

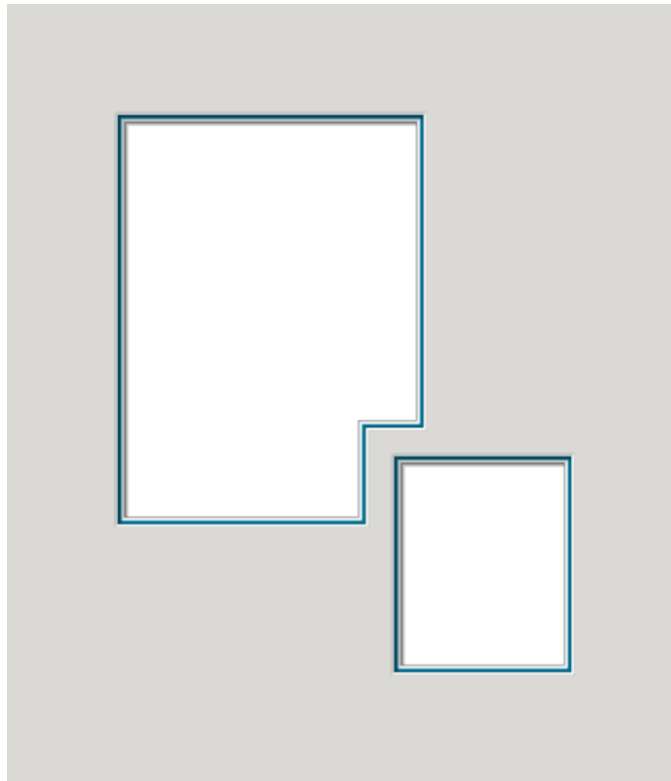


# WIZARD UNIVERSITY

WCAF Expo 2024

## TEMPLATES 703 & 704

The templates that make diagonal arrangements  
with inset openings



The instinctive arrangement for multiple openings is in a horizontal or vertical line. Templates 703 and 704 generate a touch of drama with a diagonal arrangement. The inset opening at the bottom corner brings with it the illusion that the openings overlap.

This first project is a design formed only by the templates' settings and parameters.

## BEGINNING A DESIGN WITH TEMPLATE 703

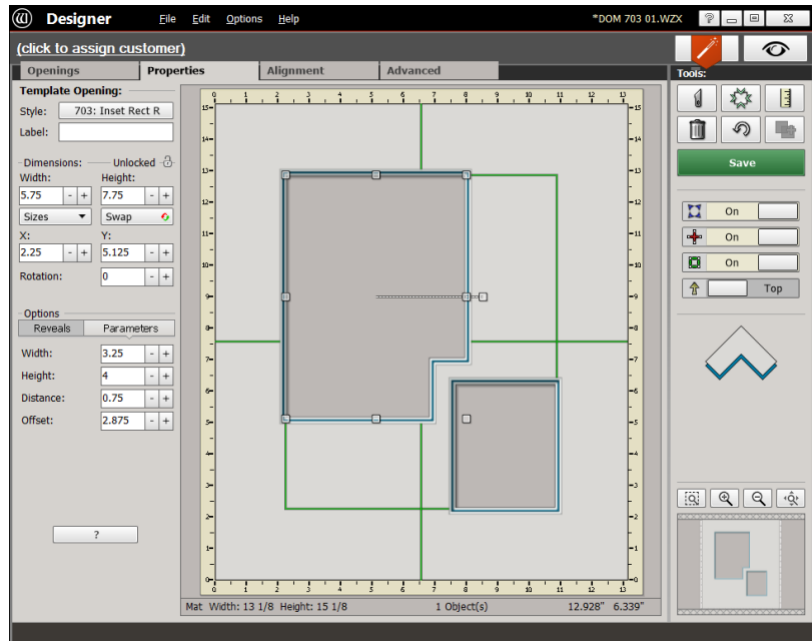
This opening is set to use template 703.

Click the **Properties** tab at the top to see how to manipulate this shape.

Under **Dimensions**, the **Width** and **Height** fields at the left set the size of the large main opening.

Click **Parameters** under **Options**.

These **Width** and **Height** fields set the size of the inset opening at the bottom right corner. These dimensions are measured on the bottom layer of the inset opening.



The **Distance** parameter sets the width of the separation between the openings. It is always measured from bottom layer.

