CLEAN CONCRETE TUTORIAL

Tutorial by Philip Klevestav

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INTRODUCTION

This is a pretty short tutorial on how you can create a pretty simple and clean concrete surface straight in Photoshop. This means creating the normal map, diffuse, specular and glossiness totally without any other programs needed.

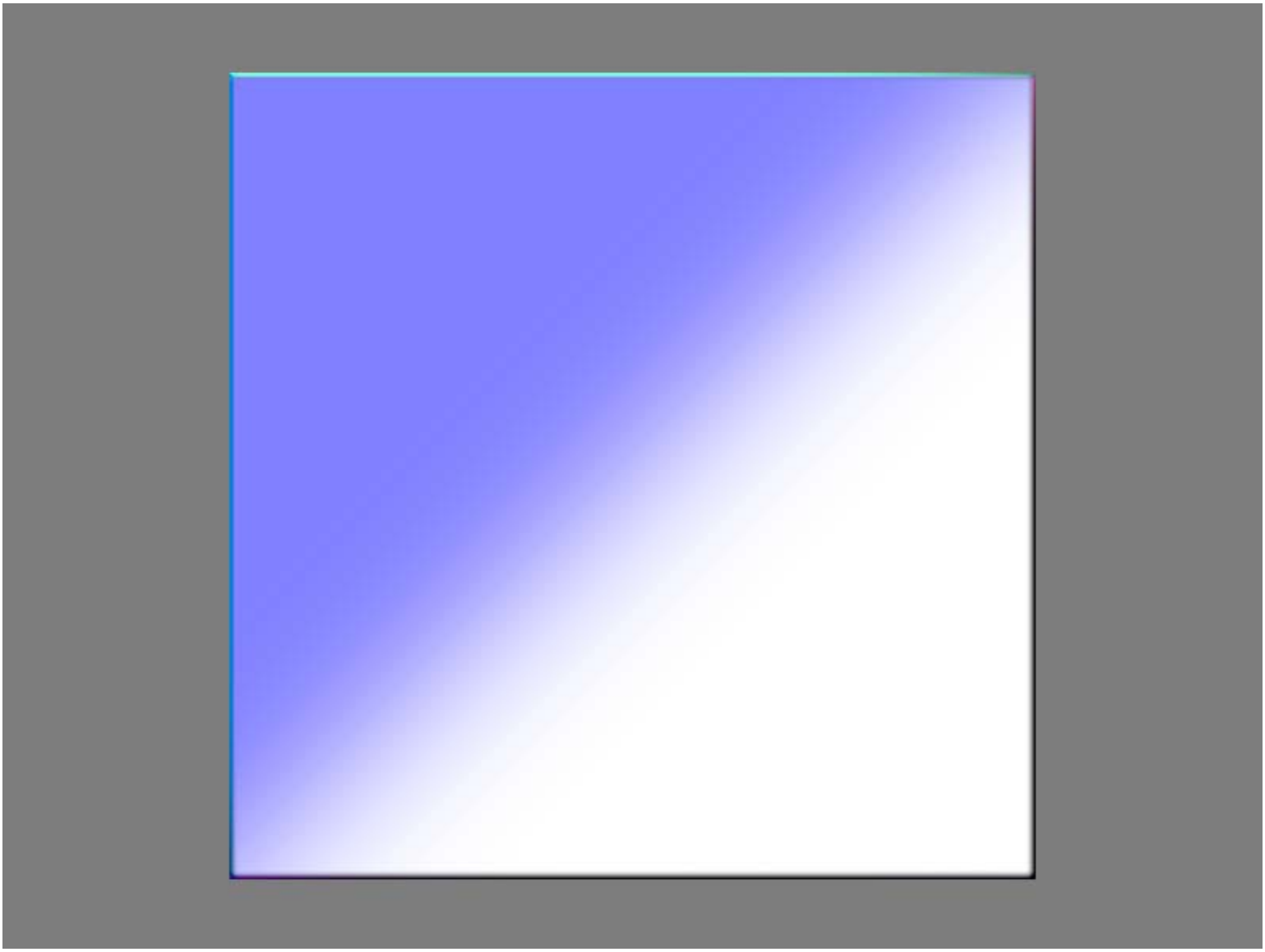
This is best suited for some types of materials. When I work it is not unusual to be mixing details made in a sculpting program with stuff made in 3DS Max and completely made in Photoshop all in one texture.
But clean materials such as this work very well to create in Photoshop only.

STARTING WITH THE NORMAL MAP

I decided to make some sort of pretty modern concrete blocks.
I try to have at least a seam in some direction when working with concrete. It can be tough if you build a huge and flat surface tho, so sometimes you may need to have something without any seams repeating all the time.
Problem is if you never have any seams it will look like everything is made out of one big piece, of course in these cases you could do a decal seam that you can place as you see fit.

