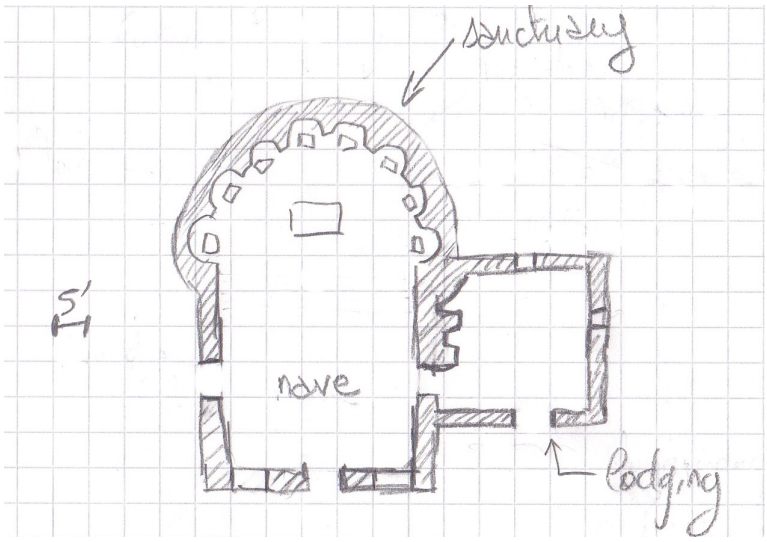
Appendix A – Part 3 without CA46

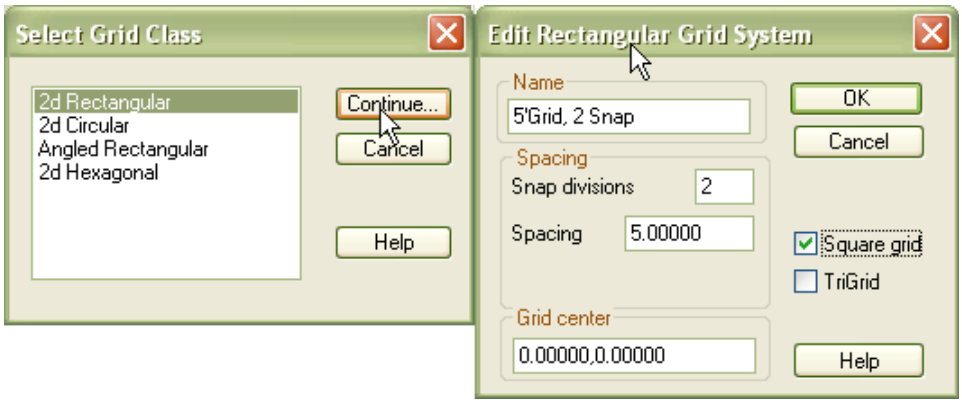
Introduction
In this part we will make a sketch to find the size of the map, draw a grid and start to build the walls of the chapel, but first we need to recap all we know about the chapel:
Hanin is a hamlet lost near world's end, or so it was before the local ruins where exorcised and people began to colonize the nearby city again. Hanin's inhabitants are born there, fleeing civilization or just their past. Multiple origins and races make for multiple religions and many gods are revered here, but there is neither enough gold nor enough talent to decorate the chapel with statues, bas-reliefs or paintings.
This means a modest sized building, able to host 8 small shrines, and accommodation for a priest.

Make a sketch of your design
Draw this sketch on graph paper. Here is the one I made for the chapel:



