THE ART OF MAP ILLUSTRATION

A STEP-BY-STEP ARTISTIC EXPLORATION OF **contemporary cartography** and **mapmaking**

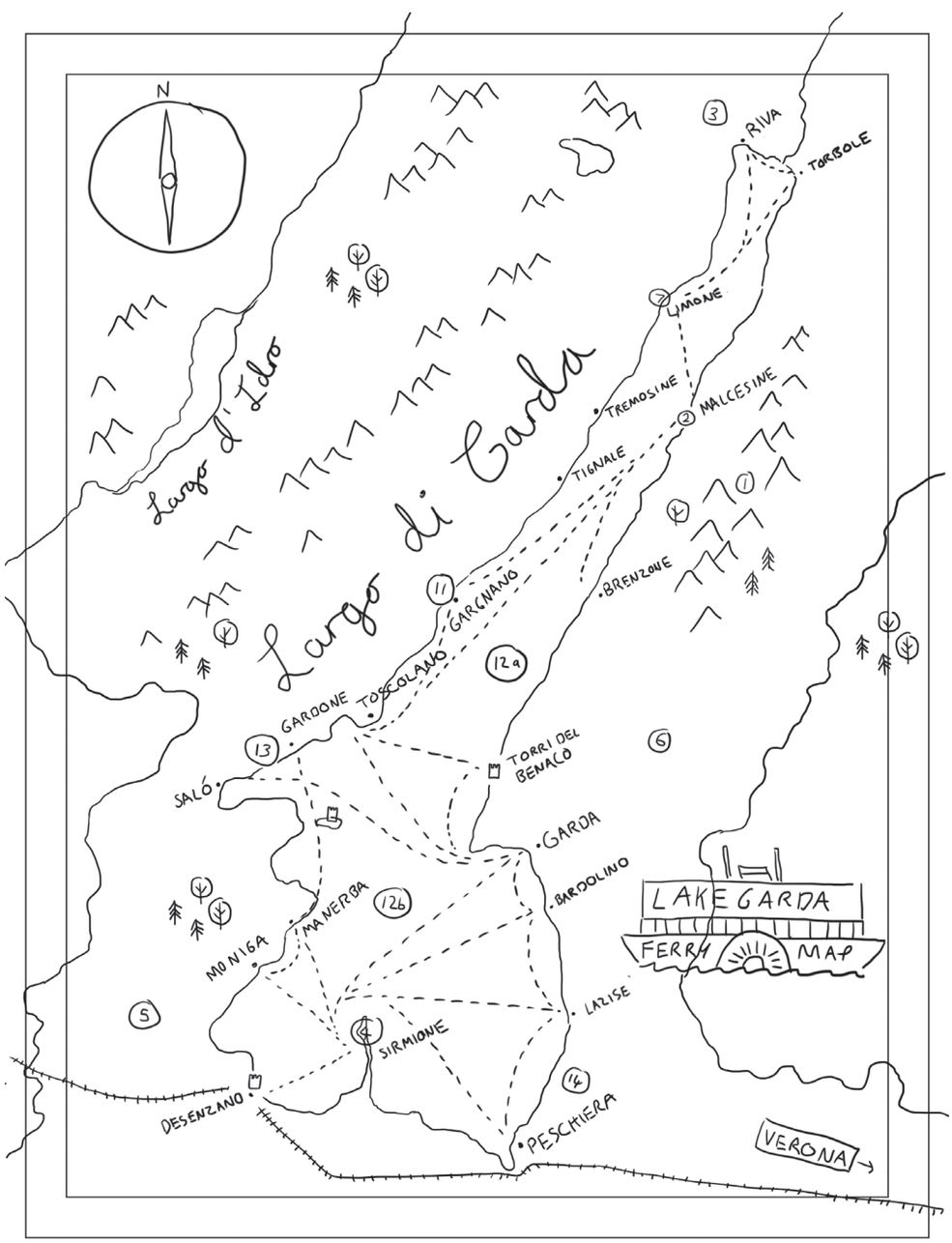
BONUS MATERIAL

On the pages that follow, you'll find expanded instructions for the step-by-step projects on pages 46-83 in your book.

LAKE GARDA

Lake Garda is the largest lake in Italy. What fascinated me most about my trip here was the ferries that skirted around the towns and villages on the water's edge. I wanted this map to be about them—these little towns and the routes the boats take, which link all these places together.

I roughly trace around the outline of the area, and number the spots where I want to illustrate something interesting. The numbers refer to a list of potential points of interest (POI's) I thought would make good illustrations. There were many things I wanted to cram into the map, but I had to remain selective and choose what works compositionally. Next I add other important details, leaving space for traditional map elements like a compass and a title. To finish my rough sketch, I add topographical markers to flesh out empty areas of the map. I try to stick to the real topographical features of the landscape whenever possible.

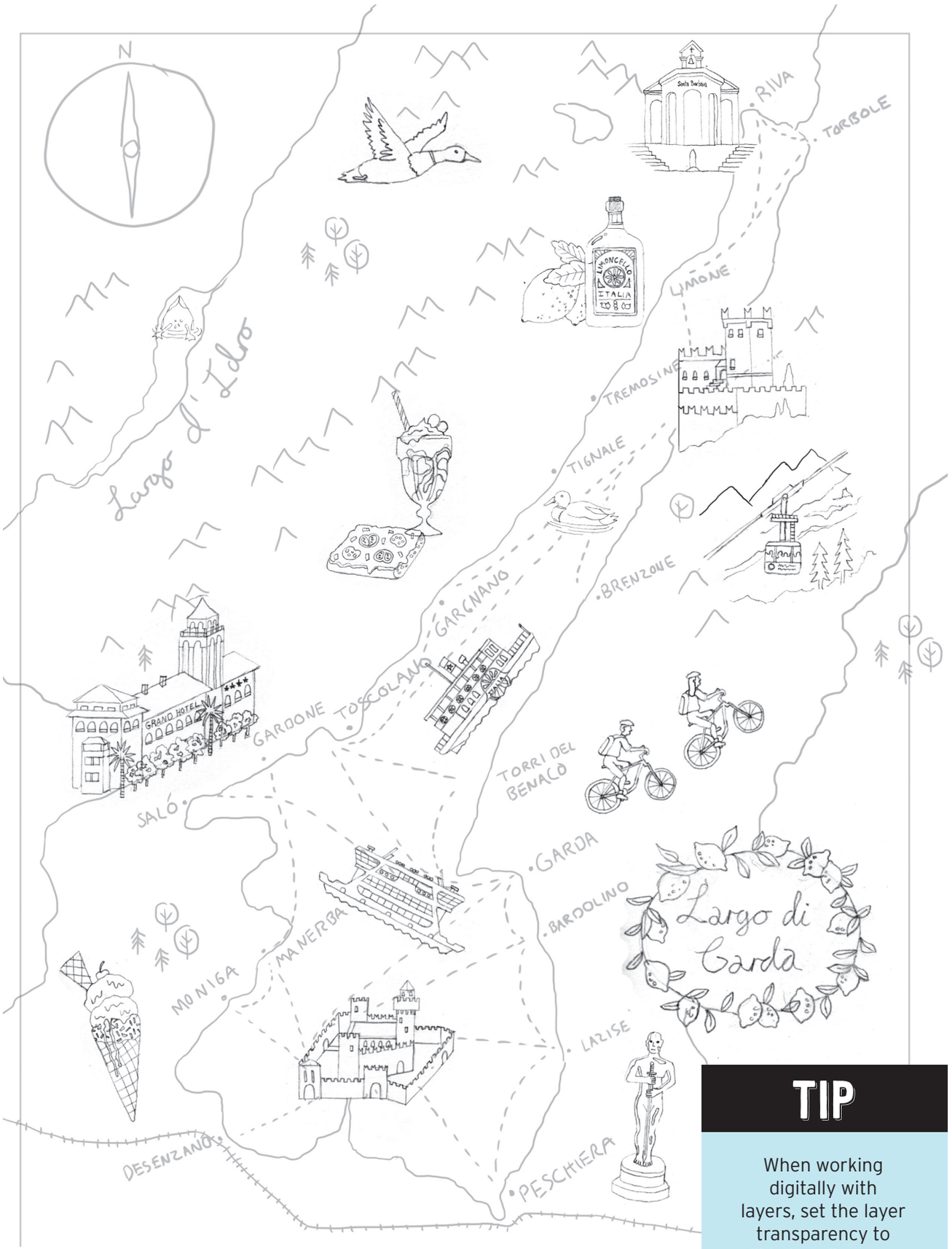


TIP

I sometimes draw the outline of the country or place freehand, but I usually trace a digital screenshot for two reasons: (1) it saves a lot of time, and (2) it ensures accuracy.

(Opposite) Next I sketch the POI's. I do a lot of image research at this stage and look for pictures I like that show the subject at the right type of perspective. I draw from these, often distorting the angle and simplifying the subject as much as I can without losing too much detail. When working digitally, I scan all the drawings into the computer and clean them up a bit.

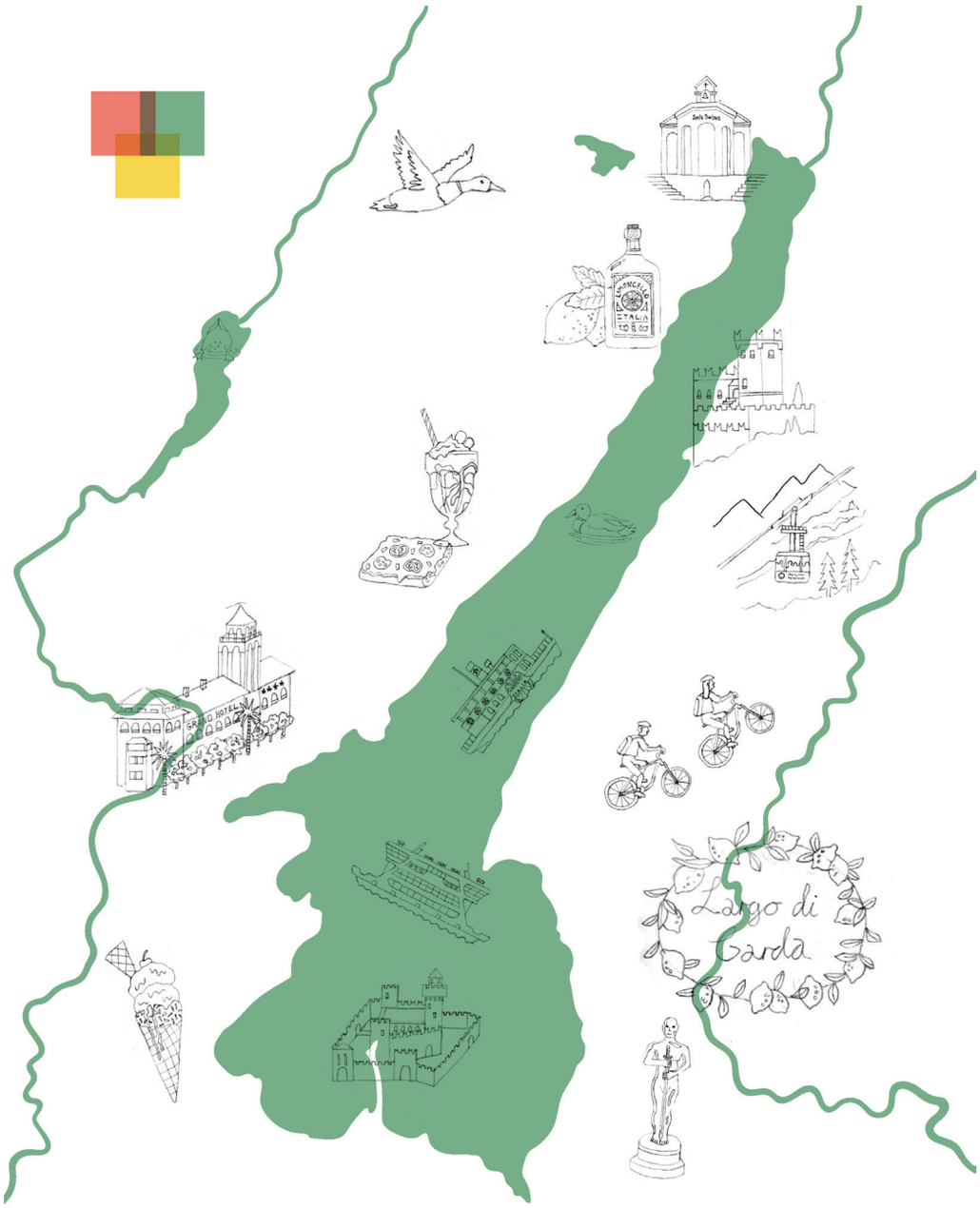
MONTE BALDO
LIMONCELLO
ITALIA
Santa Barbara



I separate the POI's in Photoshop on separate layers on top of my earlier plan. As you can see, I rotated, flipped, or erased sections of my drawings to make them fit.

TIP

When working digitally with layers, set the layer transparency to "Multiply," so you can see through the white of the paper.

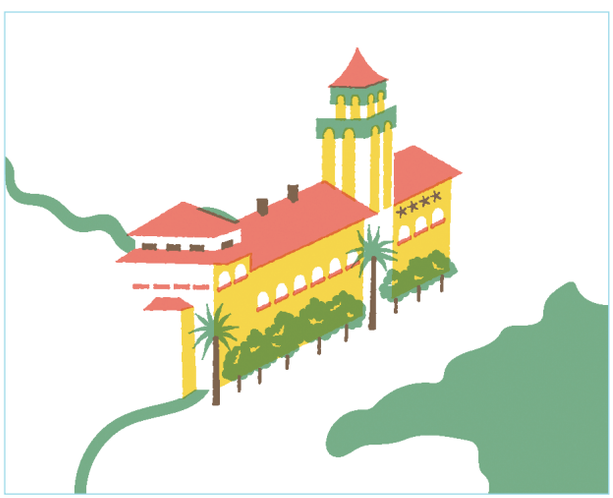


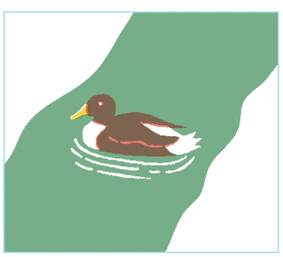
I prefer to add color in Illustrator, rather than Photoshop. Illustrator uses vectors, so you can adjust the size many times and to any scale without losing quality. You can also create lots of shapes in the same layer so the file sizes are much smaller and faster. I export the Photoshop layers to Illustrator separately, as JPEGs. First I work on the background, using the map screenshot. I use the pen tool to trace around the lake and the brush tool, with the pressure sensitivity turned on, to create thick and thin bends in the river. In the top left, you can see my color palette.

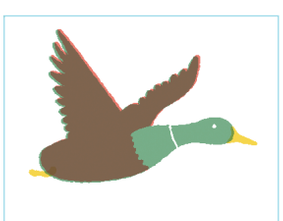
Next I bring in the Photoshop layer with my POI's and place the image on its own layer, set to "Multiply," above the rest of the artwork, so I can flick the layer's visibility on and off to see how the work is taking shape.

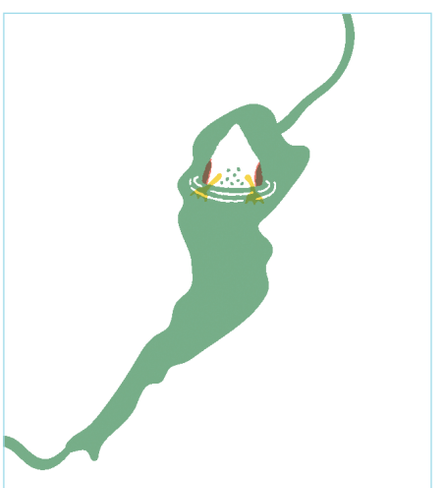
I create a new layer above the green one for white objects. I don't want to subtract anything at this stage, to ensure the freedom to move and scale objects around freely. Then I use the pen tool to trace around my first POI, one of the ferries. I repeat this process, creating a separate layer for the different colors, altering the opacity of the shapes to "Multiply" to replicate an overprint effect similar to screen printing. I love the look of that traditional technique. I also deliberately overlap and offset some of the layers slightly to give the artwork a slightly mis-registered appearance.

The pen tool allows you to outline and fill shapes very quickly, but it creates very clean and precise edges. My style aims to emulate a handmade technique, so I like to add a "Roughen" filter to the objects. Experiment with the different settings to find your preferred balance of detail vs. roughness. See page 44 in your book for more tips on using this effect.









I repeat this process for the Grand Hotel, another four POI's, and two ducks. On looser shapes, such as the chocolate sauce in the milkshake glass, I like to use the pencil tool instead of the pen tool, because it's faster. Imprecise shapes require a lot more anchor points than a regular shape. With the pencil tool you can draw the whole shape in almost one motion. There are many settings you can adjust to alter how closely the shape you create matches the original line. Again, it's a balance of smoothness over accuracy.

(Opposite) I decide to change the background to yellow and reverse the lakes and rivers to white. I also make some adjustments to all the POI's to account for the new background. As mentioned before, I don't subtract anything at this stage, so I cheat a little bit with additional layers that I will remove later when I bring it back into Photoshop.

For POI's that are yellow, such as the lemons or the Oscar statue, I create white "cutout" shapes around the illustration to keep the object from merging into the background.

Finally, I bring in the topography layer from my Photoshop sketch to begin adding the trees, mountains, railways, and a compass. These little elements fill out any empty space and go a long way in making the illustration start to look like a map.

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GRAND HOTEL
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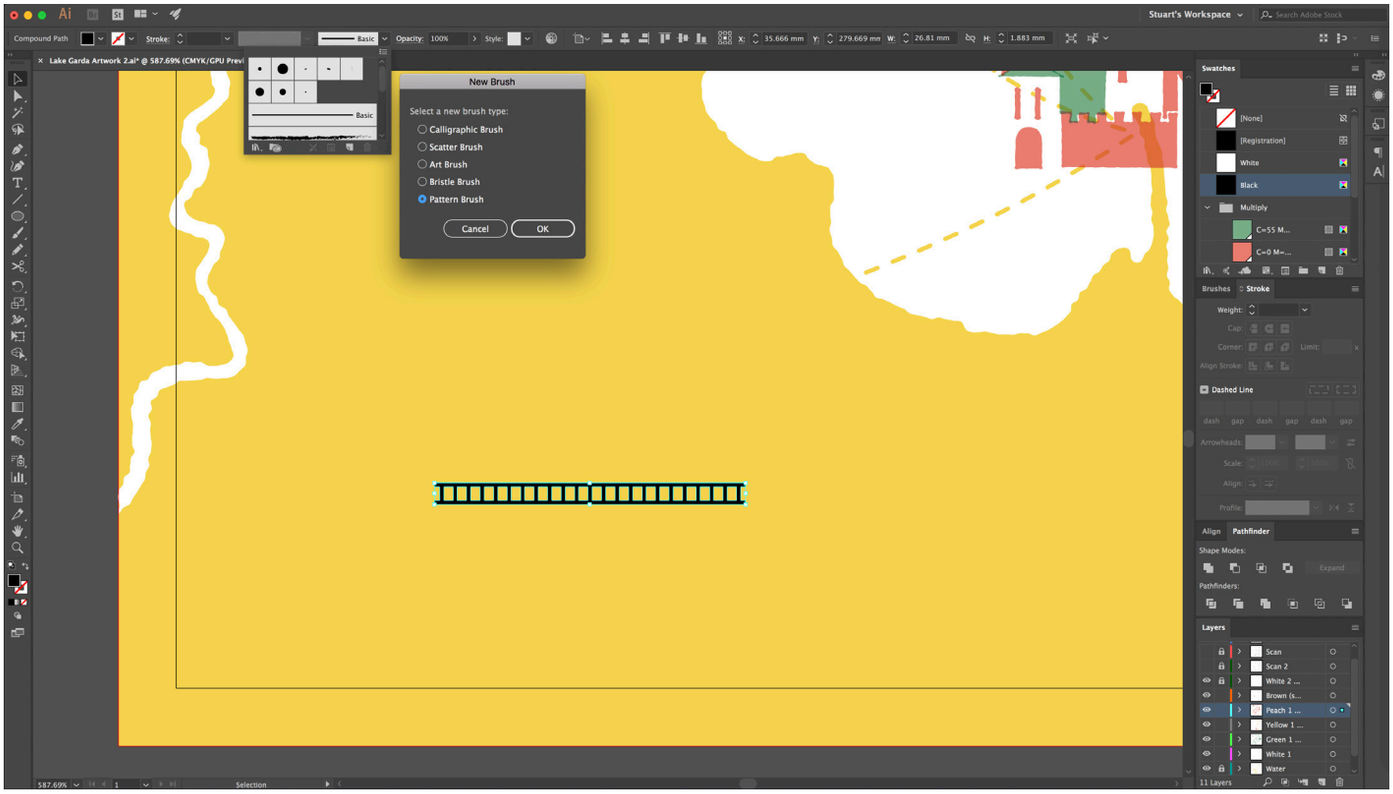
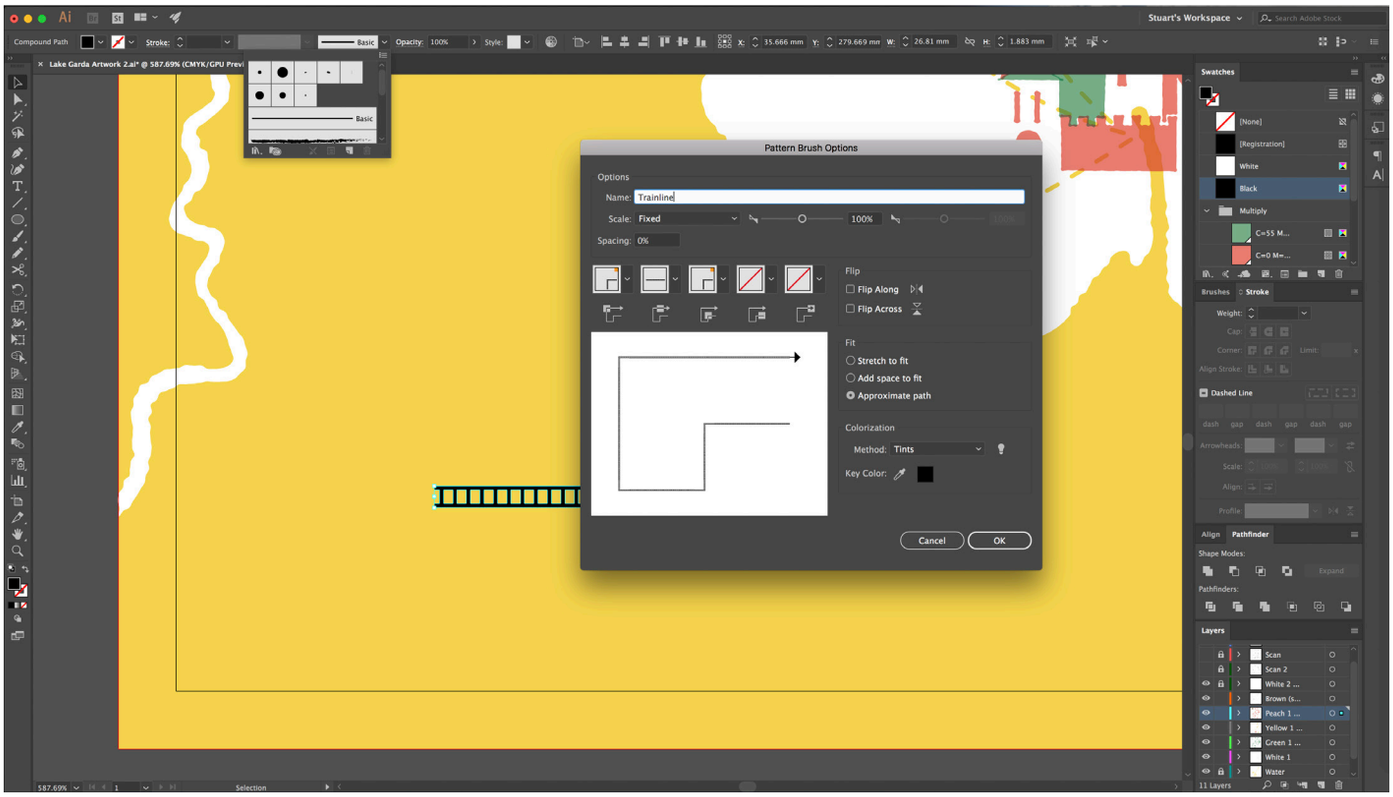
MOVIELAND