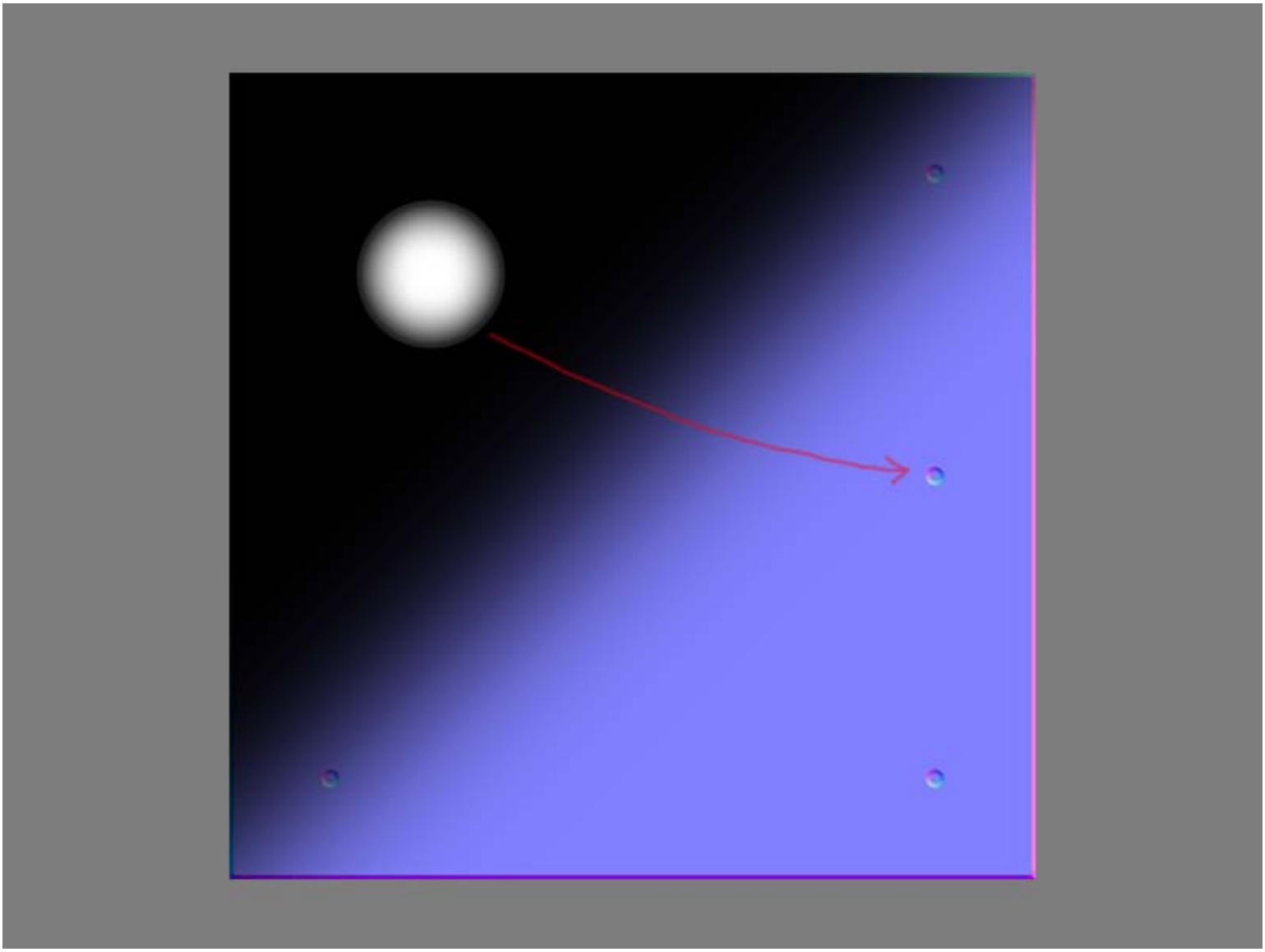
Another good thing splitting up your concrete material with seams is you can really vary a surface a lot more by rotating and flipping the same block of concrete when placed next to each other.
Sometimes you really can not split up your object in blocks of some shape, fine. But usually you can alter a design slightly just to get the opportunity to work with it in blocks, and that will usually prove to make things a lot more interesting.
I will say the same about metal. You can just do so much more with a clean surface that has some seams than one that is seamless and tiles endlessly.

So I started by creating one big layer over the whole canvas (of course you can create as many blocks you wish, I just went with one big boring square in this tutorial).
I slapped on an "Inner Glow" layer effect on this layer, chose a black color and set it to multiply (same as using "Inner Shadow" really with 0 distance set). You can see how that looks in the bottom right part of the image below. I then simple use the NVidia Normal Map filter on that.