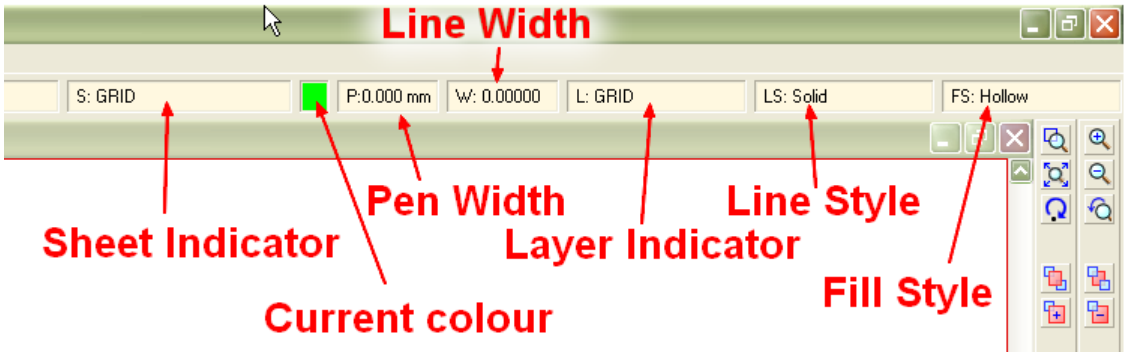
The main part is made from a diameter 35' circular sanctuary and a 25' wide square nave. The priest's quarters in another square, 20'×20' inside the walls.
The size of the map can be deduced from the sketch, for example 120'×80'. This leaves enough room to add a part of the graveyard to the left and some details around the building.

Set the screen snaps
Go to the **Tools**→**Snaps**→*Grid Settings* or right-click on the **Grid**, **Snap** or **Ortho** button.
Select the 5'Grid, 2 Snap setting. It's included in the blank.FCT template. If you prefer not to use the template, click on **New** and set everything as shown below then click **OK**:



Make sure that the Grid and Snap buttons are pressed down and that the Ortho and Attach buttons are up.

Set the screen configuration
Set your screen settings as shown in the screen shot below:



1. Open the Sheet Indicator to check the left box of the **GRID** sheet. Close the sheet selector (click **OK**)
2. Select color 1 (bright green) either by clicking on the right colors box on the color toolbar or on the color box next to the Sheet Indicator
3. Click on the Pen Width Indicator and enter 0 (if it's not already set)
4. Click on the Line Width Indicator and enter 0
5. Open the Layer Indicator and check the leftmost box of the **GRID** layer. Close the Layer Selector (by clicking the **OK** button)
6. Click on the Line Style Indicator and select Solid
7. Click on the Fill Style Indicator then on the Brush Patterns and select Hollow

Create the grid
Divide the length and the height of the map both by 5' and add each time 1 for the closing line. With 120'×80' that makes 120÷5 + 1 = 25 vertical lines and 80÷5 + 1 = 17 horizontal lines.

1. Invoke the ***Line*** tool (**LINE**↵).
2. Type **0,0**↵
3. type **120,0**↵
4. Right-click or hit **escape**.
5. Start again, but this time type **0,0**↵ followed by **0,80**↵ and right-click or **escape**. (120'×80' is the size I chose for the map).
6. Click on ***Zoom Extents*** (**ZEXT**↵) to focus the view on those two lines.
7. Right-click the ***Copy*** icon and select ***Rectangular array***, or just type **Repeat**↵. Select the horizontal green line by clicking on it then hit the **d** key or right-click and select ***do it***. Answer the prompts by:
   Numbers of columns [1]: **1**↵
   Numbers of rows [1]: **17**↵
   Repeat origin: **0,0**↵
   2nd row 2nd column: **0,5**

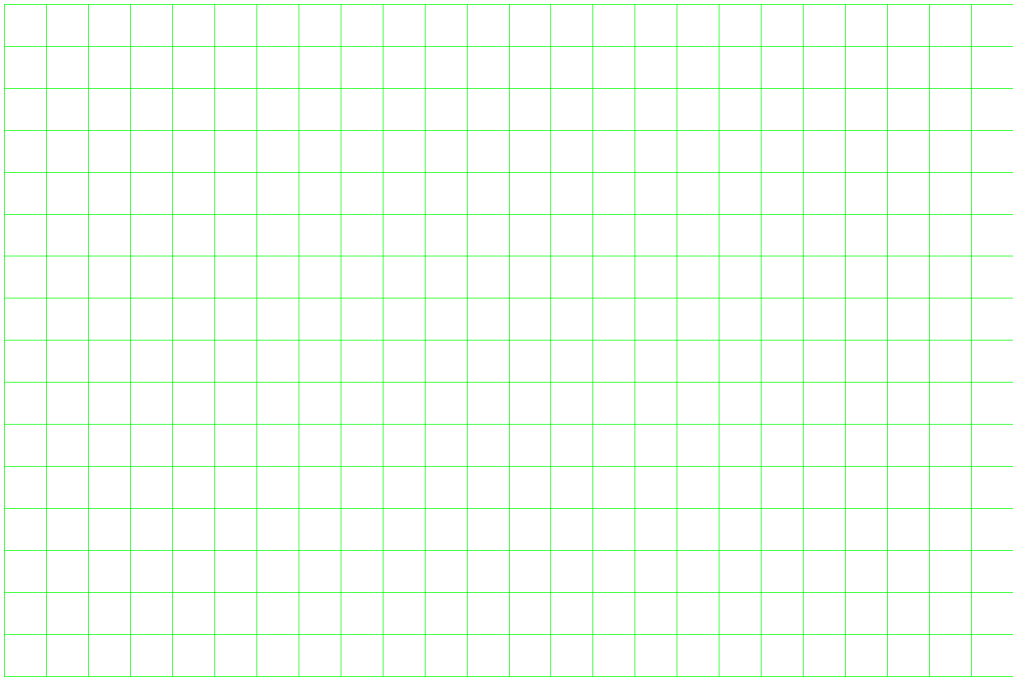
Note: if you type 0,0 for the repeat origin, you just have to type the amount of displacement for the 2nd row 2nd column input.

