Tutorial 1: CA Overhead Exit Panel with inset Exit Number Panel

SignCAD Analysis

The sign above is an overhead Exit Only panel with an inset Exit Number panel right aligned. It is made up of three panels assembled into a multi-panel arrangement, which allows independent spacing and alignments of the Exit Number panel and the legend to its left. The image below shows lines between each of the panels, two panels comprising the top section and one panel below. The sign is designed in the California standard.

Introduction to this tutorial and logic behind the construction of this panel:

The Exit Number Panel and the Exit Only yellow plaque are designed using the Rectangular panel tool. Since these are common elements used on many guide signs they can be designed and separately saved to a common location on the server or to the Favorites menu.

The main overhead panel is composed of three multi-panels. The borders between the panels are turned off. The size of each panel is controlled by the objects in them, and when in a multi-panel arrangement, by the enlarge to fit row/column checkboxes in the size tab of each panel. For example the objects in the bottom sign will control the overall size of the panel. The width of the upper panel is controlled by the contents in each panel, but they must also be sized to fit the width of the bottom panel.
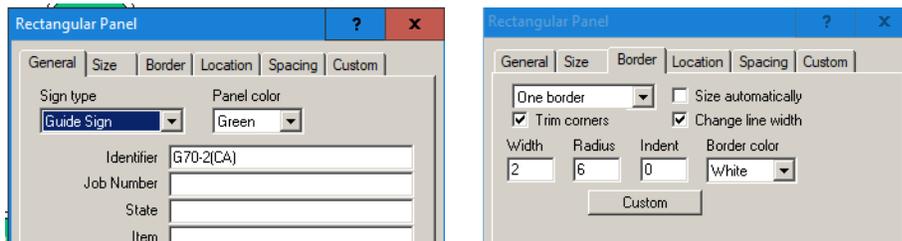
Step 1: Create the Exit Number Panel

Go to File>New, California standard, and pick the Rectangular panel tool and pick a point on the screen.

In the General tab of the Rectangular Panel dialog box pick Sign type: Guide Sign and Panel color Green (the defaults), and enter the Identifier (optional) of G70-2(CA).

Select the Border tab and uncheck Size Automatically, and check Trim Corners. Enter width of 2" and radius of 6".

In the Spacing tab pick Use Object Spacing and pick Space to Border. Pick OK. (Picking settings in the Spacing tab are personal preferences. For this tutorial we will use object spacing to border.)
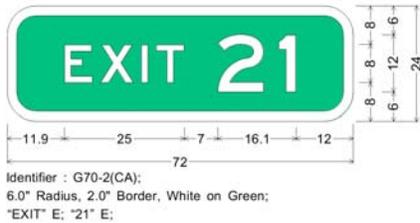

Pick the Text tool and pick <Ctrl>F for font and set the font to E series. Pick OK.

Click into the sign and type "EXIT"<enter> then pick <Ctrl>S for size and set size to 12", pick OK and type "21"<enter>.

Identifier : G70-2(CA);
6.0" Radius, 2.0" Border, White on Green;
"EXIT" E; "21" E;

Use the Select tool to drag both objects into the same row. Then window select the text and right click>Object Spacing, set left and right to 7, and top and bottom to 4". Pick OK.

Identifier : G70-2(CA);
6.0" Radius, 2.0" Border, White on Green;
"EXIT" E; "21" E;

Other than the spacing between the two text objects, the values do not need to be exact. Because the width and height increment is 6" as shown in the Rectangular Panel dialog Size tab), a value of 4" or less top and bottom spacing will allow the panel height to drop to 24". Object spacing of 7" left and right will drop the panel width to 72", also because of the 6" width increment. Everything is automatically centered.
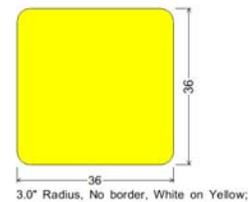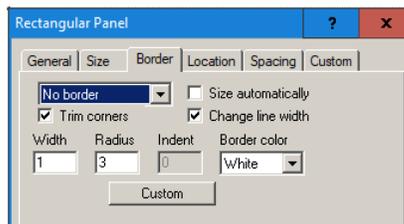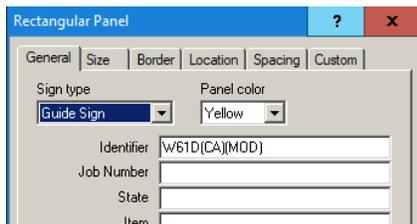
If you are unable to set object spacing because it is grayed out, go to the Preferences menu and uncheck Allow Panel Selection.

