

BRICK WALL TUTORIAL

Tutorial by Philip Klevestav

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INTRODUCTION

Brick walls of different types are very common in games and they can be created in a billion different ways. I will explain in this tutorial how I usually go about a simple standard red brick wall without any sculpting program or 3D application.

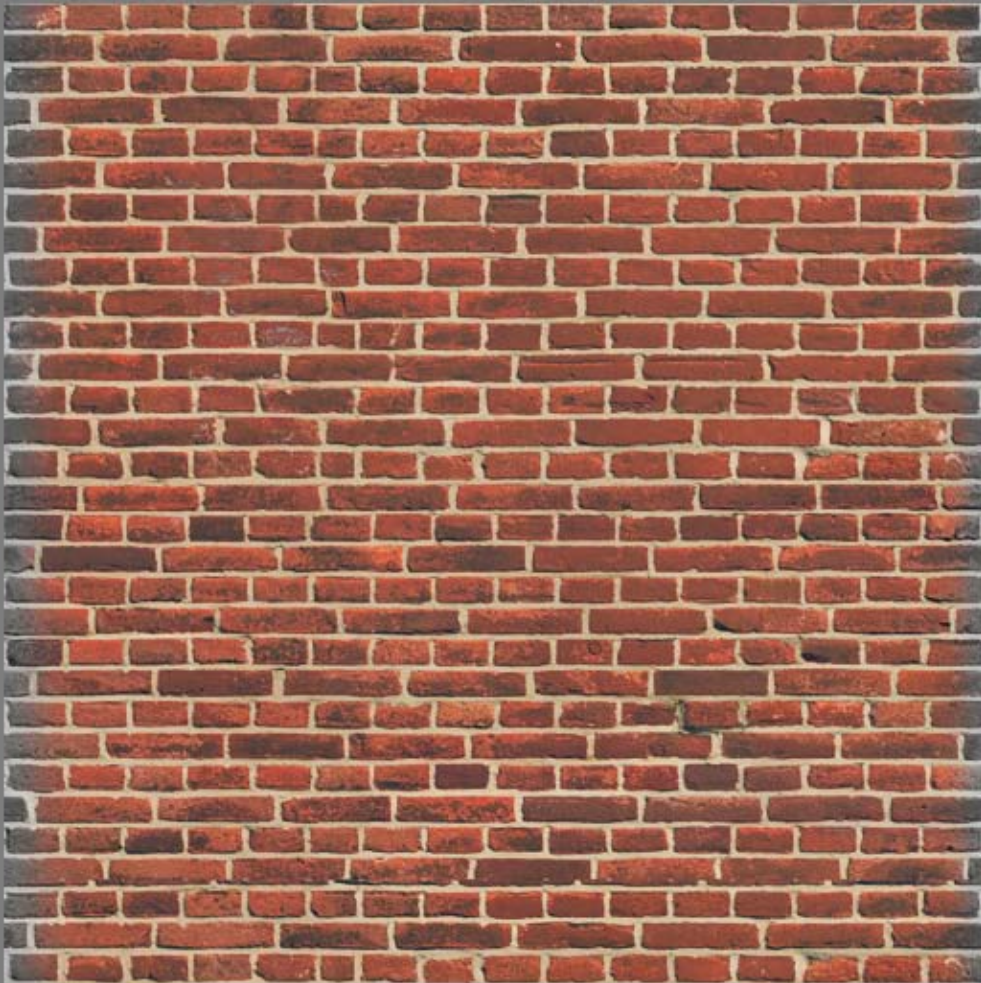
If you are looking for a sculpted brick/tiles tutorial I made one as well, even if that tutorial is made for some larger uneven tiles the principles can be used to create a brick wall such as the one in this tutorial as well.

NORMAL AND DIFFUSE MAP AT THE SAME TIME

What we are going to start with is to extract the seams from the bricks. So if you do not want to start from a photo base, you can just as easily paint this right away. The steps will be the same except the initial steps.

So when basing off an image make sure to crop at edges so the bricks could tile horizontally. I usually try to use a power of two number of vertical brick rows. This does not really matter unless you work with brushes, or you may want to make it easier to cut out bricks if you are to make a destroyed wall or something like that.