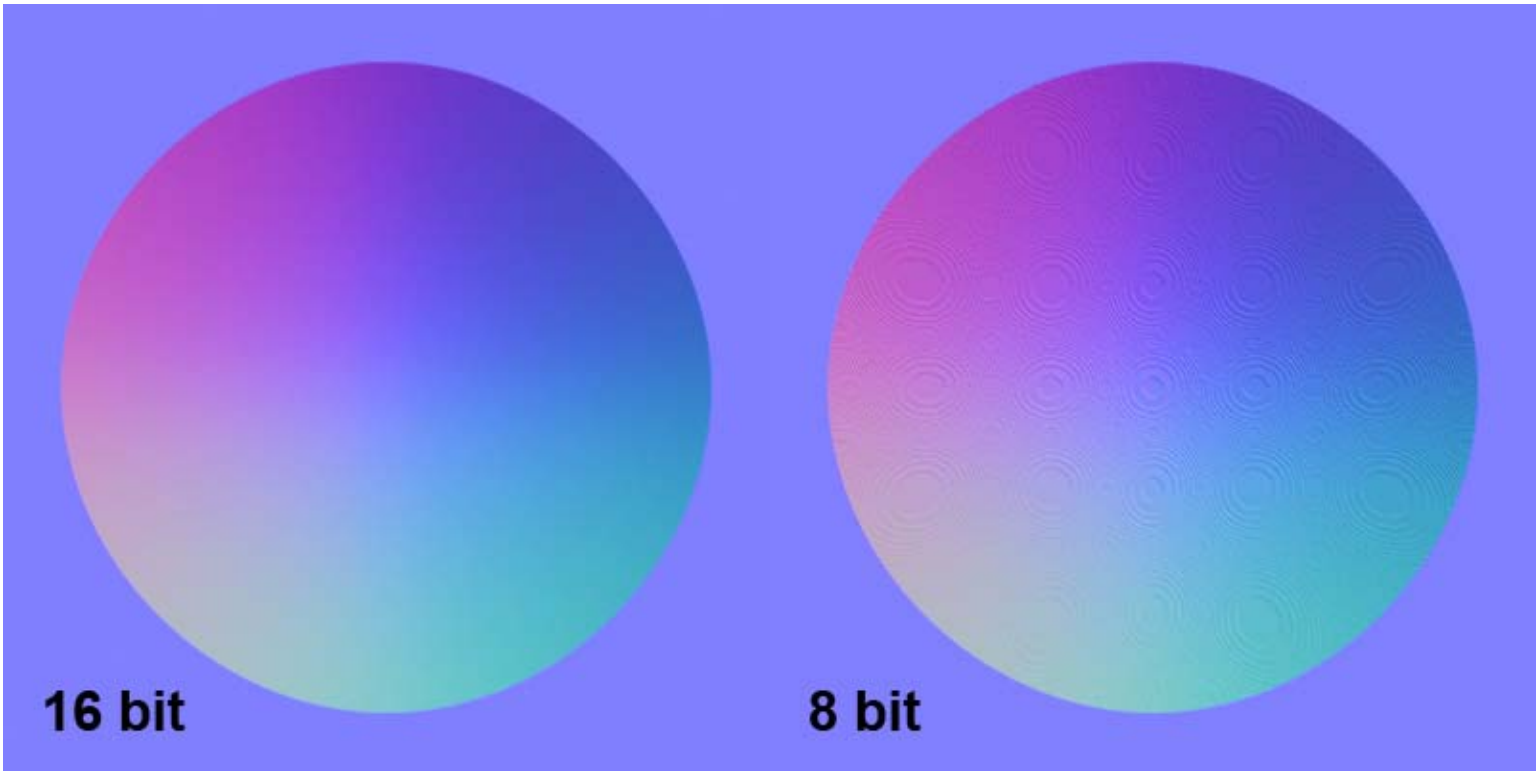


I proceed by creating the largest details first, going to smaller and smaller. This will be a relatively clean concrete, so not a whole lot of "geometrical detail" is needed.
I simply want a few of those concrete drilled holes you often see in such clean concrete blocks. I created these by doing a large circle in a new layer, like in the top left part of the image. Once again I set a Inner Glow on this one with a black color and a pretty far range to get a nice smooth gradient. You are ALWAYS after the gradients when you want to create normal map details in Photoshop, it does not matter if it is a sharp edge, it will still look better if it is slightly smooth in the edges.

When the big circle is done, make a copy of it and hide it, then I flatten it to a black background (or you just do it inverted, since it is going to go in and not out) and generate a normal map with the filter again.
Now, since you have a copy of your layer shape you can make a selection of that layer and delete the background on your generated normal map. Now you have a circle normal map in a separate layer that you can move and scale freely. I scale down the circle and copy it up so that I have six circles and place them out as I want them.