Save this sign to your Favorites menu giving it the name G70-2(CA).

Step 2 Create the Yellow Exit Plaque

Use the Rectangular Panel tool to create the yellow sign, pick a point on the screen. In the General tab, confirm Guide Sign and set Panel color to Yellow. Enter W61D(CA)(MOD) in the identifier. In the Border tab uncheck Size Automatically, enter Radius 3, select No Border and check Trim corners.

Width, indent and border color are ignored when No border is selected. The Spacing tab for this tutorial should be set to Use Object spacing. Pick OK.

Go to the Preferences menu and set Fill color>Black.

Use the Text tool to click into the yellow panel and type the word ONLY in 12" E series font. (Preferences>Text size and Preferences>Text Font).

Pick the Up Arrow tool and click in the panel to the left of ONLY and select 16CAP-1L and enter an angle of 43.5 degrees (or desired angle, see note below) in the dialog box, then pick OK. Click in the panel to the right of ONLY and select the same size and angle and pick OK.

3.0" Radius, No border, White on Yellow;
Arrow 16CAP-1L - 25.0" 44° Black; "ONLY" Black E; Arrow 16CAP-1L - 25.0" 44° Black;

Use the Select tool to window select the objects in the panel and pick Object Spacing, set top and bottom to 2 and left and right to 8. Pick OK

Note on angle: the 16CAP-1L arrow at 45 degrees is 20.4" high. Setting a top and bottom spacing of 2" pushes the panel up to 30". Setting the top and bottom spacing anywhere between 0 and 1.9" will achieve a 24" panel. The side dimension will show 20.4". If you want the side dimension to show 20" at 1 decimal place, then rotating the arrow to 43.5 degrees will reduce its height to slightly less than 20" allowing rounded numbers on the dimension line. The method used is up to the engineer/designer.

Right click on ONLY and pick Object Spacing, set its left and right to 38" and pick OK.

3.0" Radius, No border, White on Yellow;
Arrow 16CAP-1L - 25.0" 44° Black; "ONLY" Black E; Arrow 16CAP-1L - 25.0" 44° Black;

Adjust spacing accordingly if you want panel size other than 186" by setting the left spacing of the left arrow and the right spacing of the right arrow to another value. Setting both to the same value keeps the arrangement centered in the panel. If you want the size not on the 6" increments, then adjust either the minimum size or the incremental size accordingly.
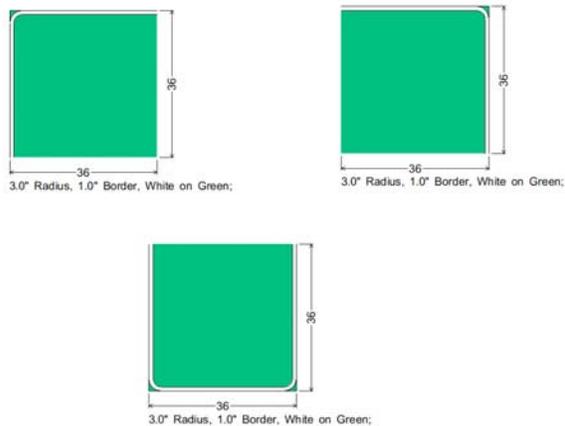
Save this sign to your Favorites menu with the name W61D(CA)(MOD).

Step 3 Create the overhead Guide Sign

Pick the Rectangular Panel tool and pick a point on the screen. The Sign type in the General tab is Guide Sign and Panel color Green. In the Border tab check Size automatically. In the Custom tab uncheck Display Top Border. Pick OK.

Pick another point on the screen above and to the left of the first one, and in its Custom tab uncheck Display Bottom and Right border. Pick OK.
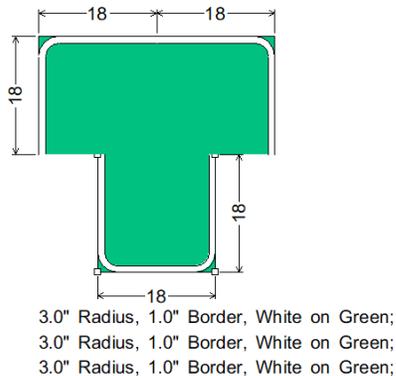
Pick a third point to its right and in its Custom tab uncheck Display Bottom and Left border. Pick OK.