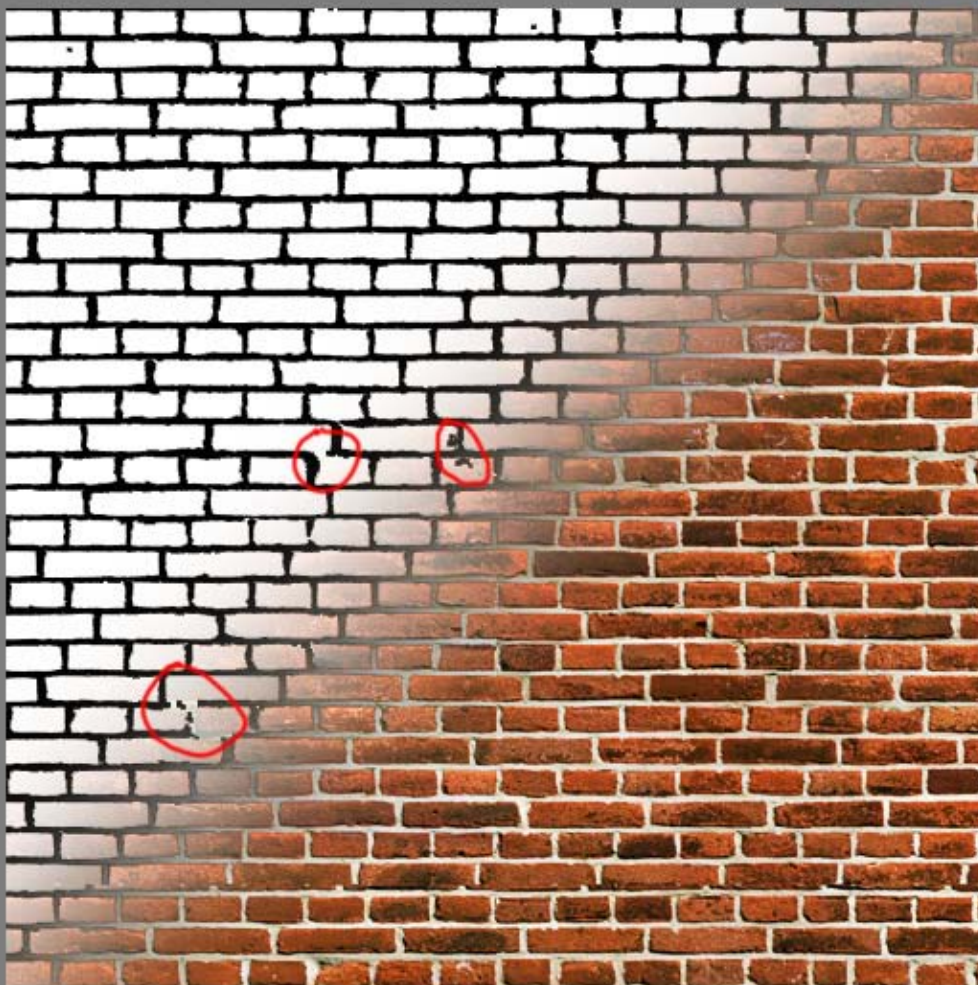
For this one I have 32 vertical rows. I had to move around some rows in order to get the sides matched well. The better you match this right away the less cloning you will need to do later on to cover the seams.



