18)



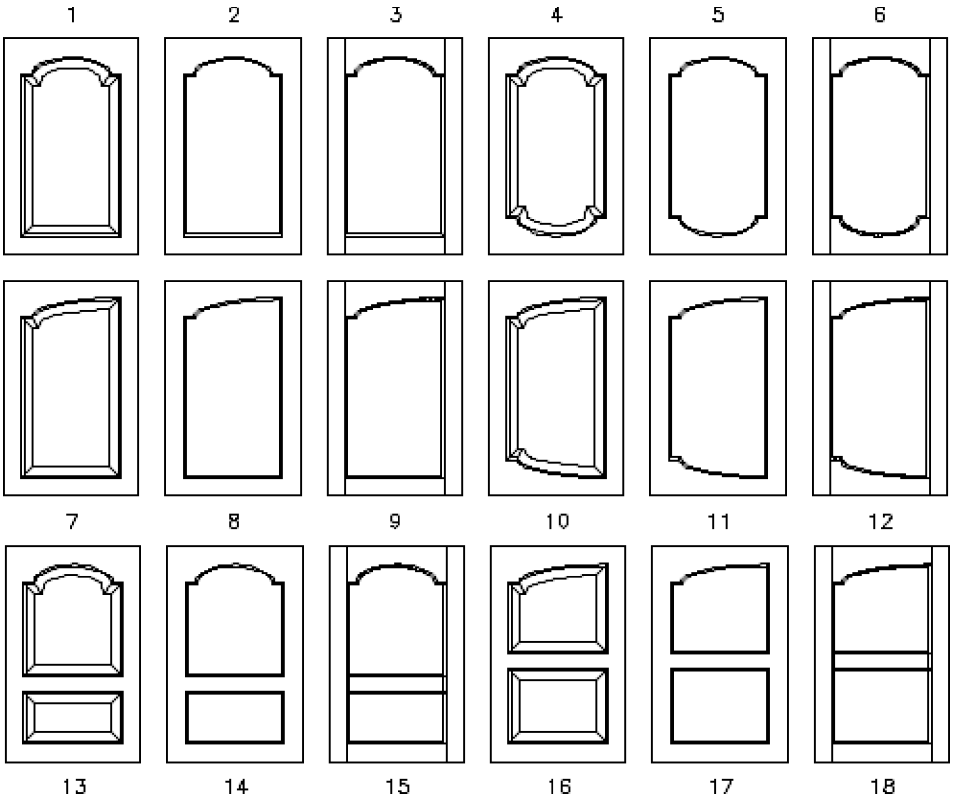
Beaded frame and raised panel (1)
Beaded frame and flat panel (2)
Beaded glass frame (3)
Double beaded frame and raised panel (4)
Double beaded frame and flat panel (5)
Double beaded glass frame (6)
Half-beaded frame and raised panel (7)
Half-beaded frame and flat panel (8)
Half-beaded glass frame (9)
Double half-beaded frame and raised panel (10)
Double half-beaded frame and flat panel (11)
Double half-beaded glass frame (12)
Beaded frame and raised panel over square (13)
Beaded frame and flat panel over square (14)
Beaded glass frame over square (15)
Half-beaded frame and raised panel over square (16)
Half-beaded frame and flat panel over square (17)
Half-beaded glass frame over square (18)



True-radius frame and raised panel (1)
True-radius frame and flat panel (2)
True-radius glass frame (3)
Double true-radius frame and raised panel (4)
Double true-radius frame and flat panel (5)
Double true-radius glass frame (6)
Half-true-radius frame and raised panel (7)
Half-true-radius frame and flat panel (8)
Half-true-radius glass frame (9)
Double half-true-radius frame and raised panel (10)
Double half-true-radius frame and flat panel (11)
Double half-true-radius glass frame (12)
True-radius frame and raised panel over square (13)
True-radius frame and flat panel over square (14)
True-radius glass frame over square (15)
Half-true-radius frame and raised panel over square (16)
Half-true-radius frame and flat panel over square (17)
Half-true-radius glass frame over square (18)