In this design, it is set to 0.75 inch.

The inner reveals are 0.125 inch wide. To calculate the width of the separation on the top layer, subtract twice the reveal width from the **Distance** setting.

The top layer of the separation is 0.5 inch wide.

### Offset

The **Offset** parameter moves the inset opening equal amounts horizontally and vertically away from the large opening.

The **Offset** value is measured from the outside of the large opening to the outside of the inset opening.

Realize though, that the sizes of the horizontal and the vertical portions of the separation cannot be altered with any parameter adjustments.

The only difference between templates 703 and 704 is that inset opening in template 704 is at the lower left corner.



## A PROBLEM... AND A VARIATION

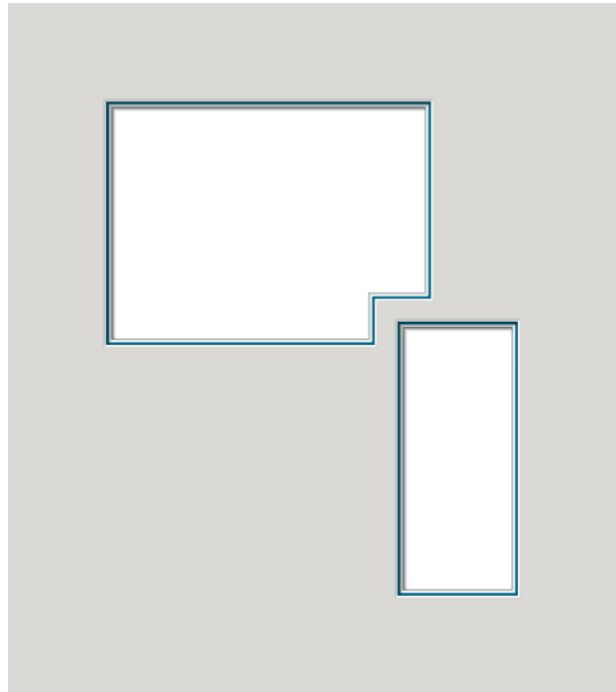
Everyone will have a preference for how prominent the inset should be – and how it should look.

There are no parameter adjustments for the horizontal and the vertical portions of the separation in templates 703 or 704.

Quite often, in fact, the appearance of the separation can be less than ideal.

If this is a real design problem, the fix is to set the size of the inset opening and the Offset parameter so that you like the look of the separation.

Then merge another rectangular opening onto the inset opening to correct its size.



## Before We Begin - A Software Setting

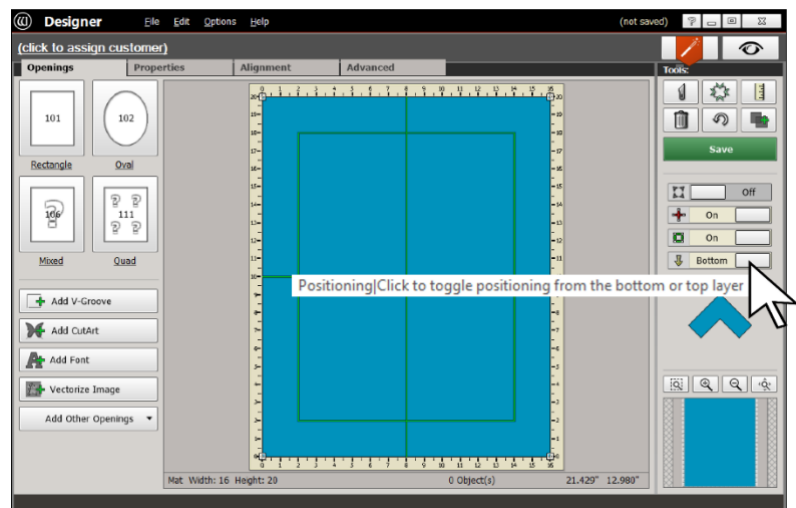
The first step for this project is to make sure that the alignment tools will reference the bottom layer of multiple layer openings.

On the design screen, at the right under **Tools**, there is a button with an arrow in it.

This is the **Positioning** button.

Click it so that the arrow points down.

The alignment tools will reference the bottom layer of the openings, making spacing for this project easier.



## A Note

For most projects, the positioning button should be set so that the arrow points up – so that the alignment tools reference the top layer. This project is a special case, though.