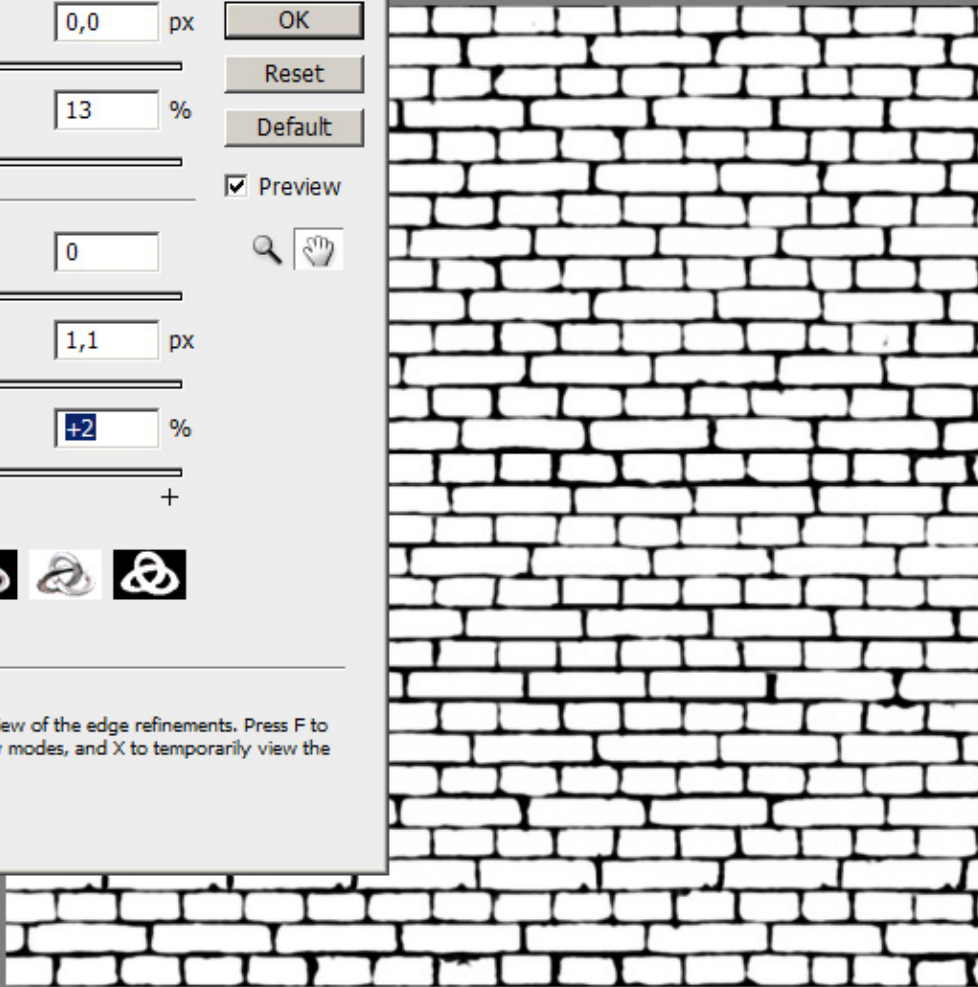
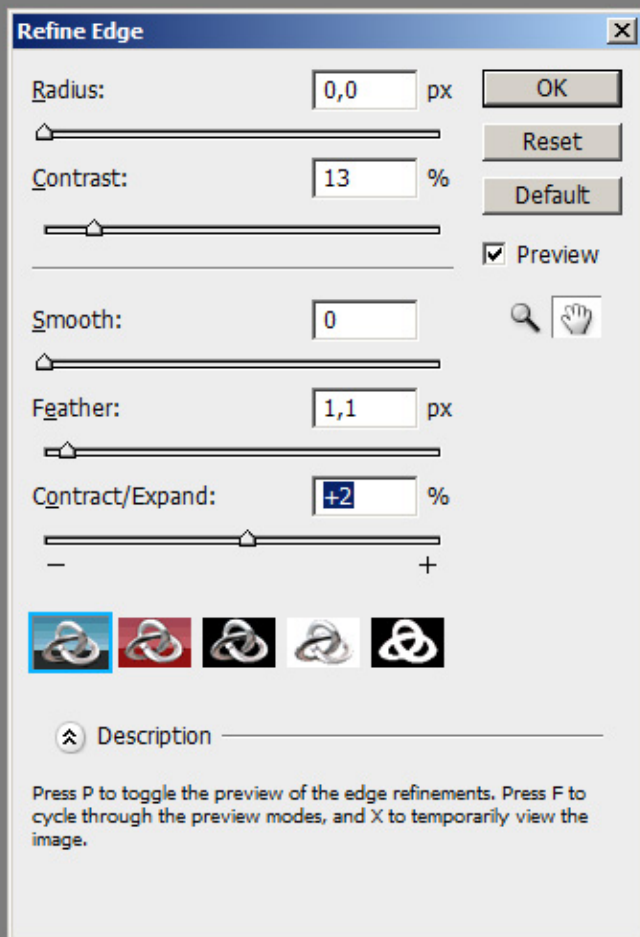
I made a selection of the seams and made a new black layer containing them. In this one it was really easy because of the colors in the image. The

seams were very different from the actual bricks. Sometimes you will not get a good result just using "Select > Color Range" or the "Magic Wand Tool", then you will need to paint out more by hand.