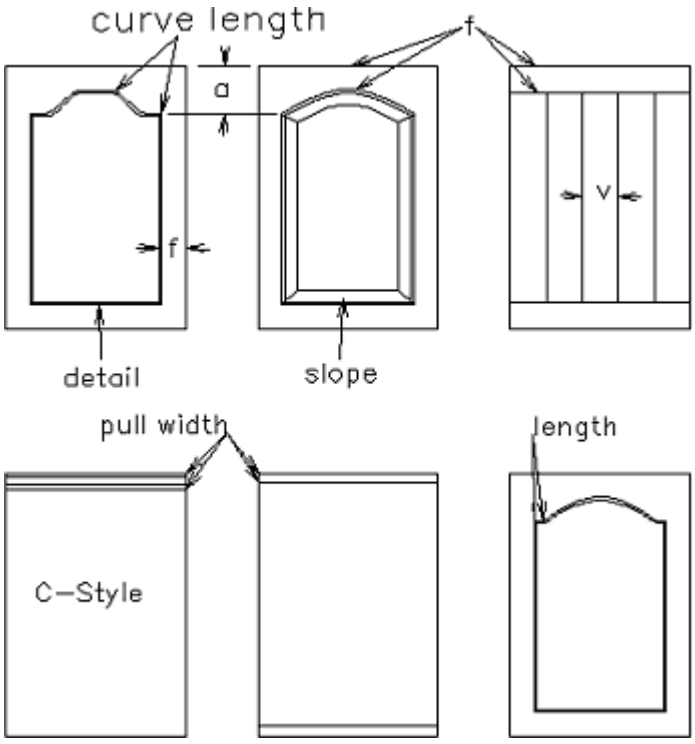


Victorian frame and raised panel (1)
Victorian frame and flat panel (2)
Victorian glass frame (3)
Double Victorian frame and raised panel (4)
Double Victorian frame and flat panel (5)
Double Victorian glass frame (6)
Half-Victorian frame and raised panel (7)
Half-Victorian frame and flat panel (8)
Half-Victorian glass frame (9)
Double half-Victorian frame and raised panel (10)
Double half-Victorian frame and flat panel (11)
Double half-Victorian glass frame (12)
Victorian frame and raised panel over square (13)
Victorian frame and flat panel over square (14)
Victorian glass frame over square (15)
Half-Victorian frame and raised panel over square (16)
Half-Victorian frame and flat panel over square (17)
Half-Victorian glass frame over square (18)



Oval frame and raised panel (1)
Oval frame and flat panel (2)
Oval glass frame (3)
Double oval frame and raised panel (4)
Double oval frame and flat panel (5)
Double oval glass frame (6)
Half-oval frame and raised panel (7)
Half-oval frame and flat panel (8)
Half-oval glass frame (9)
Double half-oval frame and raised panel (10)
Double half-oval frame and flat panel (11)
Double half-oval glass frame (12)
Oval frame and raised panel over square (13)
Oval frame and flat panel over square (14)
Oval glass frame over square (15)
Half-oval frame and raised panel over square (16)
Half-oval frame and flat panel over square (17)
Half-oval glass frame over square (18)

DOOR MEASUREMENTS



Standard frame width (f)
Arched frame width (a)
Detail width on frame
Width of raised slope on raised panel
Vertical frame width unequal square frame
Horizontal frame width unequal square frame
Vertical divider frame width multi panel
Horizontal divider frame width multi panel
Mullion width
Length of curve on French arch
Straight sect. length before starting arch on arched door
Max. V-groove spacing (v)
Width of v-groove (actual groove for shading only)
Pull width C-Style:
First pull width narrow continuos pull door 1 of 2
Second pull width narrow continuos pull door 2 of 2
Enter door thickness

PART LIST SETUP

General: for all the part listing sections.
The numbers you will be entering unless other wise noted are values necessary to add or subtract from the finished size of the cabinet. The finished size is the size listed in the attribute nomenclature.

WALL PART GENERATING DETAIL DATA

BACK:
BACK WIDTH, UNfinished end deduction:
BACK WIDTH, Finished end deduct:
BACK HEIGHT, TOP deduction:
BACK HEIGHT, BOTTOM deduction:
Deduction for BACK corner of DIAGONAL BACK:

WALL PART GENERATING DETAIL DATA page 2

END PANEL:
UNfinished END, WIDTH deduction: (width of end panel)
UNfinished PENINSULA END, WIDTH, deduction:
UNfinished END, HEIGHT deduction:
Of the unfinised end height deduction how much is the top:
Finished END, WIDTH deduction:
PENINSULA Finished END, WIDTH deduction:
DIAGONAL END, WIDTH addition: (diagonal end width is larger or smaller than the standard end panel. This is the difference between the standard end and the diagonal end panel. If the diagonal end width is less than the standard end width use a negative (-) number to subtract.)

WALL PART GENERATING DETAIL DATA page 3

PARTITION:
PARTITION, WIDTH deduction:
Peninsula PARTITION, WIDTH deduction:
PARTITION, HEIGHT deduction:
Of the partition height deduction how much is the top:
PARTITION, THICKNESS:

TOP:
TOP, WIDTH deduction:
Peninsula TOP, WIDTH deduction:
TOP, UNfinished end LENGTH deduction:
TOP, Finished end LENGTH deduction:

WALL PART GENERATING DETAIL DATA page 4

BOTTOM:
BOTTOM, WIDTH deduction:
Peninsula BOTTOM, WIDTH deduction:
UNfinished end BOTTOM, LENGTH deduction:
BOTTOM, Finished end LENGTH deduction:

FIXED SHELF:
FIXED SHELF, WIDTH deduction:
Peninsula FIXED SHELF, WIDTH deduction:
UNfinished end FIXED SHELF LENGTH deduction:
Finished end FIXED SHELF, LENGTH deduction:

WALL PART GENERATING DETAIL DATA page 5

SHELF:
SHELF WIDTH deduction:
Peninsula SHELF, WIDTH deduction:
UNfinished end SHELF, LENGTH deduct:
Finished end SHELF, LENGTH deduct:
DIAGONAL CORNER SHELF BACK deduction:

CLEATS:
NUMBER of CLEATS:
WIDTH of CLEAT:
LENGTH OF CLEAT UNfinished end deduction:
LENGTH OF CLEAT Finished end deduction:
CLEAT LENGTH deduction for diagonal rear corner:

BASE and VANITY PART GENERATING DETAIL DATA

HEIGHT:
HIDDEN HEIGHT adjustment for base cabinet: (The drawing program uses a height from floor to bottom of countertop. If the cabinet is actually taller than this value enter the difference here.)