## Beginning the Design

The main opening will be 7.75 x 5.75 inches high.  
The inset opening needs to be 2.75 x 6.5 inches high.

The illustration shows how the inset looks with just the parameter settings.

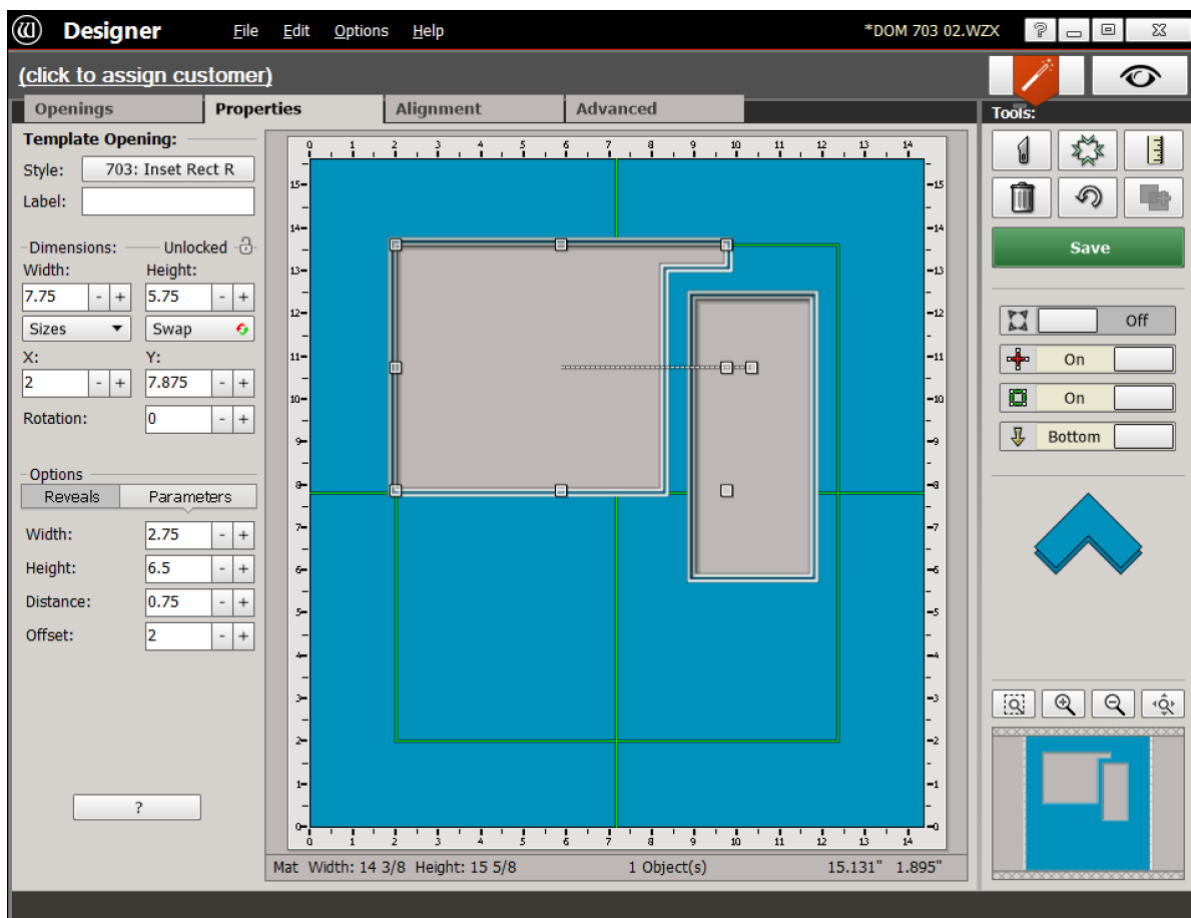
Compare it with the illustration on the previous page, and anyone would agree that this design is not acceptable.

## The Plan

We will adjust the **Height** of the inset opening and the **Offset** parameter until we like the appearance of the separation.

The **Width** of the inset opening must remain at its final intended setting, though.

We will add a rectangular opening of the proper size, align it over the existing inset opening, then group them to effectively change the size of the inset opening.





## Improving the Separation

Note that the **Width** of the inset opening remains 2.75 inches, but its **Height** has been changed to 2.5 inches.

The **Offset** parameter setting has been changed to 2.125 inches.

The size and shape of this smaller separation now fits our vision of the design.

