

D

Drawing a Kitchen Floorplan

In this chapter, you will learn the following to World Class standards:

- **Draw a Kitchen Floorplan**
- **Draw the Kitchen Walls**
- **Draw the Kitchen Openings**
- **Draw and Dimension the Kitchen Windows**
- **Draw the Refrigerator and Cabinets**
- **Draw the Counter**
- **Draw the Stove**
- **Draw the Sink and Dishwasher**
- **Add Overall Dimensions to the Kitchen**

Draw a Kitchen Floorplan

In this project, we will learn how to draw a kitchen floorplan with two openings, one window, refrigerator, stove, sink, dishwasher, counter, and cabinets. In the tutorial, we will begin by drawing the perimeter of the room and offset that outline to show the width of the wall. This plan has more complexity than the bedroom or even the bathroom layout.

In many instances, we will obtain our detail assemblies of the stove, sink, and refrigerator from the manufacturers that produce the item or from a general block library provided from our CAD software company. Even though we can download the appliance off the Internet, we still have to draw the position of counters and cabinets to show the customer where conveniences and storage cupboards will be located. After we finish the kitchen floorplan, we will want to produce multiple elevations that show how the room will appear. In this picture that shows us heights of the cabinets, counter and appliances as we stand in the kitchen, we can determine if we need to make changes to the original layout.

We will start the session with a sketch that has the required dimensions to create the lines in our CAD drawing. We will be using AutoCAD 2011 in this example.

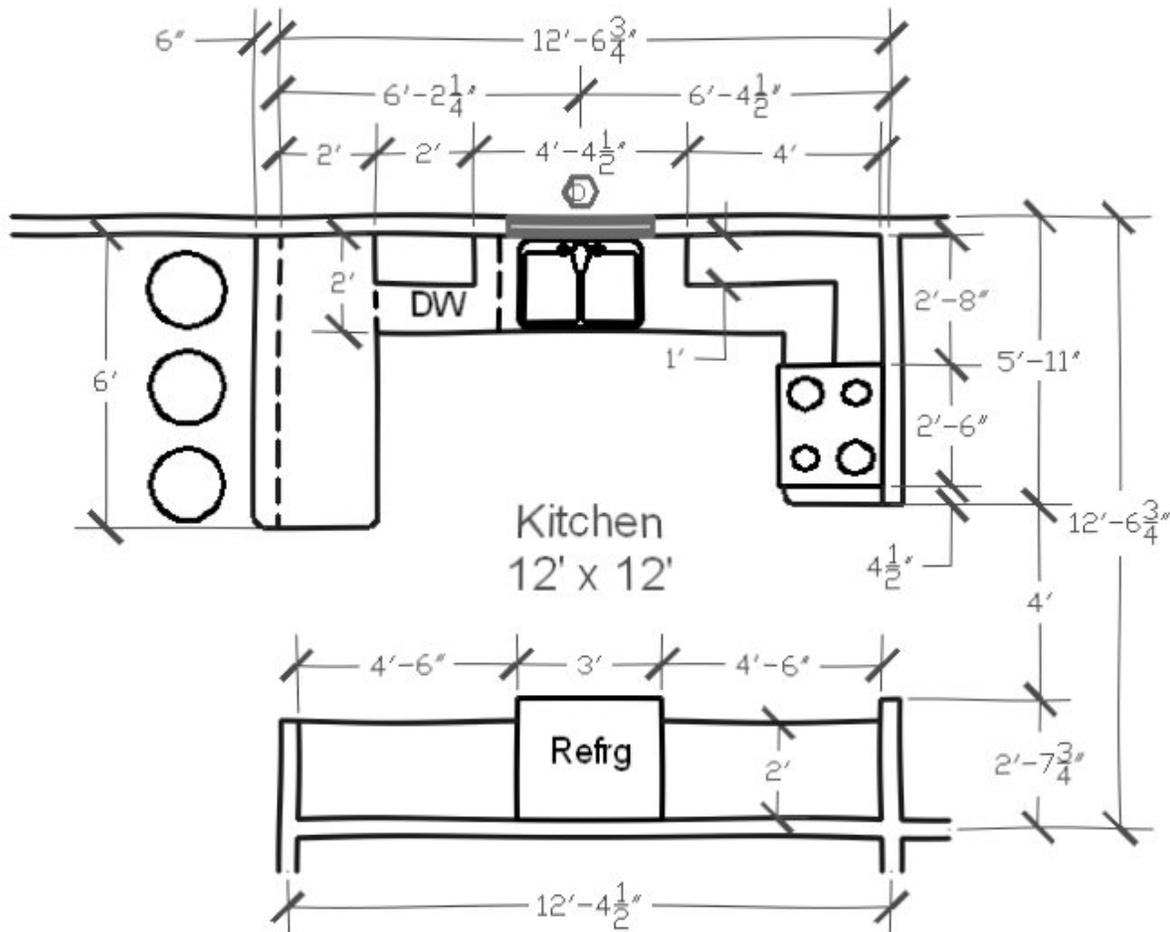


Figure D.1 – Sketch of the Kitchen

Draw the Kitchen Walls

Our kitchen has stations that store food, prepare food, cook food, and clean. The room can even have places for casual eating right up at the counter. What we can see as we tour existing kitchen designs is a multitude of ways of how the home designer can accomplish the integration of these areas.

