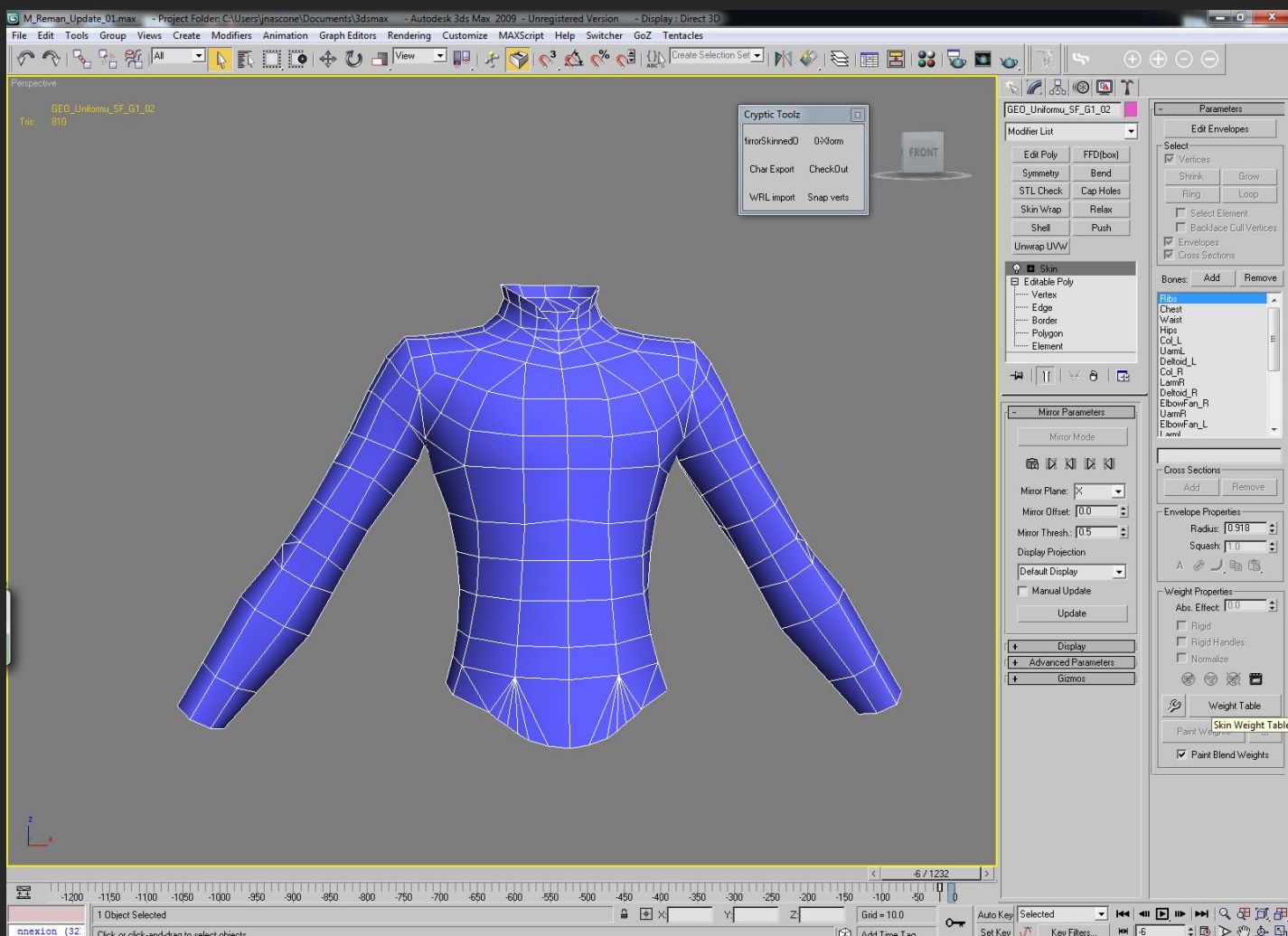
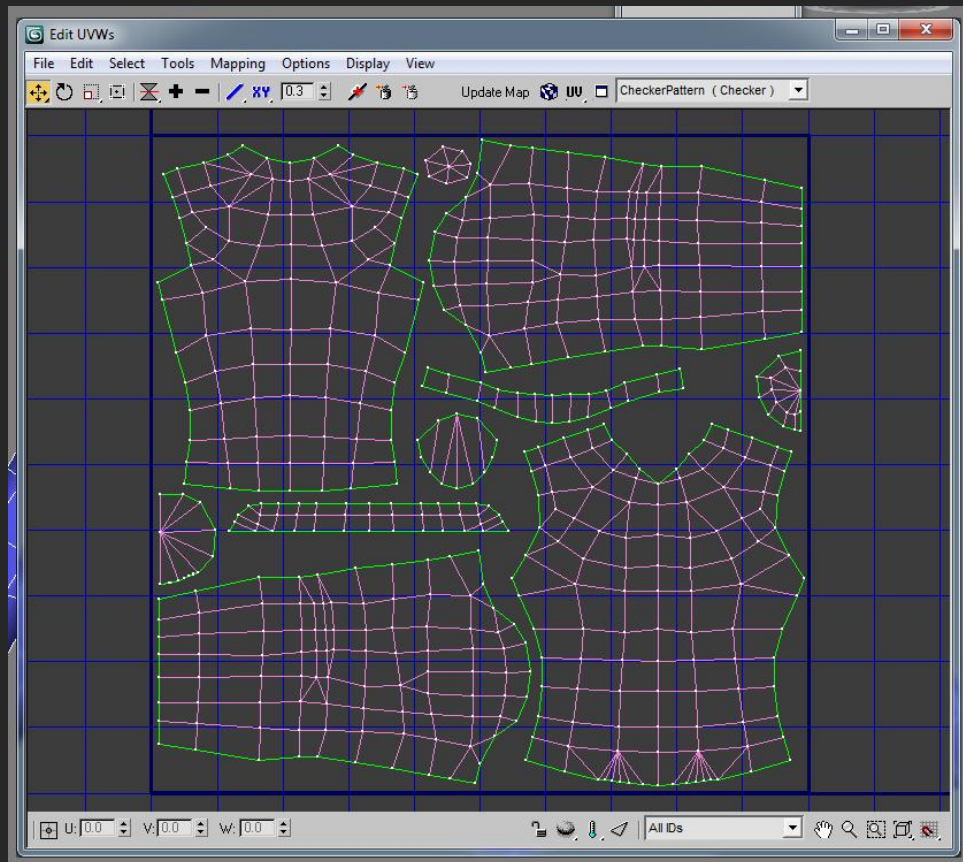


Tutorial for Sculpting on UV's in Zbrush