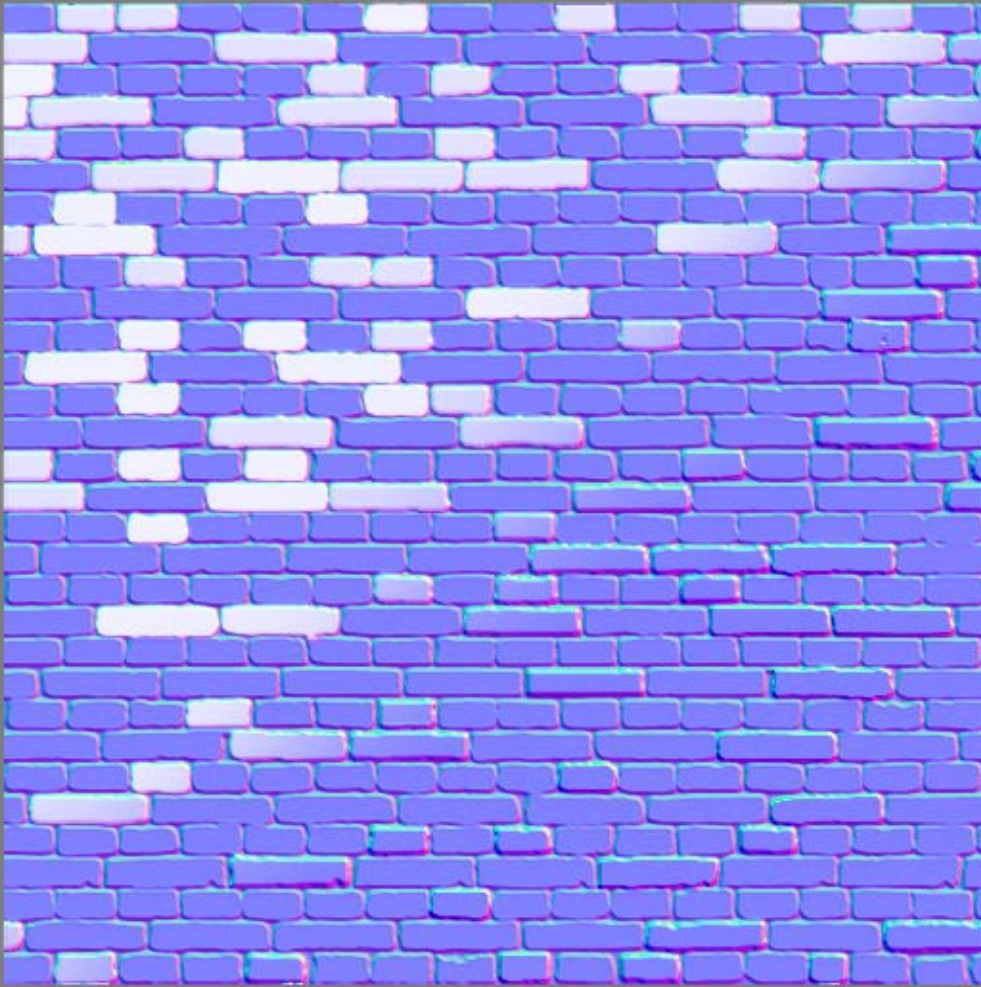
No matter if you do get a good selection from the start you will still need to fix quite some "errors" by hand, I marked things I am going to paint by hand with red.



I ended up painting quite a lot by hand and removing artifacts while also using "Refine Edge". If you look at the image below you can see I have quite a lot of gradient information between the seams and the bricks now which is good when we want to convert this to a normal map.