TOE KICK:
Is the TOE KICK a LOOSE assembly? : (0 = integral, 1 = loose toe kick)
HIDDEN amount of TOE KICK?: (The drawing program uses a height from floor to bottom of the cabinet front. If the toe kick is actually taller than this value enter the difference here.)
if the TOE KICK is not a LOOSE assembly
TOE KICK Finished end deduction:
TOE KICK UNfinished end deduction:

BACK:
BACK WIDTH, UNfinished end deduction:
BACK WIDTH, Finished end deduct:
BACK HEIGHT, TOP deduction:
BACK HEIGHT, BOTTOM deduction:
New amount of BACK HEIGHT, BOTTOM deduction (no tk):
Deduction for BACK corner of DIAGONAL BACK:

BASE and VANITY PART GENERATING DETAIL DATA p2

END:
UNfinished END, WIDTH deduction:
UNfinished PENINSULA END, WIDTH, deduction:
UNfinished END, HEIGHT deduction:

Of the unfinished end height deduction how much is the top:
Finished END, WIDTH deduction:
PENINSULA Finished END, WIDTH deduction:
DIAGONAL END, WIDTH addition:

BASE and VANITY PART GENERATING DETAIL DATA p3

PARTITION:

PARTITION, WIDTH deduction:
Peninsula PARTITION, WIDTH deduction:
PARTITION, HEIGHT deduction:
PARTITION, THICKNESS:

TOP:

SOLID TOP, WIDTH deduction: (-1 = no top): (A base cabinet may have a solid top, any positive value or 0 tells Designer Plus that there is a top or dust cover.)
If there is a top
- Peninsula SOLID TOP, WIDTH deduction:
- SOLID TOP, UNfinished end LENGTH deduction:
- SOLID TOP, Finished end LENGTH deduction:

BASE and VANITY PART GENERATING DETAIL DATA p4

BOTTOM:

BOTTOM, WIDTH deduction:
Peninsula BOTTOM, WIDTH deduction:
UNfinished end BOTTOM, LENGTH deduction:
BOTTOM, Finished end LENGTH deduction:

FIXED SHELF:

FIXED SHELF, WIDTH deduction:
Peninsula FIXED SHELF, WIDTH deduction:
UNfinished end FIXED SHELF LENGTH deduction:
Finished end FIXED SHELF, LENGTH deduction:

BASE and VANITY PART GENERATING DETAIL DATA p5

SHELF:

STANDARD SHELF WIDTH:
SHELF WIDTH deduction:
Peninsula SHELF, WIDTH deduction:
UNfinished end SHELF, LENGTH deduct:
Finished end SHELF, LENGTH deduct:
DIAGONAL CORNER SHELF BACK deduction:

CLEATS:

NUMBER of CLEATS: (enter 0 if no hanging cleats are used)
If cleats or hangers are used,
- CLEAT SIZING
- WIDTH of CLEAT:
- LENGTH OF CLEAT UNfinished end deduction:
- LENGTH OF CLEAT Finished end deduction:

CLEAT LENGTH deduction for diagonal rear corner:

If frameless construction:

BASE and VANITY PART GENERATING DETAIL DATA p6

Frameless DRAWER OPENING HEIGHT deduction: (This is the actuall opening space for the top drawer frameless construction.)

SPREADER:

SPREADER ON SINGLE DOOR CABS? 1 = YES, 0 = NO: (not all cabinets need a spreader between door and drawer front, this is the horizontal divider that the doors on 2 door cabinets strike.)
SPREADER WIDTH:

TALL PART GENERATING DETAIL DATA page 1

TOE KICK:

Is the TOE KICK a LOOSE assembly? : (0 = integral, 1 = loose toe kick)
HIDDEN amount of TOE KICK?: (the part of the toekick behind the face frame.)
if the TOE KICK is not a LOOSE assembly
TOE KICK Finished end deduction:
TOE KICK UNfinished end deduction:

BACK:

BACK WIDTH, UNfinished end deduction:
BACK WIDTH, Finished end deduct:
BACK HEIGHT, TOP deduction:
BACK HEIGHT, BOTTOM deduction:
Deduction for BACK corner of DIAGONAL BACK:

TALL PART GENERATING DETAIL DATA page 2

END:

UNfinished END, WIDTH deduction:
UNfinished PENINSULA END, WIDTH, deduction:
UNfinished END, HEIGHT deduction:
Of the unfinished end height deduction how much is the top:
Finished END, WIDTH deduction:
PENINSULA Finished END, WIDTH deduction:
DIAGONAL END, WIDTH addition:

TALL PART GENERATING DETAIL DATA page 3

PARTITION:

PARTITION, WIDTH deduction:
Peninsula PARTITION, WIDTH deduction:
PARTITION, HEIGHT deduction:
PARTITION, THICKNESS:

TOP:

TOP, WIDTH deduction:
Peninsula TOP, WIDTH deduction:

TOP, UNfinished end LENGTH deduction:
TOP, Finished end LENGTH deduction:

TALL PART GENERATING DETAIL DATA page 4

BOTTOM:

BOTTOM, WIDTH deduction:
Peninsula BOTTOM, WIDTH deduction:
UNfinished end BOTTOM, LENGTH deduction:
BOTTOM, Finished end LENGTH deduction:

FIXED SHELF:

FIXED SHELF, WIDTH deduction:
Peninsula FIXED SHELF, WIDTH deduction:
UNfinished end FIXED SHELF LENGTH deduction:
Finished end FIXED SHELF, LENGTH deduction:

TALL PART GENERATING DETAIL DATA page 5

SHELF:

STANDARD SHELF WIDTH: (100 = no standard):
SHELF WIDTH deduction:
Peninsula SHELF, WIDTH deduction:
UNfinished end SHELF, LENGTH deduct:
Finished end SHELF, LENGTH deduct:
DIAGONAL CORNER SHELF BACK deduction:

CLEATS:

NUMBER of CLEATS: (enter 0 if no hanging cleats are used)
If cleats or hangers are used,

CLEAT SIZING:

WIDTH of CLEAT:
LENGTH OF CLEAT UNfinished end deduction:
LENGTH OF CLEAT Finished end deduction:
CLEAT LENGTH deduction for diagonal rear corner:

If frameless construction:

TALL PART GENERATING DETAIL DATA page 6

Frameless DRAWER OPENING HEIGHT deduction: (This is the actuall opening space for the top drawer of frameless construction.)