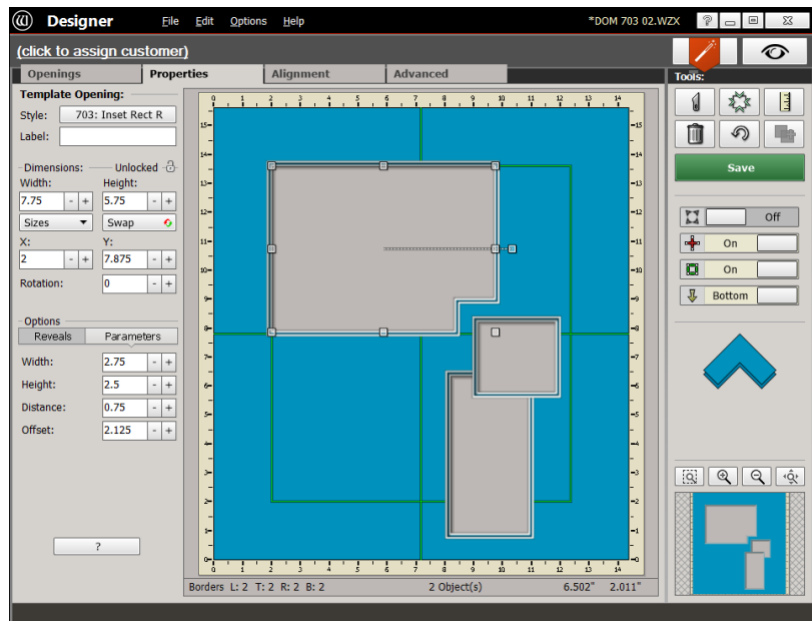
## An Additional Opening

There is also an additional rectangular opening in this illustration.

It is 2.75 x 5.5 inches high.

It has two layers and an eighth inch reveal width – identical to the template 703 opening.

This additional opening will be aligned over the inset opening. The two openings will be grouped to elongate the inset opening – while retaining the details of the separation.



## Making the New Inset Opening the Correct Size

The inset opening needs to be 2.75 x 6.5 inches high.

The additional rectangular opening is now 2.75 x 5.5 inches high.

The plan is to position a guide so that there is 1 inch of the existing inset opening above the guide. When the top of the additional opening is snapped to the guide, the inset opening will be elongated to its intended height:

1 inch (the amount above the guide) + 5.5 inches (the amount below the guide) = 6.5 inches.

After the openings are grouped, the inset opening will be the correct size.

## A Note

Whether you are extending an inset opening vertically (as in this design) or horizontally, joining an added opening to the inset opening works best when either the Height or the Width of the inset opening generated by the template are set to the final inset opening dimension. In this example, both the inset opening and the added opening are 2.75 inches wide.



## Adding the Guide

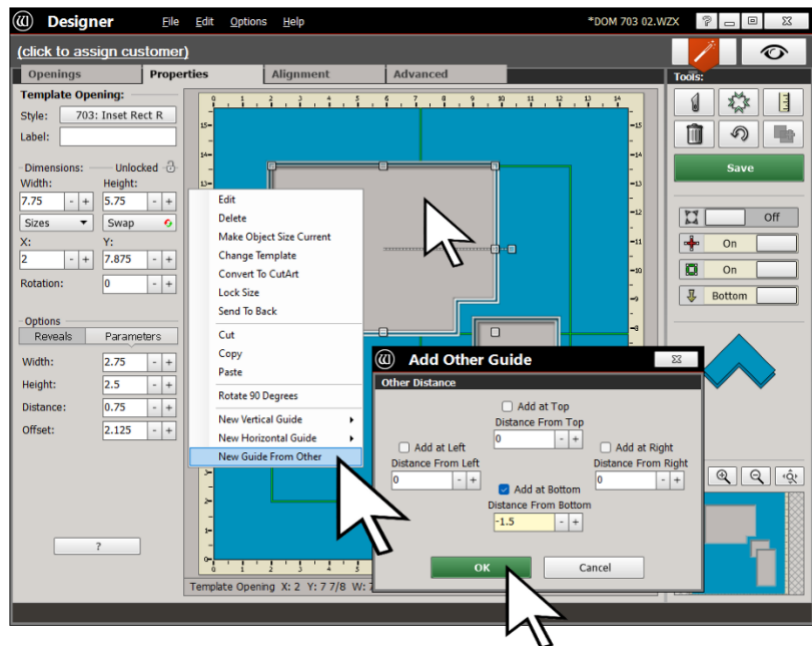
The most accurate way to add the guide in this project is to add it relative to the mani opening in the design.