MAKING A PATTERN BRUSH FOR THE RAILROAD



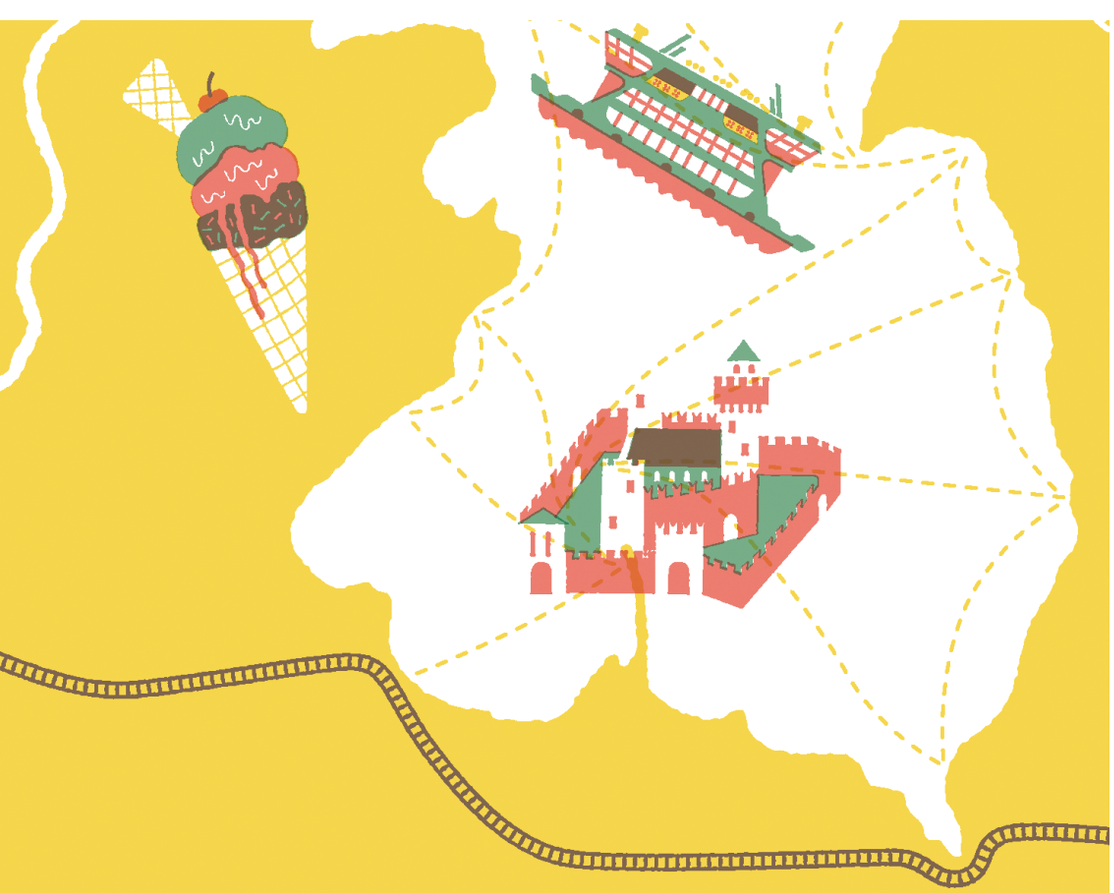
Start by making a small, straight section of black track using the pen tool. Then create a new pattern brush using this shape by clicking the “New Brush” icon at the bottom of the brush panel and choosing “New Art Brush” in the pop-up window.



There are lots of settings you can explore. I chose the approximate path setting, which retains the original artwork without distorting the shape. I set the spacing to zero, so there aren't any gaps, and I set the colorization method to "tints." Because the pattern is black, checking the tints box allows you to alter the color of the brush just by changing the stroke color. If you had specified the color to begin with, you would need to create a new brush every time you want to change the color of the track.

I start with the railway. To make the track, I use a simple Illustrator trick that saves a lot of time and effort.

See the previous page for the instructions, and see page 44 in your book for more tips on creating your own custom brush.



Next I simply draw a colored line with the pen tool (above left) and change the "Stroke Style" to the pattern brush I made (bottom left). Voilà!

(Opposite) Next I add place names, trees, and mountains. You can individually hand letter each bit of type, but to save time I digitized a few of my own custom typefaces to use in my maps. There are many different font-making programs, ranging in price. I use a website called www.calligraphr.com, which isn't perfect, but it's free and does a great job.

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TORRI DEL BENACO
BIKE RIDES
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BARDOLINO
ICE CREAM
MANERBA
MONIGA
LAZISE
SIRMIONE
MOVIELAND
DESENZANO
PESCHIERA

Once finished in Illustrator, I start moving things back to Photoshop, moving the objects grouped by color. I start with the solid yellow background. I bring in my "cheat" white layer and subtract it from the yellow. Then I bring in the greens, setting the layer style to "Multiply" again to get that nice overprinted effect.

(Opposite) Next I bring over the peach layer. Finally, I bring in the last layer—the brown color that results from combining the green and peach. I set this as a solid layer (no multiply). I mainly do this for line work or text that I want to be clear and legible, without any misprinted edges. Now all the artwork is separated over only four fixed layers. I like this stage, when everything gets subtracted and condensed. It always amazes me how much you can achieve with so few colors!

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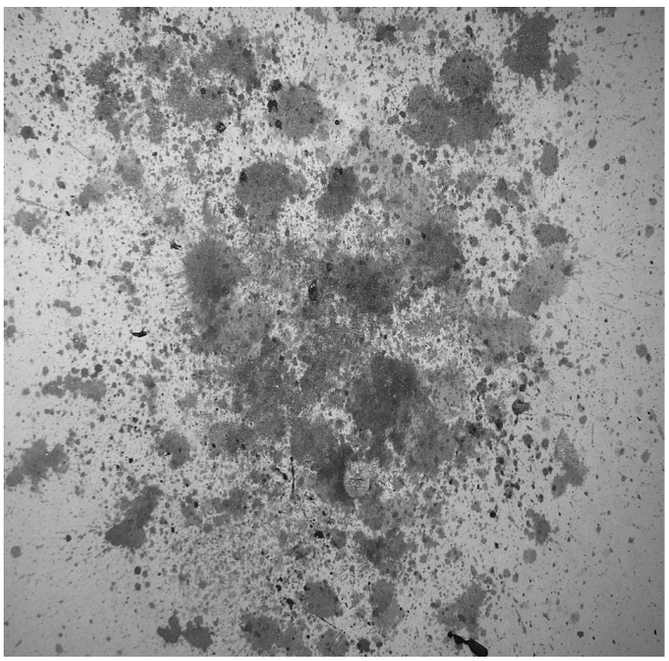

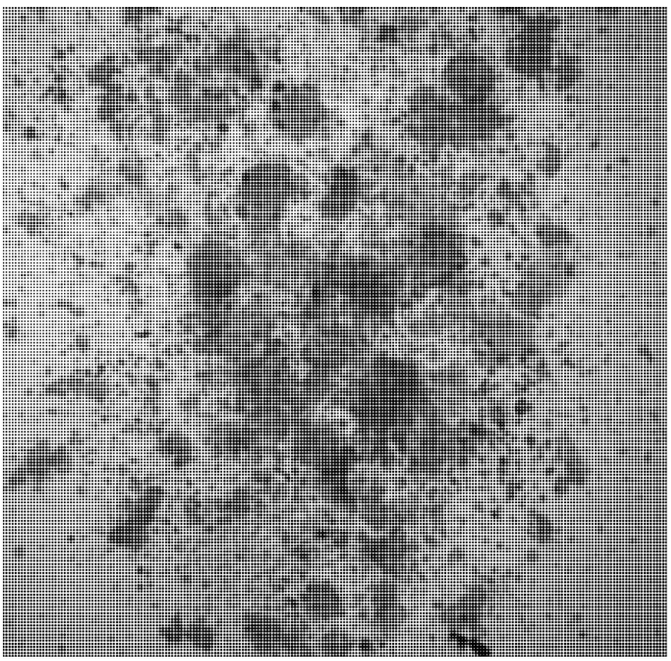

I begin texturizing the artwork with some of my own custom brushes. I created these using a mixture of paint splashes, some of which I scanned in and some that I downloaded from the Internet. I needed to give the splashes a screen-printed aesthetic. To do so, I used Photoshop's "Color Halftone" filter, setting all the channels to zero with a max radius of about eight pixels. This creates a pixelated effect that makes it look like the ink splash passed through a silk screen. Shown above is an example of this effect.

I then crudely select the shape using the lasso tool, and define the area as a new brush preset. To make sure that the dots aren't too close together, I make the paint splash a mid-gray. The lighter the color, the less densely the halftone pixels will be packed. Next I use these new brushes on each of my four layers, sometimes as erasers creating under-inked dry patches, and the rest of time as brushes creating artificial splashes of misprinted ink. In this close-up you can see the subtle texture of the map.

TIP

There are many online sources for free grungy textures you can download. A couple of my favorites are www.blog.spoongraphics.co.uk and www.lostandtaken.com.

(Opposite) To finish, I add some intricate freehand line work and hand lettering, which is more difficult to produce in Illustrator due to its tendency to smooth out the lines. I use a great Photoshop brush set to add stippled, shaded, and textured lines. With these final touches, my map of Lake Garda and its ferries is complete!

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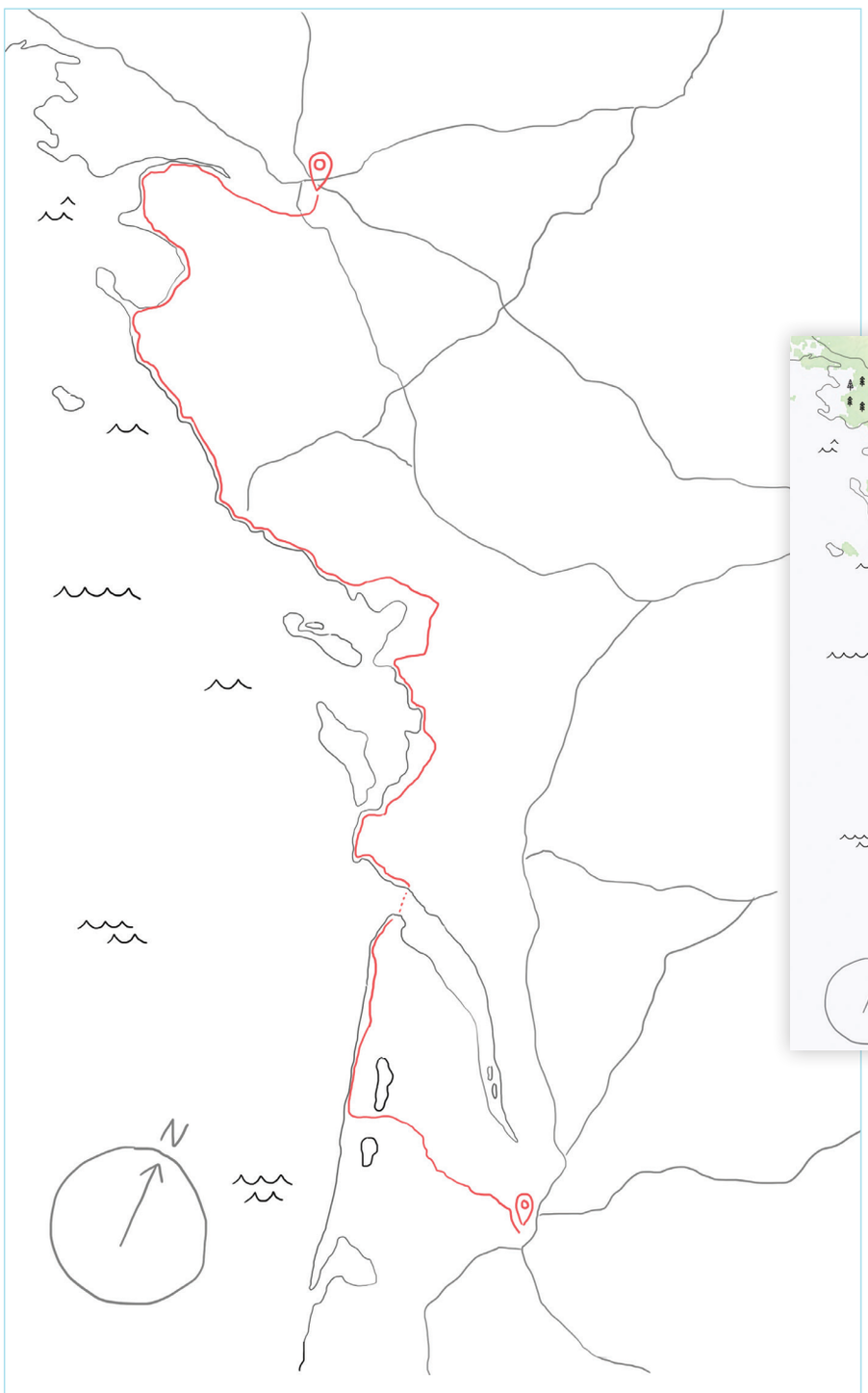
• GARDA
ICE CREAM
MANERBA
MONIGA
• BARDOLINO
Lago di Garda
SIRMIONE
• LAZISE
MOVIELAND
DESENZANO
• PESCHIERA

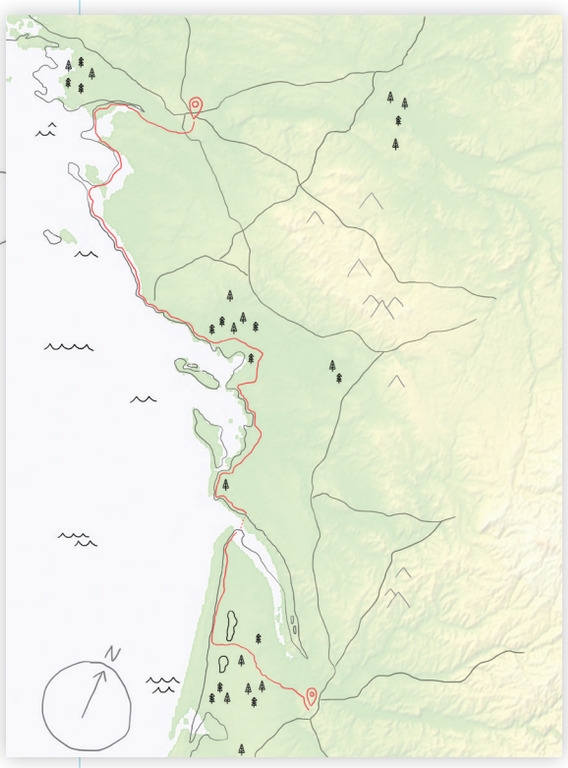
FRENCH BIKE RIDE

I drew inspiration for this map from a 300-mile bike ride down the west coast of France, which I completed with my best friend.

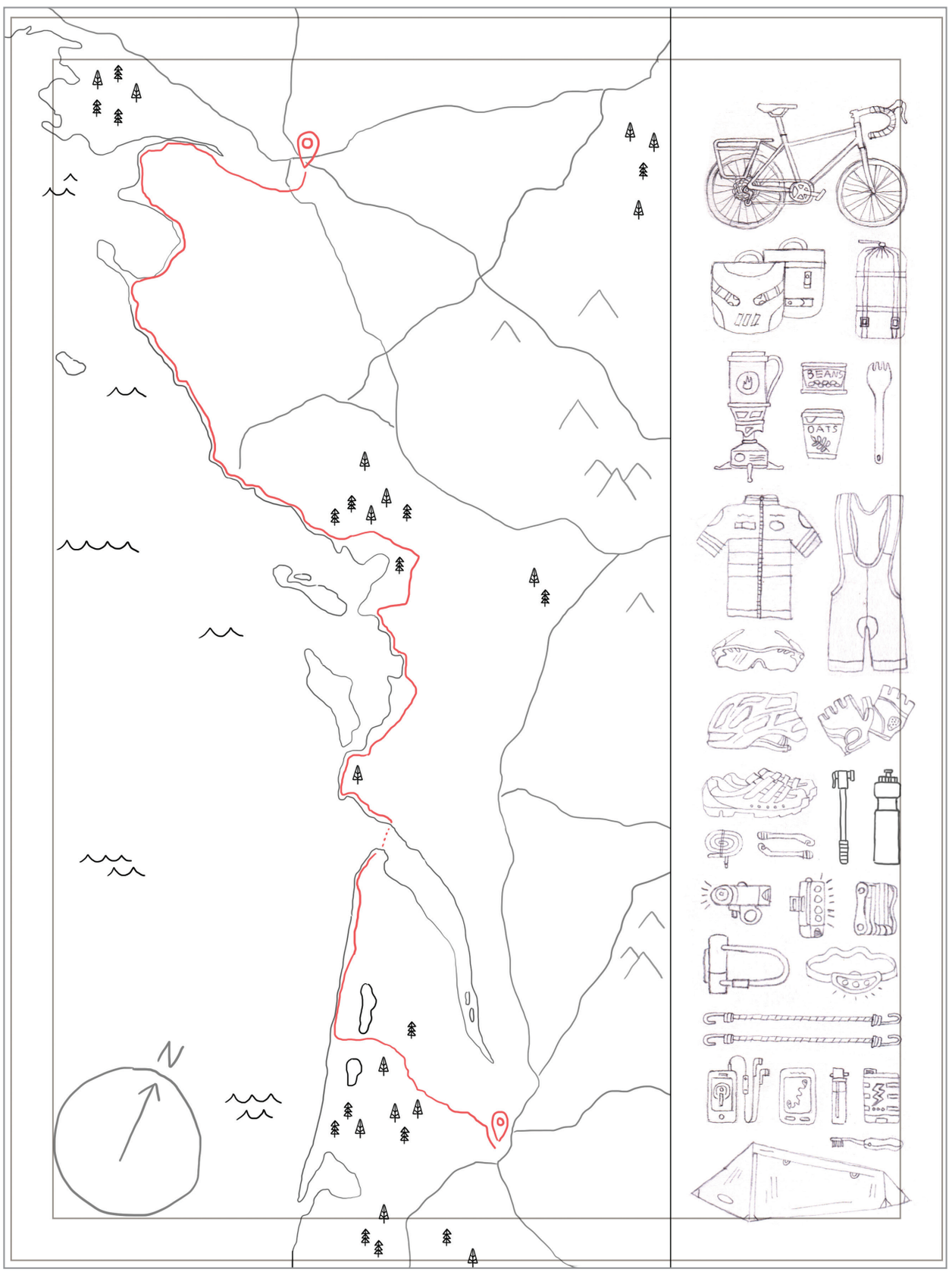


I use a screenshot of a section of a digital map as a guide to plot the cycle route.

I open the screenshot in Photoshop and roughly trace over the map, drawing around the coast, picking out a few main roads, and drawing the route. I also indicate where I want to draw a compass and the direction of north. (Notice I rotated the map slightly so the route would be at a straighter angle.)