SPREADER:

SPREADER ON SINGLE DOOR CABS? 1 = YES, 0 = NO: (not all cabinets need a spreader between door and drawer front, this is the horizontal divider that the doors on 2 door cabinets strike.)
SPREADER WIDTH:

DRAWER PART GENERATING DETAIL DATA

If frameless construction:

Standard OPENING HEIGHT for top drawer:
Drawer GUIDE SIDE SPACE deduction: (total)

Drawer BOX has 1, 3, or 4 SIDES:
AUTO Drawer LENGTH deduction: (min amount to deduct from the cabinet depth.)
STANDARD Drawer SIDE LENGTHS? 1 = YES, 0 = NO:
IF STANDARD Drawer SIDE LENGTHS are used
Drawer SIDE LENGTH 1 (shortest):
Drawer SIDE LENGTH 2 (medium):
Drawer SIDE LENGTH 3 (longest):

DRAWER PART GENERATING DETAIL DATA page 2

If the number of drawer sides is one (1):
HEIGHT of STANDARD BACK:
Otherwise:
AUTO Drawer SIDE HEIGHT deduction: (min amount to deduct from the drawer opening height.)
STANDARD Drawer SIDE HEIGHTS? 1 = YES, 0 = NO:
IF STANDARD Drawer SIDE HEIGHTS are used
STANDARD Drawer SIDE HEIGHT 1 (shallowest):
STANDARD Drawer SIDE HEIGHT 2 (medium):
STANDARD Drawer SIDE HEIGHT 3 (deepest):
Drawer SIDE CONSTRUCTION LENGTH deduction:
Drawer WIDTH CONSTRUCTION deduction:
Drawer BOTTOM LENGTH CONSTRUCTION deduction:
Drawer BOTTOM WIDTH CONSTRUCTION deduction:

ROLLOUT SHELF PART GENERATING DETAIL DATA

Rollout BOX has 0, 2, 3, 4, or 5 SIDES: (5 sides mean a double front)
AUTO Rollout LENGTH deduction: (min amount to deduct from the cabinet depth for the rollout.)
Rollout GUIDE HINGE SIDE SPACE deduction (open space only):
Rollout GUIDE SIDE SPACE NO HINGE side deduction:
If the number of rollout sides = 2 or > 3:
FRONT WIDTH addition: (add to rollout box width)
HEIGHT of rollout FRONT:

ROLLOUT SHELF PART GENERATING DETAIL DATA p2

STANDARD rollout SIDE LENGTHS? 1 = YES, 0 = NO:
IF STANDARD rollout SIDE LENGTHS are used
STANDARD Rollout SIDE LENGTH 1 (shortest):
STANDARD Rollout SIDE LENGTH 2 (medium):
STANDARD Rollout SIDE LENGTH 3 (longest):
If the number of rollout sides is 1 or greater than 2
Rollout SIDE HEIGHT:
Rollout SIDE CONSTRUCTION LENGTH deduction:
Rollout front / back LENGTH deduction:
Rollout BOTTOM LENGTH deduction:
Rollout BOTTOM WIDTH deduction:

BREAD BOARD DETAIL DATA

The amount to deduct for BREADBOARD guide space WIDTH:
The amount to deduct for BREADBOARD LENGTH: (from cabinet depth)
The amount to deduct for bread board from drawer height:

DOOR CONSTRUCTION DETAIL DATA

Are Frame and panel doors mitered? YES = 1, No = 0:
If door frames not mitered
    Frame; Total (2 sides) depth of mortise:
Total (2 sides) insertion depth of panel:
C-Pull; Width of pull to deduct from door height:
Small pull; Total width to deduct from door height:
The Width of batten:
The set back (total amount) from door edges for batten:

WALL FACE FRAME SIZE or THICKNESS' SETUP

WALL FACE FRAME CONSTRUCTION DETAIL DATA

Total mortise depth (2 ends) to add to exposed rail:
Amount to add to standard stile for DIAGONAL stile cut:
(This is the rip width allowance.)
The actual width of frame TOP:
The actual width of frame BOTTOM:
The actual width of normal frame STILE:
The actual width of DOOR - DRAWER DIVIDER frame:
The actual width of VERTICAL DIVIDER:
The actual width of WIDE HORIZONTAL DIVIDER:

WALL FRAMELESS BOX THICKNESS' DETAIL DATA

NOTE: These values are only used for fillers and spacers.
The actual thickness of TOP:
The actual thickness of BOTTOM:
The actual thickness of normal SIDE (end panel):

BASE FACE FRAME SIZE or THICKNESS' SETUP

BASE and VANITY FACE FRAME CONSTRUCTION DETAIL DATA

Total mortise depth (2 ends) to add to exposed rail
Amount to add to standard stile for DIAGONAL stile cut:
(This is the rip width allowance.)
The actual width of frame TOP:
The amount to deduct from TOP frame width for BREAD BOARD:
The actual width of frame BOTTOM:
The actual width of normal frame STILE:
The actual width of DOOR - DRAWER DIVIDER frame:
The actual width of VERTICAL DIVIDER:
The actual width of WIDE HORIZONTAL DIVIDER:

BASE and VANITY BOX THICKNESS' DETAIL DATA

NOTE: These values are only used for fillers and spacers.
The actual thickness of TOP:
The actual thickness of BOTTOM:
The actual thickness of normal SIDE (end panel):
The actual thickness of DOOR - DRAWER DIVIDER

TALL FACE FRAME SIZE or THICKNESS' SETUP

TALL FACE FRAME CONSTRUCTION DETAIL DATA

Total mortise depth (2 ends) to add to exposed rail
Width addition to standard stile for DIAGONAL stile cut: (This is the rip width allowance.)
The actual width of frame TOP:
The actual width of frame BOTTOM:
The actual width of normal frame STILE:
The actual width of DOOR - DRAWER DIVIDER frame:
The actual width of VERTICAL DIVIDER:
The actual width of WIDE HORIZONTAL DIVIDER:
The amount to deduct from WIDE HORIZONTAL DIVIDER for BREAD BOARD:

TALL BOX THICKNESS' DETAIL DATA

NOTE: These values are only used for fillers and spacers.
The actual thickness of TOP:
The actual thickness of BOTTOM:
The actual thickness of normal SIDE (end panel):
The actual thickness of DOOR - DRAWER DIVIDER:

TAMBOUR DOOR SIZING DETAIL DATA

Amount to add to the opening width:
Amount to add to opening for HEIGHT:

KNICK KNACK SHELVES DETAIL DATA

BACK THICKNESS deduction:
END THICKNESS deduction:

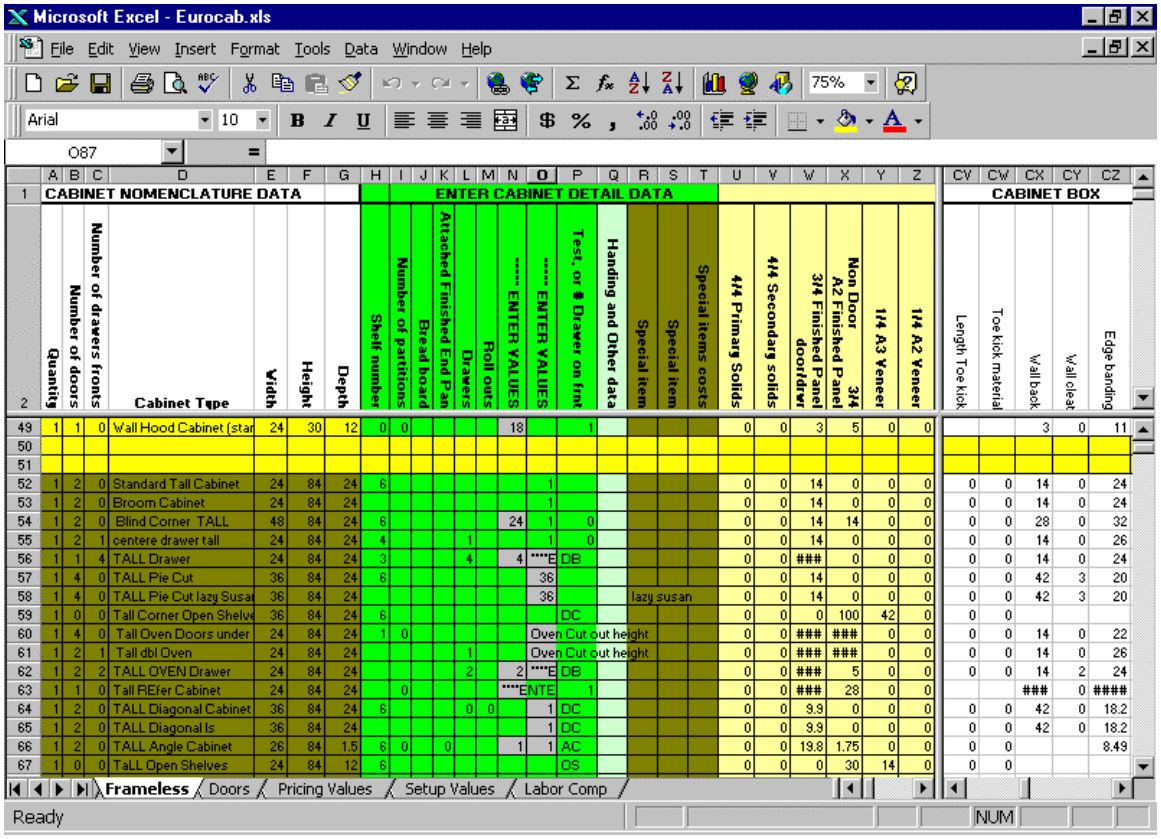
9. SPREADSHEET PRICING SYSTEM

Included with your Designer Plus program is a directory labeled **Pricing**. The directory contains my system of pricing custom cabinets. This has only recently been converted to variable values so there are still bugs in it. Use a file manager to copy these files to your hard drive. (This section is not available with the demo version of Designer Plus.)

This method of pricing offers several benefits:

1. Once setup the way you work, it will be very accurate. You can schedule shop time with some accuracy.
2. You are pricing for the way you work, not pricing against the guy down the street. This is important because your costs of materials are not variable, if you lower your selling price 10% you are actually lowering your wage 13% because what you pay for materials and overhead will not be lowered.
3. Materials ordering will be made easier.
4. You can take the bulk cutting information to the shop and run common materials in long lengths. It is much faster to handle one eight-foot piece of shelving than three thirty-two inch pieces.
5. Use these spreadsheets to do what-ifs to help develop your method of cabinet construction. Because the job is broken down into its components you can vary construction methods and materials while searching for the best product value for your shop. If you are putting too much labor into your work you can find what parts are being over built, or find some materials adjustment to bring the cost down so that you can stay in business.