3.0" Radius, 1.0" Border, White on Green;

3.0" Radius, 1.0" Border, White on Green;

3.0" Radius, 1.0" Border, White on Green;

Your three signs should look like the image above.

Pick the Select tool and while holding down the <Ctrl>key drag the top left one to attach to the top right one. A blinking edge on the right panel when the move hand passes over the edge will indicate that they will attach.

<Ctrl>pick and drag the bottom panel over the top ones until you see a blinking edge along the bottom of the two panels, then release the mouse button, which results in the panels in the multi-panel arrangement as shown in the image below:

3.0" Radius, 1.0" Border, White on Green;
3.0" Radius, 1.0" Border, White on Green;
3.0" Radius, 1.0" Border, White on Green;

Go to the Preferences menu and set Fill color to white, Text font to EMod, and Text Size to 16".

Pick the Text Tool and click into the bottom panel, and type "Los Angeles".

Pick the Up arrow tool and pick a point below Los Angeles to place the 16CAP-1L arrow at 43.5 degrees, or similar to the angle of the arrows in the yellow plaque.

Select the State Highway route marker tool and pick a point in the upper left multi-panel. The state highway route marker dialog will appear. Enter Route number 22 and select 15" size. Pick OK.

Pick the Text tool, set text size and font 13.33" E series. Pick a point to the right of the shield and type "EAST".

Your sign should now look like the one above.

Step 4 Add panels from the Favorites menu into the sign as objects

Now go to your Favorites menu and drag the two signs you previously created into the workspace:

You were able to attach the three green signs together to create a multi-panel. You cannot place a sign panel into another panel until you create an object version of the sign. It can then be placed into a panel like any other object – arrow, text, route marker, etc. In the image above you could attach the Exit Number panel to the top of the multi-panel, but not into the multi-panel.

Use the select tool to <Ctrl>select the yellow plaque, being sure to select the plaque and not the objects in it. Handles in the corners will ensure it is selected. Go to File>Create Object and pick OK.

Do the same with the Exit Number panel.

Drag the new yellow plaque into the bottom panel to the right of the arrow.
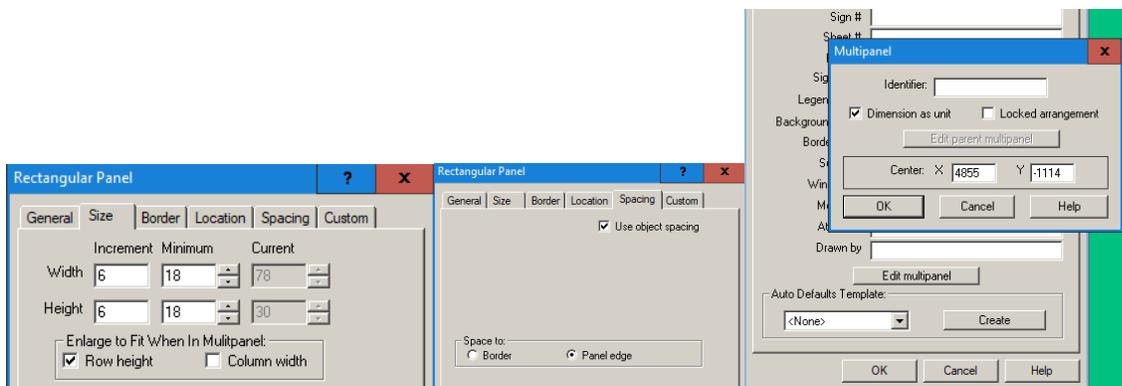
Drag the new Exit number panel into the small right panel.

The original plaque and exit number panel can be deleted, or can stay in the file to show their internal dimensions. The originals are in the Favorites menu, and can be pulled into any new file in the same standard and used as templates. To delete them hold down the <Ctrl>key while window selecting the panels and hit the Delete key on the keyboard.

These new objects act like other objects with alignments and spacing.   Right click on the Exit Number panel and pick Object Spacing 0 on all sides, and Object Align top right.

Right click on the panel it is on and pick Edit Data. In the Size tab check Enlarge to Fit Row height, and in the Spacing tab pick space to panel edge.