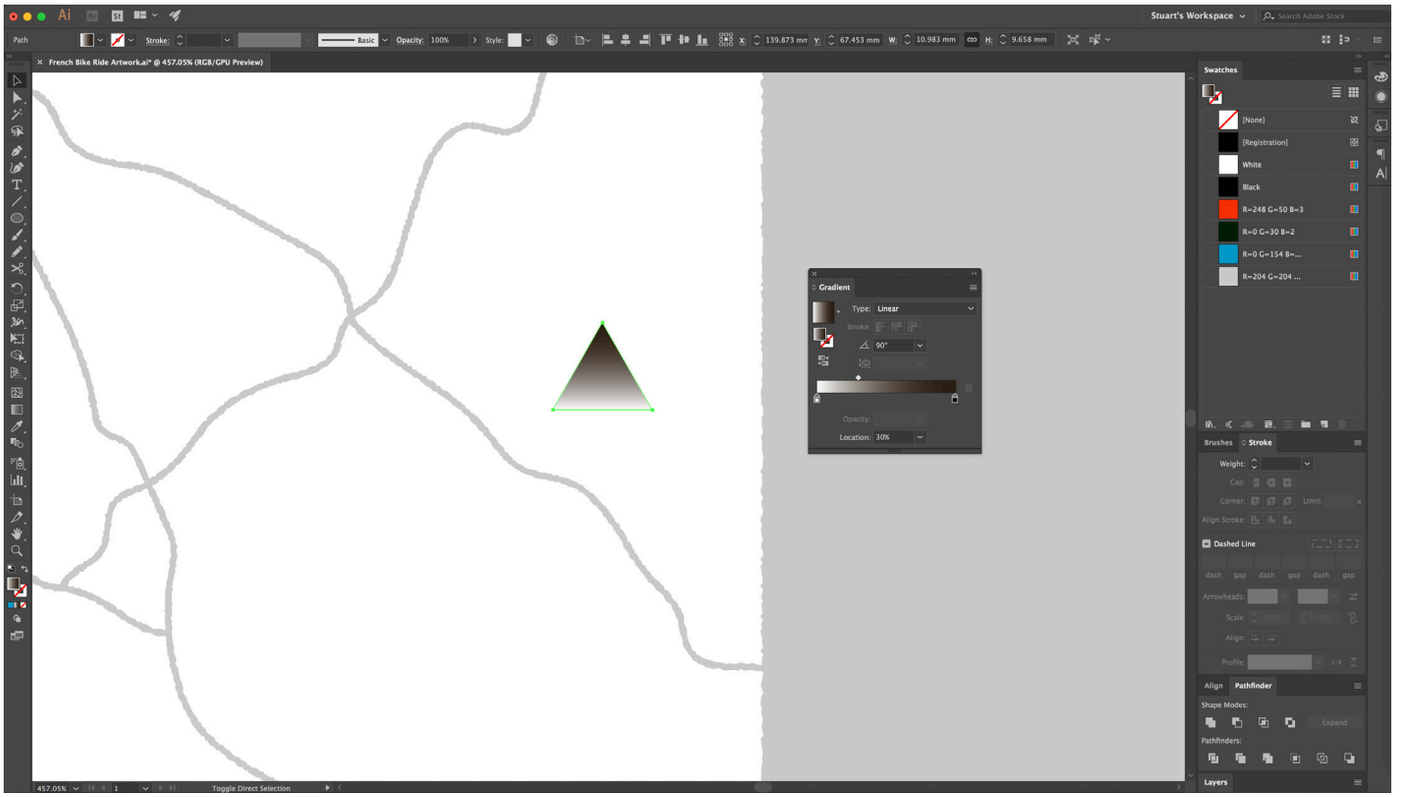


Next I place a topographical survey of the region underneath my sketch. Using the image, I can see where the mountainous regions are and add markers to my map for mountains and trees.

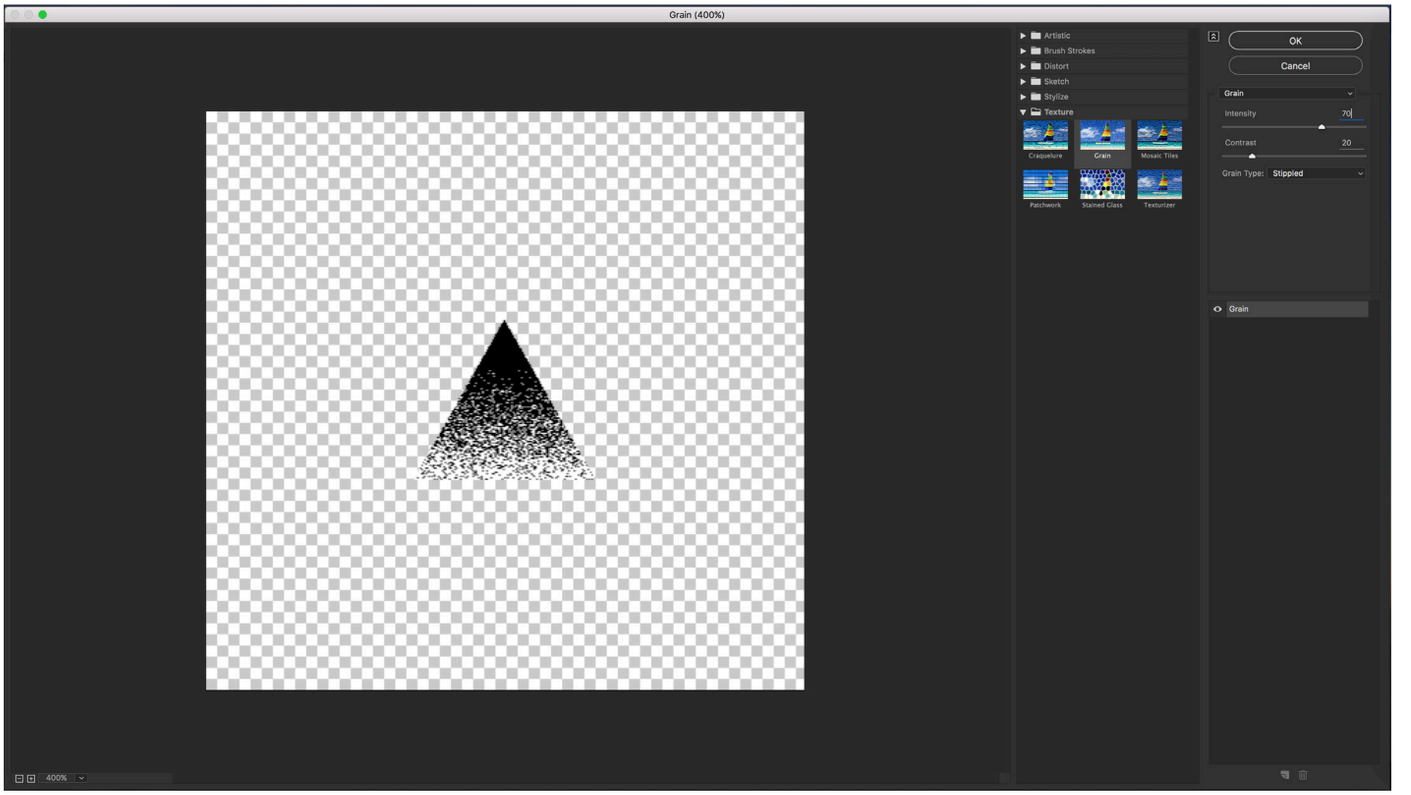


On the side of my sketch, I include an illustrated itinerary of what I took with me. I thought it would be fun to draw some of the stuff I lugged around on the back of my bike for 300 miles. I sketched almost everything in my sketchbook, scanned them in to my computer, and arranged the drawings. It took some maneuvering, and the scales of the items aren't consistent, but that's okay. Don't be afraid to try something new in your mapmaking—you may surprise yourself!

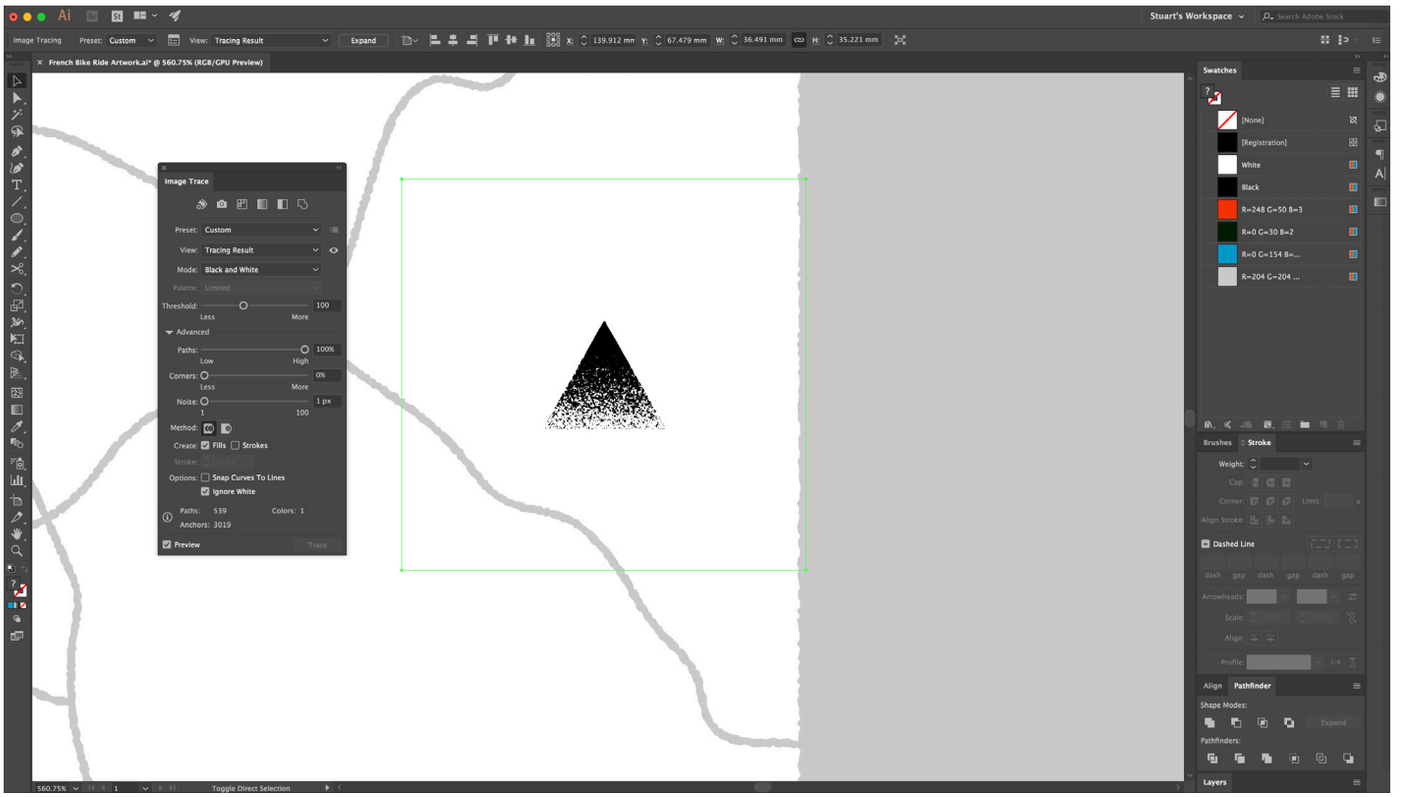
USING IMAGE TRACE TO CREATE THE MOUNTAINS



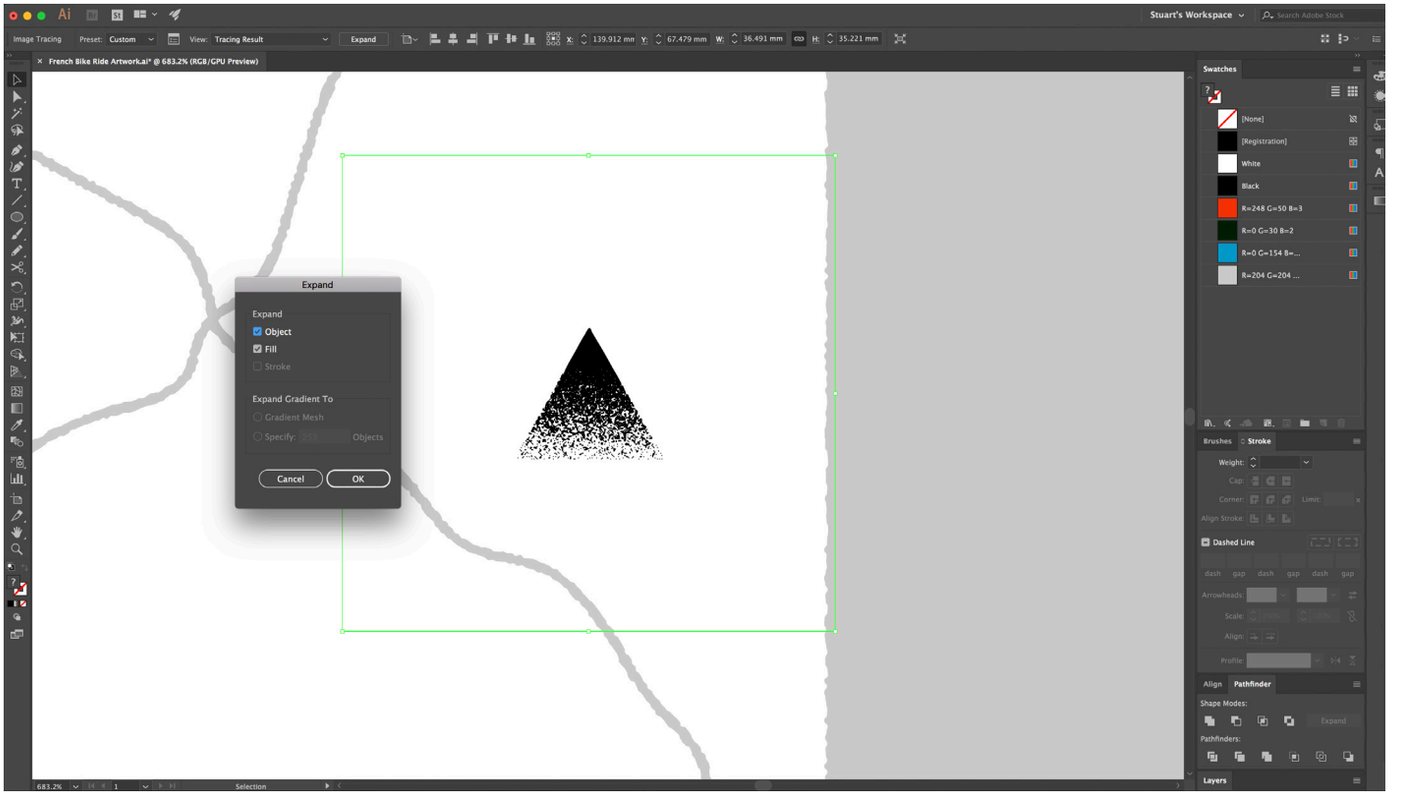
Create a triangle and fill it with a gradient. I set the angle to 90 degrees so the black descends from the top of the mountain. Altering the "location" changes how strong and far either end of the gradient extends. I wanted the back to extend further, so I move this closer to the white end of the scale.



On the top menu bar, click on Effects > Texture > Grain. Using the filter, with the grain type set to stippled, alter the intensity and contrast settings until you're happy with the result.

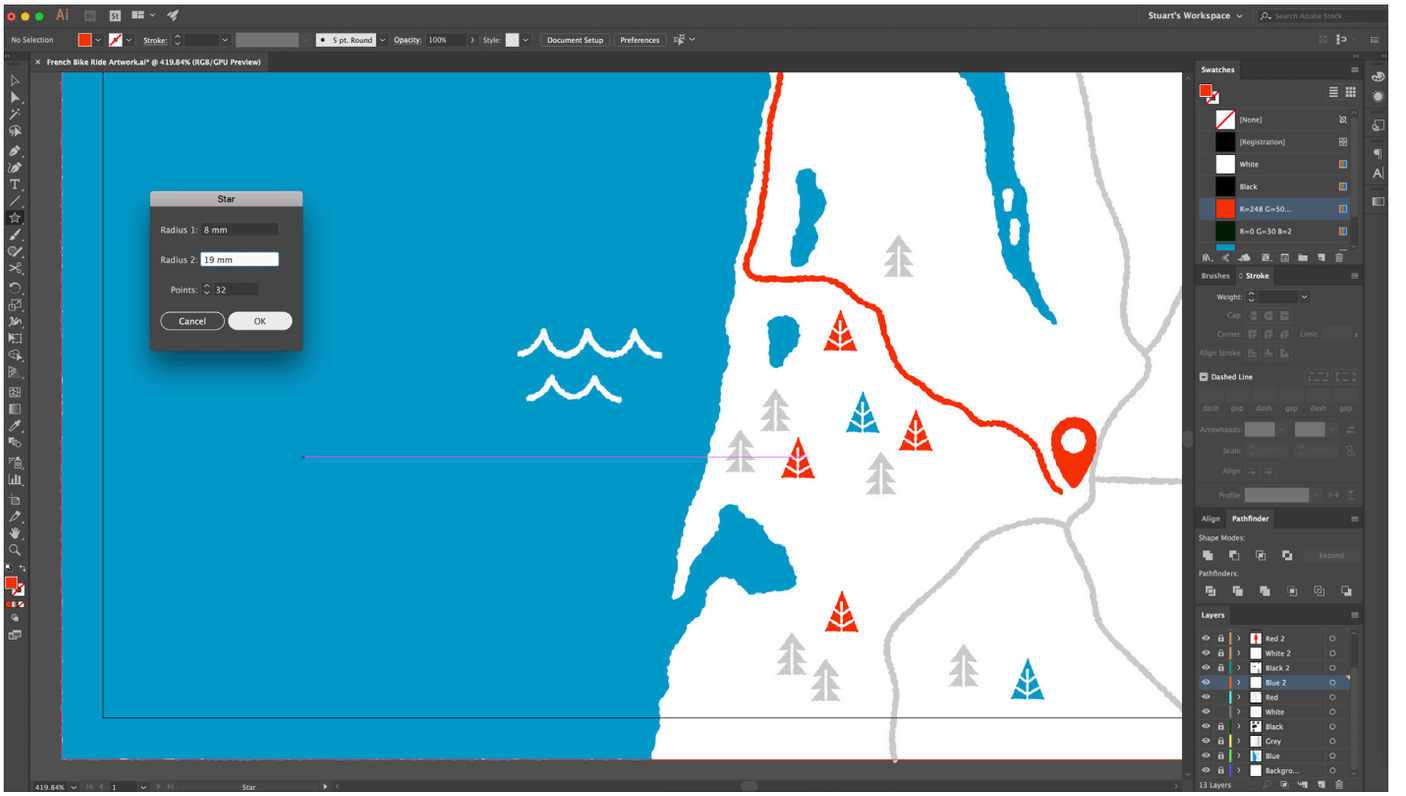


Next expand the appearance of the shape. Now you can use the image trace tool to revectorize the object. There are many different settings you can adjust in the trace toolbar. I want to capture the grittiness of the effect without needing to capture every little speck. "Threshold" determines the overall detail of the trace, "Paths" alters how tightly it traces, "Corners" adds more anchor points, and "Noise" filters how much of the small details the trace picks up. It's a balancing act to find the settings you like, but once you've found the right combination you can save the preset and use it instantly whenever you want to trace something in a similar way. Be sure to tick the "Ignore White" box so that it creates a single-color shape after the trace.

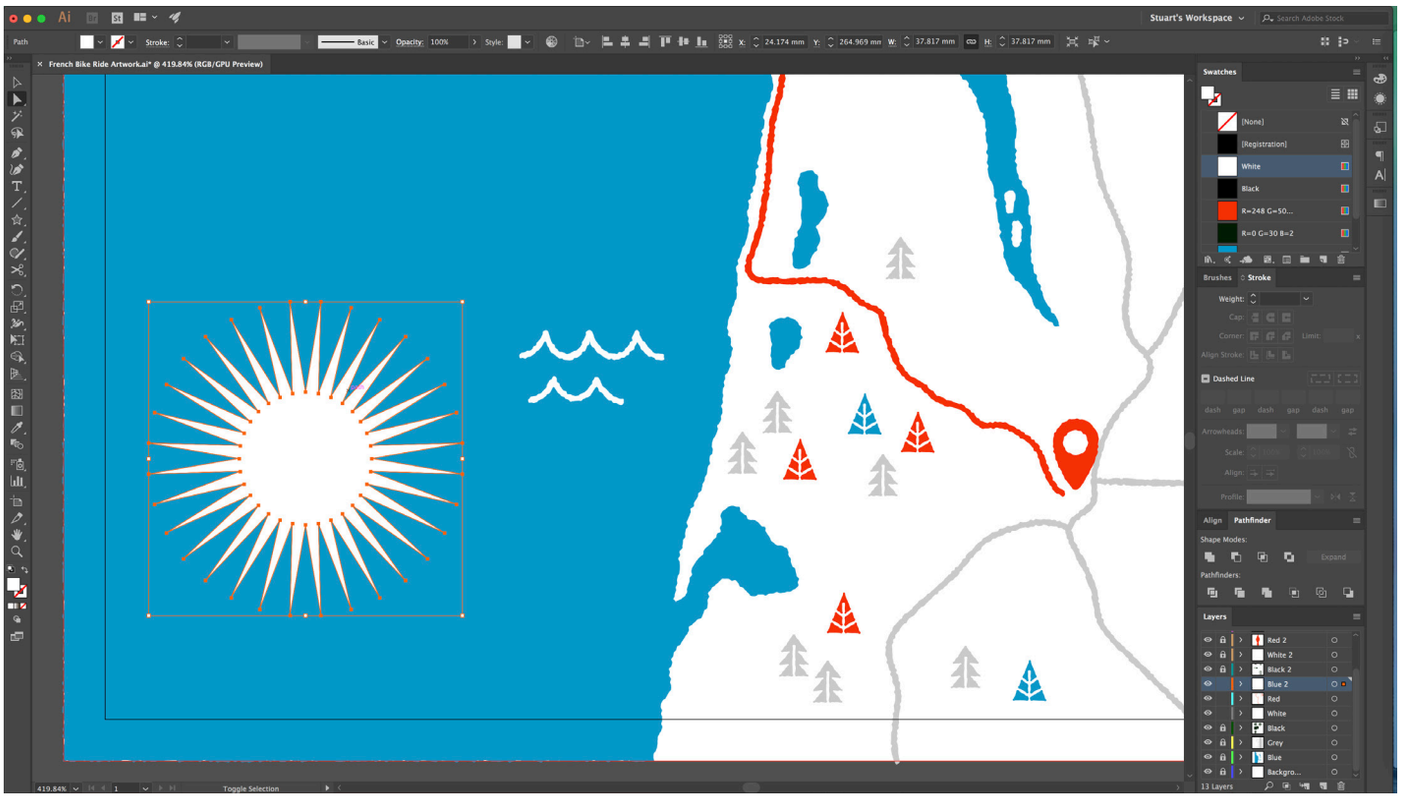


Expand the object once more, and now you can alter the color and size, and add as many mountain peaks to the map as you like.