Open the Pricing spreadsheet. Notice there are several tabs along the lower part of the screen. Select either the "Framed" or "Frameless" **SHEET** by clicking on the tab.



A Spreadsheet is a table of cells; in each cell you enter data, or create formulas. The formulas can use data from other places in the same sheet, or from other sheets not even open in your computer. Each horizontal line of data, called a **ROW** is a self-contained mathematical system of pricing the particular cabinet listed in the nomenclature "CABINET TYPE" (column D) cell. The vertical cells called **COLUMN**s organize data so that it can be used. A cell is given a name by where it is found by column and row, so a cell located in row 3 and column AX is **LABEL**ed AX3. Entering an equal sign (=) at the beginning of a cell tells the spreadsheet the contents is a formula so entering *=1+2* in the cell will display 3 in the cell when you press enter. The 1 or 2 could have been any cell label in the spreadsheet, for instance *=B3+C4* adds the values found in cells B3 and C4. Click on a few of the cells in the Pricing spreadsheet (columns BN to ES) and notice that all computations are based only on data contained in the same row.

In Pricing, cells in columns A through T are used to input data for the formulas in the rest of the row to compute the information desired. These cells correspond to the values created in the Designer Plus nomenclature. By taking the material report, opening it in a spreadsheet, and sorting it to columns using

spaces, commas, and apostrophes you can price cabinets drawn by Designer Plus.

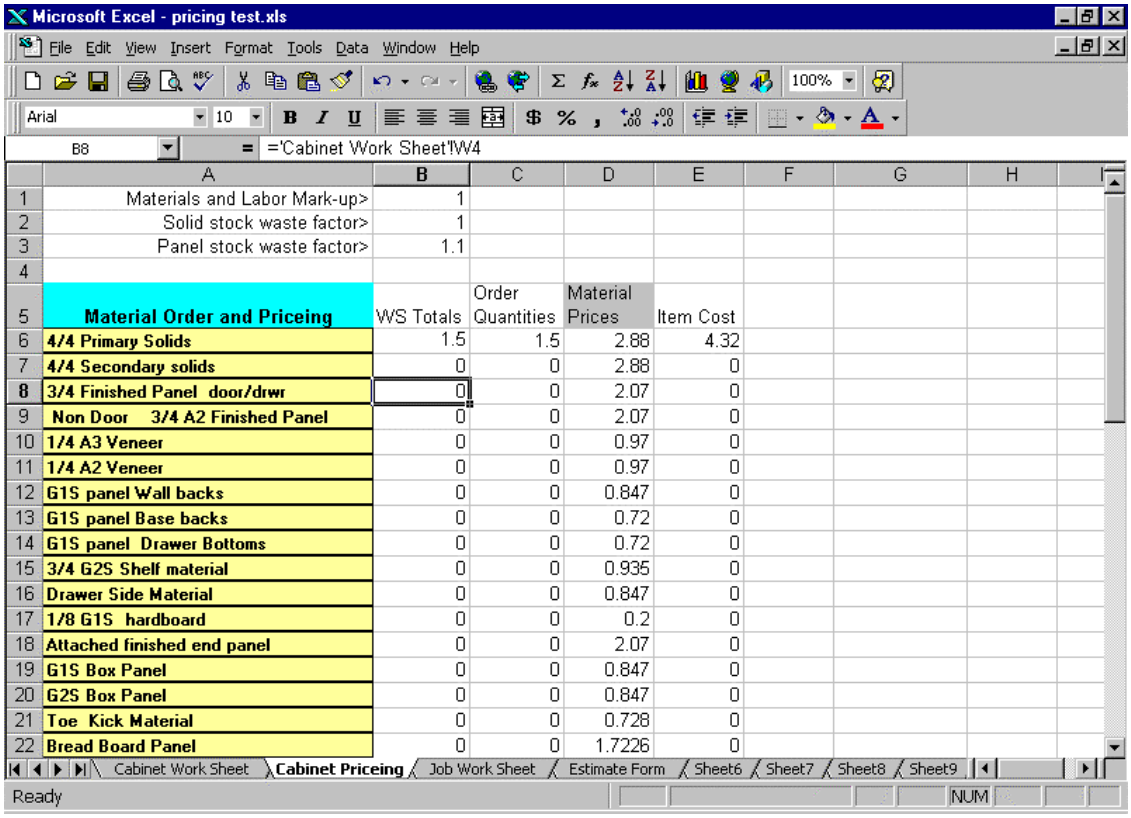
Cells U through BM are used to total material and time for this particular row, Cells BN through CI are used to compute door and drawer front needs. This cell spread is bordered at both ends with rose colored cells. In operation you copy the data for the door style used from the "*Door*" sheet, and paste it in this area of each row.

Cells EP through IT are the variables used in pricing and are a light yellow. Click on one of the cells in this section. Notice that it is equal to the value directly above it. This is the method used to get construction data to all of the rows when pricing, without entering the data in each row. The values in this section are created in the sheet called "*Setup Values*". Enter values for each construction question, rows 3-111 columns B and C. For the example some of the labor values come from calculations done in the sheet named "*Labor Comp*". These computations are averages of several jobs and are linked from one page to the next. To create a link, place an equal sign in the cell in the "*Setup Values*" sheet, select the "*Labor Comp*" sheet tab, then click on the cell to link and press enter to complete the link. You are then returned to the "*Setup Values*" sheet and the link is established. The value in this cell will also be displayed in the linked to cell.