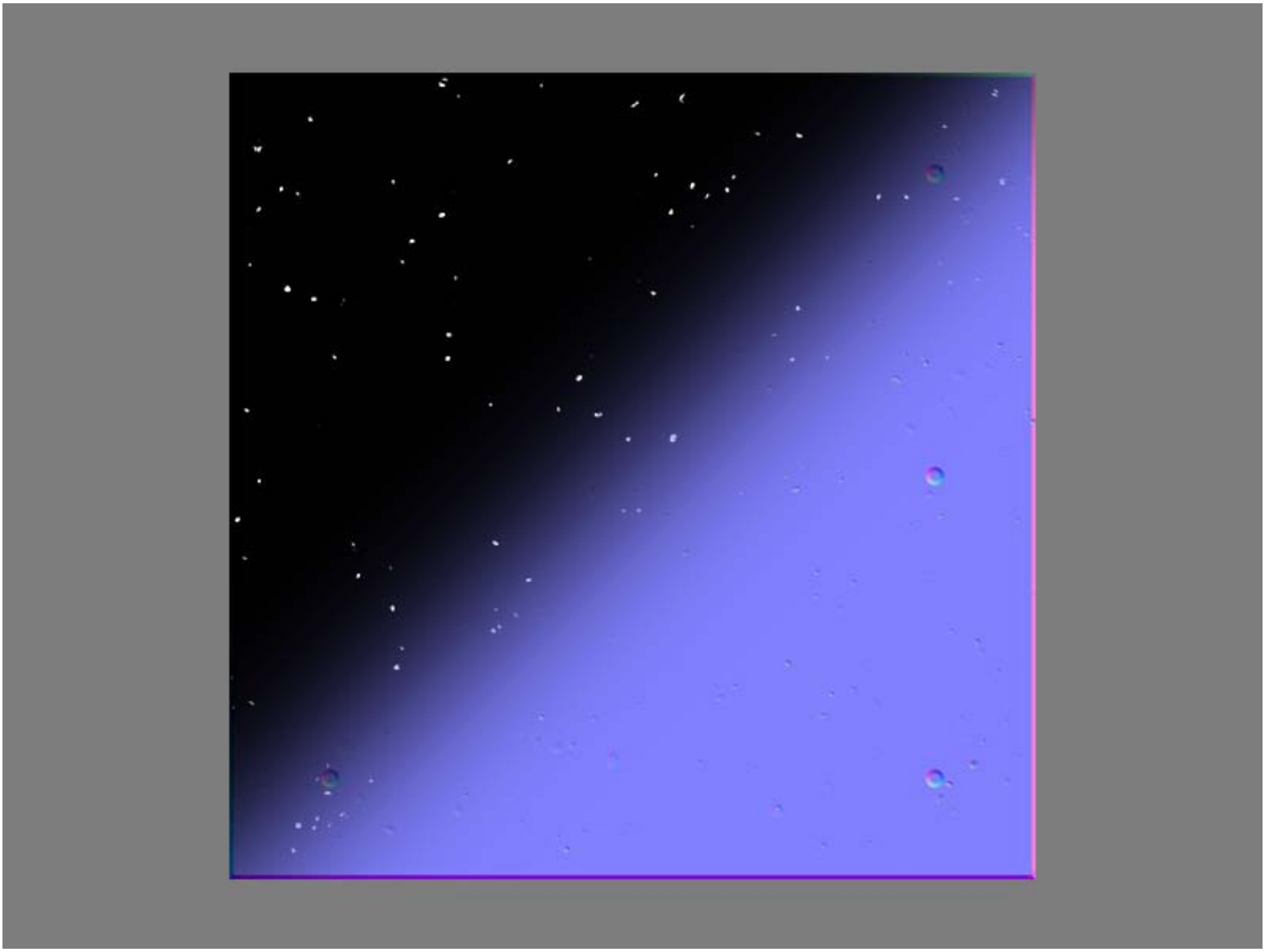


In this case I did not bother with this, BUT when you work with large soft shapes (big gradients) that you are to convert to normal map information, a good thing is to work in 16bit mode in Photoshop.
If you look at the image below you can clearly see the difference between working in 16bit mode vs. 8bit. This image was converted to 8bit before saved. So you can always work in 16bit mode and when done, convert it to 8bit and still have the fine gradients (almost) intact.