8. Invoke ***Rectangular array*** (**Repeat**↵) and select the smaller, vertical line then hit the **d** key or right-click and select ***do it***.

Note The default values are set to the first input (**7.** above). Every time there is a default value, you can accept it by right-clicking, which also means you cannot cancel by doing so (the **escape** key still cancels).

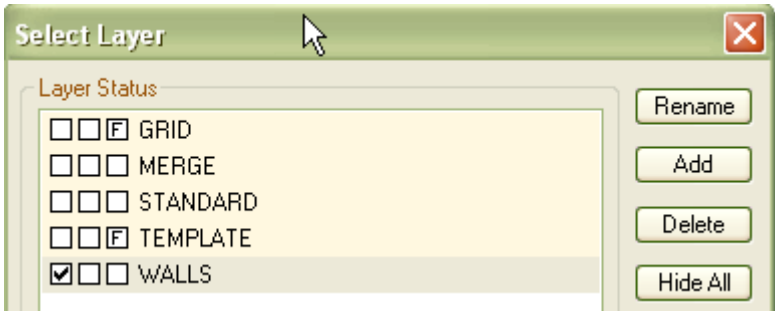
Here answer:

Number of columns [1]: **25**↵
Number of rows [17]: **1**↵
Repeat origin: **0,0**↵
2nd row 2nd column: **5,0**↵



Freeze the Grid

To make this grid secure, click on the Layer Indicator, check the leftmost box of the **WALLS** layer (or any layer except the **GRID** or **TEMPLATE** layers) then check the rightmost box of the **GRID** layer. It should show an "F", meaning that the layer is now frozen. Close the layer selector by clicking **OK**. Your grid is secure (try erasing or moving part of the it: you can't select it anymore).



Save the map under a new name such as Chapel01.fcw.

Note: CC3 has a tool to draw a grid in one go. It's the **Draw**→***Hex or Square Overlay...*** I don't use it because it gives a grouped entity and grouped entities still react to commands even on frozen layers (see sidebar next page).

The Sanctuary – Mapping at last!
Fourteen pages and not a single map line yet. It's about time something happens...

The mean radius is 35'÷2 = 17.5'. A width of 5' will provide enough thickness to host the shrines so the inner circle has a 15' radius and the outer circle a 20' radius:

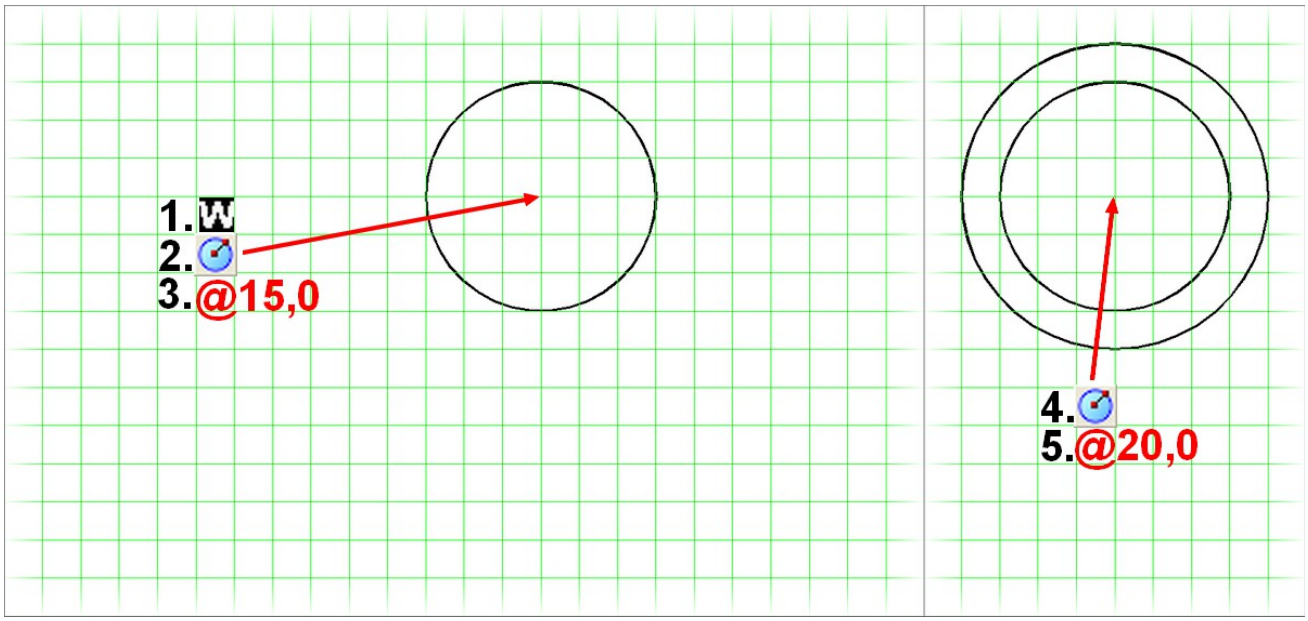
1. Click on the wall button W to set the colors, the sheet and the layer in one go.
2. Use the *Circle* tool (**CIRP**↵). Click a grid corner to place the circle's center.
3. The prompt asks for a point on the circle. Use the **@** short cut. The "at sign" character means "counting from the last used point". The last used point is here the center of the circle. Type **@15,0**↵ which indicates a point 15 units to the right of the center, effectively designing a radius 15' circle.
4. Use the *Circle* tool (**CIRP**↵) again. Click first circle's center (it's a grid node, the cursor snaps to it. Alternatively use the *Center* modifier **F4** on the first circle).
5. Type **@20,0**↵.
6. Save the map as: Chapel02.fcw

Frozen Entities
The rules governing frozen entities are:

- An entity on a frozen layer cannot be erased, moved, copied or altered in any way,
- An entity on a frozen layer still can be used with modifiers. For example you could start a line from any grid line by using the *On* (**F9**) modifier.

This last point is important because often the grid gets in the way. That's the reason for the two green buttons added part 1, page 2: G and G. In just one click you can hide or show the grid.

- Show the grid to draw construction lines (see further), place symbols, count squares, etc. On a small map like this one, the dotted grid you get when the **GRID** button is down would be enough, but on more extented maps, use the green grid instead.
- Hide the grid to draw or use tools with modifiers or just to check your work.