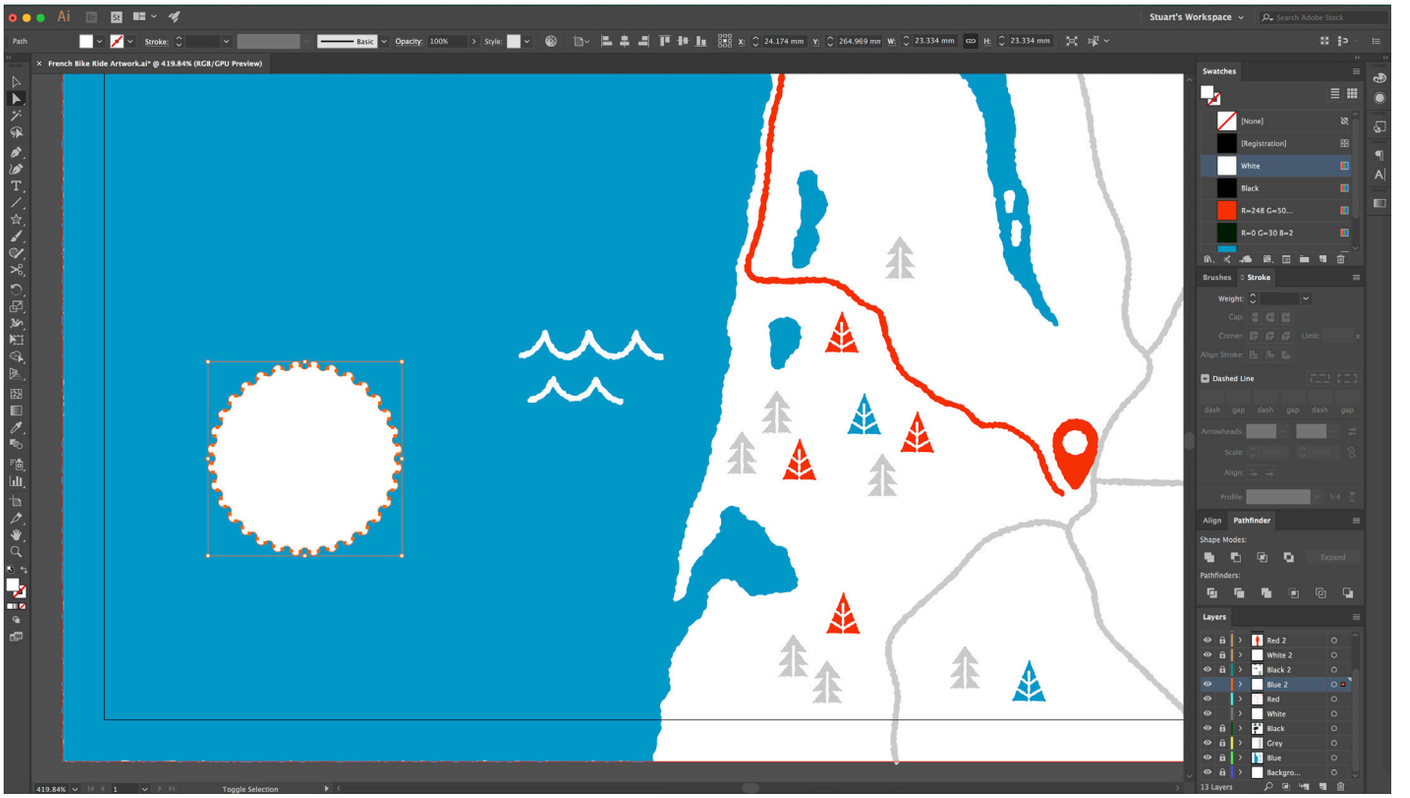
USING THE STAR TOOL TO CREATE THE COMPASS



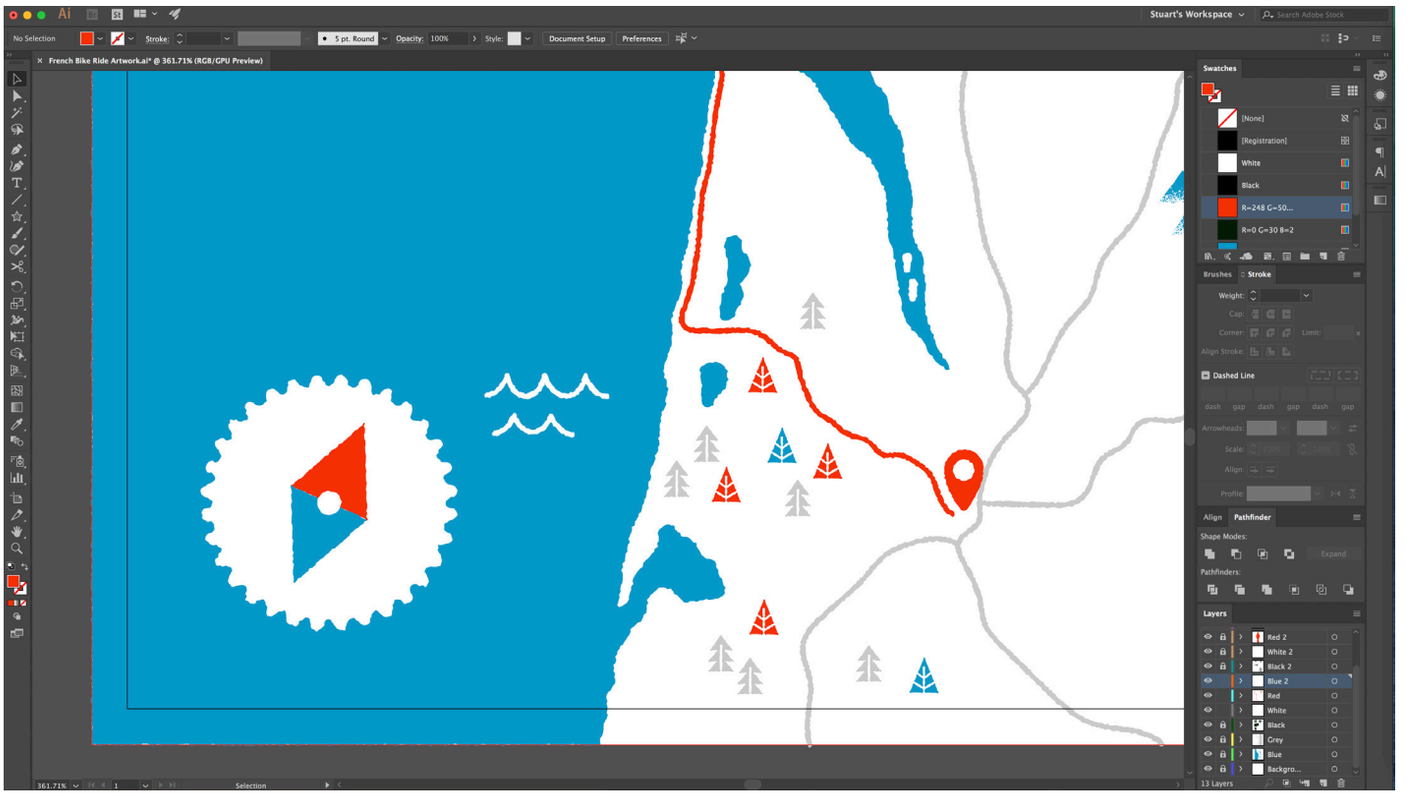
I create the cog-shaped background of the compass using the star shape tool. I wanted a large cog, so I set the points to 32 and alter the radii so that radius one is almost half of radius two. The first radius refers to the inner angles of the star, while radius two refers to the outer radius of the star tips.



Here is the star shape that results with these settings.



It was important to set the difference between the two radii so large, because I can use Illustrator's round edges feature (active when using the direct selection tool), and the greater difference allows me to round the edges until curved and resembling a cog wheel.



For the middle of the compass, you can simply use two triangle shapes with a small circle in the middle.

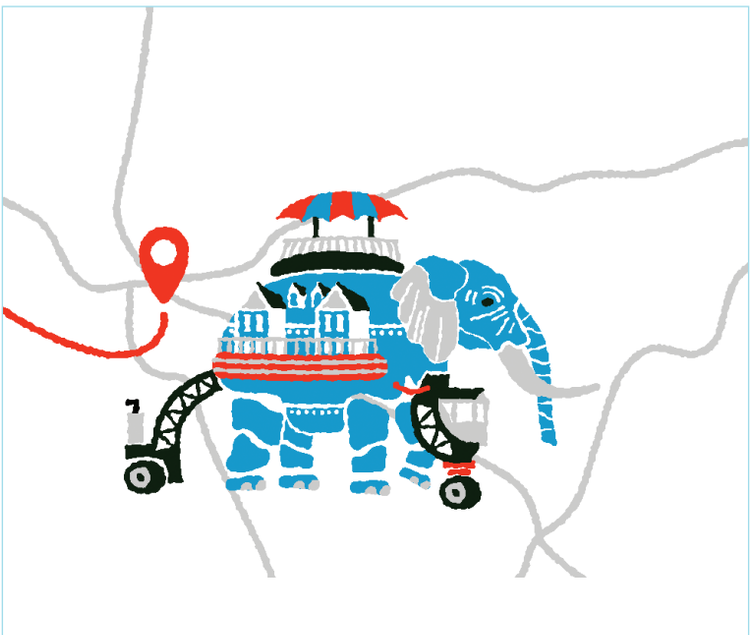
Next I add trees and a compass to the map. I created the cog-shaped background of the compass using the star shape tool. (See the previous page.)

(Opposite) Next I bring in the JPEG containing my inventory and draw around all the items using the pen tool. I had to think creatively with some of the objects—restricting yourself to only a few colors presents challenges, which is why I often draw things as simply and clearly as possible. Since I wasn't trying to replicate a screen-printed aesthetic, I kept all the items on the same layer, which made things much simpler.

BEANS
OATS

BEANS
OATS

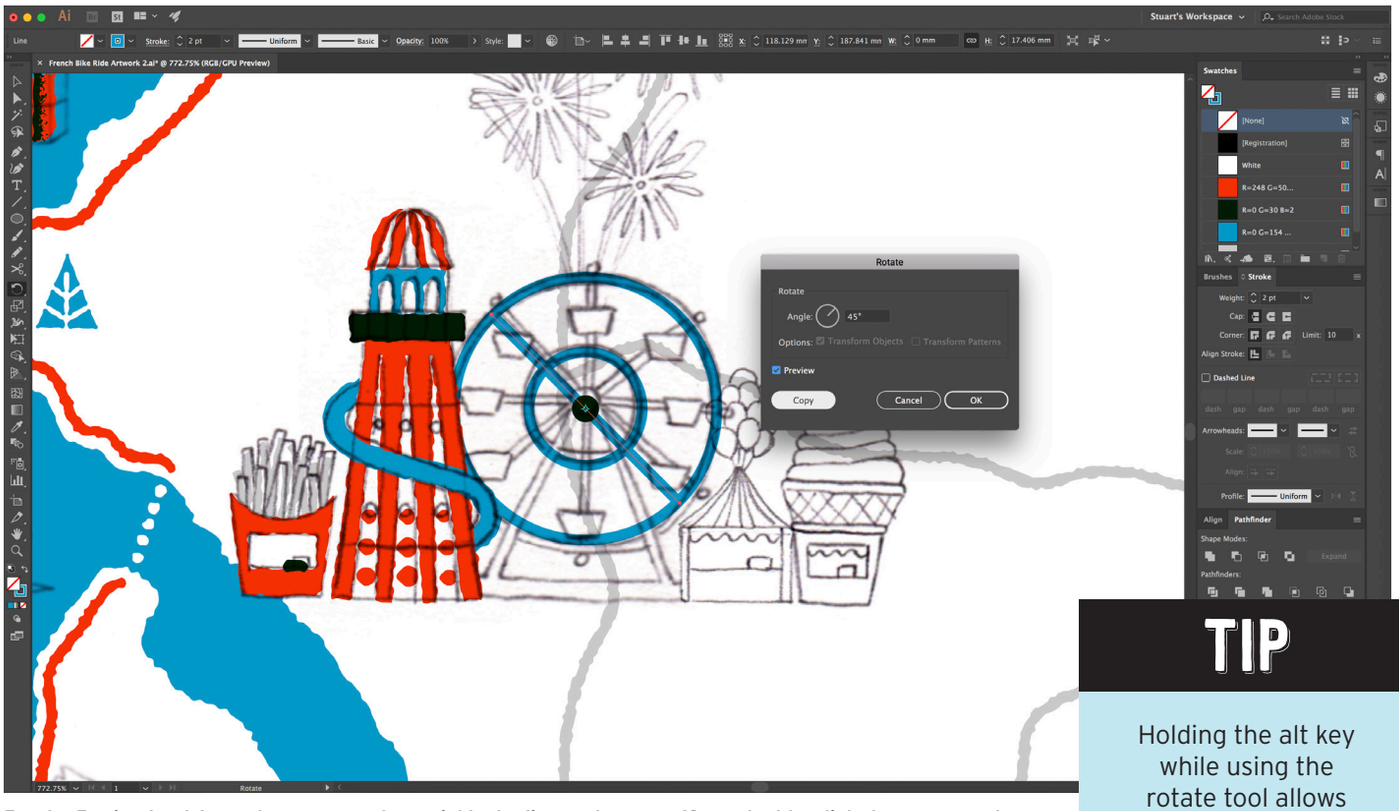
After finishing the inventory items, I begin drawing the POI's, starting with the mechanical elephant I saw in Nantes. This creature is made up of multiple panels, so I thought the simplest way to represent that was to break it into parts with small gaps between each of the sections. Rather than trying to draw the same exact curves on either side of the gap, I cheated and used Illustrator's "Offset Path" setting. See page 45 in your book for more tips on using this tool.



First I draw two shapes overlapping one another. I select the shape with the curve I want to use and apply the "Offset Path" setting with only a small value entered. (The larger the value, the bigger the resulting offset.) I subtract the resulting shape from the adjacent panel, creating a curve that matches the adjacent one. I repeated this process until I make the entire body.

To make the fairground, I use a few techniques that I haven't mentioned yet. See the following page for a full tutorial on how to use these new techniques to make the different fairground pieces.

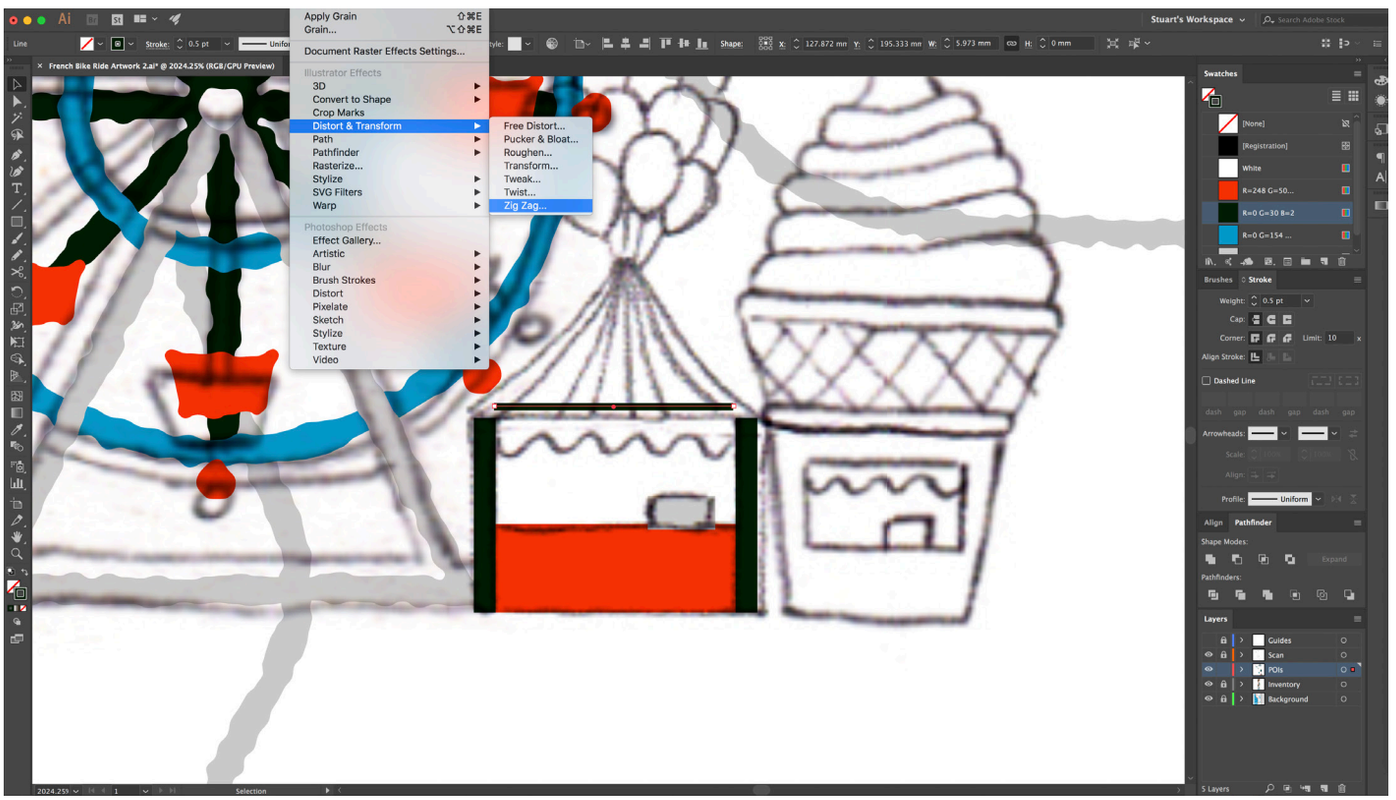
CREATING THE FAIRGROUND



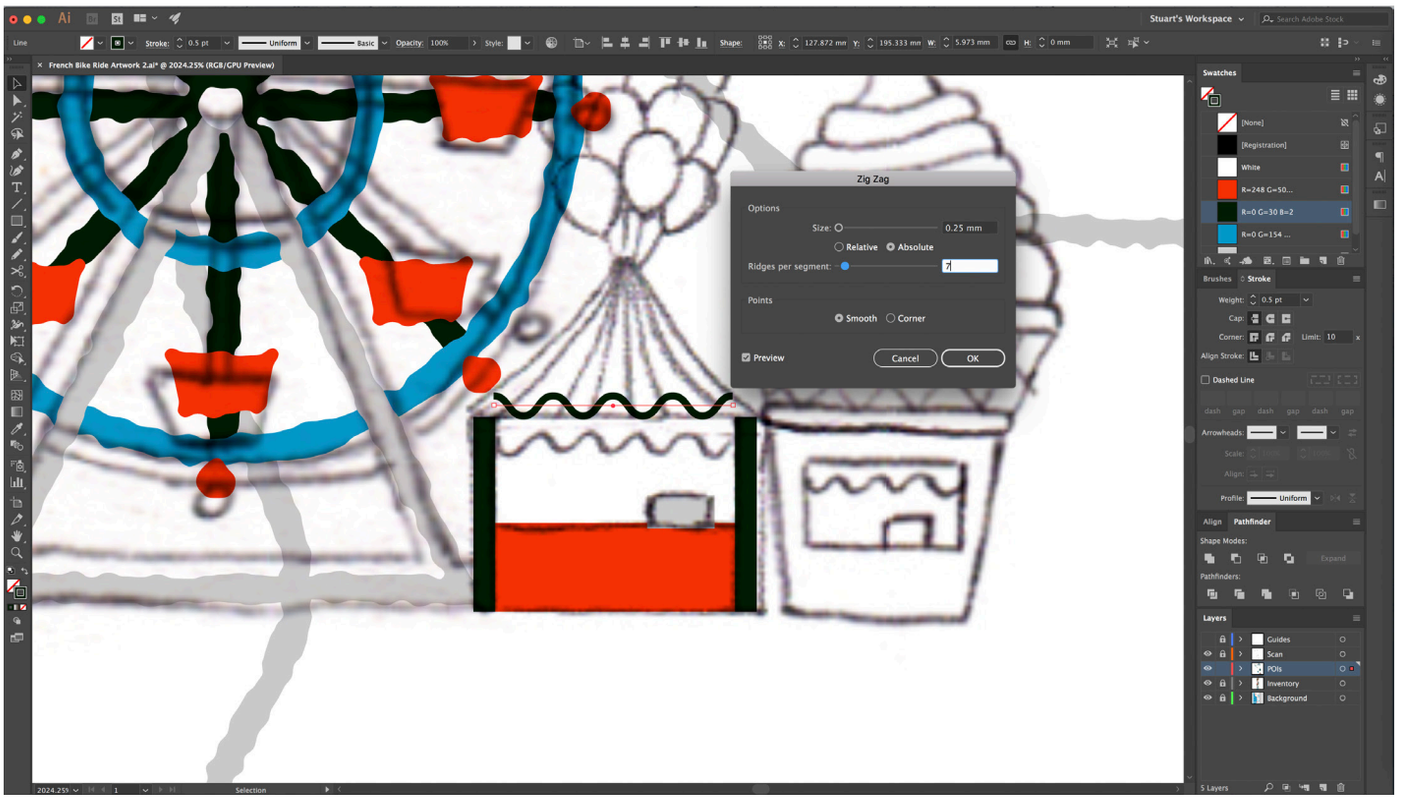
For the Ferris wheel, I use the rotate tool to quickly duplicate elements. If you double-click the rotate tool, a new tab opens that allows you to specify the rotation amount. Pressing copy rotates and copies the original shape, and by pressing ctrl + d afterwards you can repeat the action as many times as you like.