To begin the drawing, we open the CAD program and with our architectural template by selecting New and then we choose architectural as shown in Figure D.2. The current layer is set at floorplan so we are ready to draw our walls.

We begin to draw the rectangle by choosing Polyline and then we pick a starting point on the lower left side of the graphical display. With the Ortho Mode on, we push the the line to the right and type 12' (feet) at the command line. A single line will appear as shown in Figure D.3.

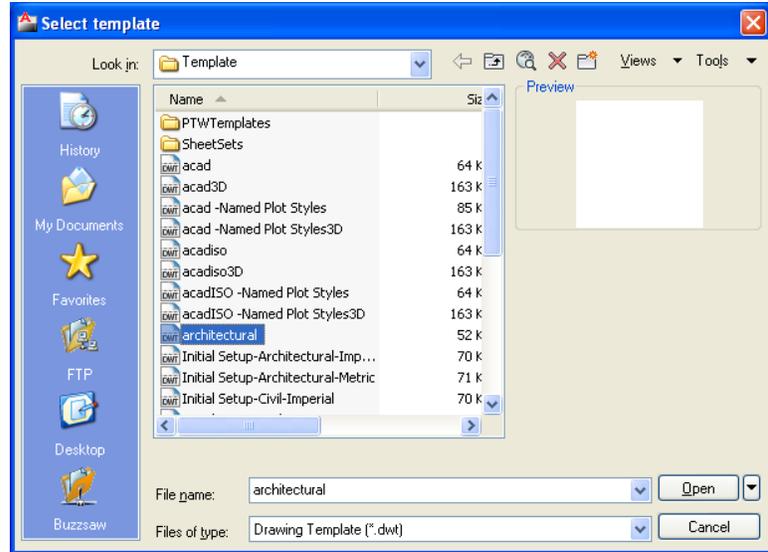


Figure D.2 – The Architectural Template

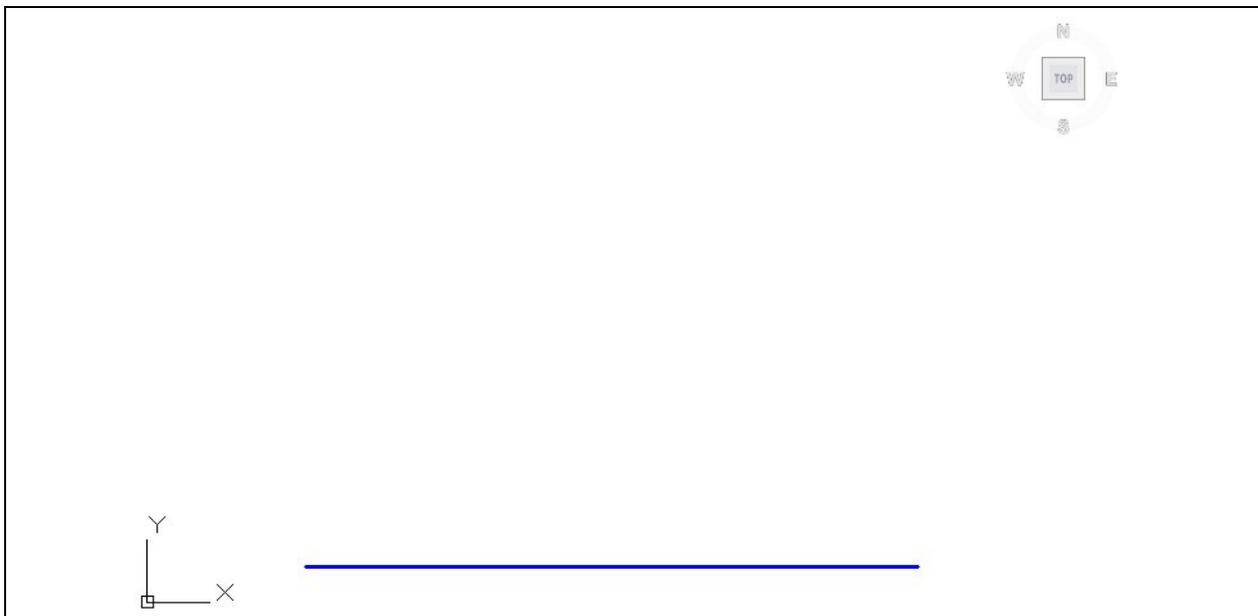


Figure D.3 – Drawing the First Line in the Kitchen Wall

We continue with the rectangle by drawing the next leg upward by 90 degrees. We type 12' and enter. We draw the third line to the left at 12'. Finally, we will type "C" for close to complete the Polyline.