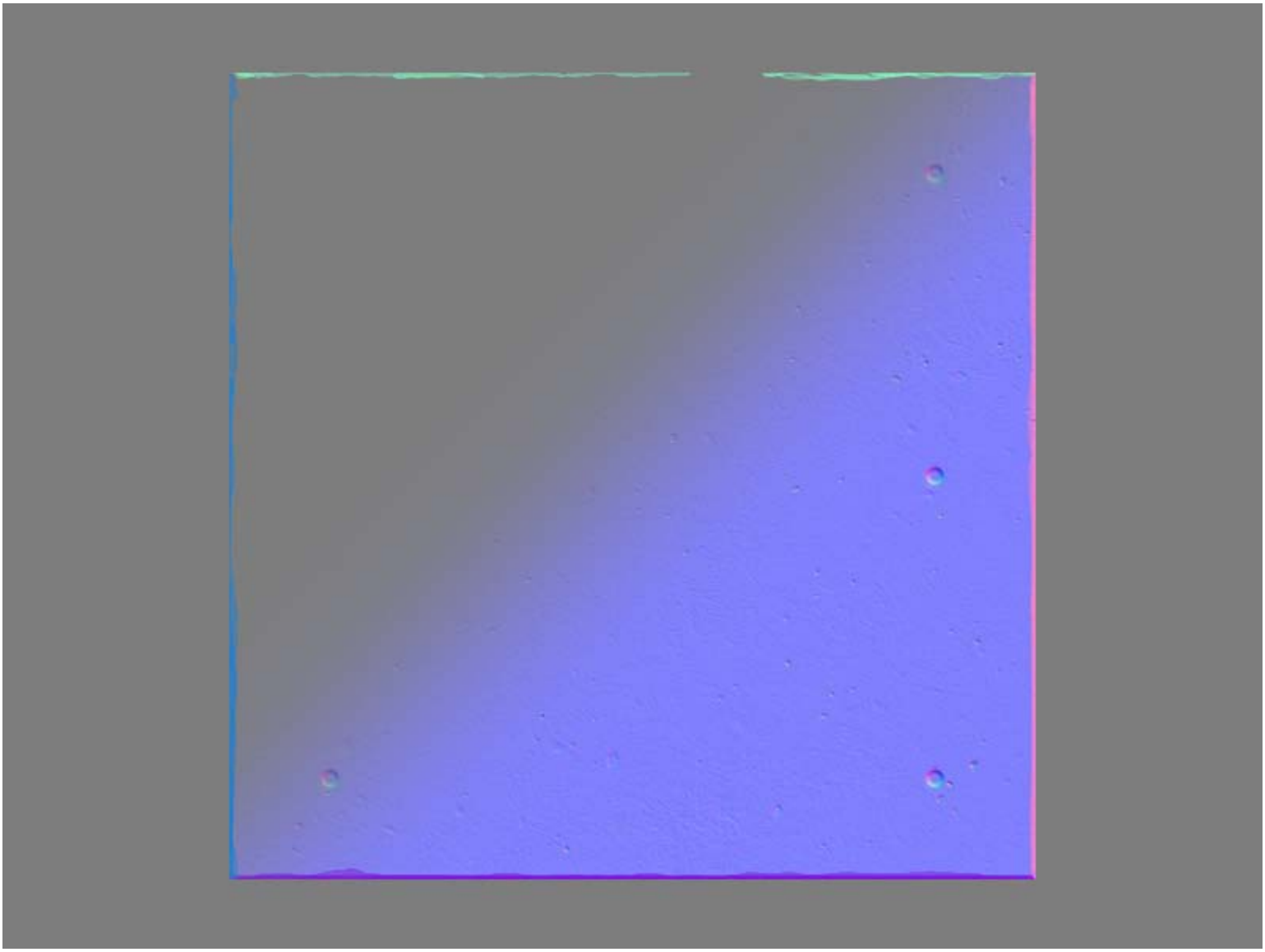
I now proceed with the same idea as above to create some small dents and uneven holes in the concrete. I made a brush that scatter dots pretty well and I just start brushing that out in a new layer. Make a copy of that layer, flatten the original to a black (or if you worked with black dots, a white) background and generate a normal map. Make a selection from your copied layer and create a new layer with the dots. Now you have the normal mapped dots in a separate layer.

You can also overlay the whole layer of course if you prefer that. There are a lot of guides and tips out there about overlaying normal information in Photoshop and you can do it more or less "correct", I usually half the blue channel info or set it totally to mid grey. You can also make a copy of your layer before killing/changing the blue channel info, and kill the red and green channels then set that layer to multiply and have that on top of your overlay layer with the blue channel 50% grey. But since I usually keep larger details like the "drill holes" earlier to "Normal Blending Mode" and small sublte details only overlayed there is so little information in the blue channel of those that I simply do not bother with it. In the end I normalize the whole normal map as well.