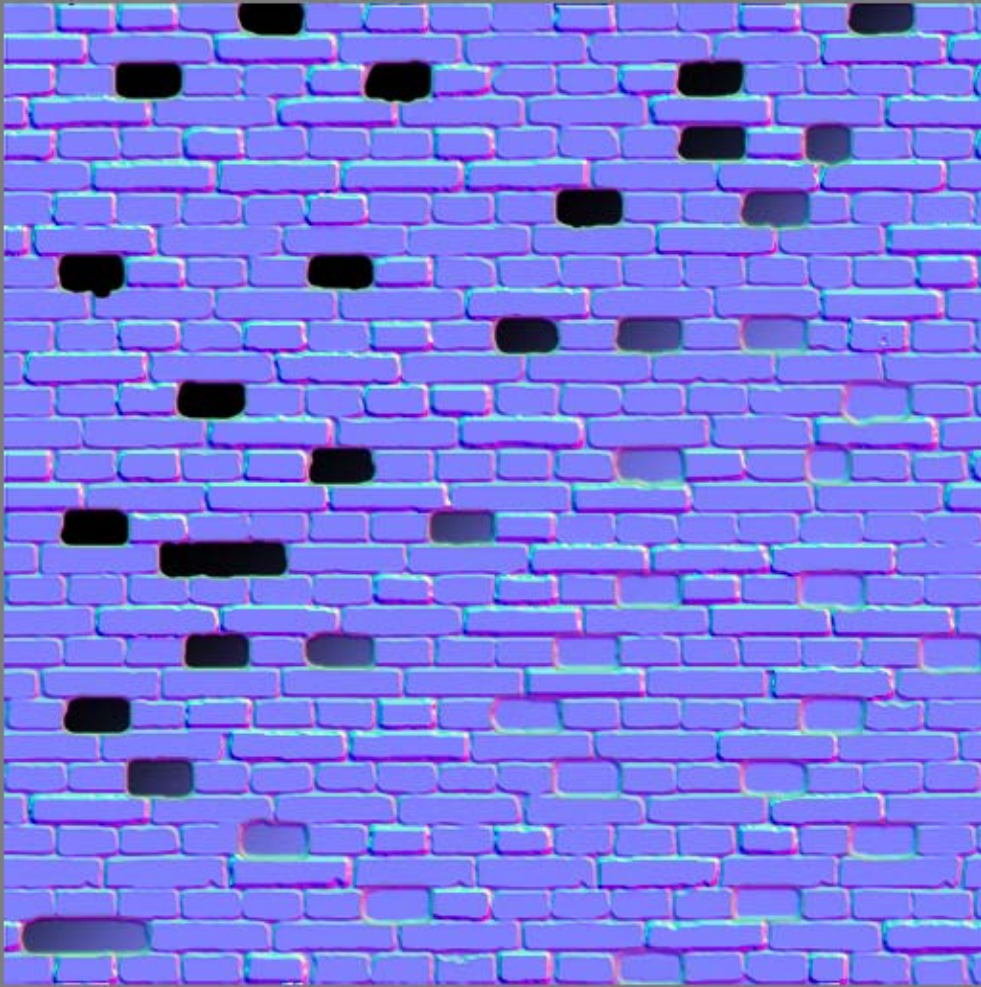


Right after I have converted the above step to a normal map everything is of course very flat since it was essentially just black and white information. What I almost always do now is to create an empty layer and using the bucket tool and check "All Layers" in the top properties. This way I can start filling up certain bricks by just one click. So start doing this on various bricks. If you fill up an edge brick remember to fill the same brick on the other side to not mess the horizontal tiling up. When you feel done, just copy the layer, flatten the original to a black background and use the normal map filter. Now mask the result with your layer copy.