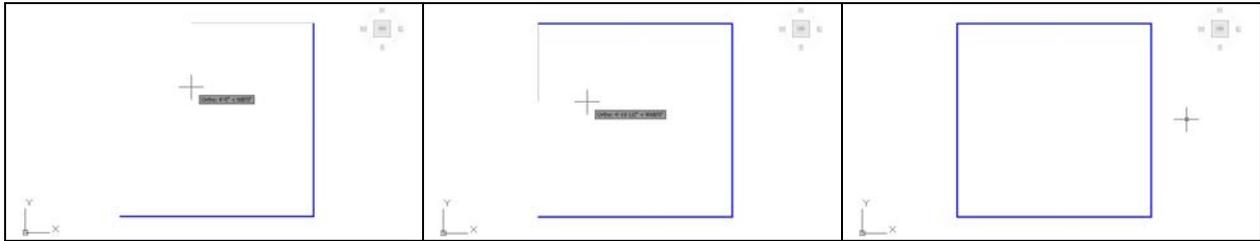


Figure D.4 – Completing the Rectangular Drawing of the Kitchen Interior Wall

Our next step is to offset the interior boundary of the wall 4.5 inches outward using the Offset command. We computed our walls at 4.5 inches since a 2 by 4-wall stud measures 1.5 by 3.5 inches. We add a sheet of 1/2-inch drywall on either side of the 3.5 inch width to add up to 4.5 inches.

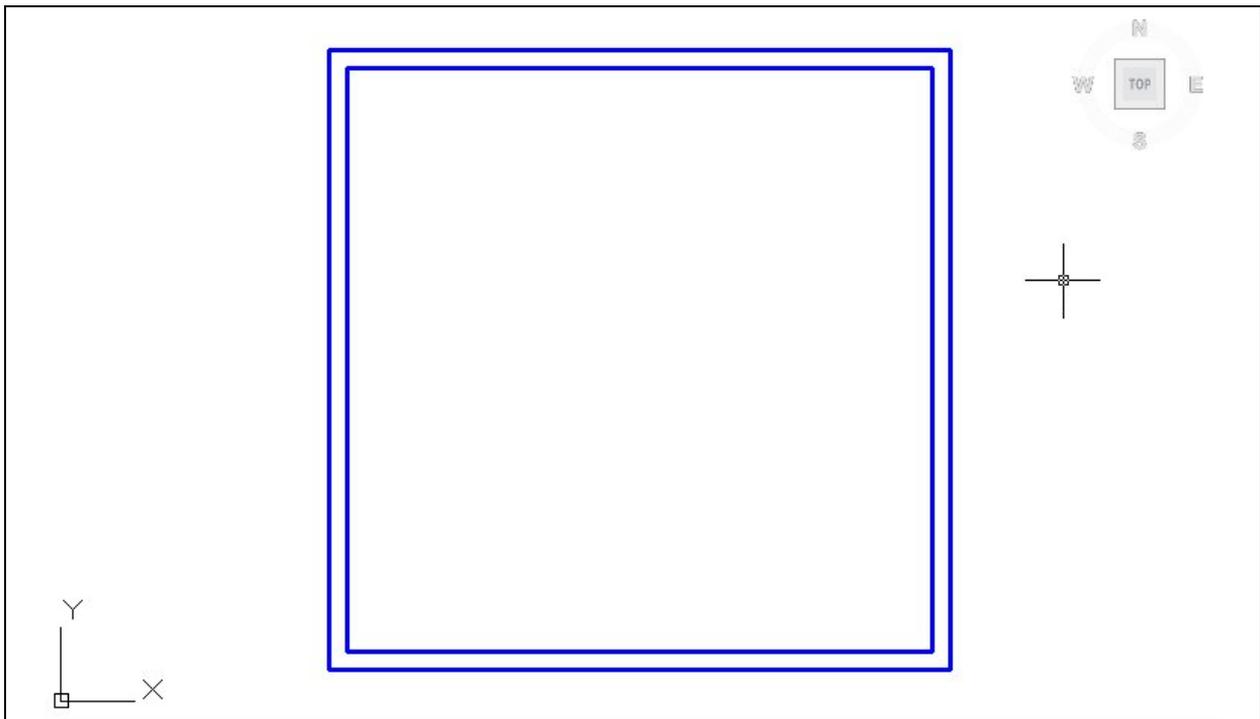


Figure D.5 – Offset the Kitchen Wall

We are provided with a sketch that shows us that the kitchen is part of a larger layout since we can see how the room reaches out to other areas in the dwelling. We can see the wall intersections that begin to extend towards the rest of the house.

To draw these extensions, we will offset the outer perimeter of the wall we have just drawn and offset the boundary 8 inches and 48 inches as shown in figure D.6. After that, we will explode the two Polylines representing the kitchen wall. Now, we will extend the lines of the kitchen wall as shown in figure D.7.