TIP

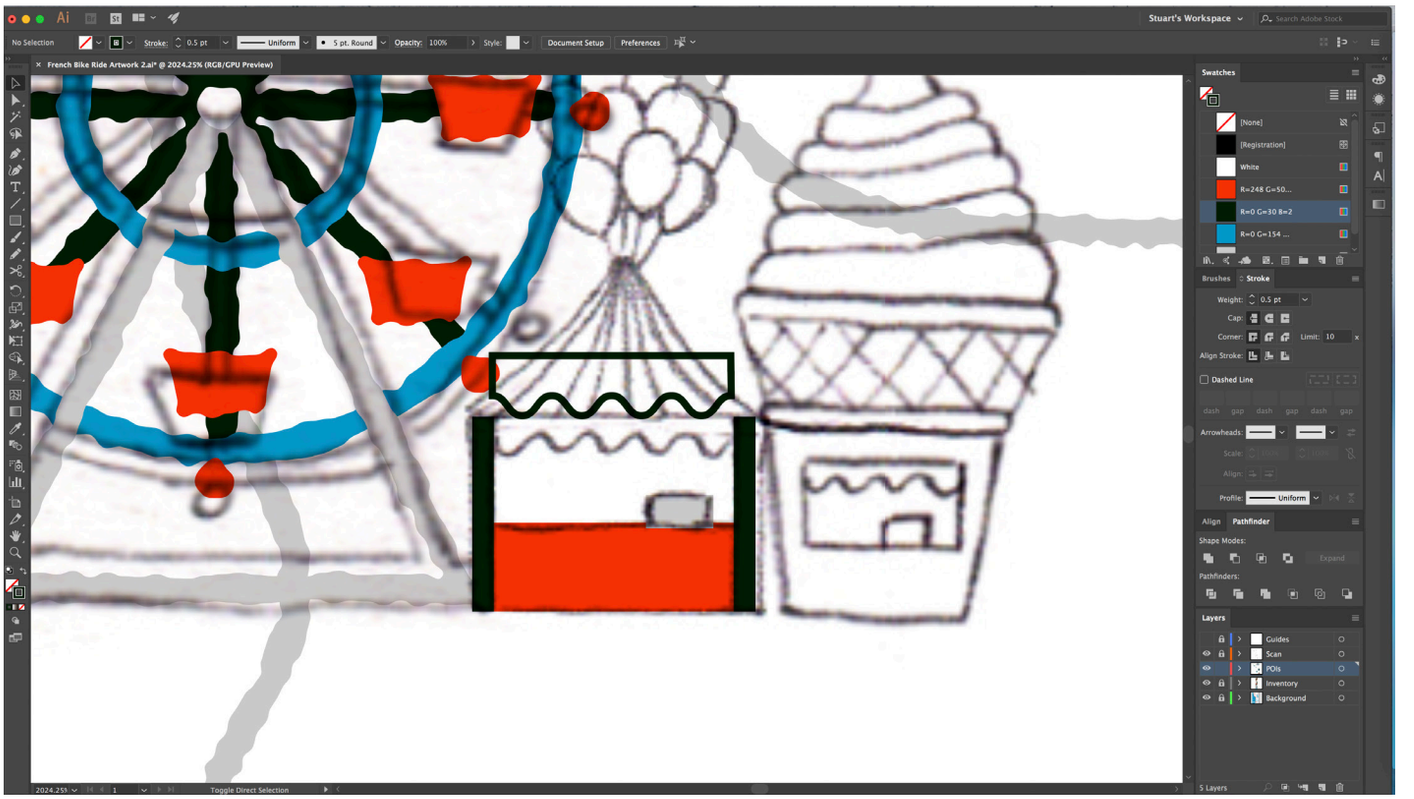
Holding the alt key while using the rotate tool allows you to move the rotation point to wherever your cursor is pointing.



To make the wavy shape on the food and balloon stands, I start by making a straight line. Then I apply Illustrator's Zig Zag effect, found under the Distort & Transform tab.



The size bar alters the strength of the effect, and the "Ridges" setting determines the number of ripples. I tick the smooth box to create rounded waves.



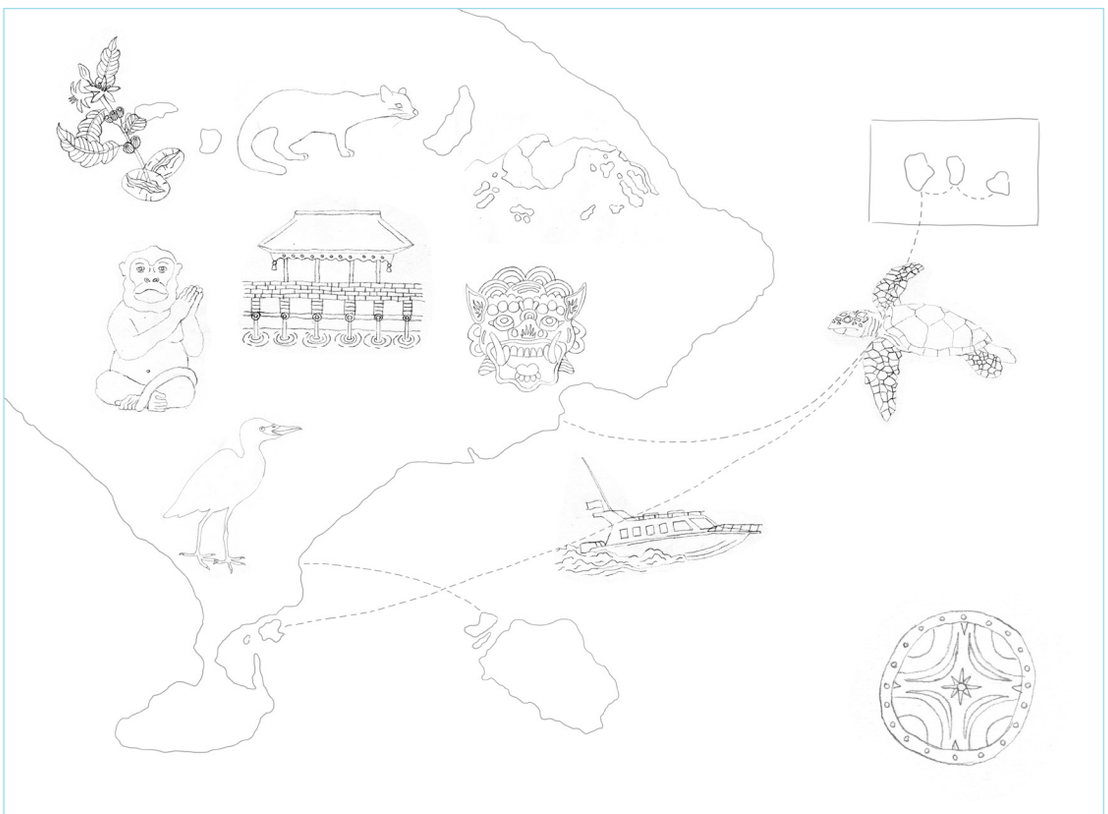
I expand the effect and use the pen tool to complete the shape. Once you've done this, all you have to do is turn off the stroke color and select whatever fill color you like!

BALI

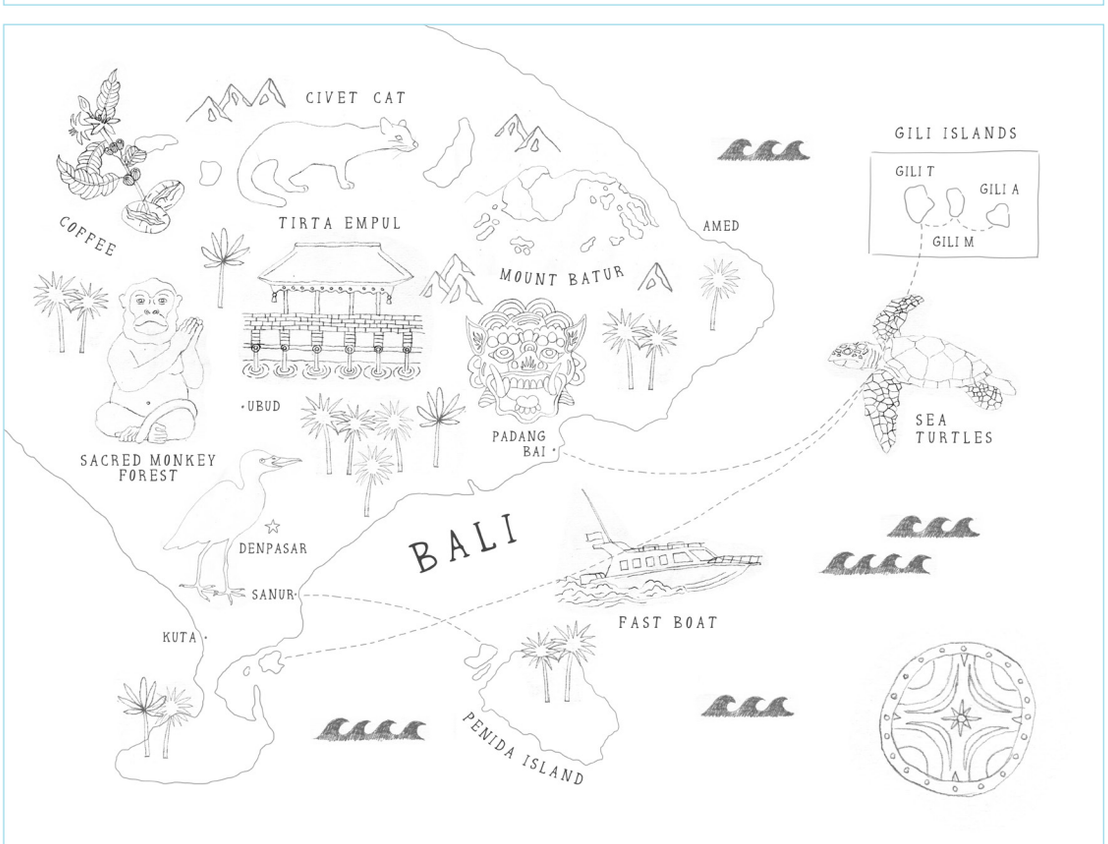
This map is based on a recent adventure to Indonesia. We traveled around the east of Bali and across to the Gili Islands for a few weeks.

For reference, I took a screenshot of the area I wanted to draw. I took some creative liberties by moving and adjusting the size of some of the islands to fit everything I wanted and leave room for a compass in the bottom right corner. Illustrated maps don't always have to be completely accurate—the map is more like a journal, rather than something to navigate by.

I trace the islands in Photoshop and add towns, a rough compass, and markers for the points of interest (POI's). I also draw a box around the Gili Islands to indicate that they are added to the map from an area just outside its boundary. This is a common trick in cartography—for instance, take a look at a map of the United Kingdom, which commonly features the Shetland Islands in this way.



Next I sketch the POI's in my sketchbook and scan them. After a bit of cleaning up in Photoshop, I bring each image into the document, setting the opacity to "Multiply," and arranging them on the map. Bali has a rich cultural heritage, and I wanted to reflect that in the compass design and the traditional Balinese mask. I also add the boat route that took us to the Gili Islands and to Kuta.

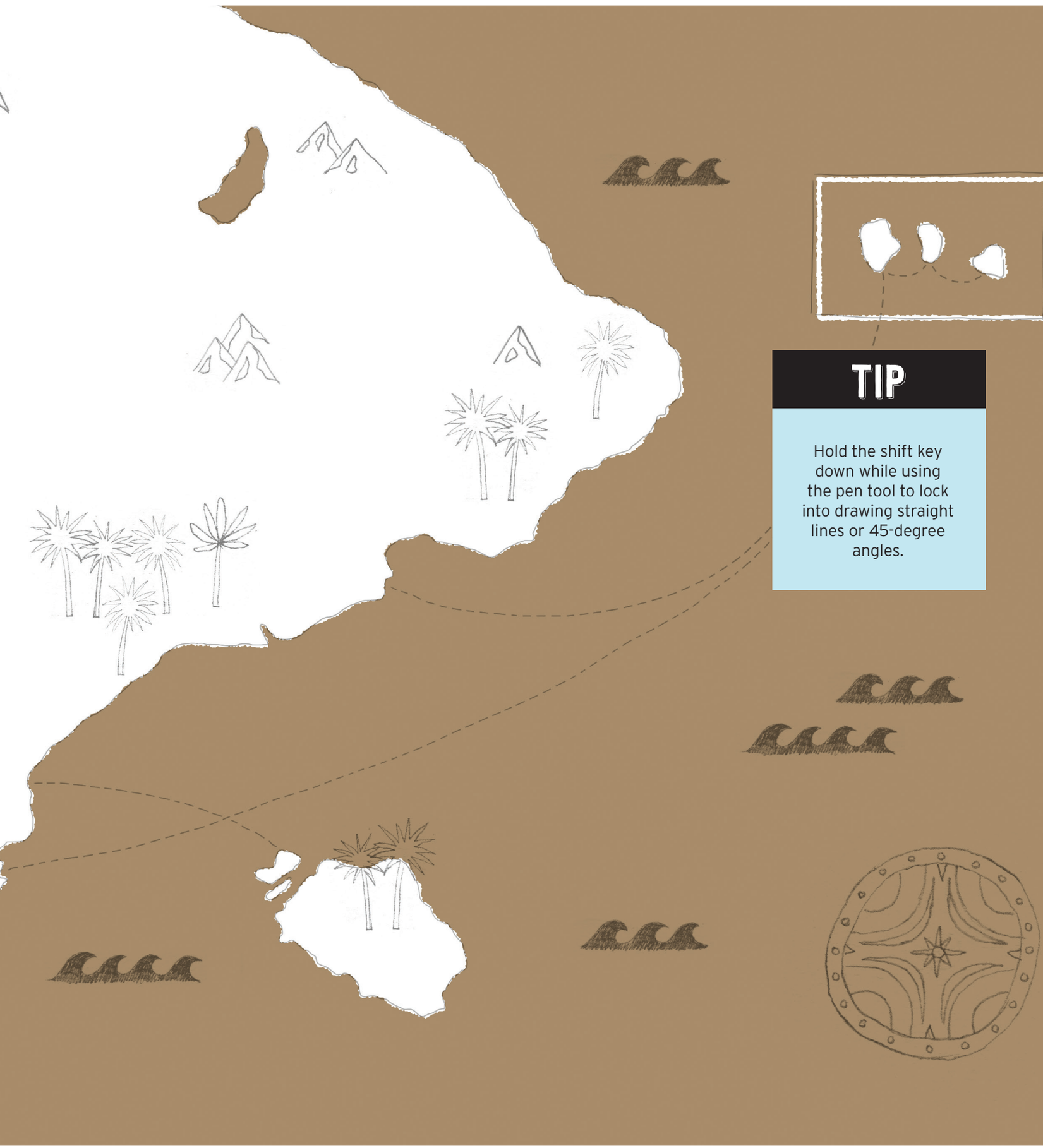


I add trees, mountains, and waves. I usually draw these items quite small and scatter lots of them around the map, but this time I made these elements larger. The tropical terrain is a big feature of the island, and I want to emphasize that. I also add text for the POI's and towns.

Bali is rooted in traditional art and beliefs, so I want to create a hand-drawn aesthetic for this map. To do so, I use a lightbox and layout paper to draw over my original sketch. However, rather than tracing every single line, I picked out areas of shadow with rough pencil strokes and some edges to add definition.

Then I scan the layout paper and clean it up in Photoshop. I open the clean scan in Illustrator and use the "Image Trace" tool to vectorize the lines, with a high threshold and path setting to capture most of the detail. Some lines are broken and slightly distorted, which adds to the roughened, handmade appearance I want.

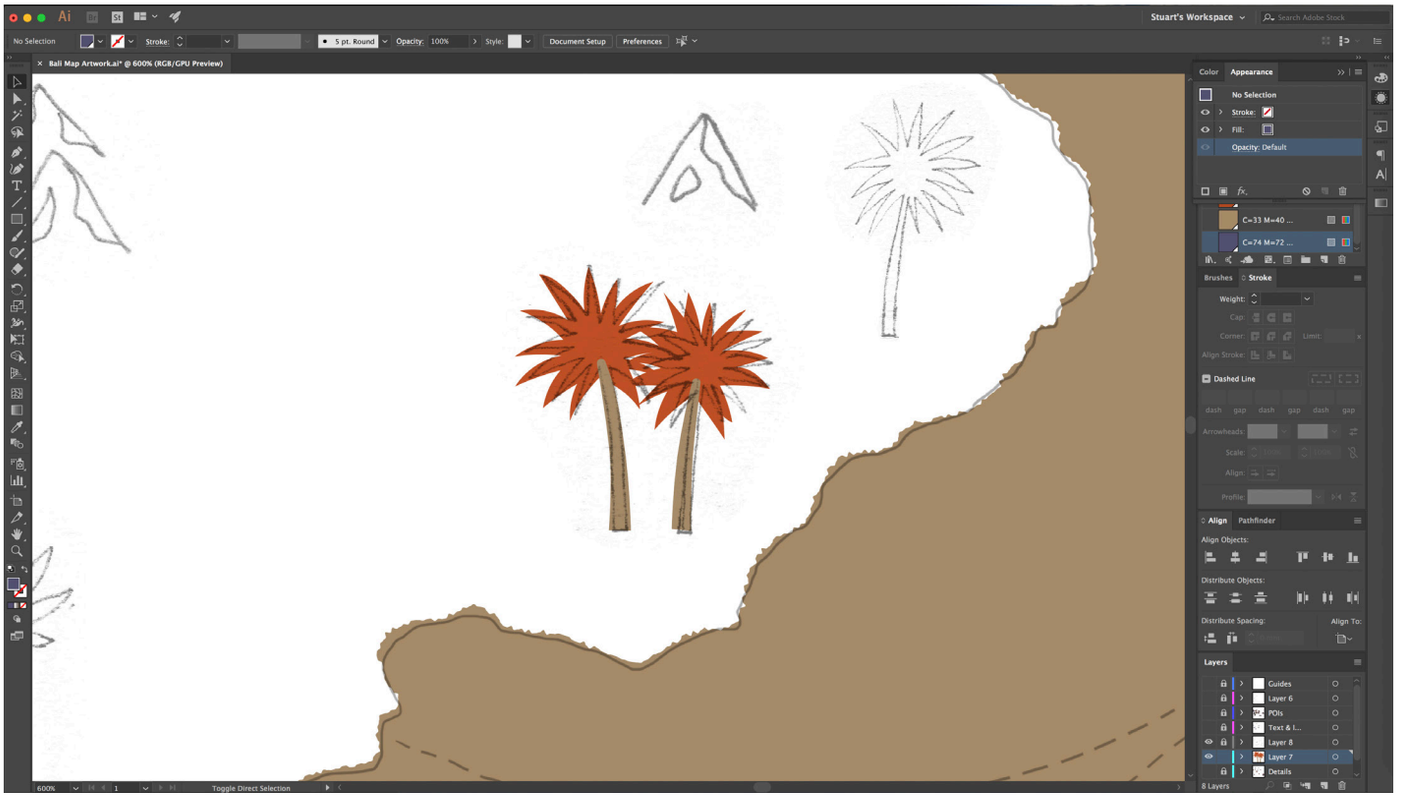
I bring the first of my sketch layers into Illustrator and use the pen tool to draw around the islands and create the small box around the Gili Islands.



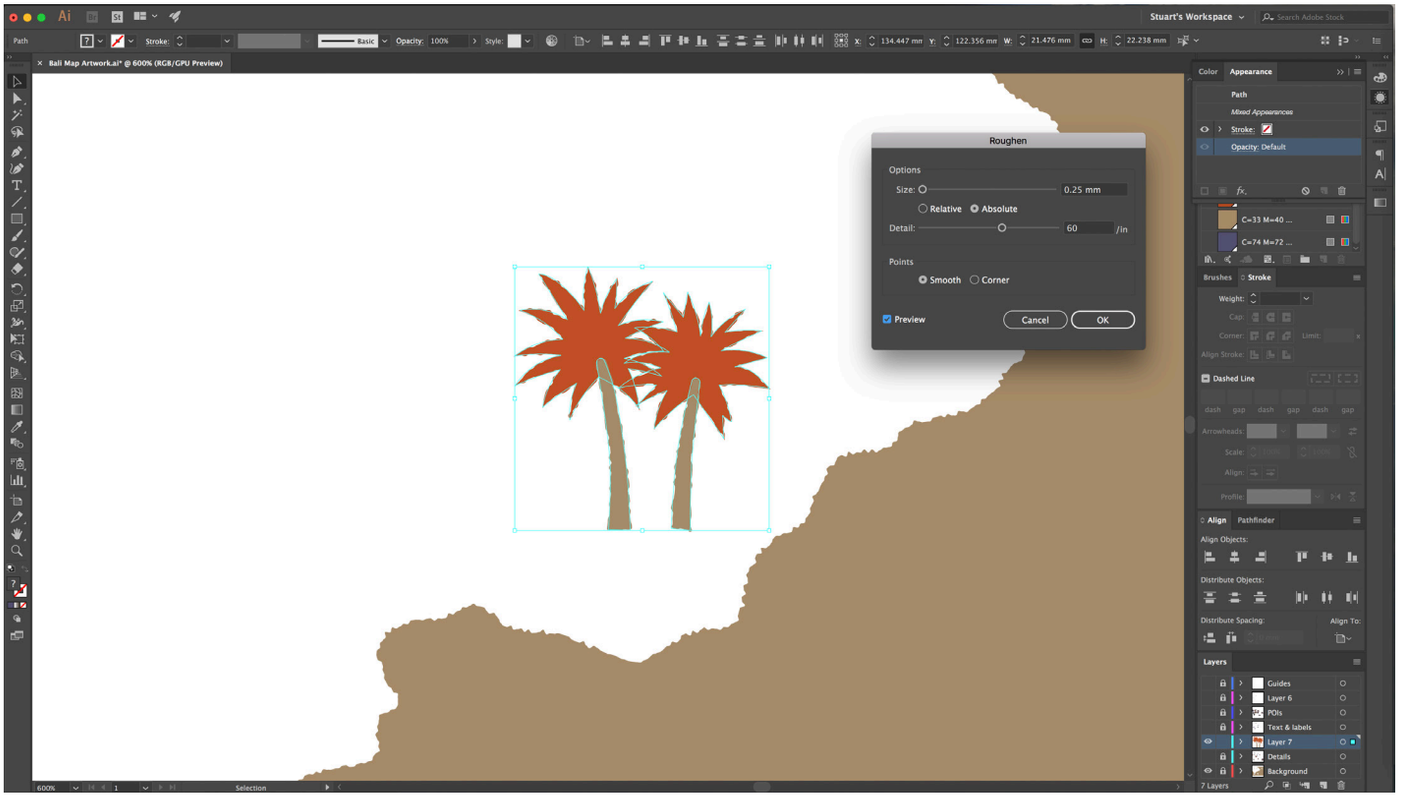
TIP

Hold the shift key down while using the pen tool to lock into drawing straight lines or 45-degree angles.