The order placement of data in the setup values sheet is not usable as created because it is placed vertically. To change the orientation and place the data in the proper place highlight cells 3-111 of the column desired and copy it (Ctrl-C). Select the "*Pricing Value*" sheet tab, select a cell in column EP, from the Edit menu select "*paste special*" then choose "*values only*" and "*transpose*" then *OK*. In cell A of the same row enter a descriptive name for this type of construction. This sheet is your database of construction options. You can have as many construction types as desired and by swapping them in the estimate spreadsheet you can rapidly do what-if pricing.

Open the spreadsheet titled Estimate.

There are three sheets in this spreadsheet:
1. Cabinet worksheet,
2. Cabinet Pricing
3. Estimate Form



	A	B	C	D	E
1	Materials and Labor Mark-up>	1			
2	Solid stock waste factor>	1			
3	Panel stock waste factor>	1.1			
4					
5	**Material Order and Priceing**	WS Totals	Order Quantities	Material Prices	Item Cost
6	**4/4 Primary Solids**	1.5	1.5	2.88	4.32
7	**4/4 Secondary solids**	0	0	2.88	0
8	**3/4 Finished Panel door/drwr**	0	0	2.07	0
9	**Non Door 3/4 A2 Finished Panel**	0	0	2.07	0
10	**1/4 A3 Veneer**	0	0	0.97	0
11	**1/4 A2 Veneer**	0	0	0.97	0
12	**G1S panel Wall backs**	0	0	0.847	0
13	**G1S panel Base backs**	0	0	0.72	0
14	**G1S panel Drawer Bottoms**	0	0	0.72	0
15	**3/4 G2S Shelf material**	0	0	0.935	0
16	**Drawer Side Material**	0	0	0.847	0
17	**1/8 G1S hardboard**	0	0	0.2	0
18	**Attached finished end panel**	0	0	2.07	0
19	**G1S Box Panel**	0	0	0.847	0
20	**G2S Box Panel**	0	0	0.847	0
21	**Toe Kick Material**	0	0	0.728	0
22	**Bread Board Panel**	0	0	1.7226	0

The cabinet worksheet is where you compile data from the pricing spreadsheet, the job you are pricing, and the costs of materials. Select the "Cabinet Work Sheet" tab and notice the salmon colored area titled Cabinet construction cost data. This is the row (3) where you will copy the row containing your pricing values from the "*Pricing Values*" sheet of the pricing spreadsheet. Row 4 totals all of the materials and labor for the job.

The "*Cabinet Pricing*" sheet is where the information is organized and made usable. The totals tallied in row 4 of the Cabinet Worksheet are linked to corresponding cells in this sheet. This data is then manipulated for computing the amount of stock to order with waste factors, and priced with values you enter in column D under material prices. You can create your own database of material prices and paste these values if desired.

The "*Estimate Form*" sheet is what your customer will see, customize this as you wish and print it to take only one sheet of paper.

PRICING A JOB

Open both the pricing and estimating spreadsheets. Save the estimate spreadsheet with a new name, because you do not want to damage the master. Use a name that will relate to your job and make it easier to find later.

For this exercise we will assume you have used Designer Plus to draw a kitchen and have created a material list of the nomenclatures, with DesignCAD 3D's materials program. You may also manually enter values for the nomenclature area, just ignore all references to the materials list, and enter the values manually.

Open the material list created by the materials program of DesignCAD 3D. Because this file is an ASCII text file you may be asked what to do with it; follow the instructions for converting text to columns. The columns are separated by spaces, commas, and apostrophes and are not fixed width. If your spreadsheet loaded the file without query, each line of the file was place in the first cell of the Row. Select this column and find the tool for sorting data to columns (parsing). After this has been converted to columns, you can start compiling the estimate. You can sort the rows to get like types together if you wish. It would make further steps easier.

Starting with either the first or last row of the cabinet list, observe the cabinet type. Switch to the pricing spreadsheet select the construction type ("*Framed*" or "*Frameless*") sheet find the same cabinet type, select the row and copy it. Switch to the estimate spreadsheet and paste the row beginning with row 5, the first one after the label SUBTOTALS. Switch to the materials list, highlight cells A-T of the proper row, copy these cells, switch to the estimate spreadsheet and paste these cells starting with A5. This is over the nomenclature section of this row. Switch back to the materials list and delete the highlighted cells. Repeat these steps until you have deleted the entire materials list, then close this spreadsheet without saving it. If you are doing this manually, make sure each value in cells A-T are correct.

Switch to the pricing spreadsheet, select the "*Doors*" sheet tab, select the door style desired by selecting all of the cells of the door-drawer construction information columns BN-CI in one row. Copy these cells. Switch to the estimate spreadsheet, select cells BN5 to BN(End of list) and paste the door style pricing information.

Change to the "*Cabinet-Pricing*" sheet of the estimate spreadsheet and you will see the totals from the cabinet work sheet. Enter values for materials, and labor (by the minute), and the kitchen is priced.

Note: if you delete a row from the cabinet work sheet in the estimate spreadsheet there will be "REF" listed instead of a value. When you deleted the row, the cells in the construction section lost their reference. Remember that each of these cells were equal to the cell directly above. To fix, select any cell or group of cells in the EP or higher area that have correct values displayed, then copy it, and paste it over the first row of affected cells between EP(row number) and IT(row number). This will restore the reference of these and the cells below. Do not enter values.