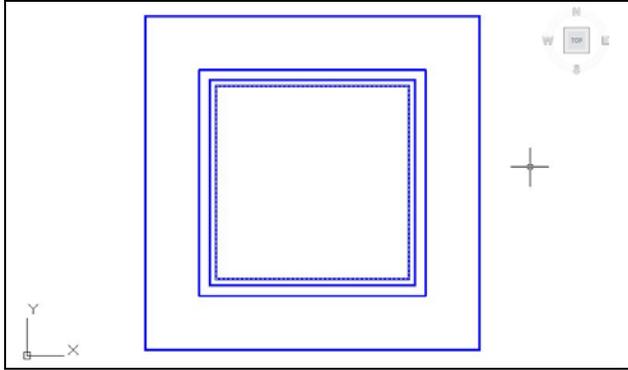


Figure D.6 – Two Construction Lines

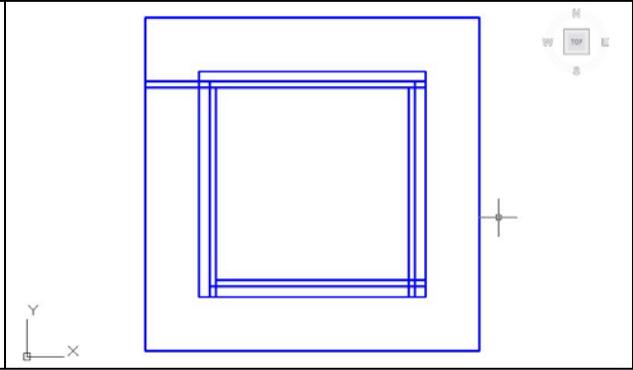


Figure D.7 – Extend the Wall Lines

In our next step, we will erase the 8 inch and 48 inch offset Polylines as we see in figure D.8. Lastly, we will trim the wall intersections as we see in figure D.9.

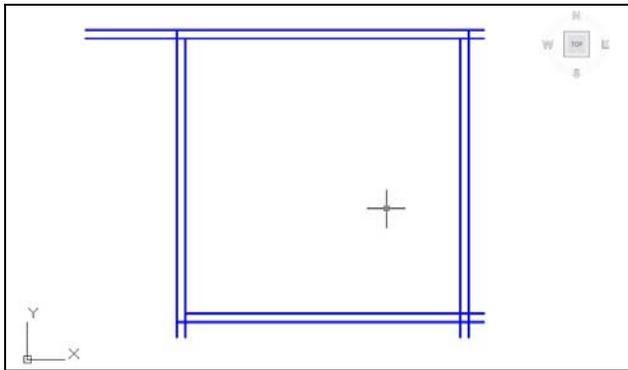


Figure D.8 – Erase Construction Lines

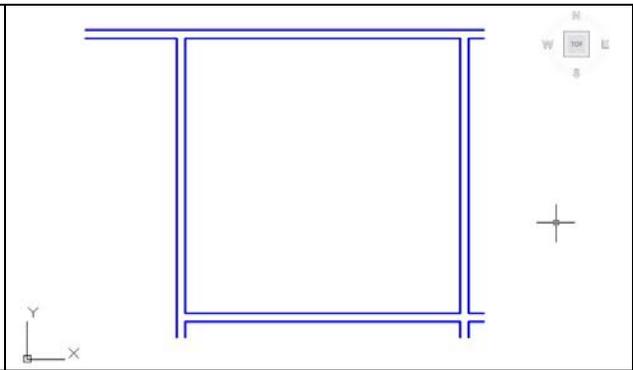


Figure D.9 – Trimming the Wall

Draw the Kitchen Openings

Our kitchen design has two openings, one into the dinette to the left and to the right, to the formal dining room. To create the left opening, we will offset the bottom inside wall 24 inches upward. We then offset the new line 48 inches upward. We can use the Trim command to break the left wall and the Fillet command with the radius set to zero to create the walkthrough.

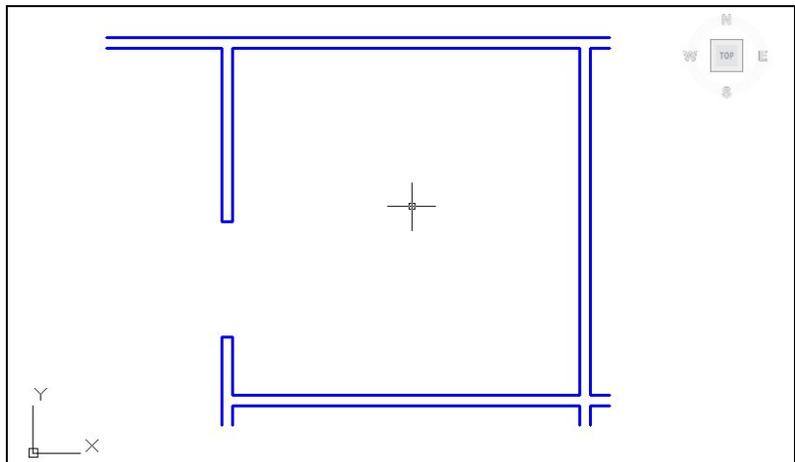


Figure D.10 – Adding the Left Opening

We repeat the steps to make the second opening. However, the first offset is 31.75 inches and the second offset is 48 inches. At this point, we have finished our kitchen space and we will add a window in front of the sink.

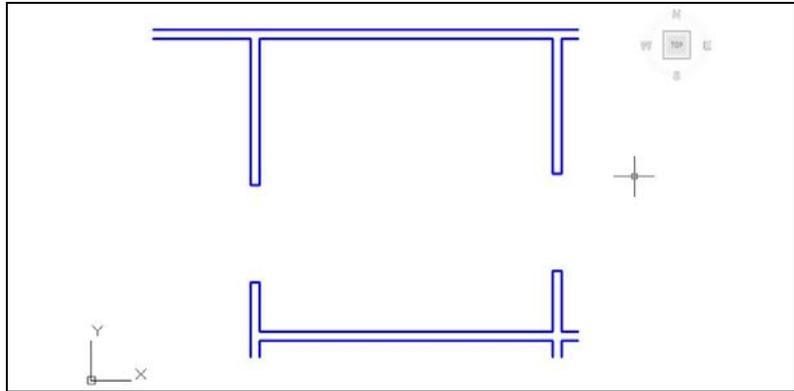


Figure D.11 – Adding the Right Opening

Draw and Dimension the Kitchen Window

To add a window to the Kitchen, we will change the current layer to window and draw a line starting from the midpoint of the inside of the top kitchen wall upward and connecting perpendicular to the top outside wall. We then use the Offset command copy the 4.5-inch line 18 inches to the left and right as shown in Figure D.12.