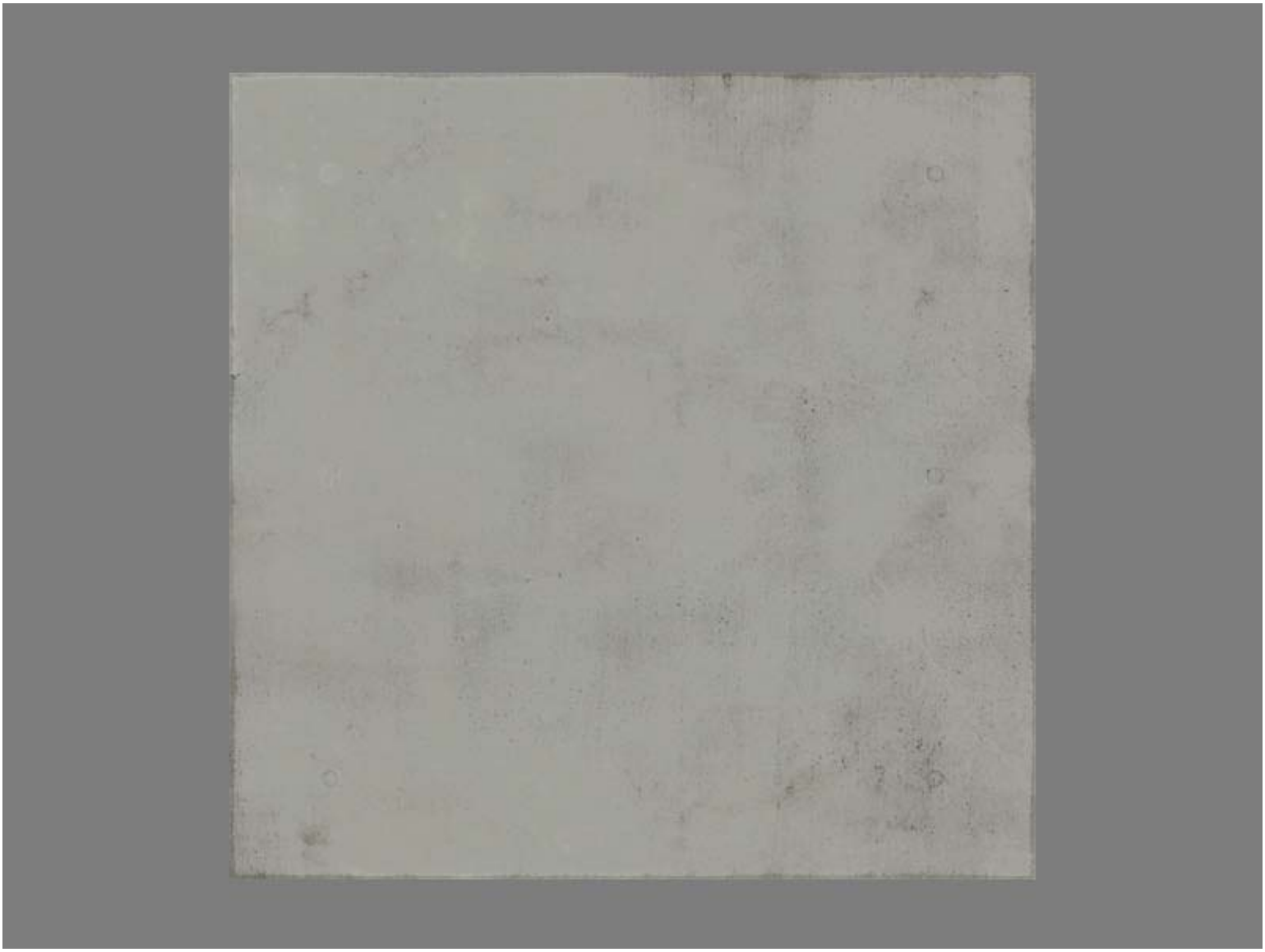
Last few things I do is to create a new empty layer and manually paint some uneven borders of my block. Like in the top left of the image below. The layer is set to "Normal Blending Mode" and I simply color picked the border normal map colors and used a brush at about 50% opacity.

The last thing I did was to use a big photo to get some additional high frequency detail. I usually work with these in their original size even when converting to normal map information. This way I get rid of a lot of ugly noise when scaling the layers down than what I would have got by scaling it down before generating the normal map.