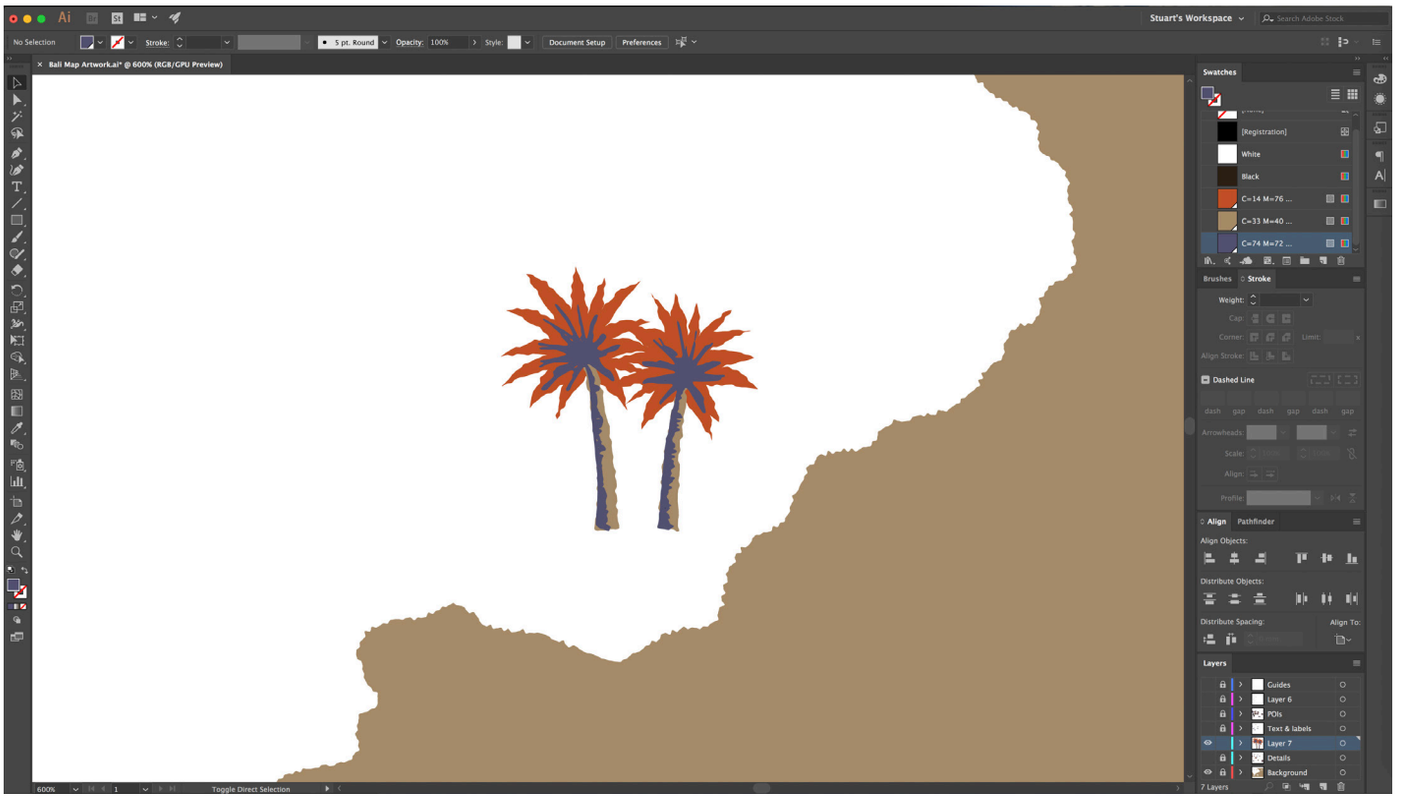
CREATING THE PALM TREES



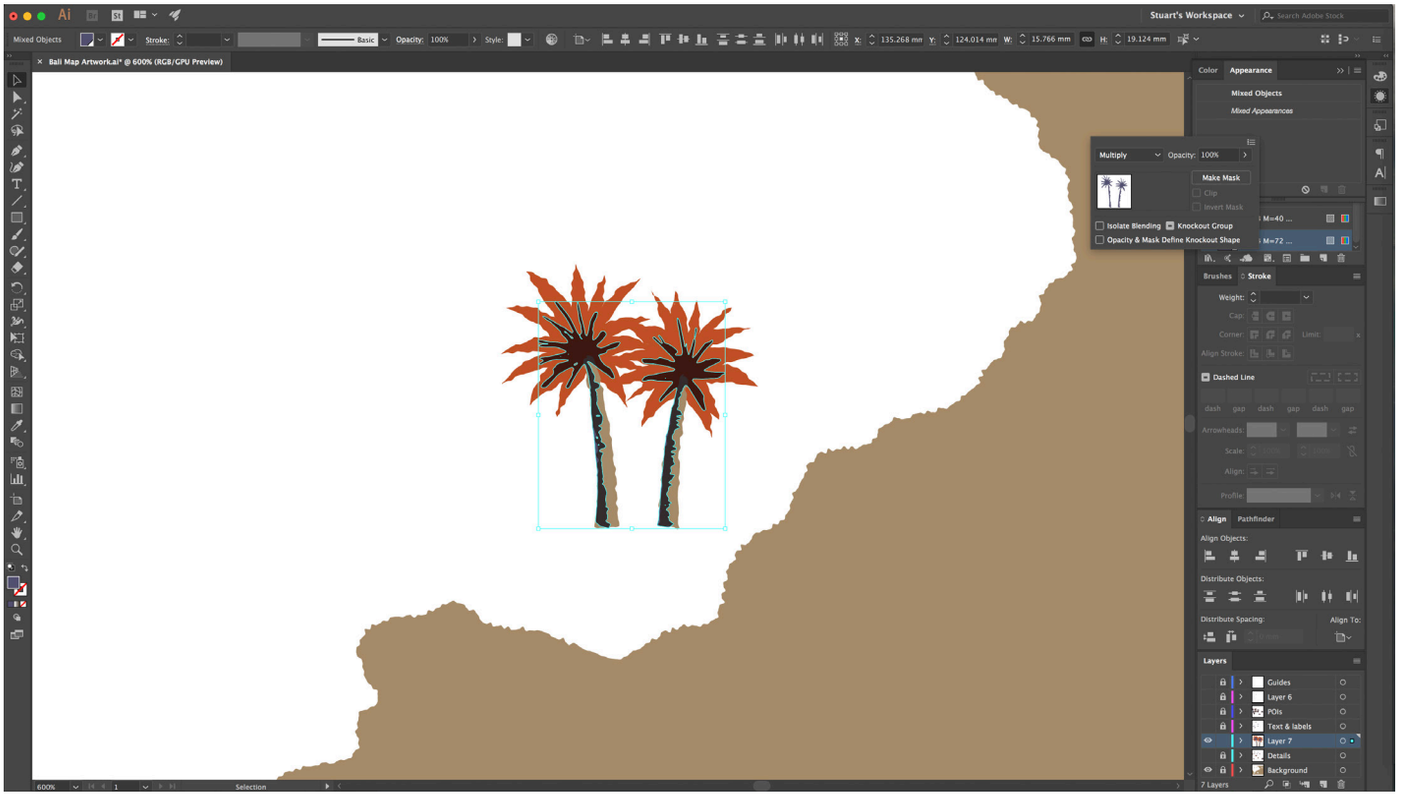
To make the trees, I draw around my pencil outlines with the pen tool.



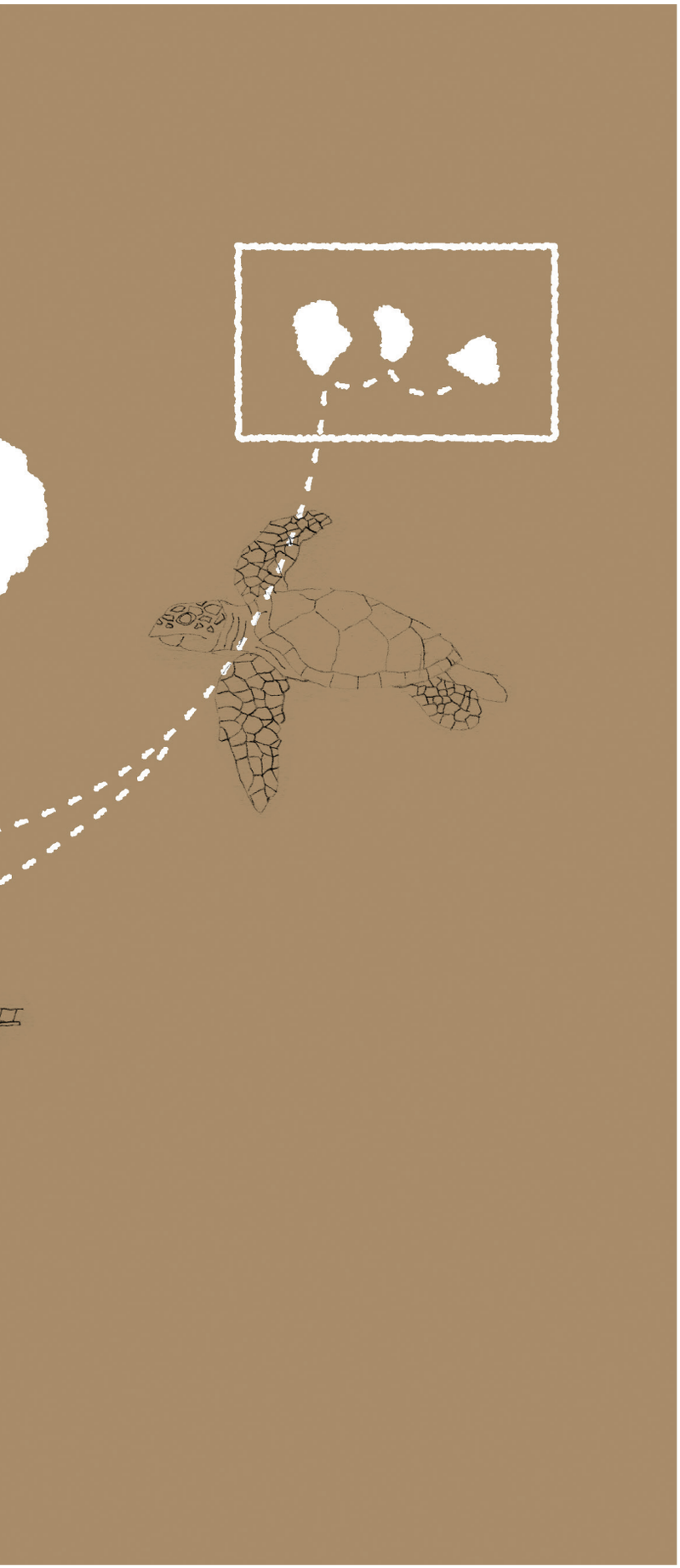
Next I apply the roughen filter to slightly distress the edges.



Then I paste the image-traced lines into the document and alter the color and line up the new shapes with the trees.

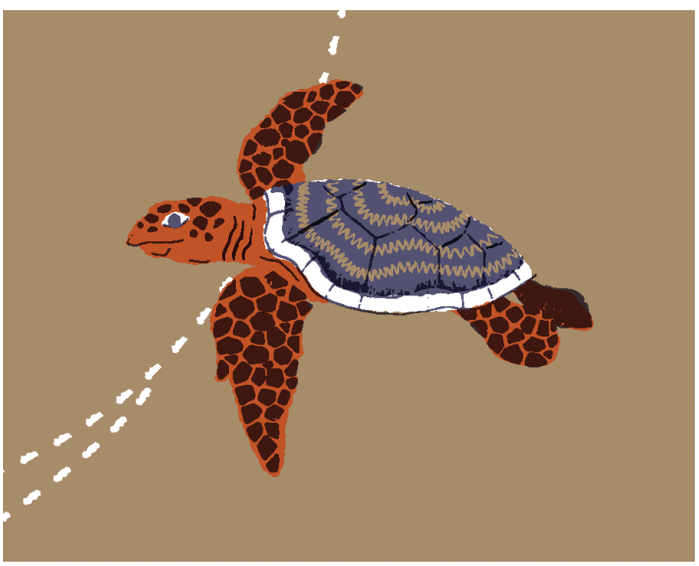


I set the opacity to multiply to make the shapes darker and create an overprint effect. Now I can copy and paste as many trees as I like for the map.



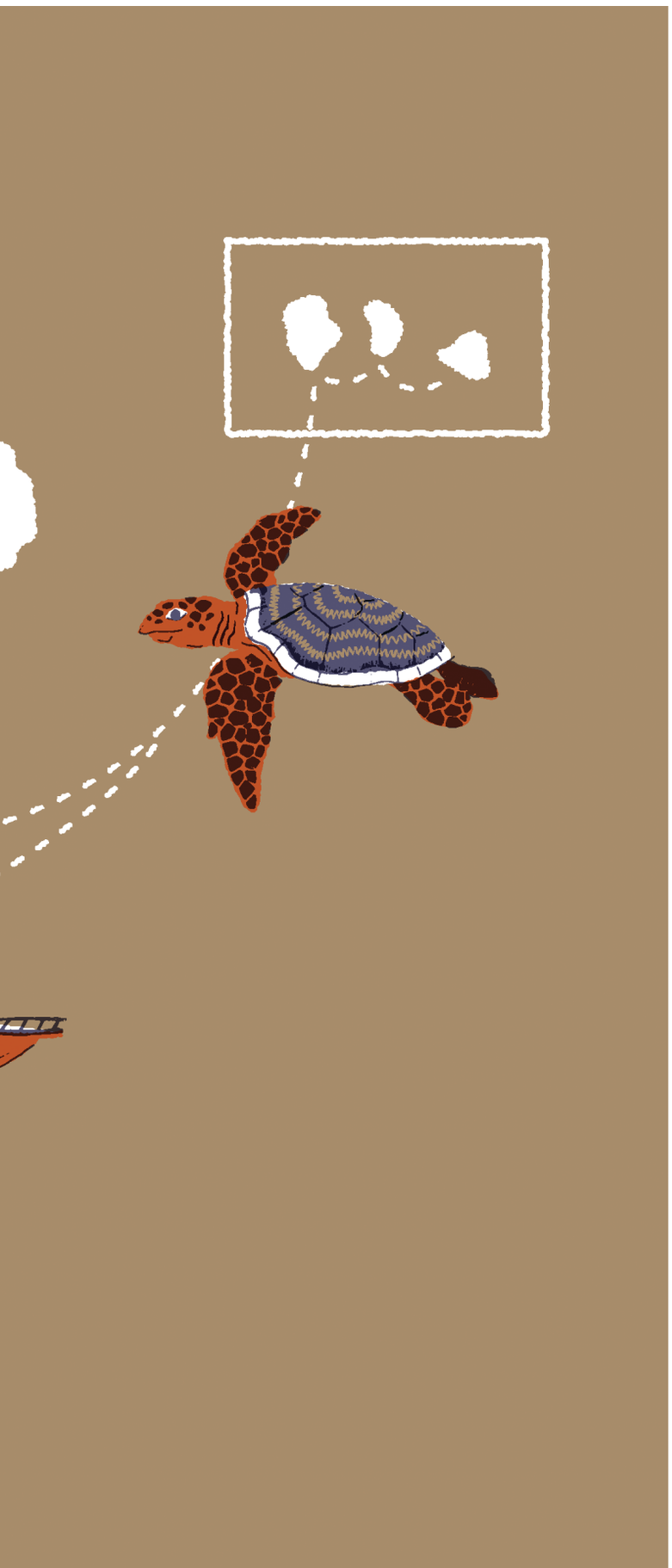
Next I add several sets of trees to the map.

I bring in the image containing my POI's and line it up with the map, setting the opacity to "Multiply" on a locked layer above the artwork so I can work underneath the line sketch without accidentally moving it.



Next I start the process of adding color to the POI's, beginning with the sea turtle. I start this process very similar to how I made the trees. I block in the colors with the pen tool, using the sketch as a guide. Then I place the image-traced lines on top of the shapes and set its opacity to "Multiply." The lines were too heavily broken up on the turtle's shell, so I use the brush tool with the pressure sensitivity turned on to fill in the missing lines. Then I expand the lines, group them together (Object > Group), and set the opacity to "Multiply." I apply the "Roughen" filter to the colored shapes and create a white area for the eye.

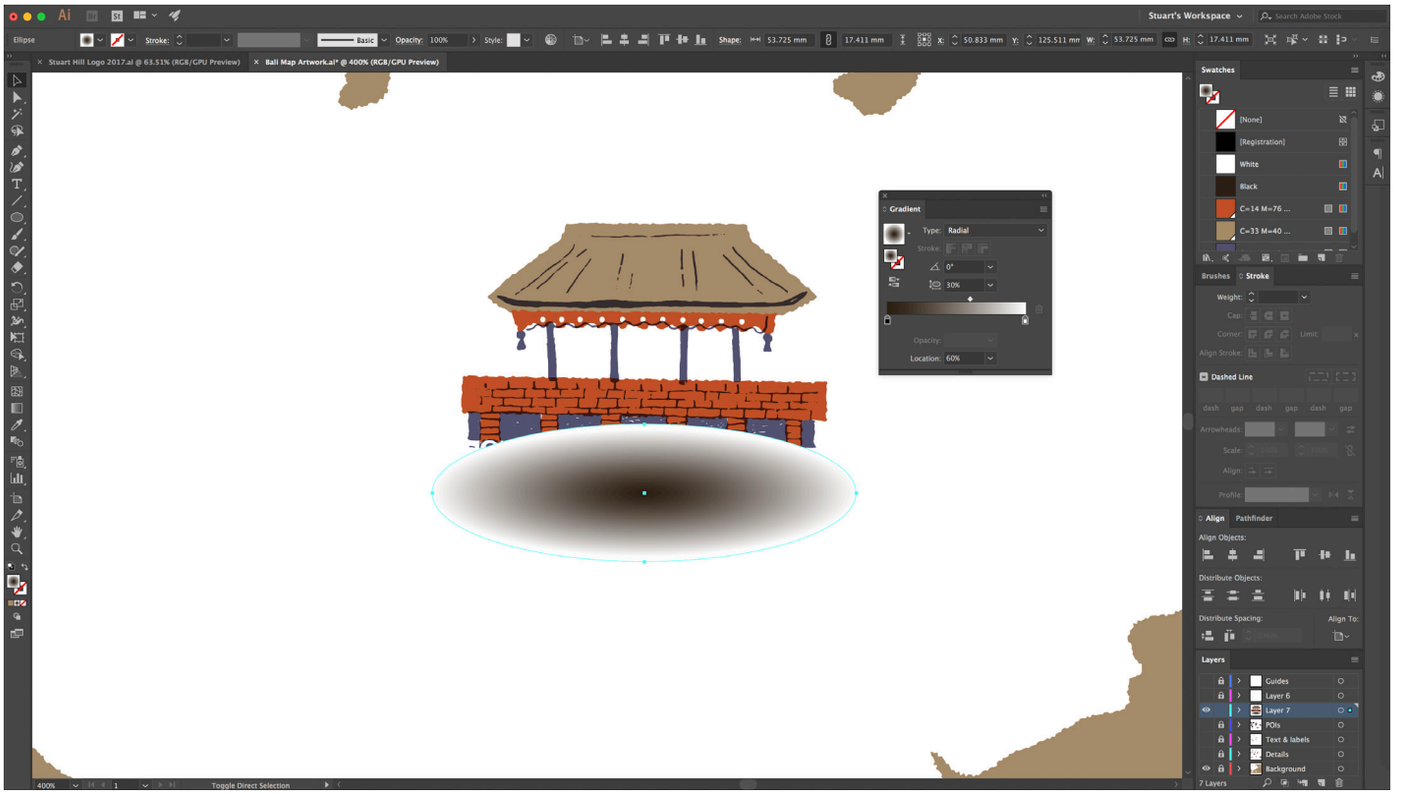
The most challenging part was creating the pattern on the shell. Illustrator has a great "Zig Zag" tool, which I used on a series of lines that mirrored the contours of the shell.