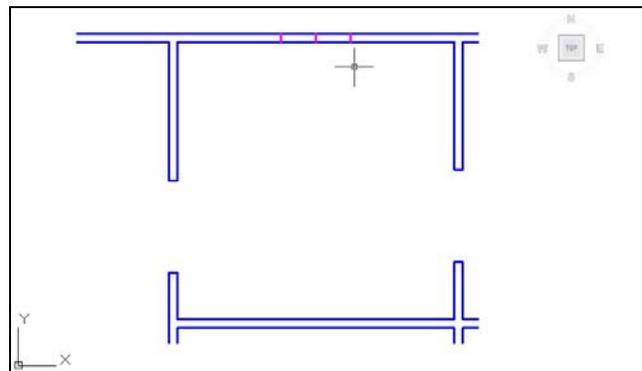


Figure D.12 – Adding a Window

We can erase the middle line we used to begin to draw the window and then we will utilize the Trim command to remove the blue wall lines. After that, we will draw the two lines for the window as shown in Figure D.13. To get the two lines that represent the glazing, we offset the last two lines 1.5 inches to the inside as shown in Figure D.15.

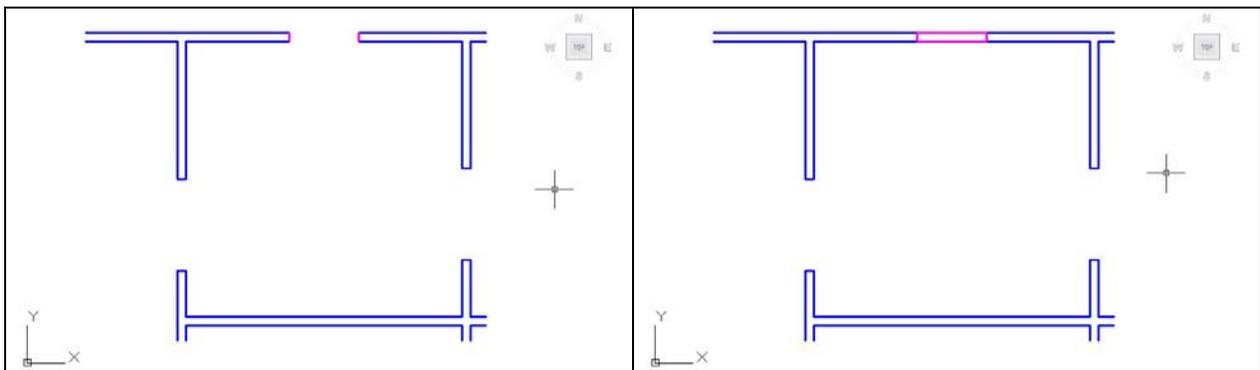


Figure D.13 – Trimming the Window

Figure D.14 – Adding Window Lines

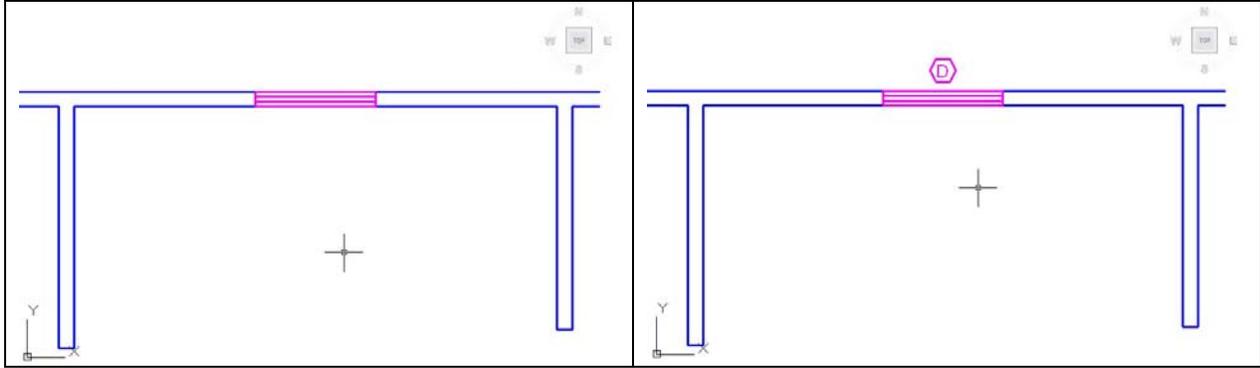


Figure D.15 – Adding Lines for Glazing

Figure D.16– Adding Window Symbol

When we show a window on an architectural floorplan, we use a letter inside a hexagon to denote the type of window and we can match the description of the window by reading the same letter on the window schedule in the plan set.