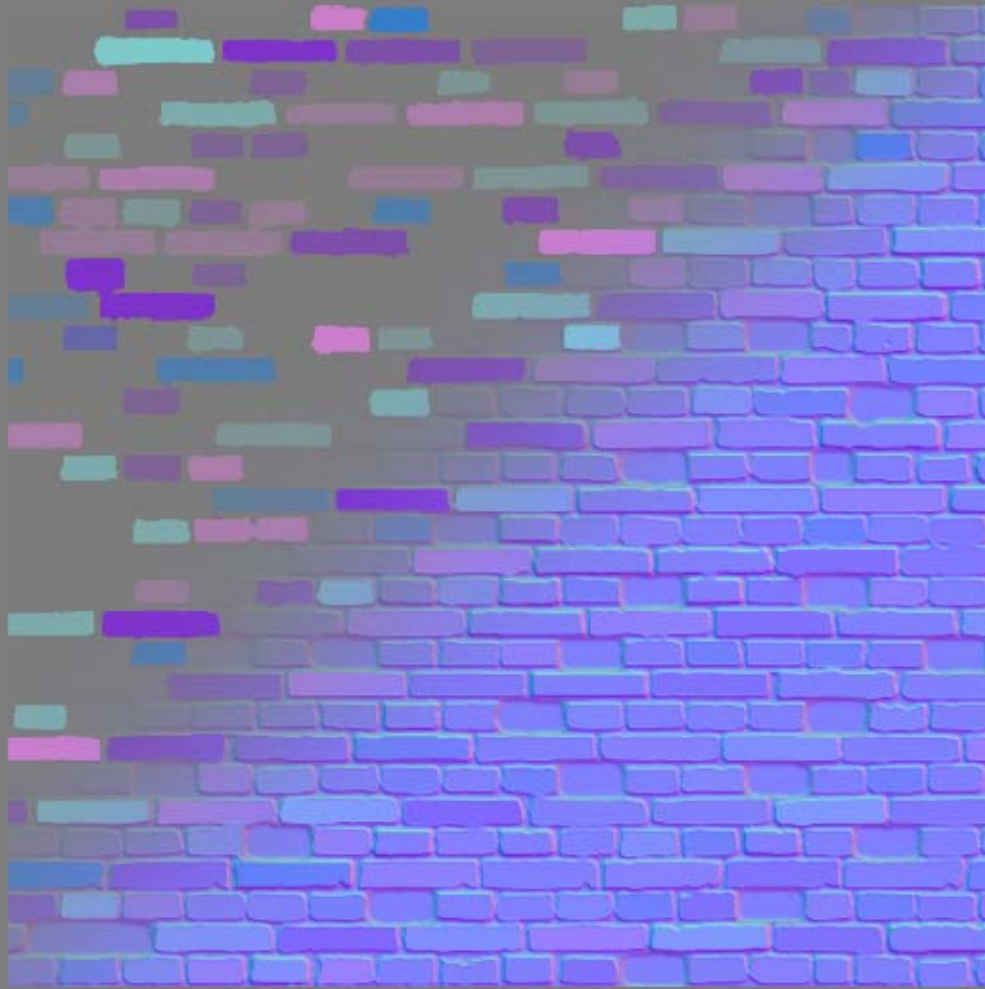


Create a new empty layer and do the same procedure, only now you will need to extend your selection a bit. For this you can use "Refine Edge" again when you are done filling up new ones. I made them black right away. The same thing now, create a copy, flatten, generate normal and mask the result with your copy.

Now you have both bricks pushed out and pushed in. You can of course play around a lot more with this adding more levels of pushed in and pushed out bricks to exaggerate the effect. You may also want to fix the edges a bit more square, but that can easily be done later on.



Next step is to add angle information. I do this the same way as the two steps above. Only now I am using top, down, left and right (for example RGB Up 127,255,127/Down 127,0,127/Left 255,127,127/ Right 0,127,127) normal angle information. I used a pretty low opacity to be able to click more than once on certain bricks to create a stronger angle on some bricks. I then just overlay this result at a pretty low opacity.



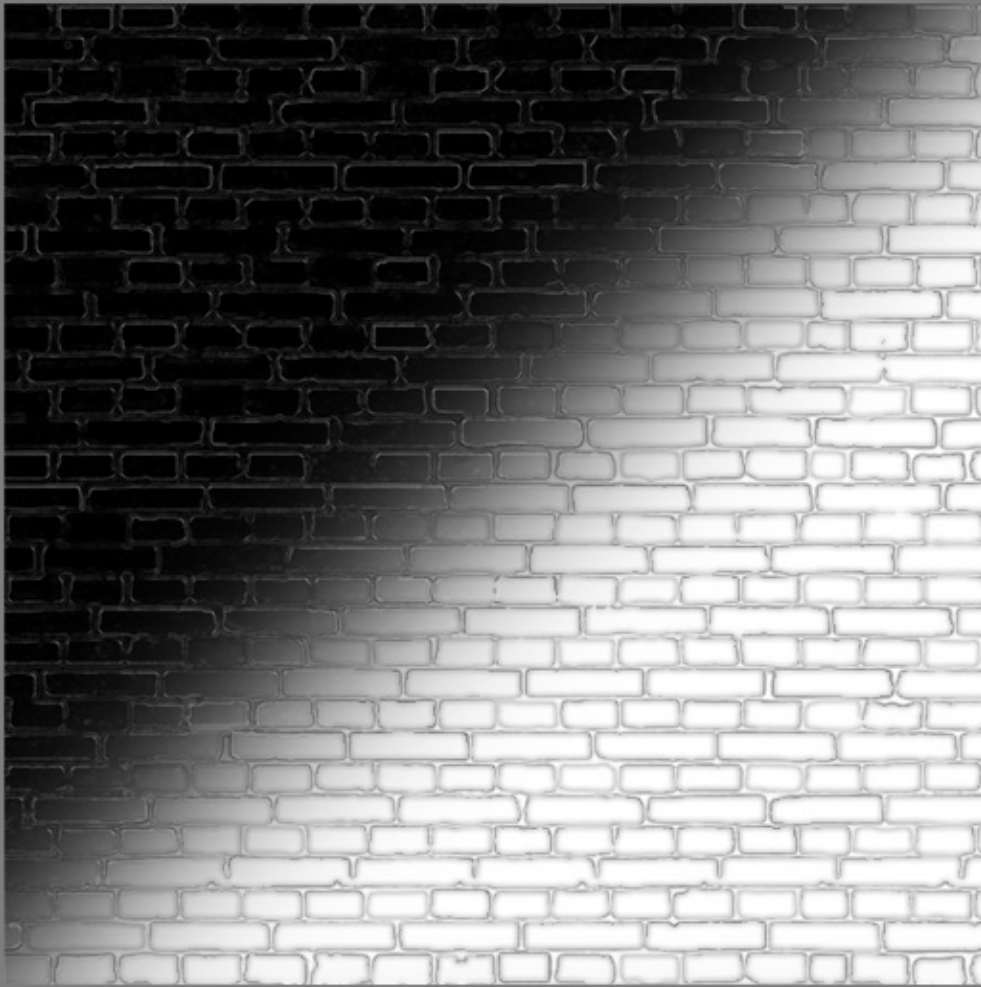
The diffuse shaped up quickly since I already had a base that I color/contrast adjusted and smoothed out a bit. I then added two variation materials, one overlayed and one with normal blending mode but masked using "Select > Color Range" when creating the mask. The masked images does not have to, or actually should not be, another brick image since the stones will not be aligned with your stones then. Better use concrete and such materials in general to overlay and vary up the diffuse/spec/gloss.