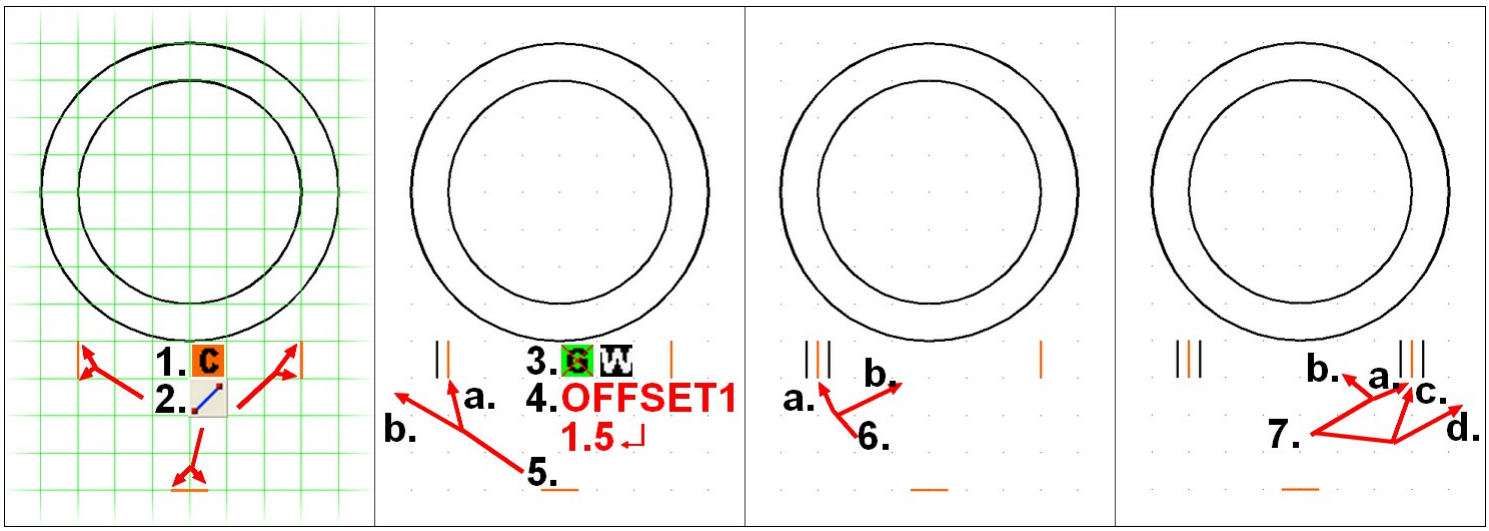


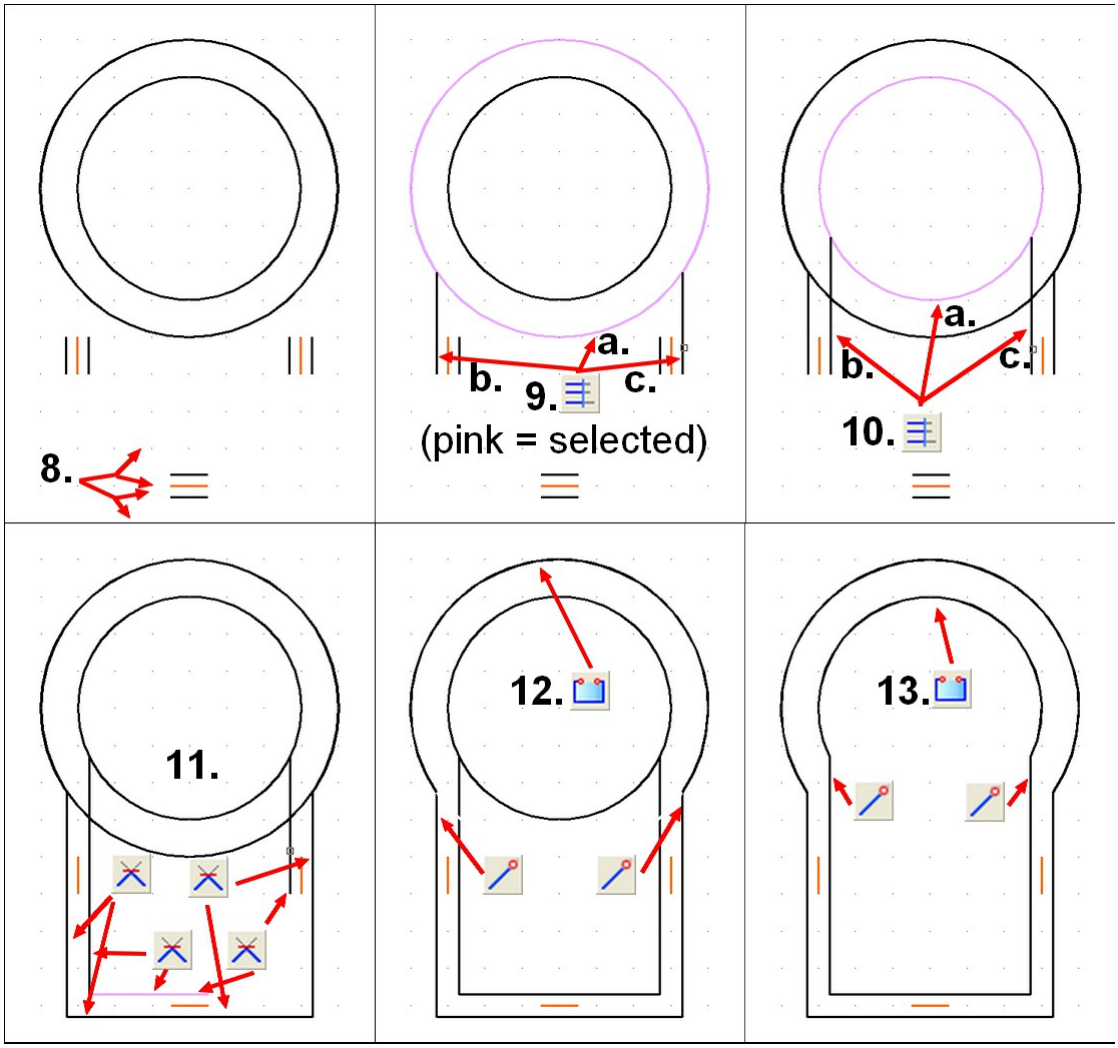
Note: Line widths were increased for better reading.