We add the letter D at the midpoint of the outside line representing the window using Dtext and Middle for the text insertion point. We draw a hexagon at the same midpoint that has a radius of 4” as shown in Figure D.16. We move the letter and hexagon 6.5 inches to the right.

Add the Refrigerator and Cabinets

To obtain the three blocks of the refrigerator, stove and sink for the kitchen we will go to the worldclasscad.com website and download the kitchen blocks at:

http://www.worldclasscad.com/residential_architectural.htm

We can save the blocks in the same folder where we are saving our drawings for the residential textbook.

To insert the refrigerator symbol, we choose Insert on the Menu bar and Block from the list. When we are prompted for the insertion point, we should pick the midpoint of the interior line of the bottom wall. The refrigerator is 36 wide and 29.5 inches deep and is opposite the sink and food preparation zone.

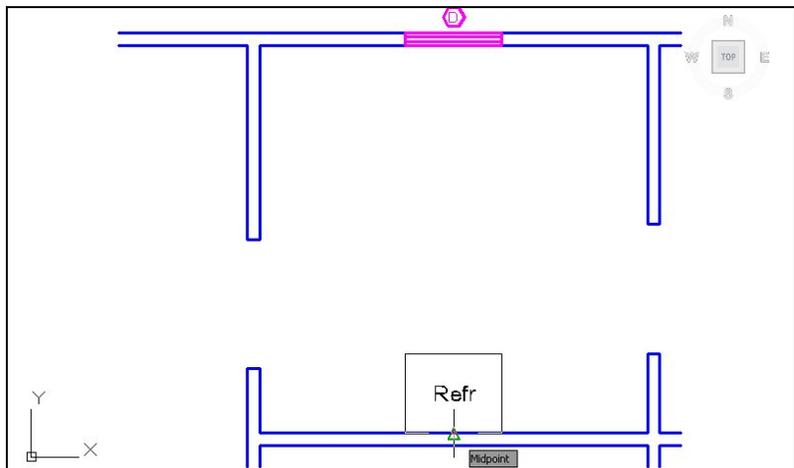


Figure D.17– Adding the Refrigerator Block

There will be floor to ceiling cabinets on either side of the refrigerator. We will create a cabinet layer and set it to current. We will draw a line from the left opening to the side of the refrigerator using the perpendicular Osnap to get a horizontal line. We mirror the line to the opposite side to show cabinets on both sides.

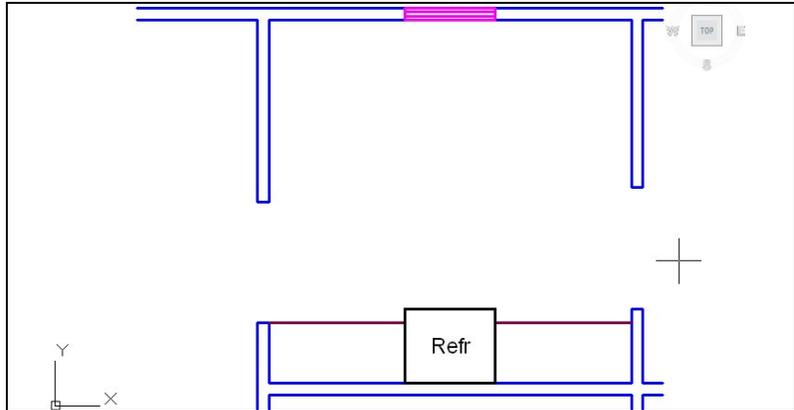


Figure D.17– Adding the Cabinets

Add the Counter

To draw the counter, we create a counter layer and set it as current. We begin on the right hand opening and draw a line 24 inches to the left, and then we draw a second line upward, 3'6.5 inches long. We draw the third line of the counter 8 feet to the left and then drop the fourth line 4' downward. The fifth line is 30 inches to the left and the last line connects perpendicular to the inside of the top wall.

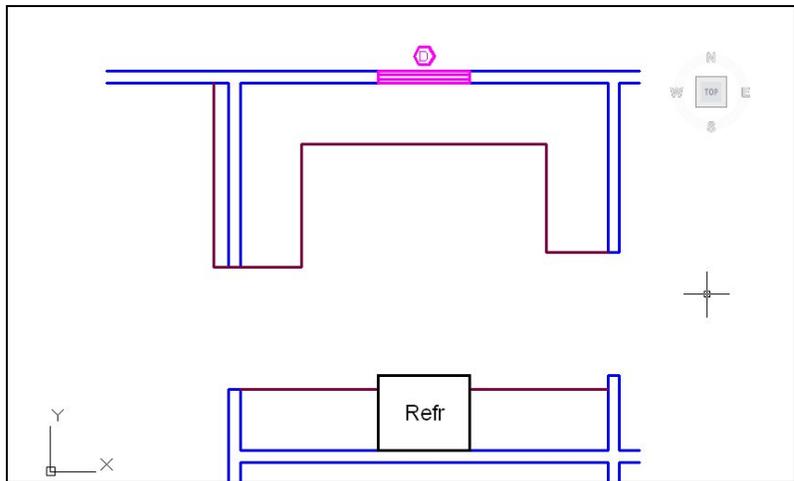


Figure D.18– Adding the Counter

This wall on the left side of the kitchen only goes as high as the counter, so we erase the end of the opening and the inside line. We will change the linetype of the outside wall to hidden, since the entity is under the counter surface. We did not show the contour of the front of the lower cabinets under the counter until we make the elevation and determine this detail.