Right click on the Template 703 opening.

From the menu that appears, select **New Guide From Other** at the bottom.

In the **Add Other Guide** dialog box, enter **negative 1.5** in the **Add at Bottom** field.

Click OK. The guide will appear 1.5 inches above the bottom of the inset opening.



## Why Negative 1.5 inches?

The inset opening is currently 2.5 inches high.

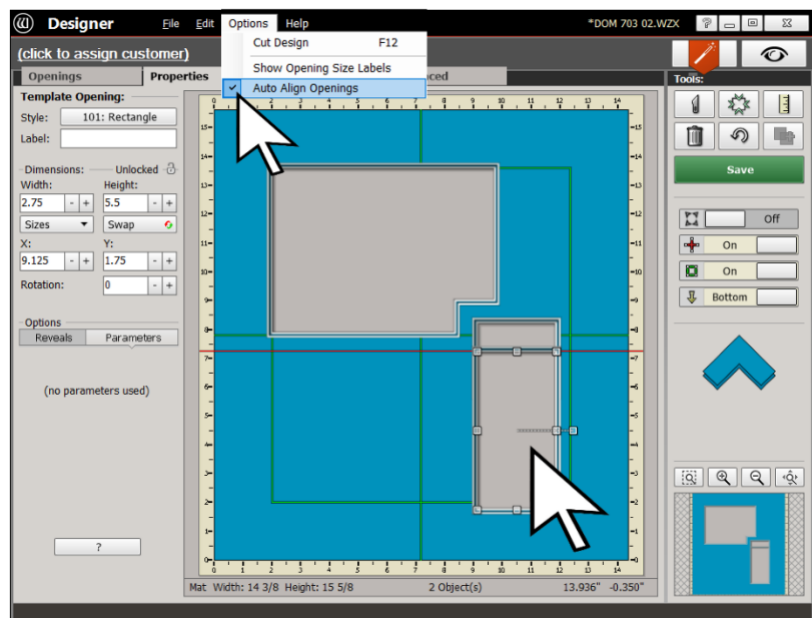
Adding a guide 1.5 inches above its bottom will leave 1 inch of the inset opening above the guide. When the additional opening's top is snapped to the guide, it will be 1 inch higher, as planned.

## Snapping the Additional Opening into Place

Snap the additional opening into place with its top against the guide and its right side against the right side of the existing inset opening.

## A Reminder

To make sure that the sides snap to each other, click **Options** at the top to verify that **Auto Align Openings** is checked.



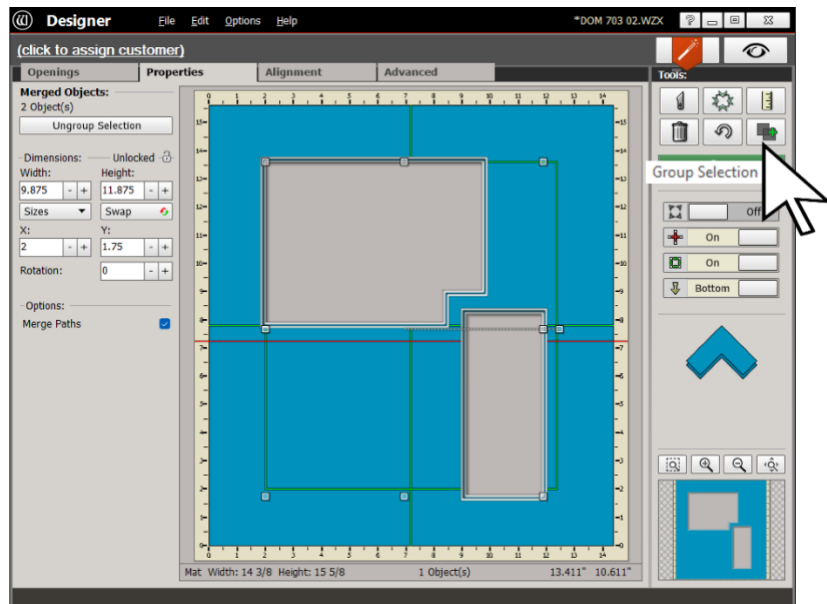
## Grouping

Select both openings.