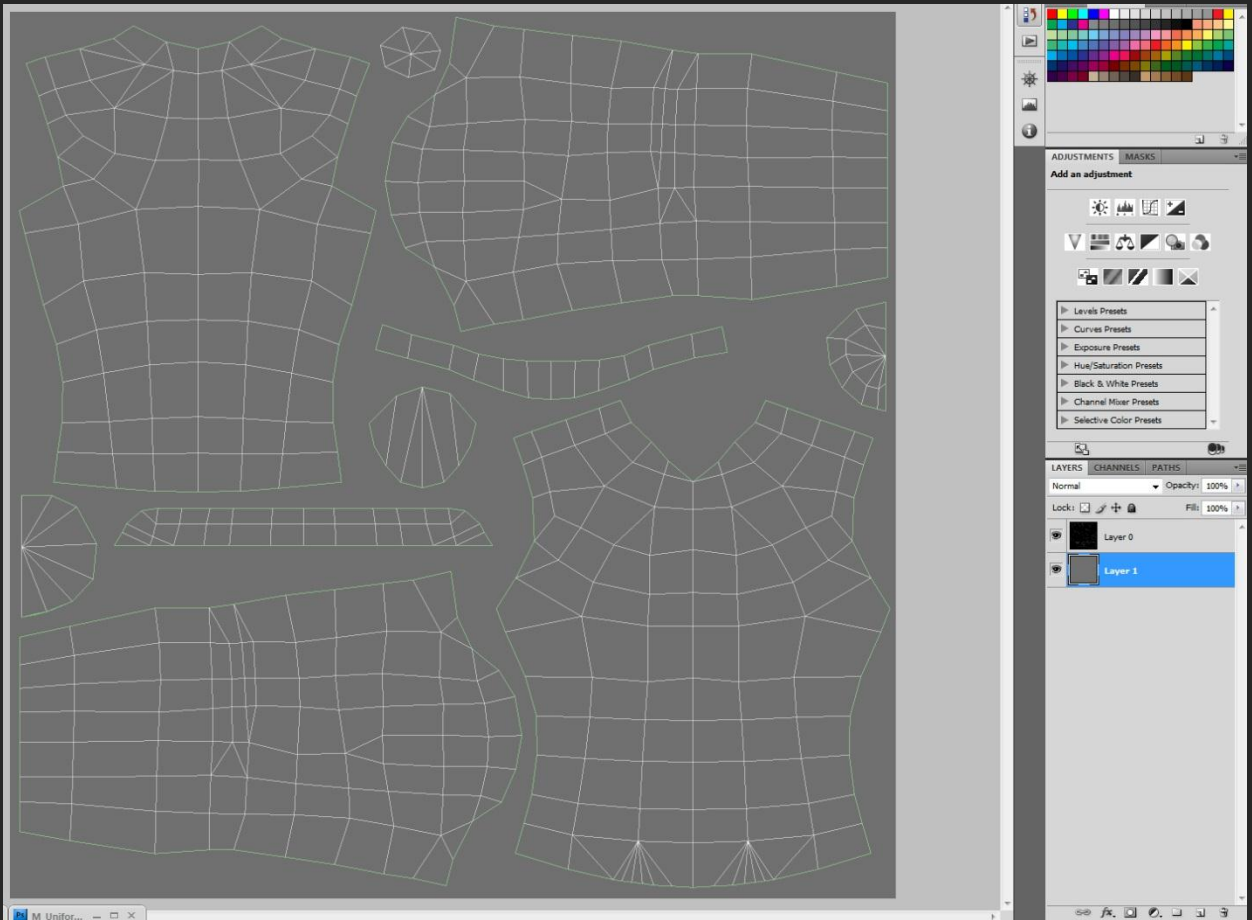
The goal of this tutorial is to show how you can quickly create & edit a normal map without baking and without having to use Photoshop filters and gradient alone (which tend to give a volume-less, procedural, flat looking normal map).