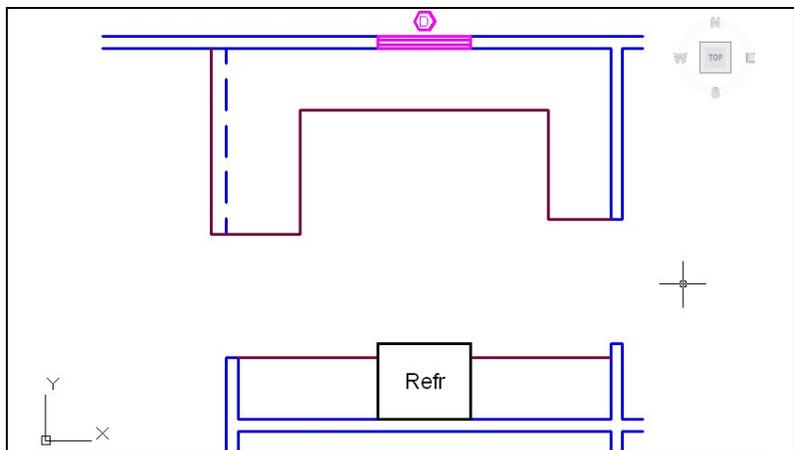


Figure D.19– Showing the End of the Counter Wall

Add the Stove

We insert the stove symbol by choosing Insert on the Menu bar and Block from the list. When we are prompted for the insertion point, we should pick the endpoint of the corner of the right kitchen opening. We will then move the stove up 4.5 inches. The stove is 30 wide and 25 inches deep and is opposite the counter area where people are eating.

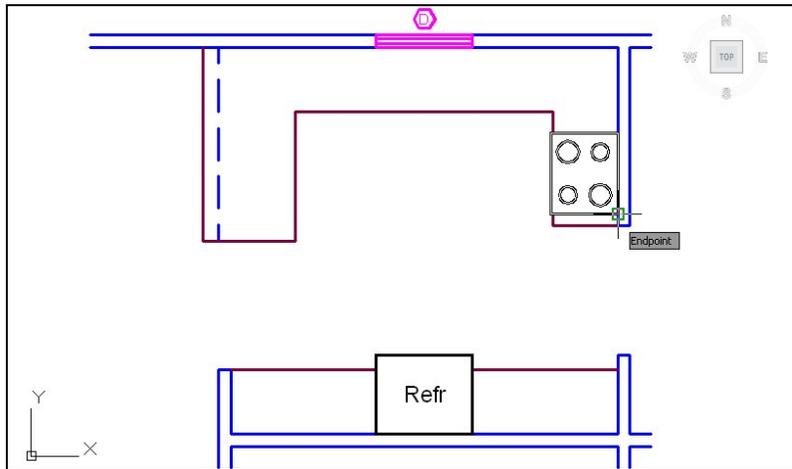


Figure D.20– Add the Stove

Add the Sink and Dishwasher

We insert the sink symbol by choosing Insert on the Menu bar and Block from the list. When we are prompted for the insertion point, we should pick the midpoint of the kitchen counter. We will then move the sink up 1 inch. The sink is 32 wide and 22 inches deep and is in front of the 36-inch wide window for good lighting.

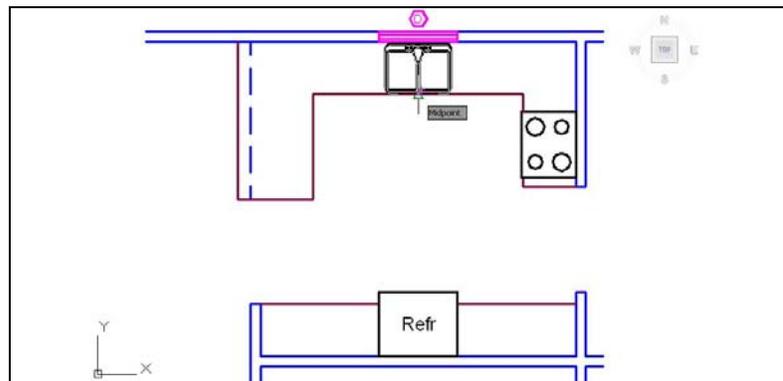


Figure D.21– Adding the Sink

We then want to draw where the dishwasher will go, so we change the current layer to appliance. From the left corner of the counter, we draw a hidden line upward and connect perpendicular to the inside of the top wall. We copy the hidden line 30 inches to the right. We add the text DW to the area where the dishwasher will be.