The Nave

> **Construction Lines**
> Construction lines are temporary drawings that won't appear on the final map. Their uses are multiple: finding intersection points, project lengths, draw sketches etc. Here, I use them mostly to get precise intersection points. Because they won't appear on the final map they go on their own sheet: **CONSTRUCTION**.

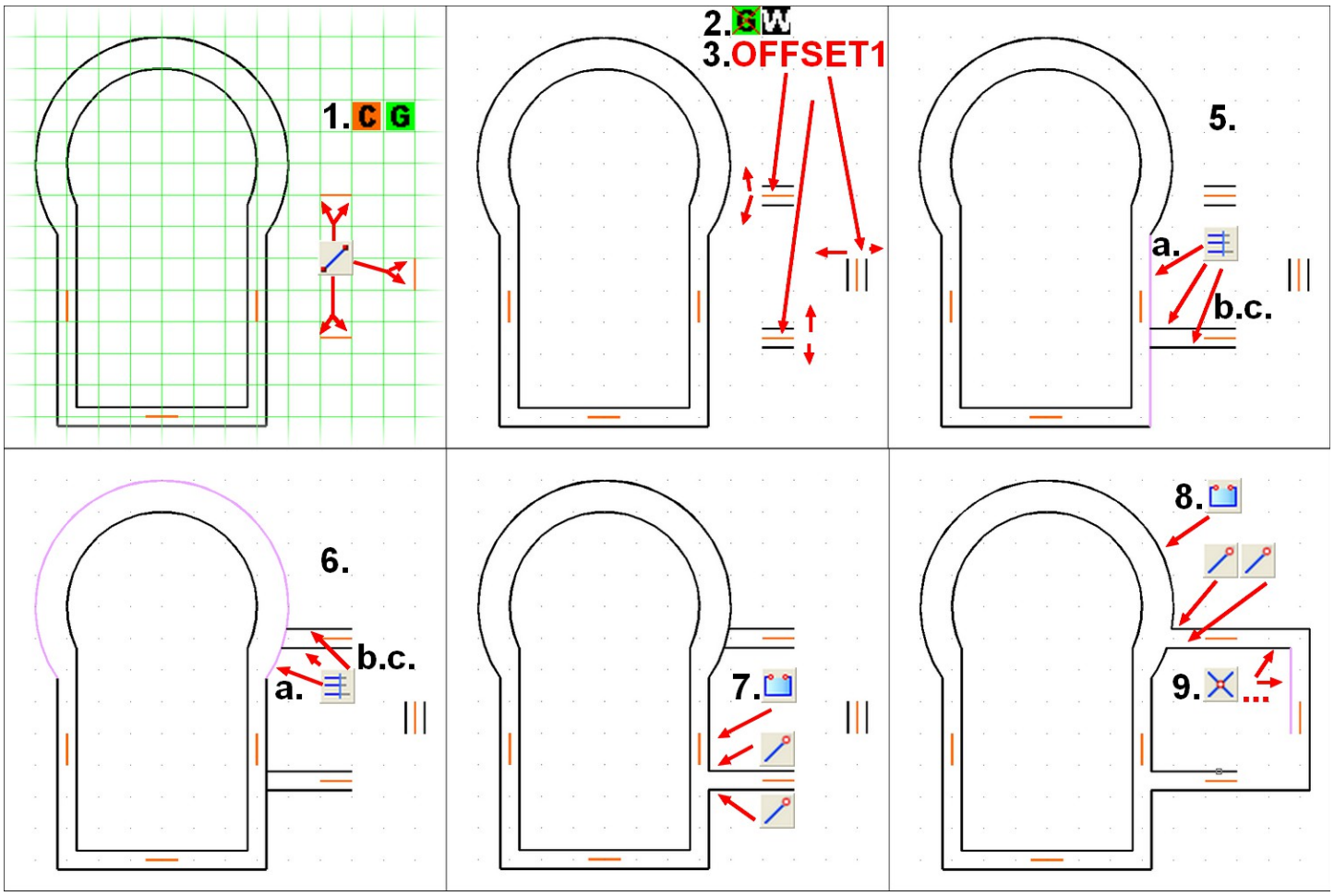
1. Click on the orange button C that sets everything for construction lines: the sheet to **CONSTRUCTION**, the layer to **STANDARD** and the color to bright orange (8) to clearly identify the nature of the lines
2. Use the ***Line*** tool (**LINE**↵) to draw some very short lines on the axises of the walls of the boxed part of the chapel without crossing the circles (see sidebar). Right-click after each line
3. Click on the G icon to hide the grid then click on the W icon to quit the construction settings and enter wall drawing mode: **WALLS** sheet and layer, color black (0)
4. Select the **Draw→Offsets→*Offset One*** (**OFFSET1**↵) tool. Type **1.5**↵ for the distance
5. Click on the rightmost orange line then on it's left.
6. Click again on the rightmost orange line then on it's right
7. Repeat steps **5.** and **6.** for the leftmost orange line
8. Repeat steps **5.** and **6.** for the lower orange line but click above and below instead of right and left. Right-click to end the offset tool
9. Trim the outer vertical lines to the outer circle with the ***Trim To Entity*** (**TRIMTO**↵) tool
10. Trim the inner vertical lines to the inner circle with the ***Trim To Entity*** (**TRIMTO**↵) tool
11. Trim the corner lines to each other with ***Trim to Intersection*** (**TRIMINT**↵) tool