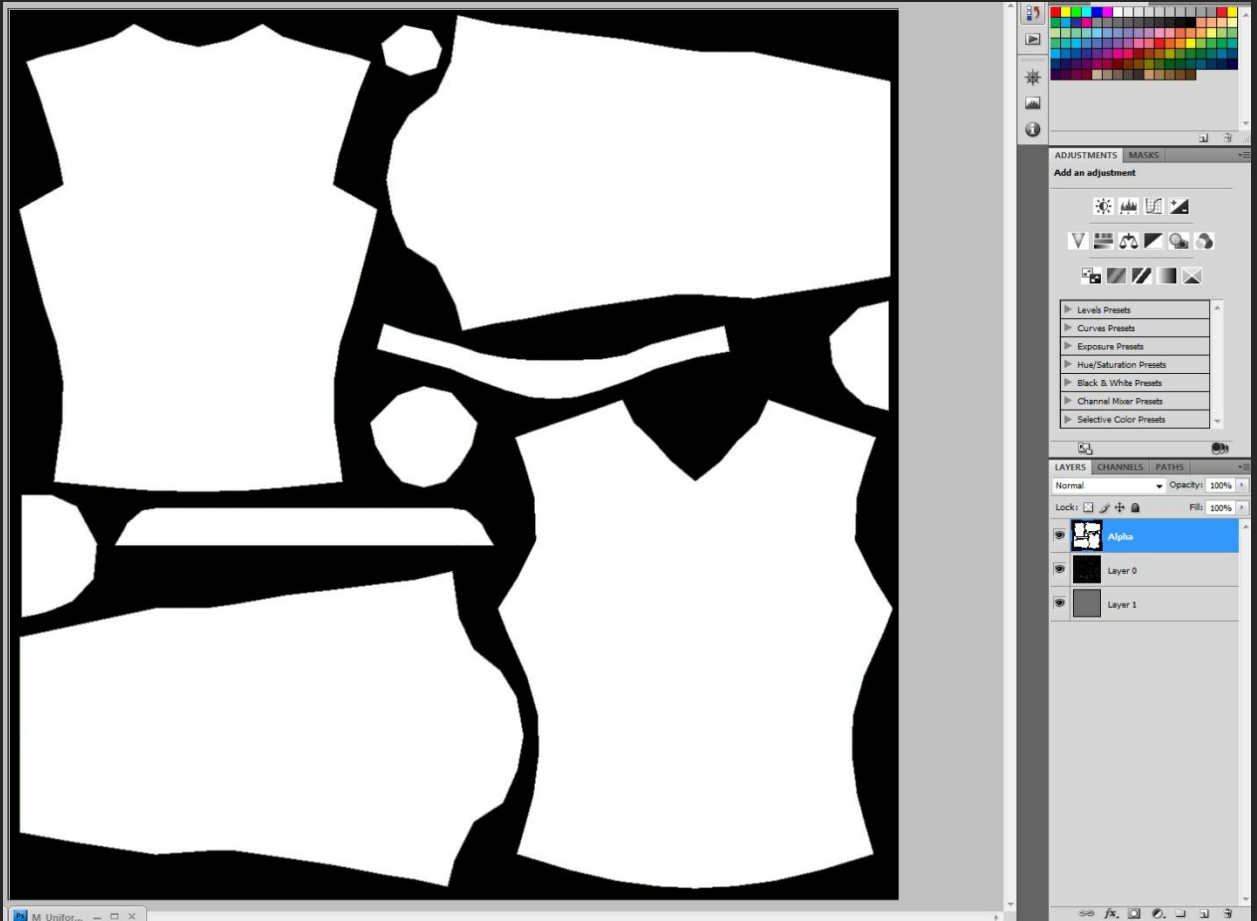
1. Import your desired poly mesh into your scene. Make sure the poly mesh is unwrapped and has clean UV's.



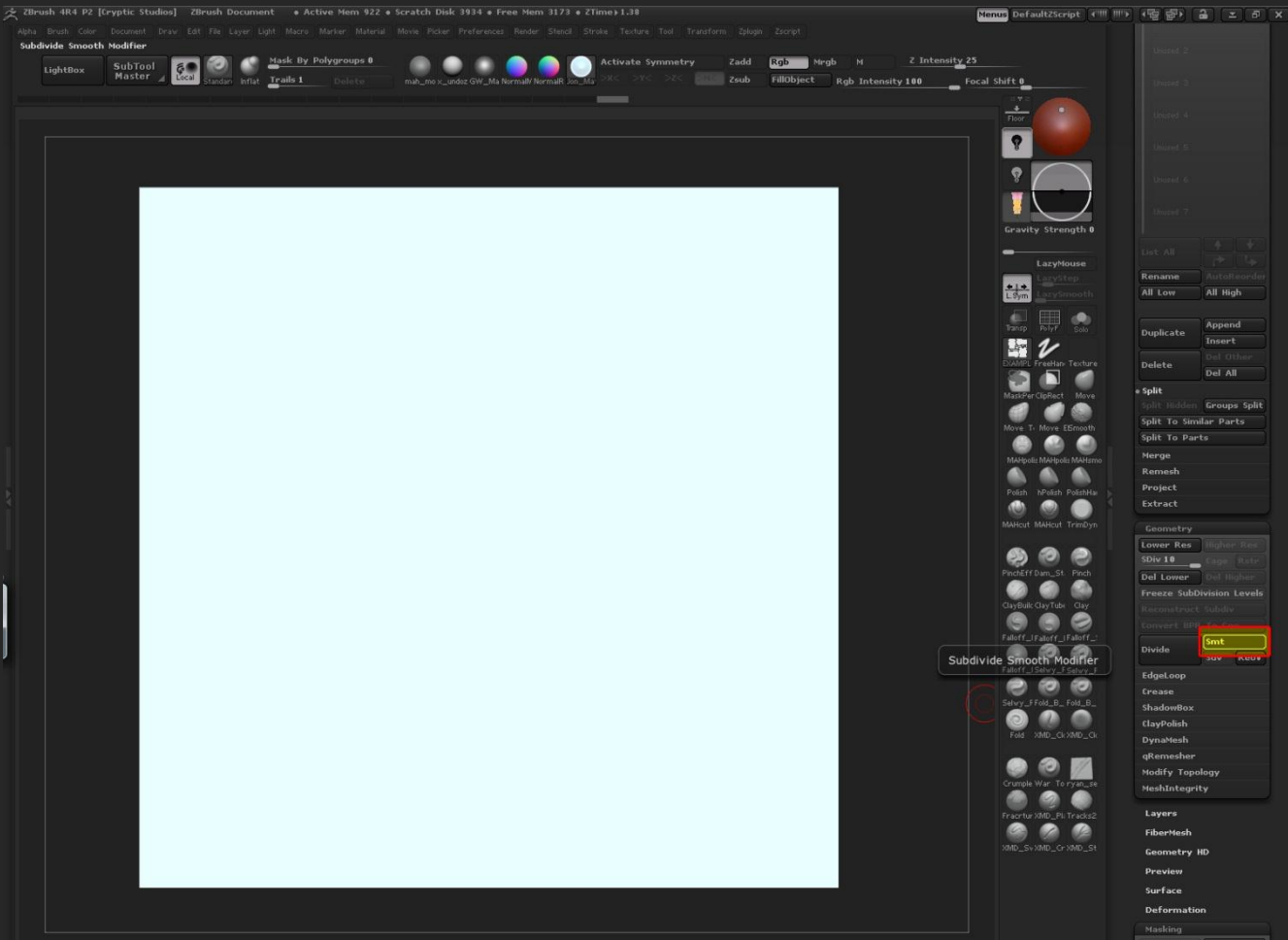
2. If you're using 3ds Max, apply the modifier "Unwrap UVW" to your poly mesh. You now need to render out an image of UV layout for the mesh. Go to Edit>Render UVW Template. Save your desired size (I prefer 1024 or 2048 for a sharper image)
3. Now create a new "Plane Object Primitive" and make sure it is perfectly square with zero to one Uv's. Export that poly mesh out as an Obj which we will later import into Zbrush.