Click **Group Selection** under **Tools** at the upper right.

The original inset opening and the additional rectangular opening will be merged into one rectangle – and it will be the correct size.

Set the outside size and the project is ready to cut.



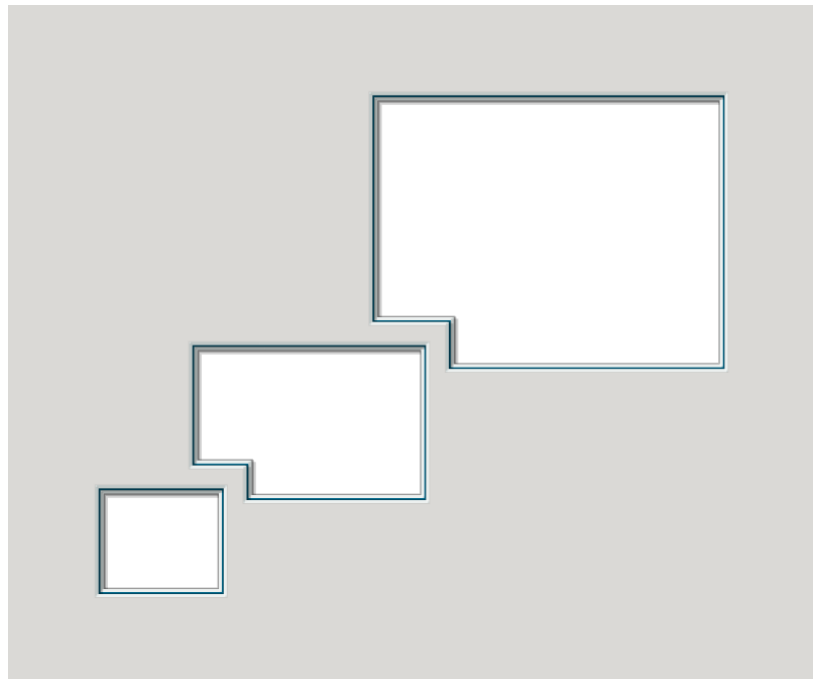
## CASCADING INSET OPENINGS

If Templates 703 and 704 can generate inset diagonal arrangements with two openings, why not three...or more?

Just as in the previous project, the inset opening will be extended by grouping it with an added opening. But this time the added opening will use Template 703 or 704.

This design uses template 704. The only difference with template 703 is that the inset opening would be at the lower right corner.

A cascading arrangement with template 703 would be a mirror image of this design.





## Beginning the Design

Look again at the illustration of the completed design on the previous page.

The main opening at the upper right is 8.75 x 6.75 inches high.

The inset opening at its lower left corner (the middle opening) is 5.75 x 3.75 inches high.

The inset opening at this opening's lower left corner (the lower left opening) is 3 x 2.5 inches high.

## The First Opening

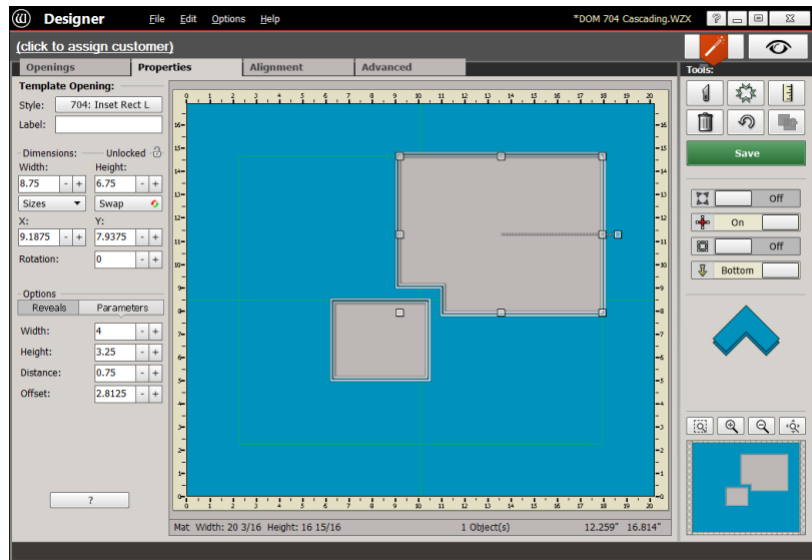
The **Distance** parameter is set to 0.75 inch so that the width of the separation on the top layer will be 0.5 inch.