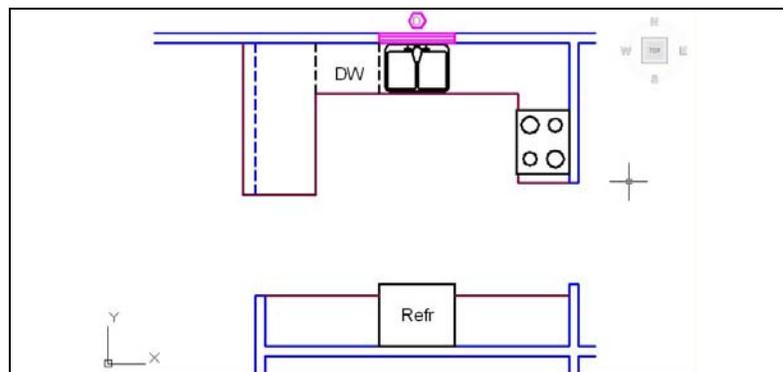


Figure D.22– Adding the Dishwasher

Add the Upper Cabinets and Stools

The last details we will put in the kitchen will be the upper cabinets. They typically only extend 1 foot from the wall. We change the current layer to “cabinet” and we draw a line from the top of the left side of the dishwasher downward 12 inches. We continue with the second line to the right 24 inches and go up 12 inches with the third line..

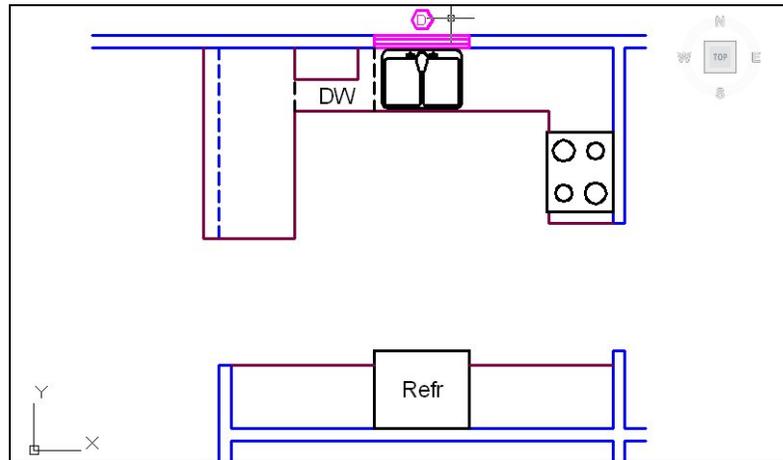


Figure D.23– Adding the Upper Cabinet

We will mirror the last line segment around the window and sink. Then, we pick up the upper cabinet on the right side by drawing a 36-inch line to the right. We draw another line downward and end it perpendicularly into the stove.

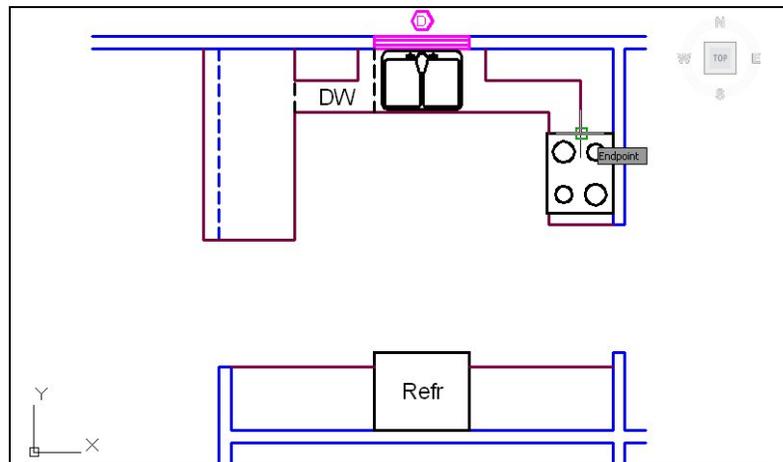


Figure D.24– Adding Another Upper Cabinet

We will curve the end of the counters with a 3-inch radius. We will place three of them on the ends of the counters as shown in figure D.25. We put the rounded edges on the counter as a safety feature, so people will not hurt themselves if they bump into them. Interior corners do not require the rounded element.

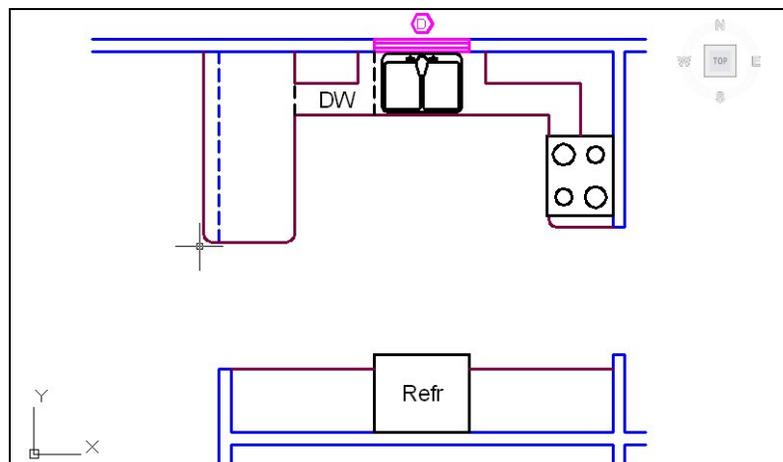


Figure D.25– Adding Radius on Counter Corners

*** World Class CAD Challenge * - Open a new file in your CAD program with the architectural template. Draw the wall, opening, cabinets, counters, windows and appliances of the Kitchen showing dimensions in 30 minutes.**

Continue this drill multiple times using the steps we have learned, each time completing the drawing under 30 minutes to maintain your World Class ranking