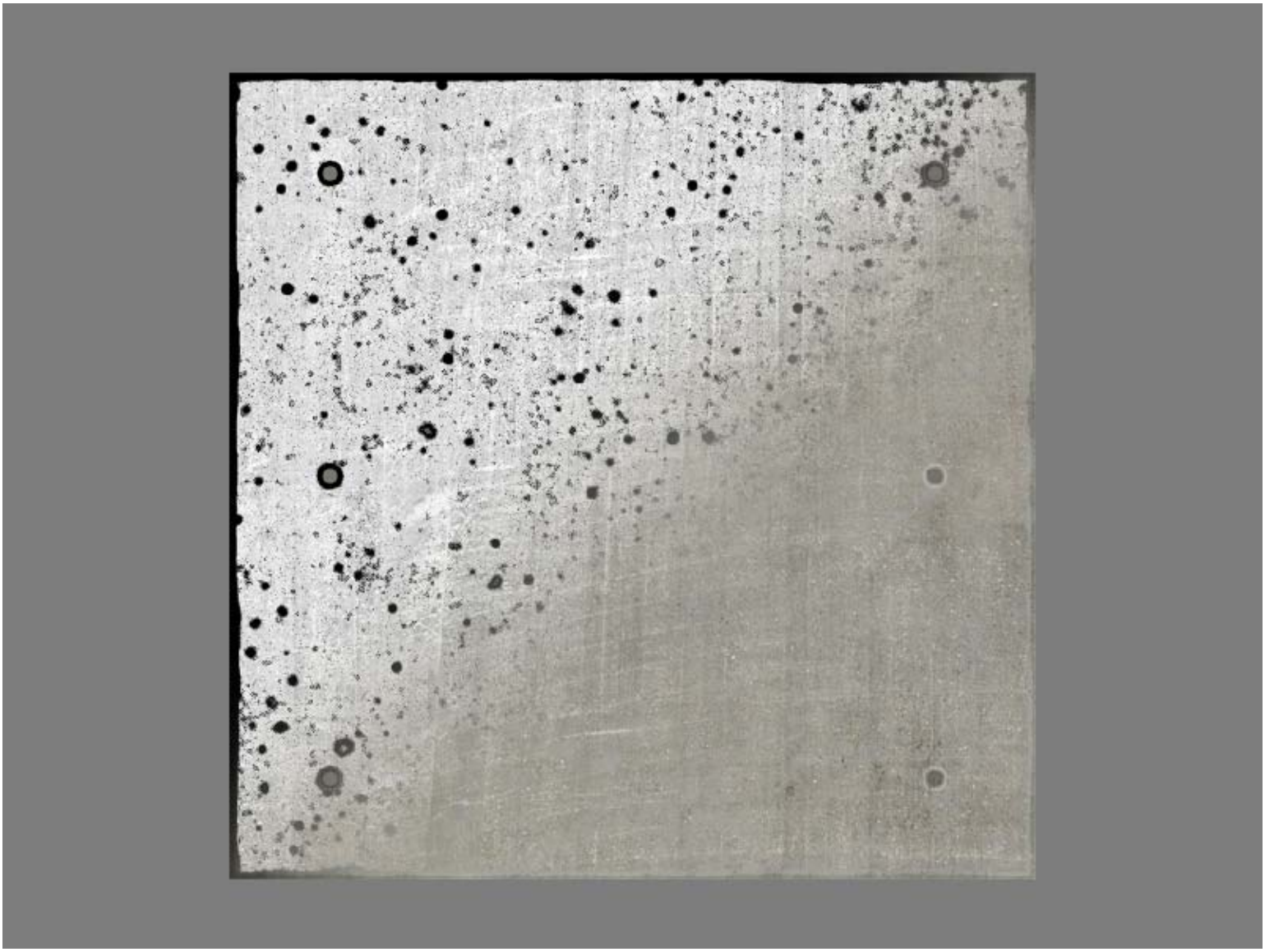


THE DIFFUSE AND THE REST

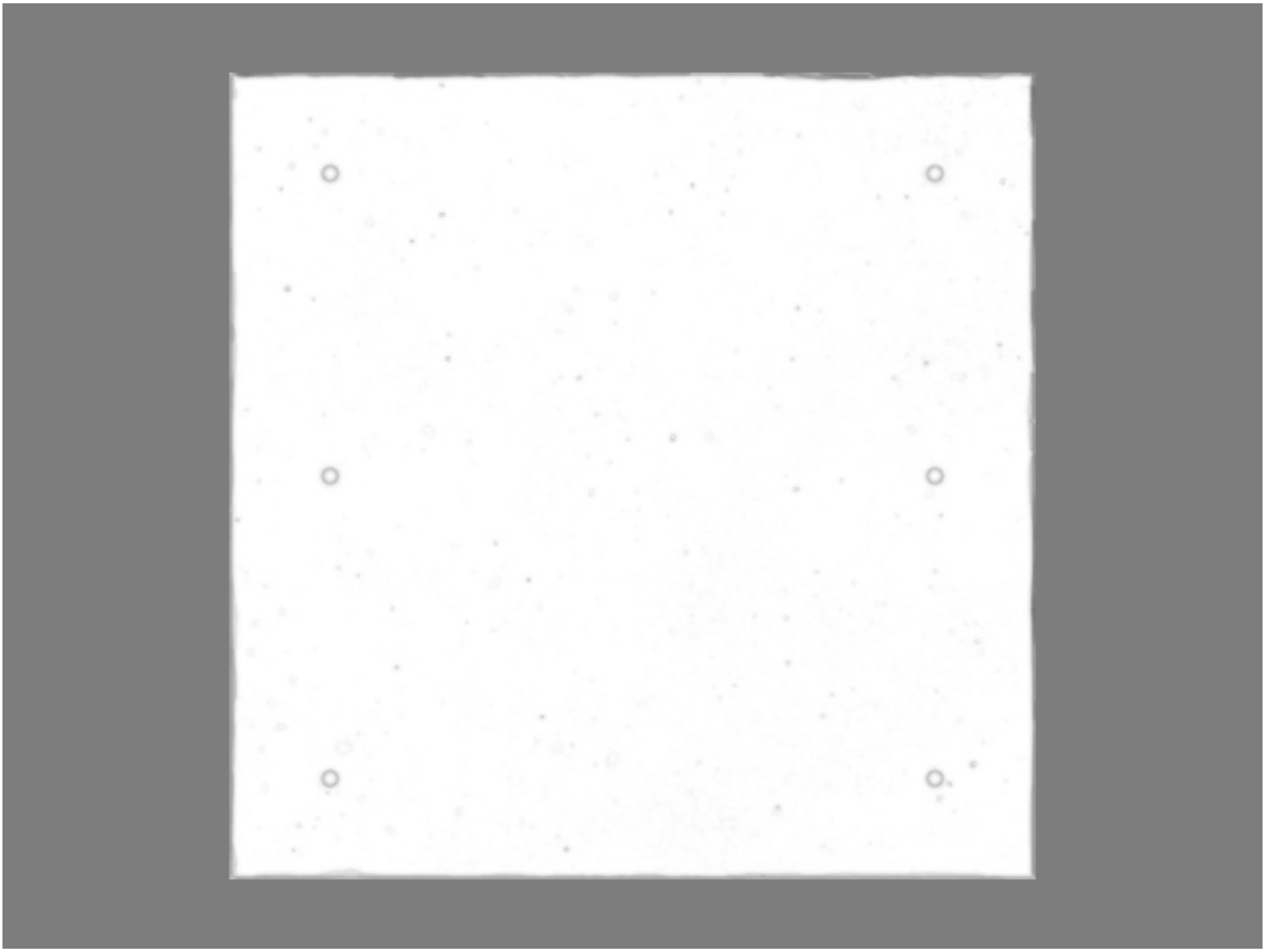
I started out very simple and used brushed a few large subtle strokes on a beige background color, I then added and manipulated a photo overlay, smudged it out and decontrasted to just keep some basic information and flattened it.