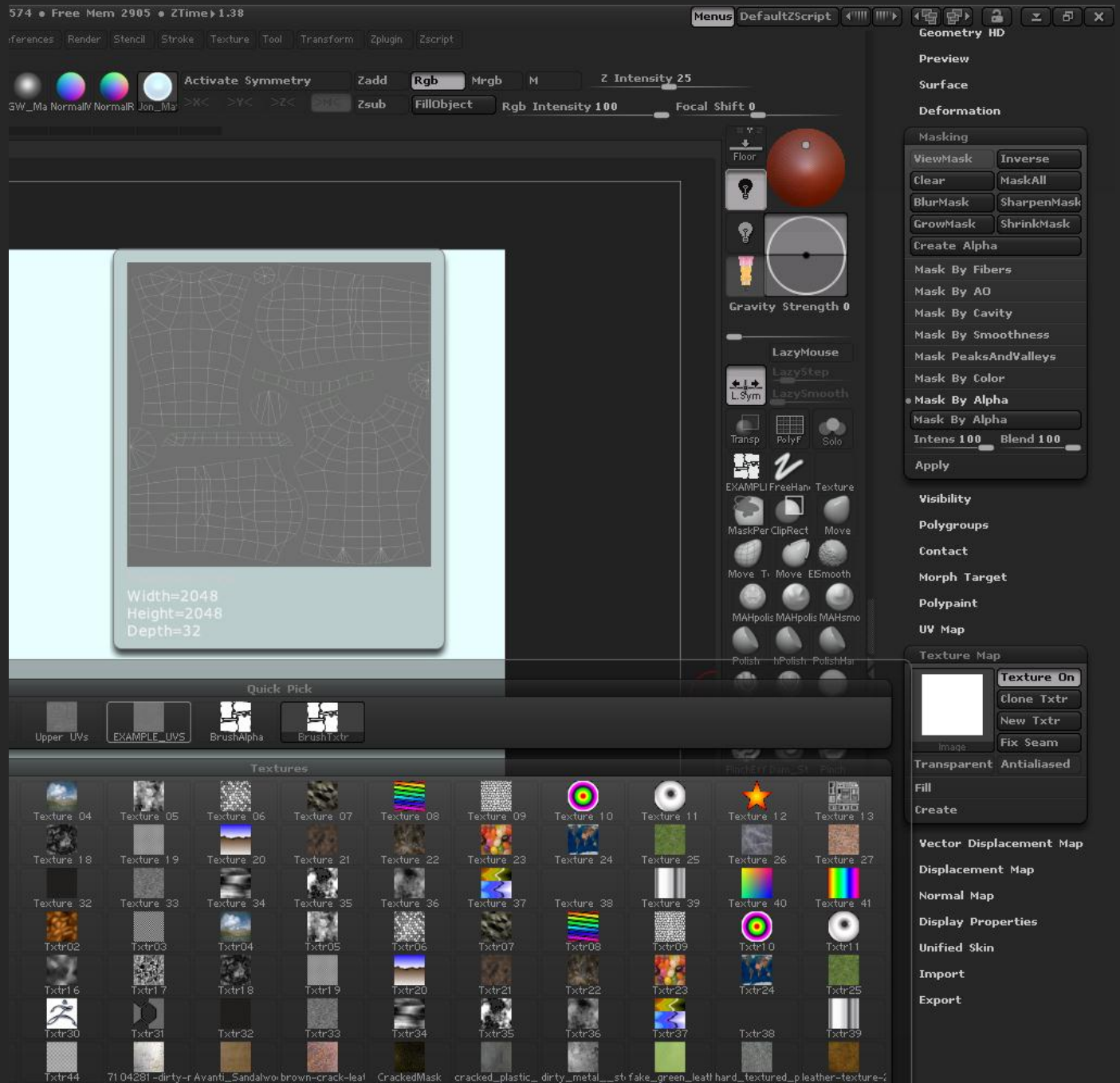
4. Open your exported UVed image in 2d painting application, in this case Photoshop. For ease of visibility make your top layer the UVed image with it set to screen. Create a second layer and fill it with 50% grey set to normal. Save your new UV's image.