BUGS AND TESTING

These spreadsheets are supplied free of charge, with the hope you will help me make them a valuable asset to Designer Plus. They are not locked, which means you can edit each cell yourself. No warranty as to accuracy or suitability for your use is made or implied. When you find problems please record what they are, then go ahead and fix it if you can (work on a copy, not the working version). Mail (or e-mail at support@kitchen-consultants.com) the problem, and a copy of the cell contents for what you did to fix it, to me so that I can make Designer Plus as usable as possible. You can copy the contents of a cell the same way you copy text in a word processor.

Testing

Make a copy of the estimate spreadsheet. Set up your construction methods and materials and enter them in the proper places. Using one cabinet type at a time: price it, check that the materials to order are correct, that the bulk cutting list is correct, and that the time to manufacture is accurate. Check that multiple door, drawer options return the correct values, and that large and small version for the cabinet are accurately reported. When you have checked each cabinet type in all of the configurations you will use, the spreadsheets are ready to work for you.

10. EPILOGUE

Your purchase was registered when you ordered. You do not need to send in a registration but I would like to hear from you! Tell me about any improvements you would like to see in Designer Plus, how it interacts with you, new cabinet or door configurations, etc. that you would like to see in any new version of Designer Plus.

If you find an error in Designer Plus I want to get it fixed as quickly as possible. What I mean by error, is that Designer Plus is not drawing a cabinet properly in some configuration, or the door size or nomenclature attributes are not correct, or the program fails. This problem has to be repeatable and predictable. Infrequent problems could be just about anything: power fluctuations, DesignCAD 3D interaction or system glitches. I can fix predictable problems but the other kinds are the fun of computers.

If you do find one, please record all the details of what is happening in Designer Plus, such as the instructions you have given Designer Plus as to the configuration of the cabinet to draw, accessories, etc. Tell me what the problem is, for instance: In layer 15 the door size recorded is bigger than the cabinet. I need this information in order to duplicate the problem. If I cannot duplicate the problem I cannot fix it. Send the information to KITCHEN CONSULTANTS, P.O. BOX 1881, PORT ANGELES, WA 98362, or email support@kitchen-consultants.com. You could call (360)-457-0855, but since my business is custom kitchens I may be on a job. I will correct the problem if possible, or find a way to overcome or avoid the problem, (see the notes on the cabinets section five (5)). And send you a note with the instructions to avoid the problem or make a corrected patch available. I will also need your name and phone number and the serial number of your program. When you ordered Designer Plus, the program date and serial number were recorded in your name. The serial number can be found on the program disk label, and you may also view the serial number by typing **RLD** at the input line of the CAB menu.

11. LICENSE AGREEMENT

This agreement is a legal contract between you, the end user, and Rodney L. Davidson d. b. a. Kitchen Consultants. If you do not agree with the following terms please return Designer Plus and all related materials shipped with Designer Plus, and do not open the envelope containing the disks. You will receive a full refund of the amount you paid for Designer Plus. The opening of the envelope containing the disks is acceptance of these terms.

This agreement permits you to install Designer Plus software on as many computers as you own. Provided Designer Plus software be used at the same time **only** on the same number of computers as you have license agreements for. This agreement licenses one single user. Additional licenses may be purchased at a discount. Please contact Kitchen Consultants, P.O. Box 1881, Port Angeles, WA 98362, (360)-457-0855.

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You may transfer this licensed copy of Designer Plus software to another party if you comply with these rules:

1. The party to whom Designer Plus software is transferred is registered with Kitchen Consultants. To do this send the serial number, new name, address, phone number, and $15.00 to Kitchen Consultants, P.O. Box 1881, Port Angeles, WA 98362. By doing this your name will be moved to the history section of this license, and the new registrant will be listed as the active user. The new registrant will enjoy the same rights and responsibilities as you do now. Except for fraud, this will also remove you from liability should this licensed copy be used for the unlawful distribution of Designer Plus.
2. All documentation, original disks, etc. must be transferred to the new registrant.
3. You keep nothing from this licensed copy of Designer Plus software, either in memory or printed form. To remove Designer Plus from your hard disk run Designer Plus' uninstall utility. While in the directory of where your Designer Plus files are located, type DELETEDP \Path of the *>PCX file (RETURN). If you have not installed the *.PCX files omit this path statement. All files pertaining to Designer Plus will be deleted.

If this license agreement is an upgrade from another version of Designer Plus software, then the older version may be transferred as above.

Again you are the license holder. You are responsible for the safe keeping of this licensed copy of Designer Plus software.

12. WARRANTY:

Kitchen Consultants warrants that Designer Plus software will perform substantially as described in the accompanying literature. Should a defect be found in Designer Plus software, Kitchen Consultants will at its option either:

1. Correct the problem via software and make a correction 'patch' available to you, or.
2. Provide you written instruction as to how to overcome or avoid the problem.

Others as well as myself use this program and there are many features that have been incorporated into Designer Plus because of requests made by users - which I do not use. Effort was made testing these features when they were incorporated into the program; however, as bugs are found and reported fixing the first bug sometimes creates more bugs which may not be found in testing or my own use. This happens because of the limits of DesignCAD, variable names must be reused in order to avoid exceeding the symbols space limit, and the program is chained through several programs to complete the drawing. With your help we can make Designer Plus a very valuable tool, please record the steps that bring you to a problem, then let me know what they are so that it can be fixed. If I don't know about it I can't fix it!

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To remove Designer Plus from your hard disk delete the directory where you placed Designer Plus. DesignCAD 3D will also be deleted, so if you want to keep DesignCAD 3D v4 reinstall it to a temporary directory and move your drawings, macros, etc. to it first.