In the General tab pick Edit Multi-panel and check Dimension as a unit. Pick OK.   These steps position the Exit Number as shown in the image of the sign below.

Pick the top left panel, and right click, edit data, Size, enlarge to fit column width and pick OK.

Your sign should look like the one below.

The two enlarge to fit settings in the top panels ensure that the top panels will always be as wide as the bottom panel, and the panel containing the Exit number panel will always be as high as the panel to its left. This panel is a template for all other exit number panels.

12.0" Radius, 2.0" Border, White on Green;
"EAST" E;
12.0" Radius, 2.0" Border, White on Green;
12.0" Radius, 2.0" Border, White on Green;
"Los Angeles" E Mod; Arrow 16CAP-1L - 25.0" 44";

The two remaining tasks to complete the design of the panel are 1) to apply spacing and alignments between 22 East and Los Angeles, and 2) apply spacing in the row of arrows.

With the Select tool right click on the white arrow and set right spacing to 108. Pick OK.
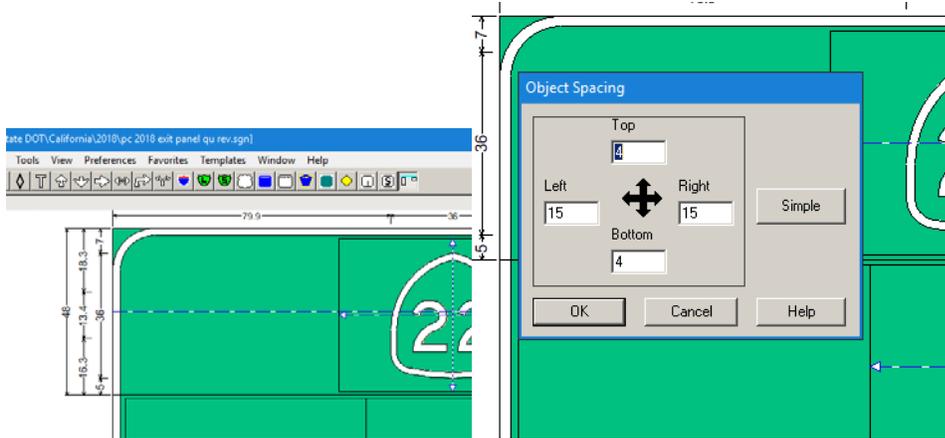
Pick the Arrange tool, the rightmost tool shown depressed below.

Right

The Arrange tool displays alignment lines and bounding boxes for all the objects. Click on the horizontal dashed line in the blank area of the left panel and pick Object align bottom. See the left image below.

Right click on the shield and pick object spacing, set the bottom to 0 and top to 10 (The panel height is 48", top border is 2", shield is 36", therefore 12" is required from the shield to the top of the panel.)

Pick OK.

12.0" Radius, 2.0" Border, White on Green;
"EAST" E;
12.0" Radius, 2.0" Border, White on Green;
12.0" Radius, 2.0" Border, White on Green;
"Los Angeles" E Mod, Arrow 16CAP-1L - 25.0" 44";

The distance between Los Angeles and 22 is 13". This can be adjusted without adjusting the height of the panel by adding and subtracting equal amounts in the top and bottom spacing of Los Angeles.

Drag the triangle at the left of the route marker to increase the left spacing, which moves the arrangement of the shield and cardinal direction to the right. Drag it until the E is aligned with the vertical dotted line through Los Angeles. Dragging the triangle is the same as setting the left spacing in the object spacing dialog box.   The value of the left spacing in the image below is 82". The value of the left spacing in the image above is 15" (the default lateral spacing equal to numeral height) as indicated by the bounding box and dimensions.
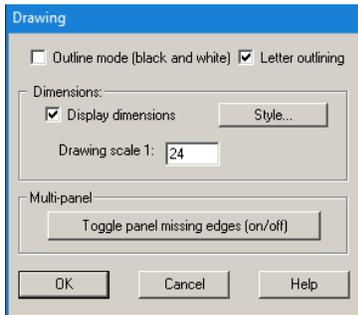
Adding up dimension lines can verify exact centering.

Save this file and add it to your Favorites menu to be used as a template for similar signs.

The final sign design is shown above.

If you want to see the lines of the separate panels, go to Preferences>Drawing and toggle panel missing edges on/off. See the image below.

You have successfully completed this tutorial.