12. Use ***Break*** (**BREAK**↵) with the outer circle, clicking on in but outside the part to remove (between the vertical walls). Click the ***Endpoint*** modifier or hit the **F5** key and select the left vertical line near the top then do the same with the upper endpoint of the right vertical line
13. Likewise ***Break*** (**BREAK**↵) the inner circle from the left vertical line upper endpoint to the right vertical line upper endpoint





The Priest Lodging
To add the lodging, we use the same method :

1. Click on C, click on G and use the *Line* tool (**LINE**↵) to draw some very short lines on the axises of the walls. Right-click after each line
2. Click on the G then click on the W
3. Select the **Draw→Offsets→*Offset One*** (**OFFSET1**↵) tool. Type **1.5**↵ for the distance or right-click to accept the default value if it's 1.5
4. Click on all the new orange lines. Offset both sides of each line.
5. Trim the lower wall to the nave outer right wall with the *Trim To Entity* (**TRIMTO**↵) tool
6. Trim the upper wall to the sanctuary outer arc with the *Trim To Entity* (**TRIMTO**↵) tool
7. *Break* (**BREAK**↵) the left outer nave wall, clicking on the part to keep. Use the *Endpoint* modifier (**F5**)key to select the leftmost endpoints of the lower wall
8. *Break* (**BREAK**↵) the left outer sanctuary wall (arc), clicking on the part to keep. Use the *Endpoint* modifier (**F5**)key to select the leftmost endpoints of the lower wall.
9. Trim the corner lines to each other with *Trim to Intersection* (**TRIMINT**↵) tool



Conclusion

We have now a well defined map area and the rough shape of all the walls has been designed.

In part 4 / Appendix B we will refine these walls by adding alcoves (recesses) and other similar features, giving more details to the basic masonry.