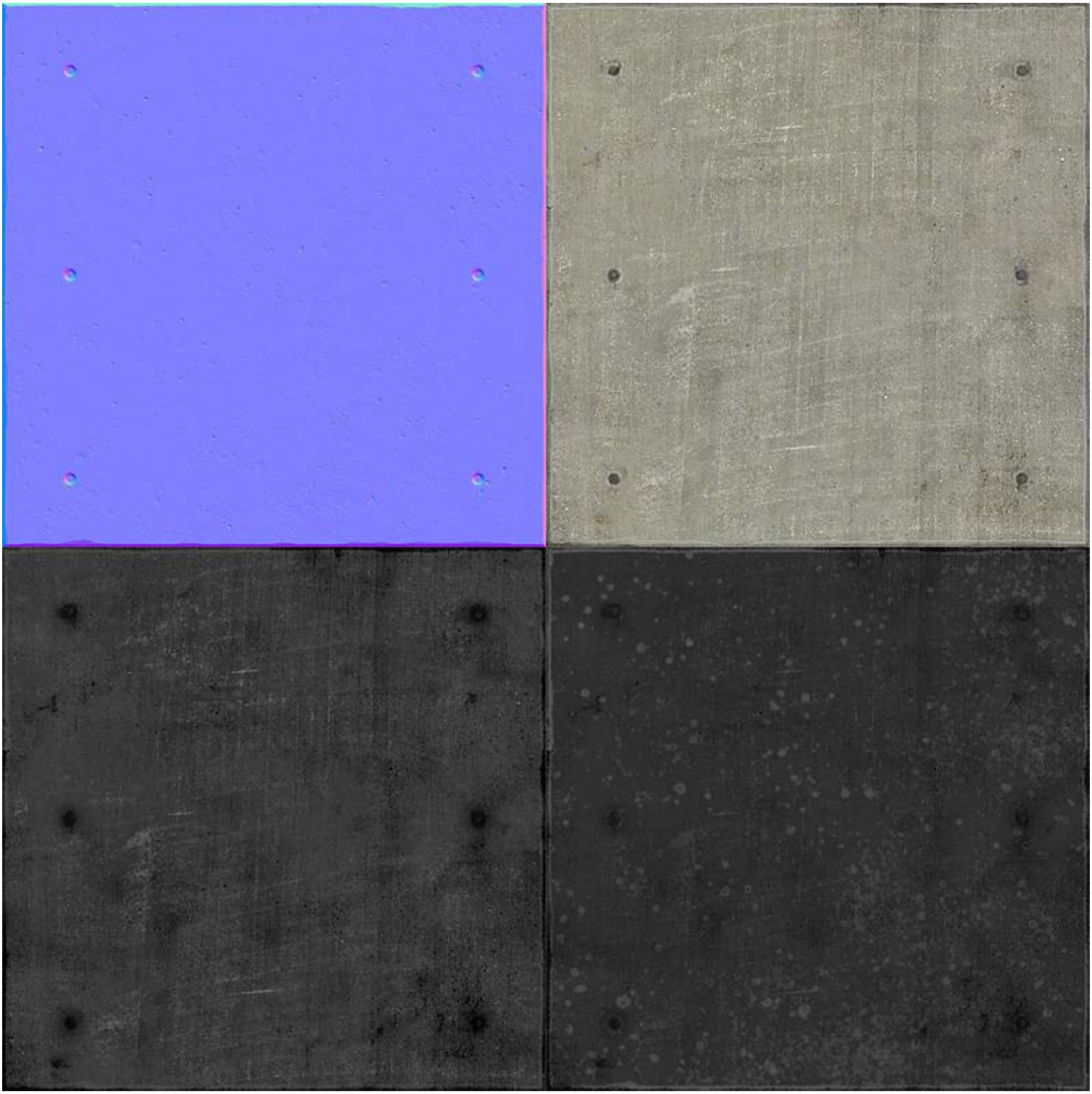
Proceeding with the diffuse I added another image that I masked out using a VERY high contrasted blue channel from the normal map. In fact I believe I blurred it first and then contrasted it a lot using levels until it looked something like in the top left of the image below.



When doing everything in Photoshop it is always the problem with the ambient occlusion, you can get pretty far by using the blue channel from your normal map tho. I did that here and blurred it slightly, contrasted it a bit and painted some additional info like in the drill holes until it turned out to something like below.



Here are all the complete maps. Since I already got some good masks for my layers I used those and played around a bit with the specular and glossiness maps to end up with something like this.



The end result with all maps applied.
Download the .PSD

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