I used another concrete image for the seams, since I already have masks for that it is really easy to adjust anything you want on the bricks, ranging from brightness variation on certain bricks to the seams hue and brightness.

You can see some variations I did with the bricks in the top left using the information I had from layers in the normal map.



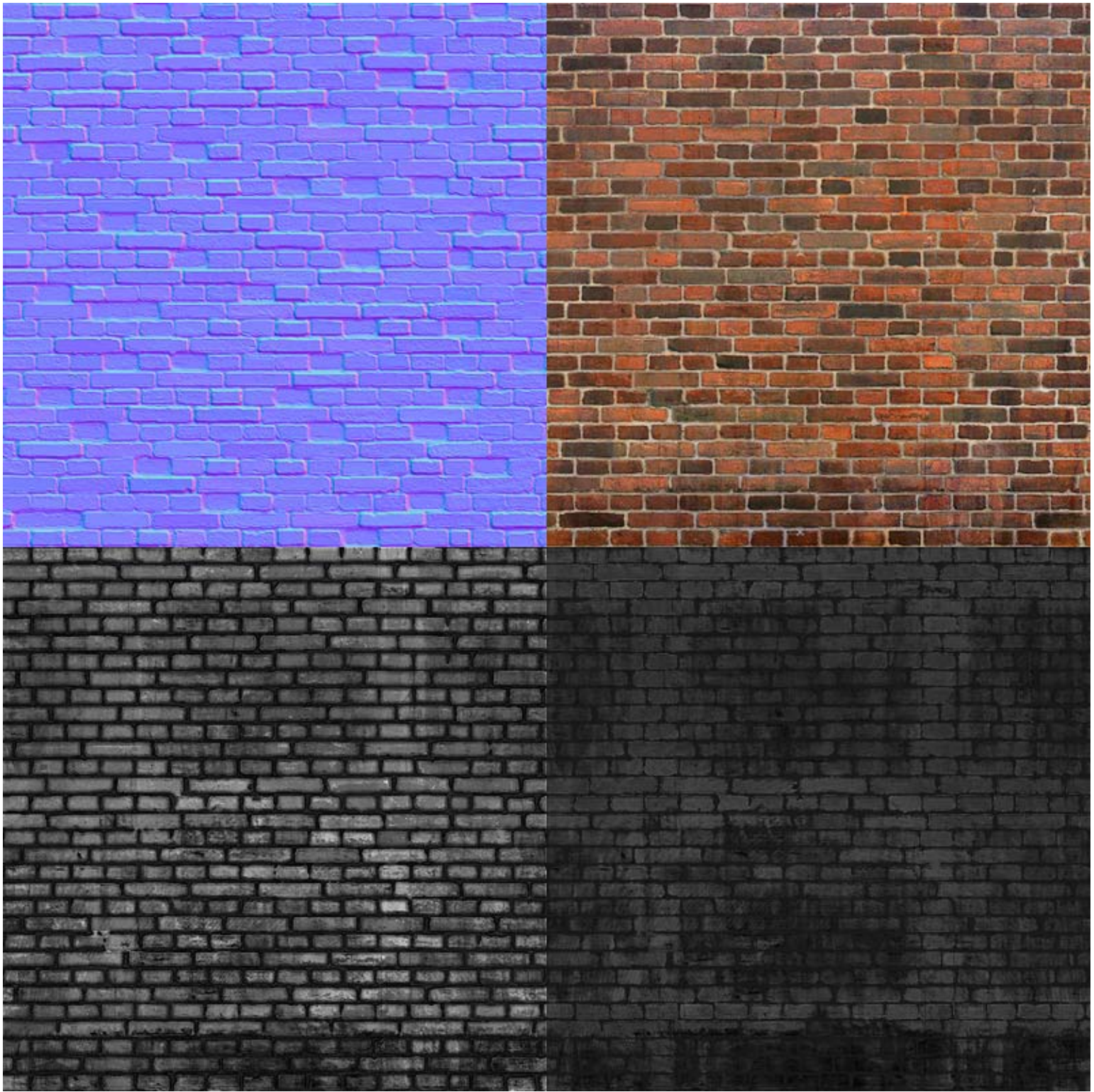
The "ambient occlusion" was faked by using the normal map blue channel with some tweaking. I also used the blue channel to create an edge definition map that I screen on the texture to define the bricks a bit better.