The **Width** is 4 inches.

The **Height** is 3.25 inches.

The **Offset** parameter is set to 2.8125 inches.

These parameters are set so that the size and proportions of the separation fit our vision of the design.



## Preparation for Aligning the Second Opening

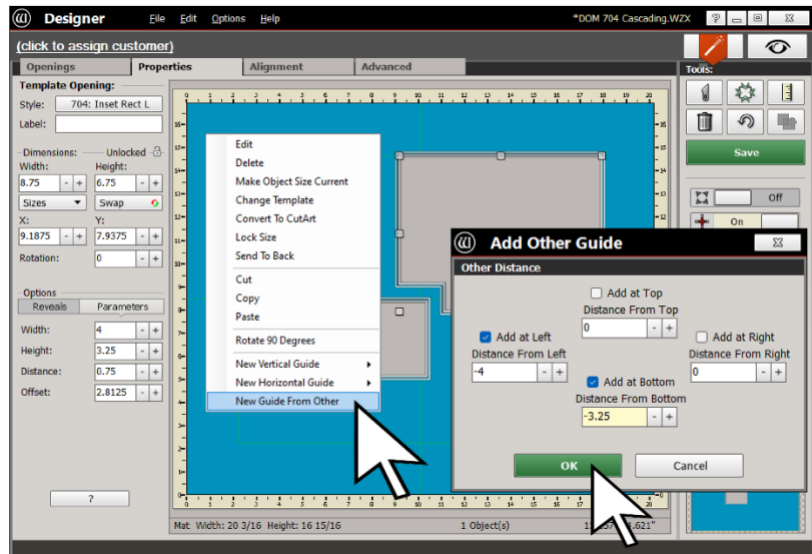
Right click on the opening.

From the menu that appears, click **New Opening From Other**.

In the **Add Other Guide** dialog box, see that in the **Add at Left** field negative 4 is entered.

In the **Add at Bottom** field negative 3.25 is entered.

Click **OK**. The guides will appear in the next illustration.







## The Second Opening

Copy and paste the opening to add another template 704 opening.

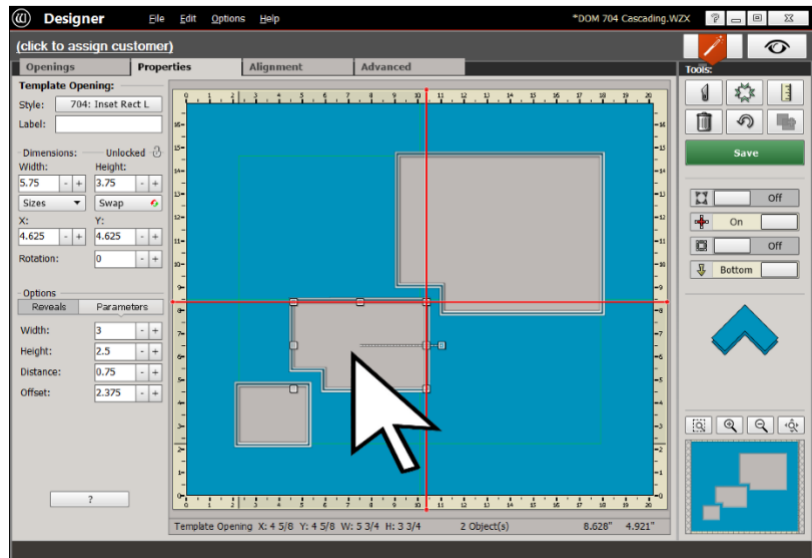
Its dimensions are 5.75 x 3.75 inches wide – the size of the middle opening in the original plan.

The parameter settings are:  
Width: 3 inches  
Height: 2.5 inches  
This is the size of the lower left opening in the original plan.

Distance: 0.75 inch  
Offset: 2.375 inches

Drag the new opening and snap it into place with its top against the horizontal guide and its right against the vertical guide.

When the opening is correctly snapped, the guides will flash bright red.



## Grouping

Select both openings.

Click **Group Selection** under **Tools** at the upper right.

The two overlapping openings in the middle will be merged into one opening.

Set the outside size and the project is ready to cut.