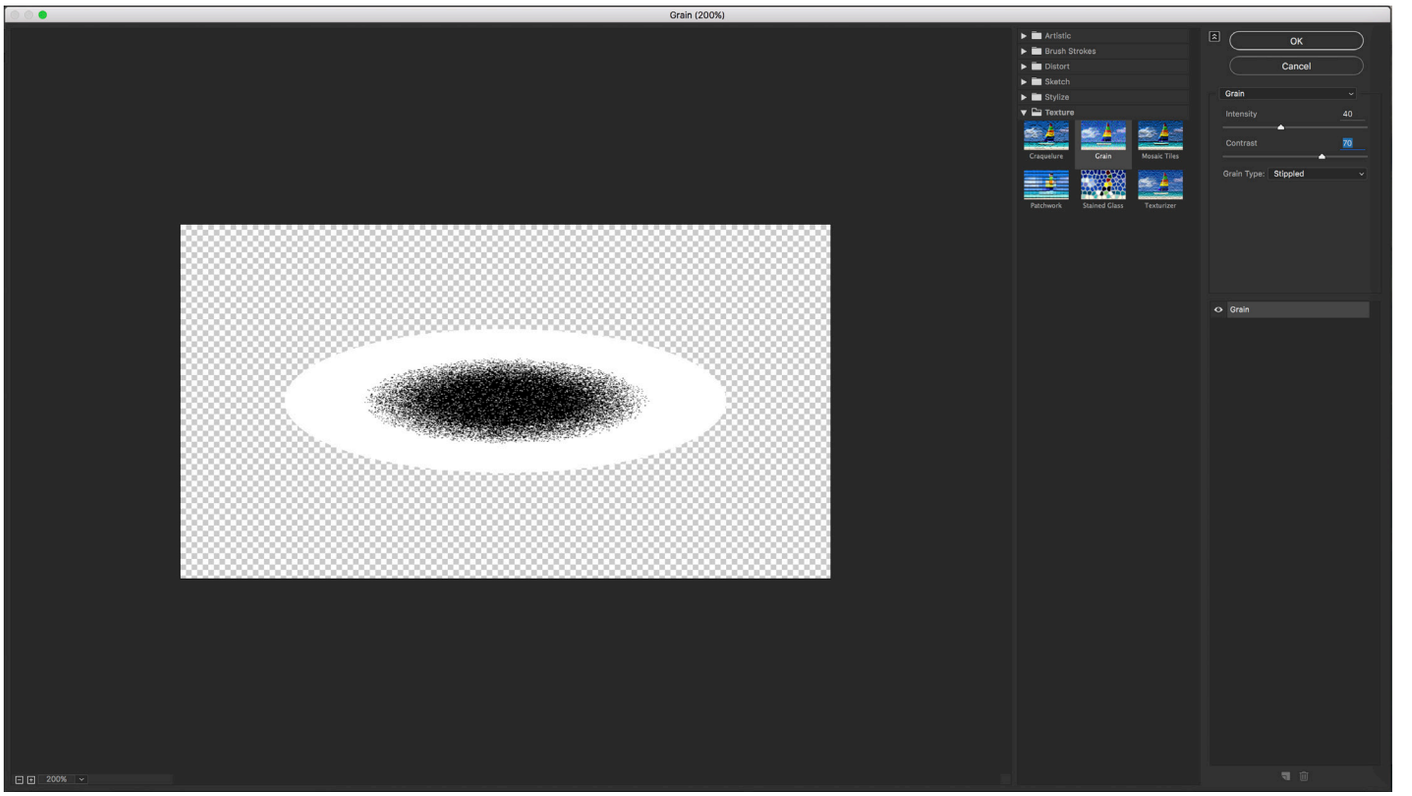
I continue creating the rest of the POI's in a similar fashion, one at a time.

To fade the water in the temple pool into the background.

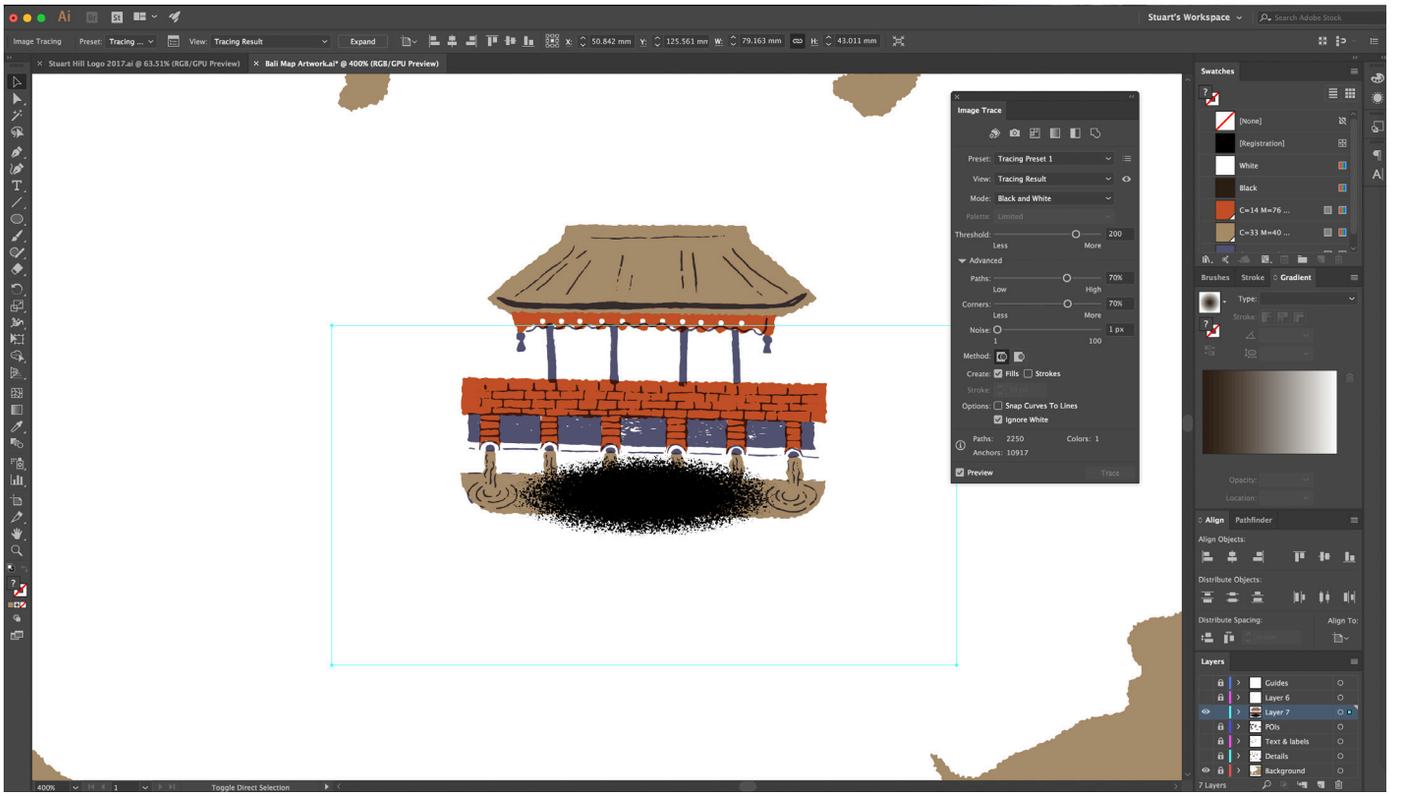
CREATING THE FADED WATER EFFECT



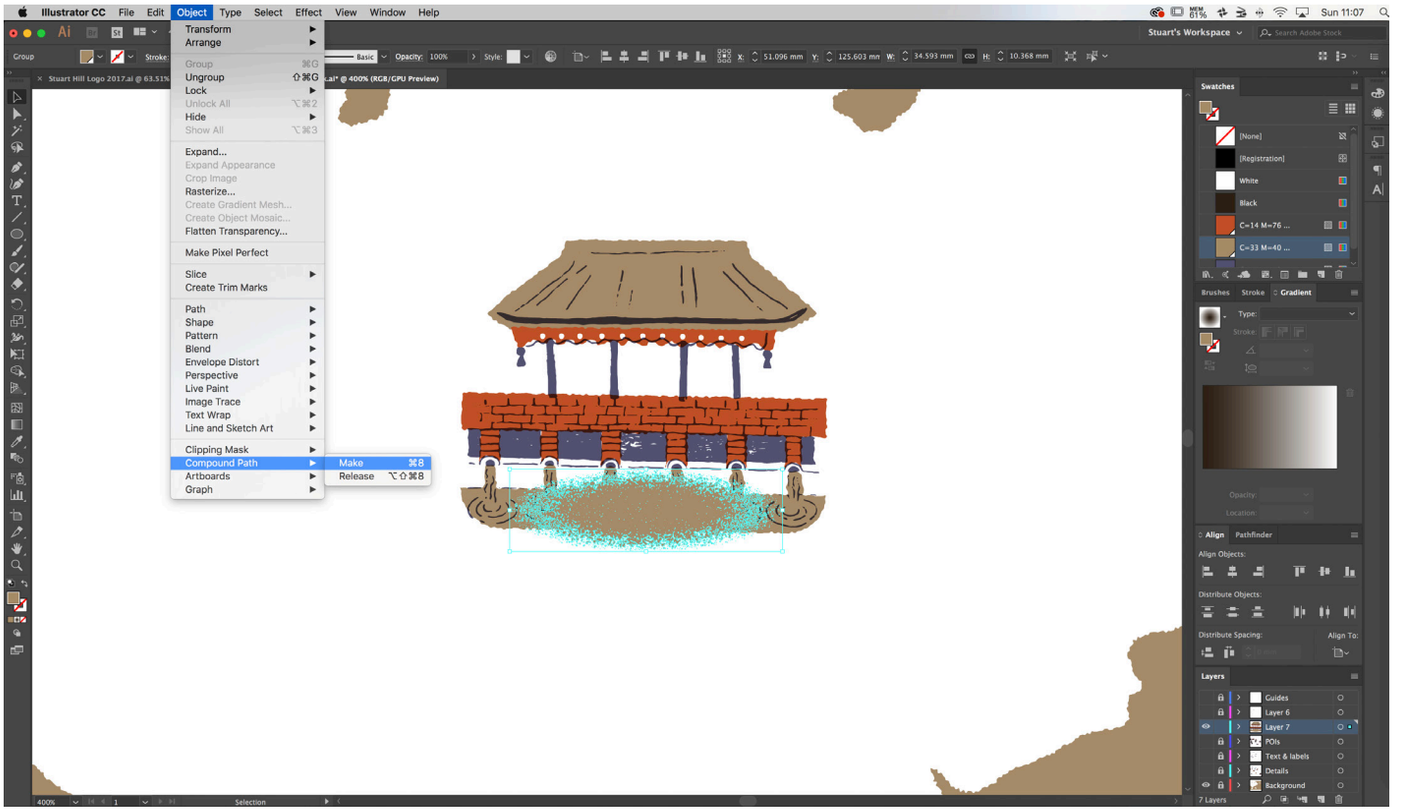
First I make an oval with a radial gradient, with the aspect ratio set to 30 degrees to make a much flatter curve.



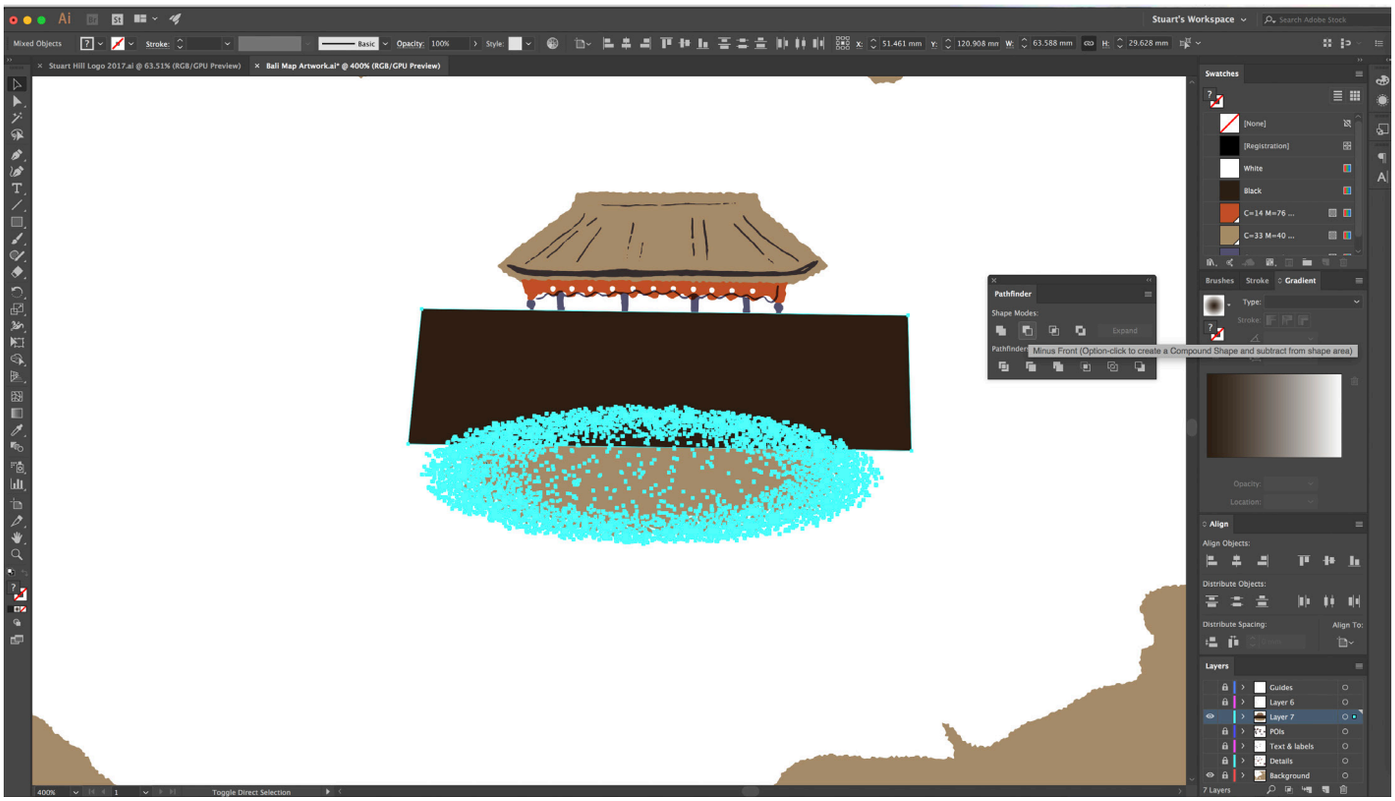
Then I use Illustrator's grain tool (Effect > Texture > Grain) to create a stippled effect.



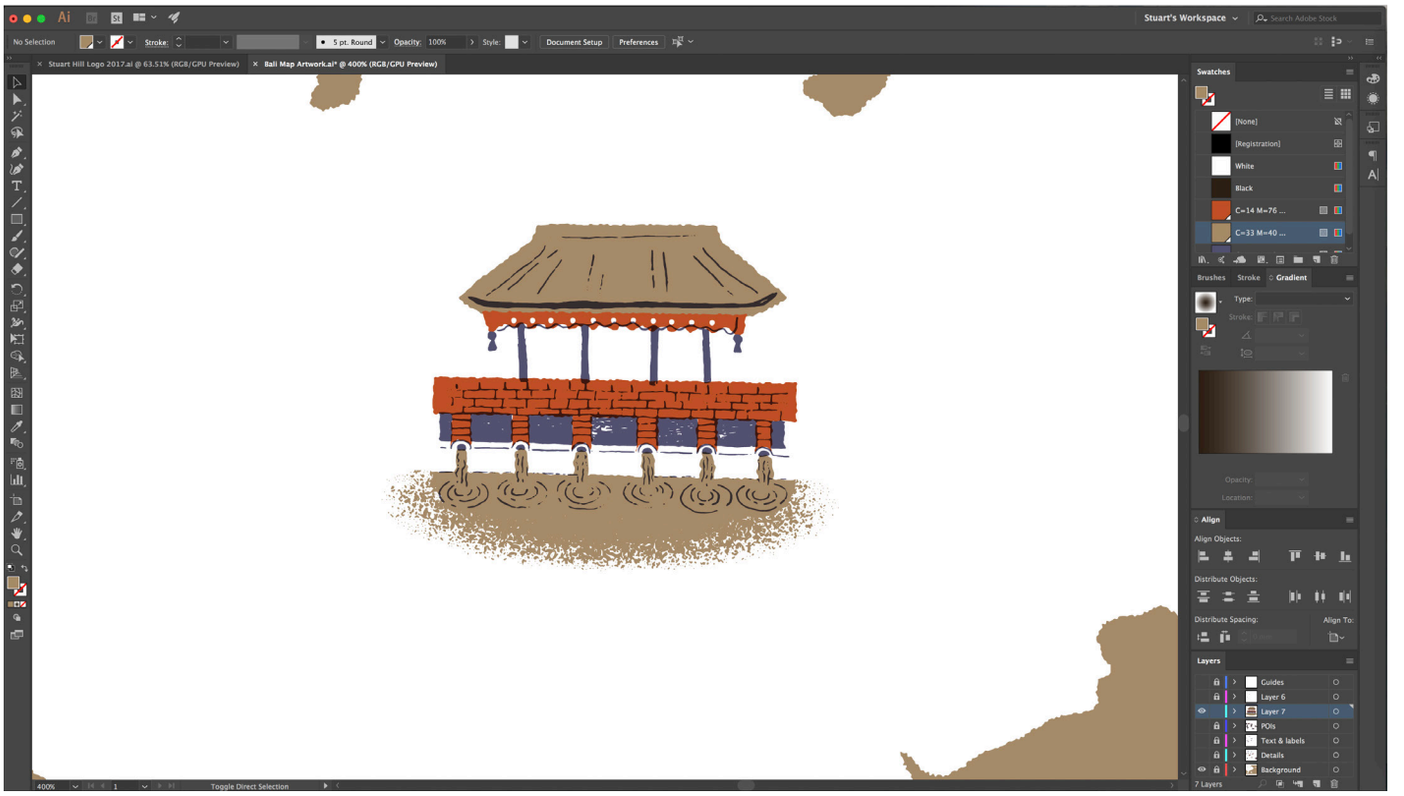
Next I use the image trace function to vectorize the new shape.



Then I expand the shape (Object > Expand) and convert it into a compound path.



Using the pathfinder (Effect > Pathfinder) “minus front” tool, I remove a square shape that follows the base of the structure.



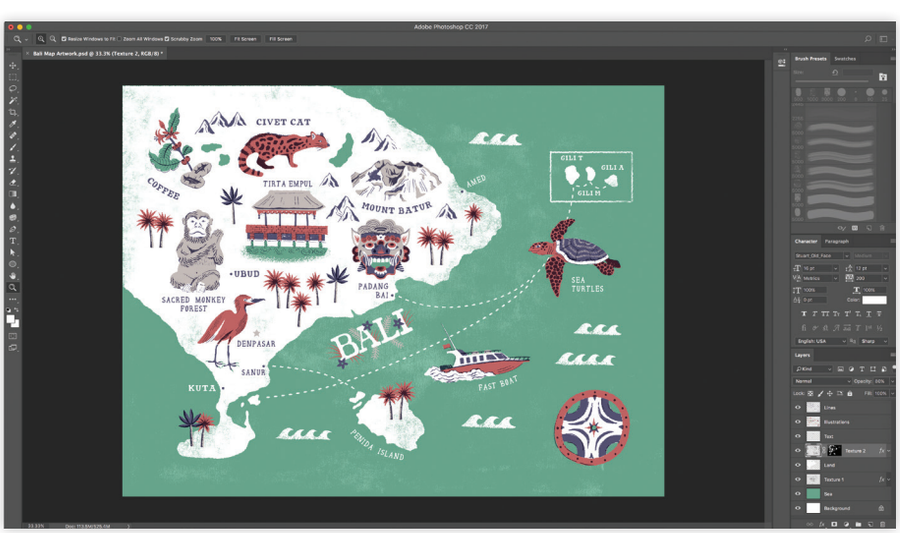
Then I move the stippled shape to the back of the artwork, and it's finished!

I bring in the mountains and waves, which I had image-traced from my sketches—just like I did for the POI shadows and outlines. Then I add all the text using my own custom fonts.

I decide to change the brown background to turquoise and add a light gray to the color palette. You can quickly change colors in Illustrator by going to the "Select" tab, navigating to "Same," and choosing "Fill Color."

TIP

To choose colors that work well together, convert your palette to grayscale to ensure there is a good contrast between the different swatches.