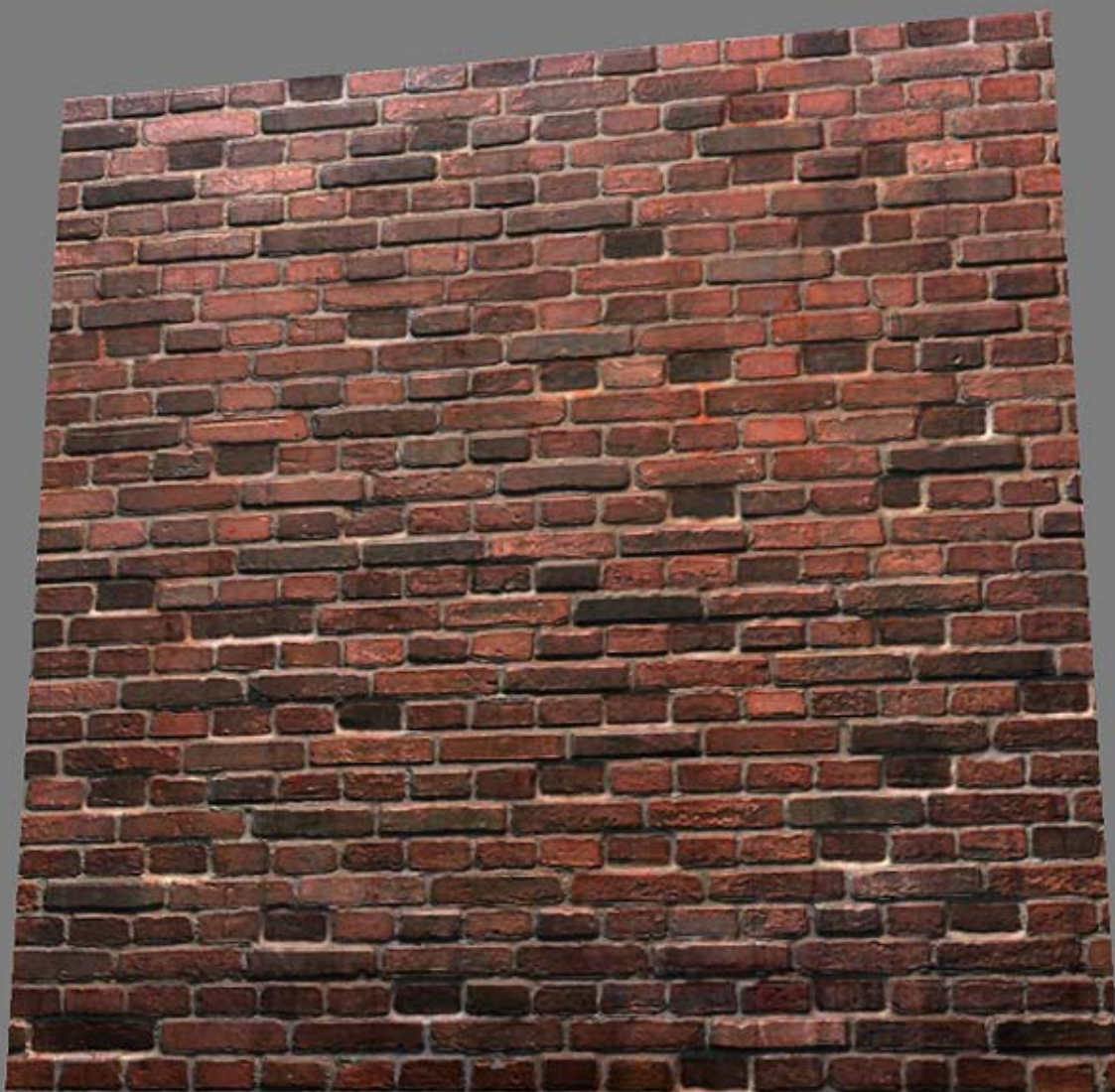
The normal map got a high/mid frequency overlay from the original image used to create the bricks.

The diffuse can easily be adjusted to various looks and type of bricks, an easy way to totally change the look on a brick wall is to play around with the seam brightness.

In the specular I killed the seams and added a slight darkening around the edges and the glossiness map got a bit more exaggerated fields of dark to break up the texture a bit. All these masks and overlays are just the same as in the diffuse with other settings and leveling.



The end result with all maps applied.
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