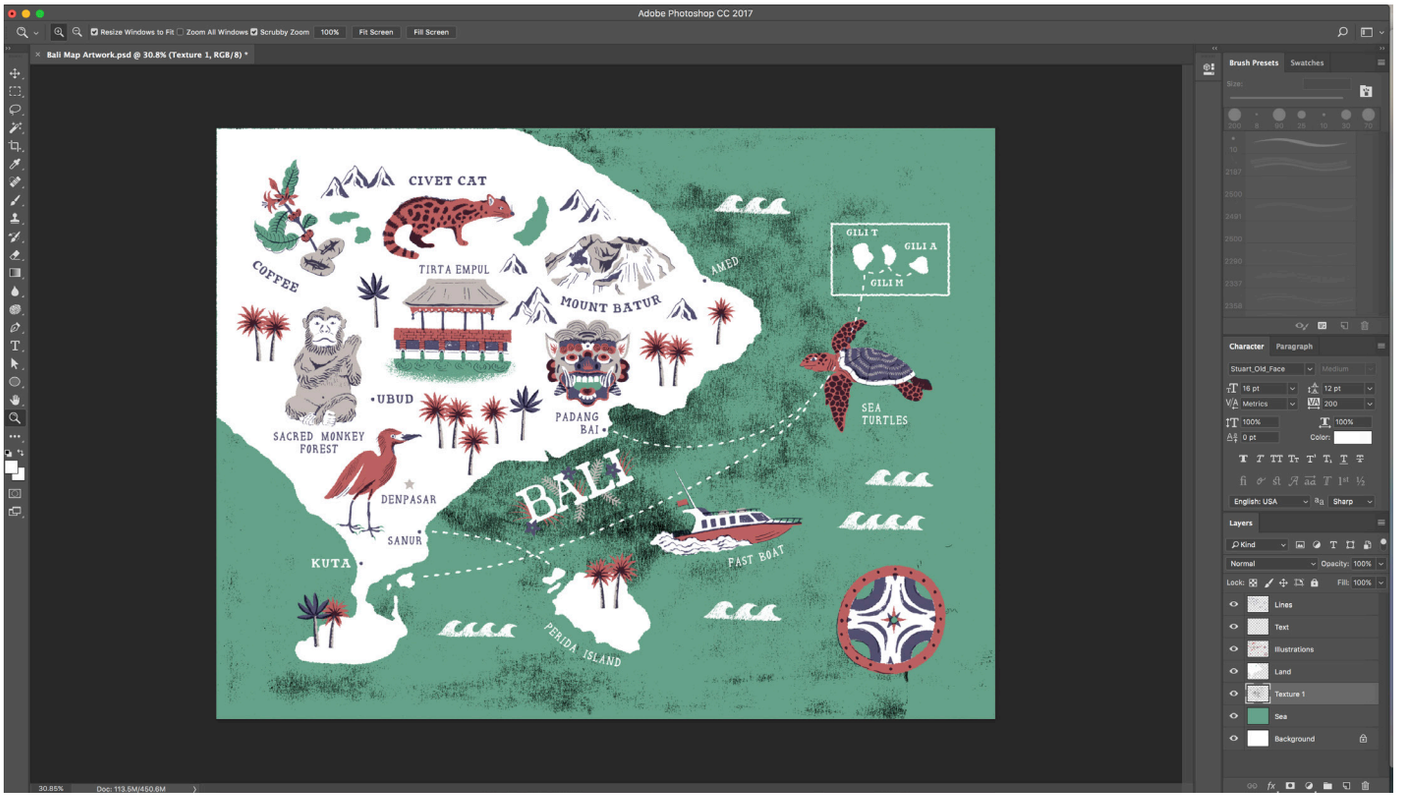


Next I bring the Illustrator objects into Photoshop to add textures. I separate the objects into five groups/layers: (1) the sea, (2) the land, (3) the illustrations, (4) the image-traced lines (set to "Multiply"), and (5) the text. This will allow me to create different textures on individual layers.

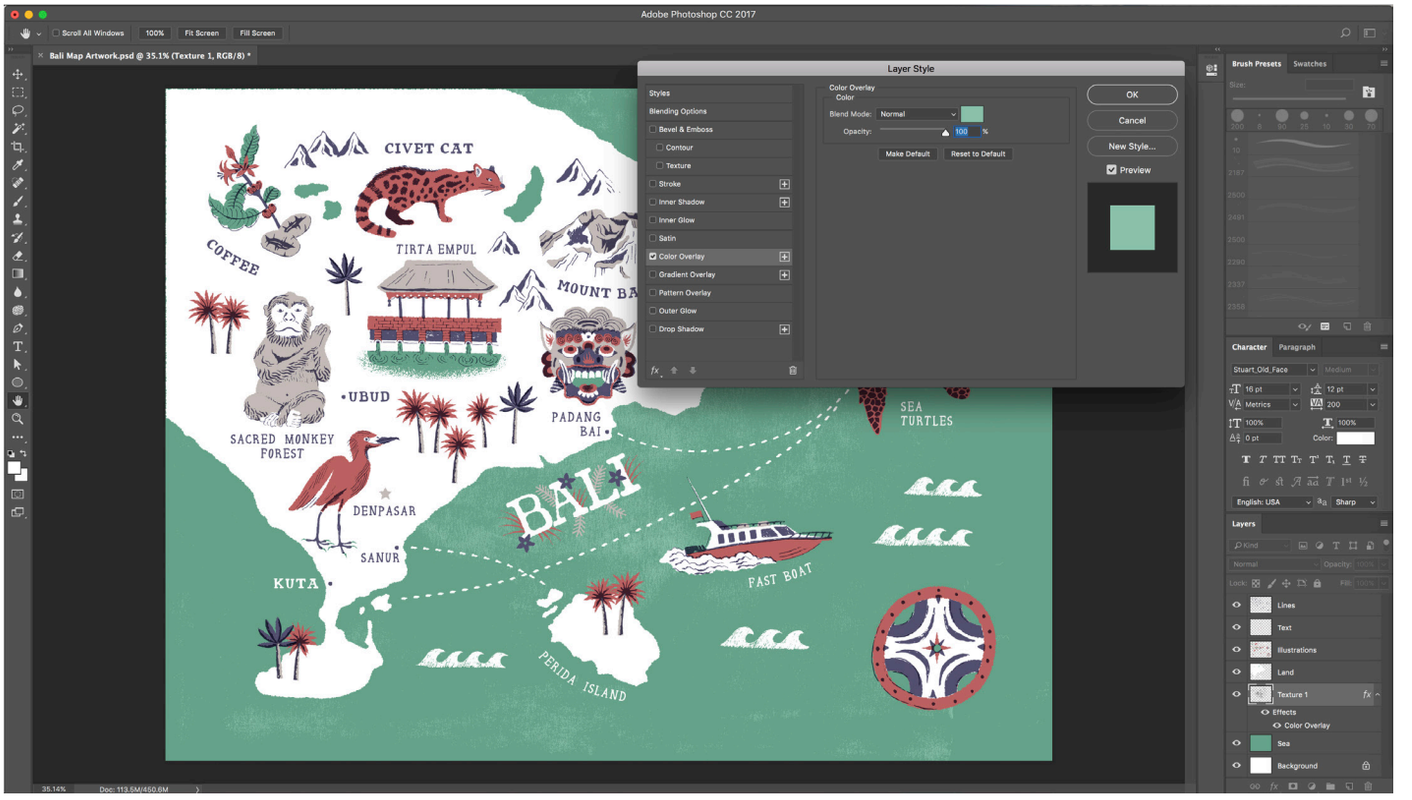
You can create your own inky texture by using printing ink, a roller, and your scanner. I use an inked texture from a pack that I purchased; the texture has a transparent background, so I simply paste the image into my Photoshop document (above) and use "Color Overlay" in the layer style to change the texture's color to a slightly lighter green than the background (left).

See the following four pages to see how I add different textures to the individual layers.

ADDING TEXTURE BACKGROUNDS

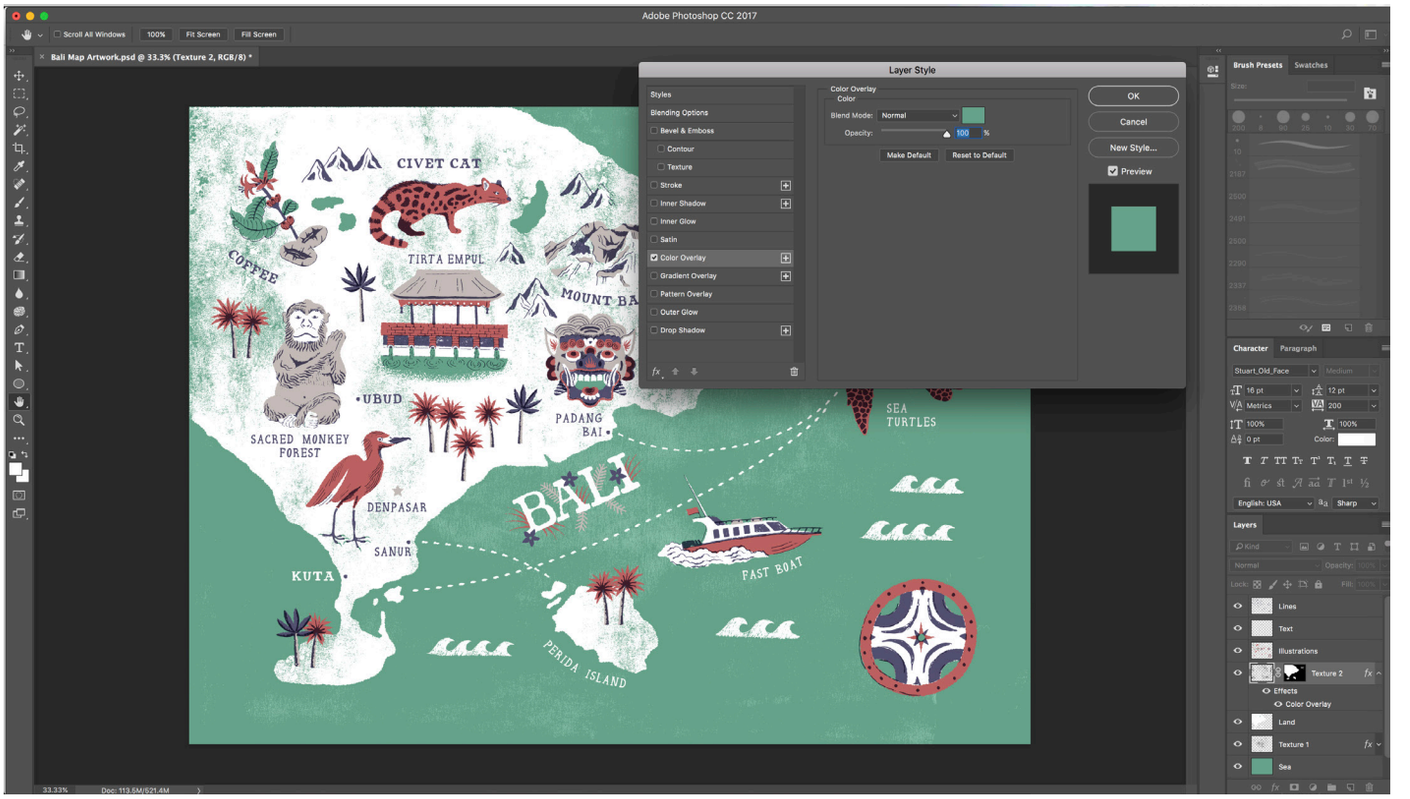


Here I drop in the first texture into the Photoshop document.

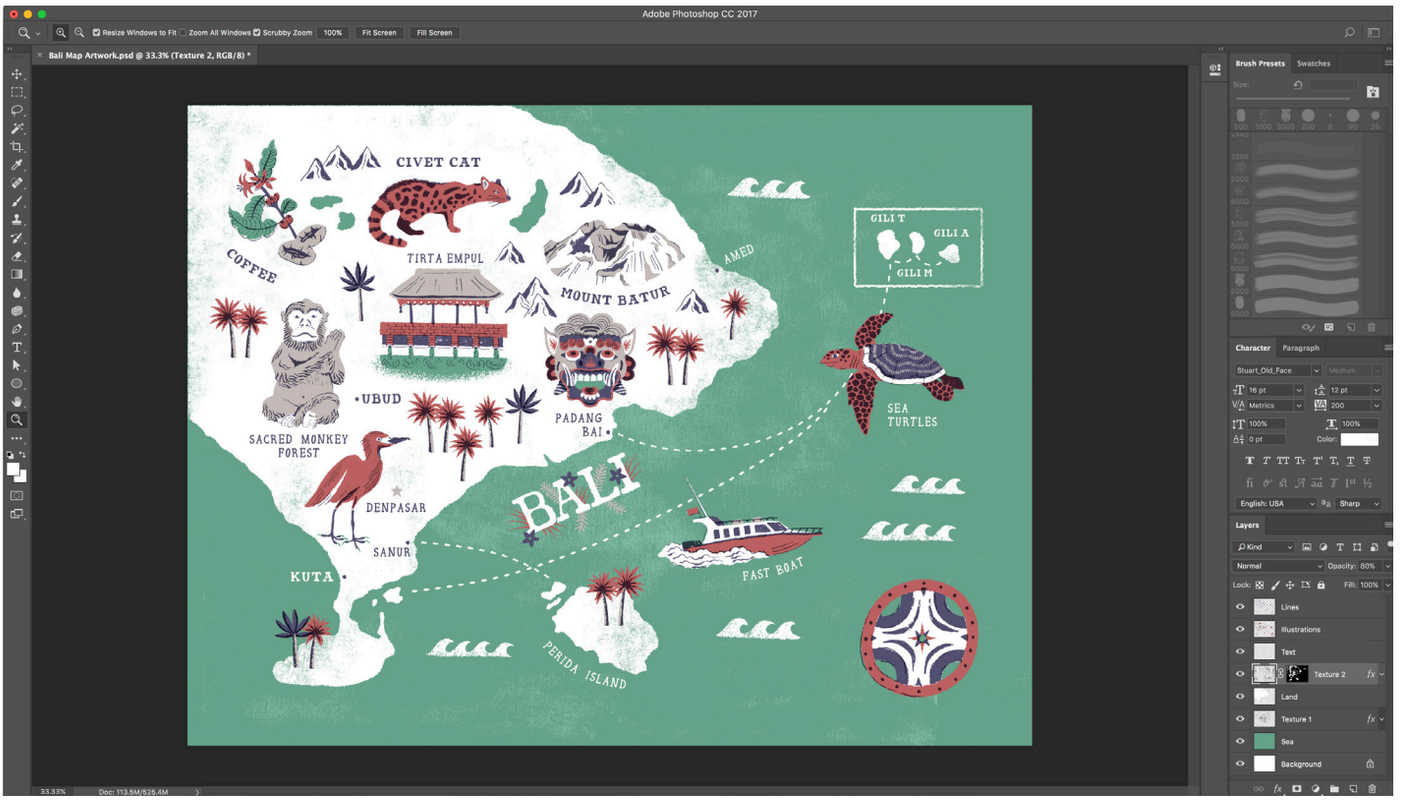


Then I use the color overlay layer style to recolor the texture. I want a subtle effect over the sea, so I choose a color that's slightly lighter than the green background.

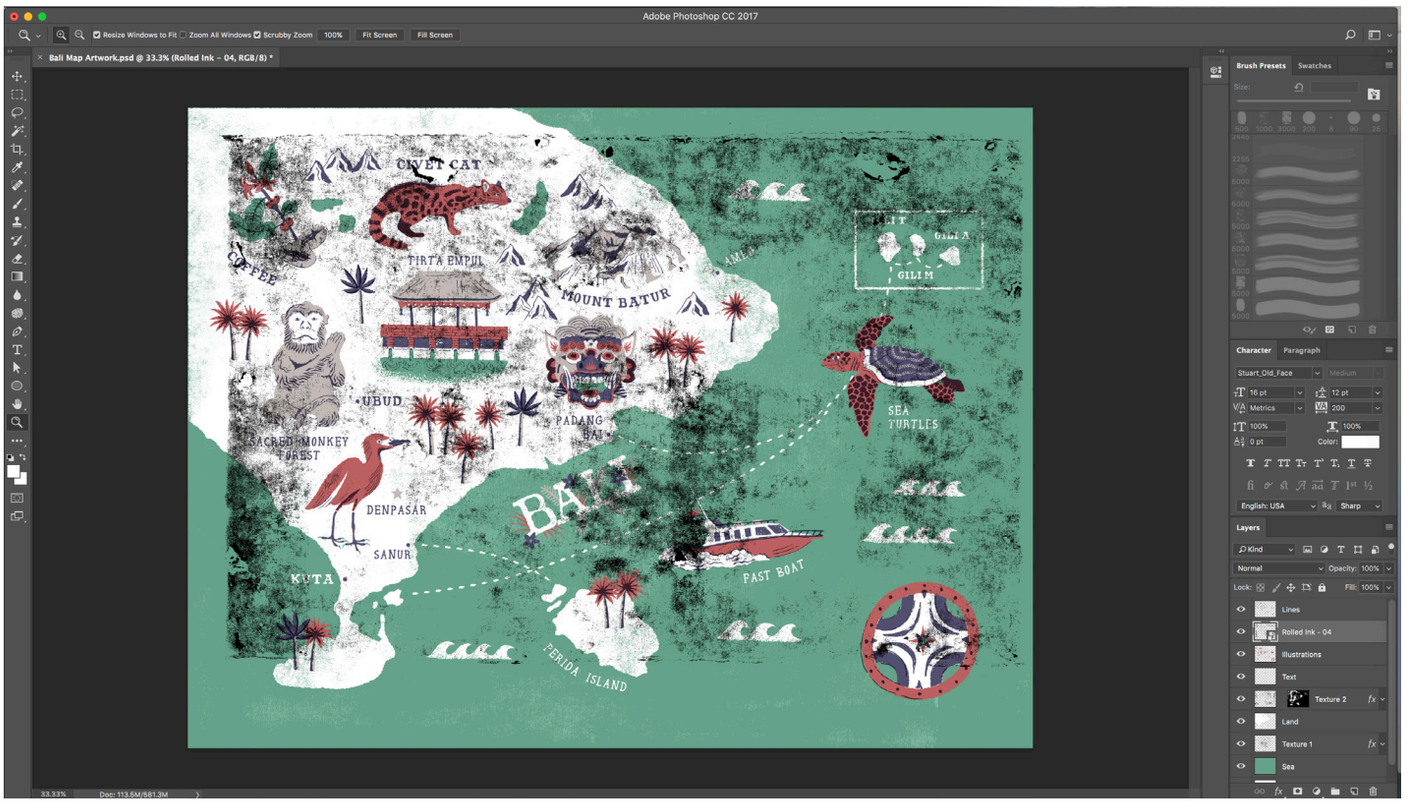
Next I do the same for the land layer, but this time I click the land layer in the side tab while holding the ctrl key to select the entire shape. Then I create a layer mask using the selection to restrict the texture to only the land.



I use the color overlay style and choose the same green color I used for the sea.

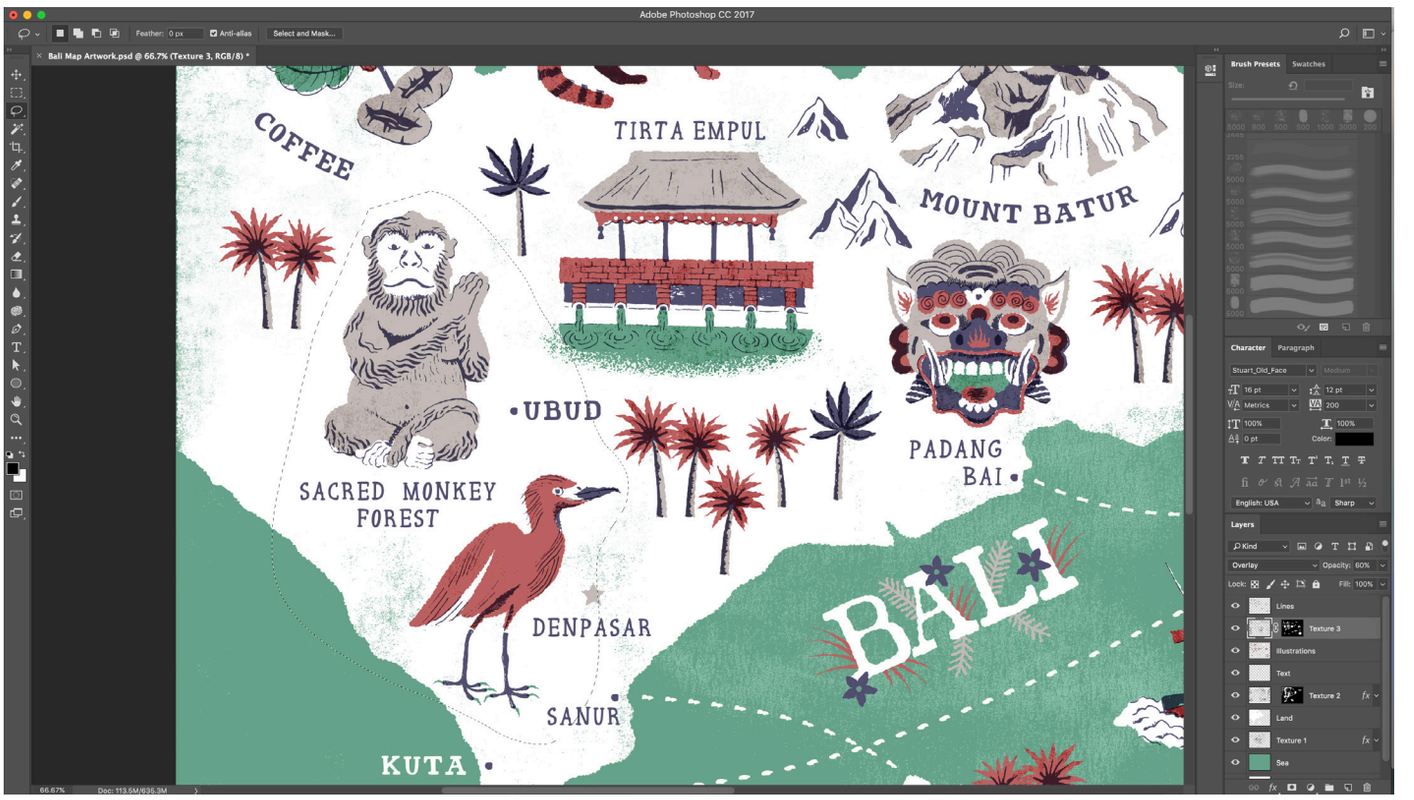


This texture is a bit too strong, so I use the eraser tool and a rough brush to reduce the strength of the effect around the POI's. I also reduce the opacity to make the effect subtler.



Next I do the same with the layer of POI's, but this time I keep the texture its original color.

I also set the style to overlay with a reduced opacity value so that the effect is very subtle.



There are a few areas where I want to increase the amount of texture, but I don't want it to overspill into other POI's. To overcome this, I use the lasso tool around the illustrations I want to include, and then I use a custom brush to add more texture to the area.

CIVET CAT
COFFEE
TIRTA EMPUL
MOUNT
SACRED MONKEY FOREST
UBUD
PADANG BAI
DENPASAR
SANUR
KUTA
BAL
PENIDA ISLA

GILI T
GILI A
GILI M
AMED
T BATUR
SEA
TURTLES
FAST BOAT
ND