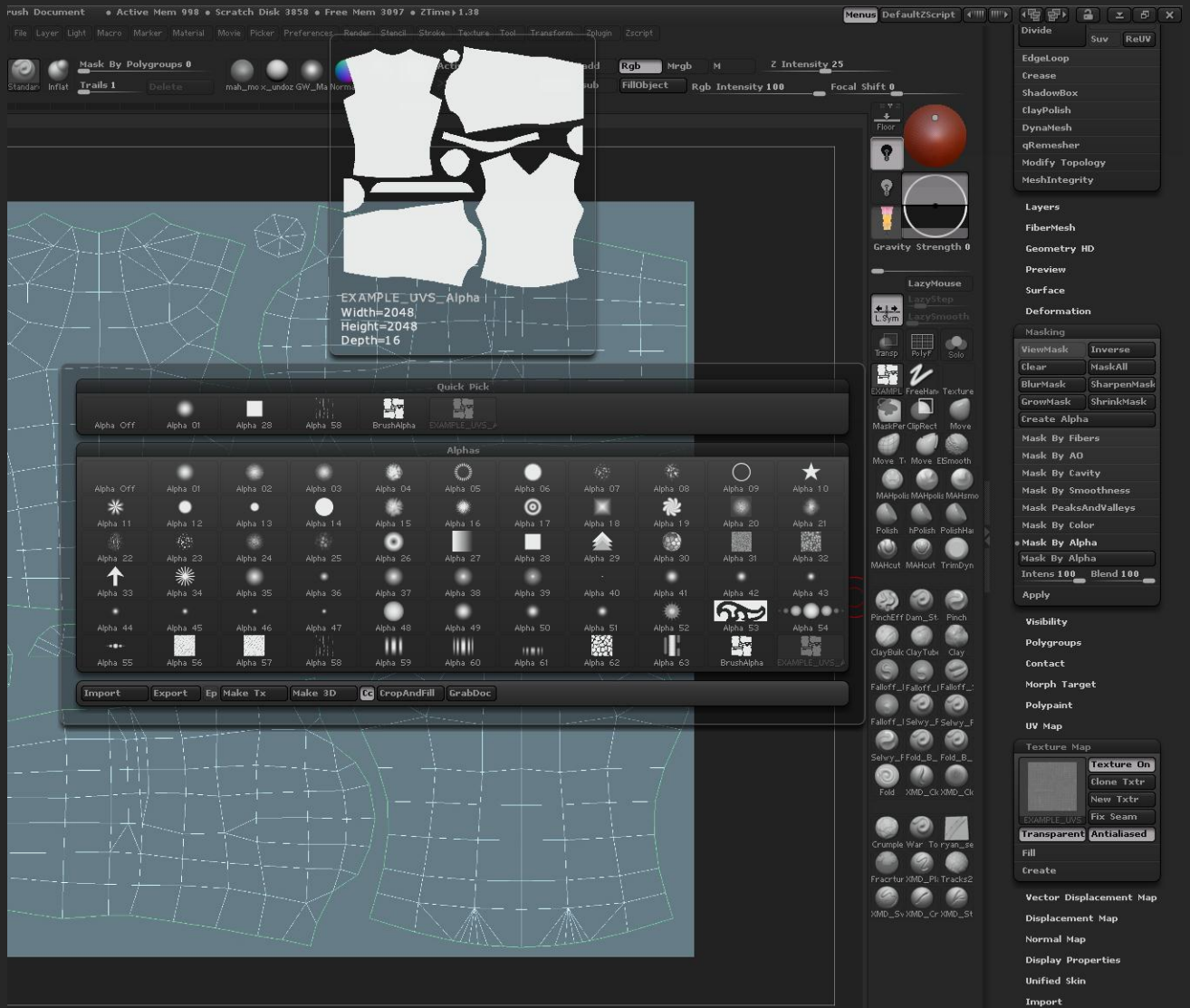
5. Now we will create an alpha which we will later use in Zbrush. To do this go to your top layer and w/ the magic wand tool select the negative space of your UV shells. With that selected, create a new layer on top (here labeled “ALPHA”) and fill it in black. Invert the selection and now fill it white. Your final result should look similar to in image above. Save your alpha image and open Zbrush.



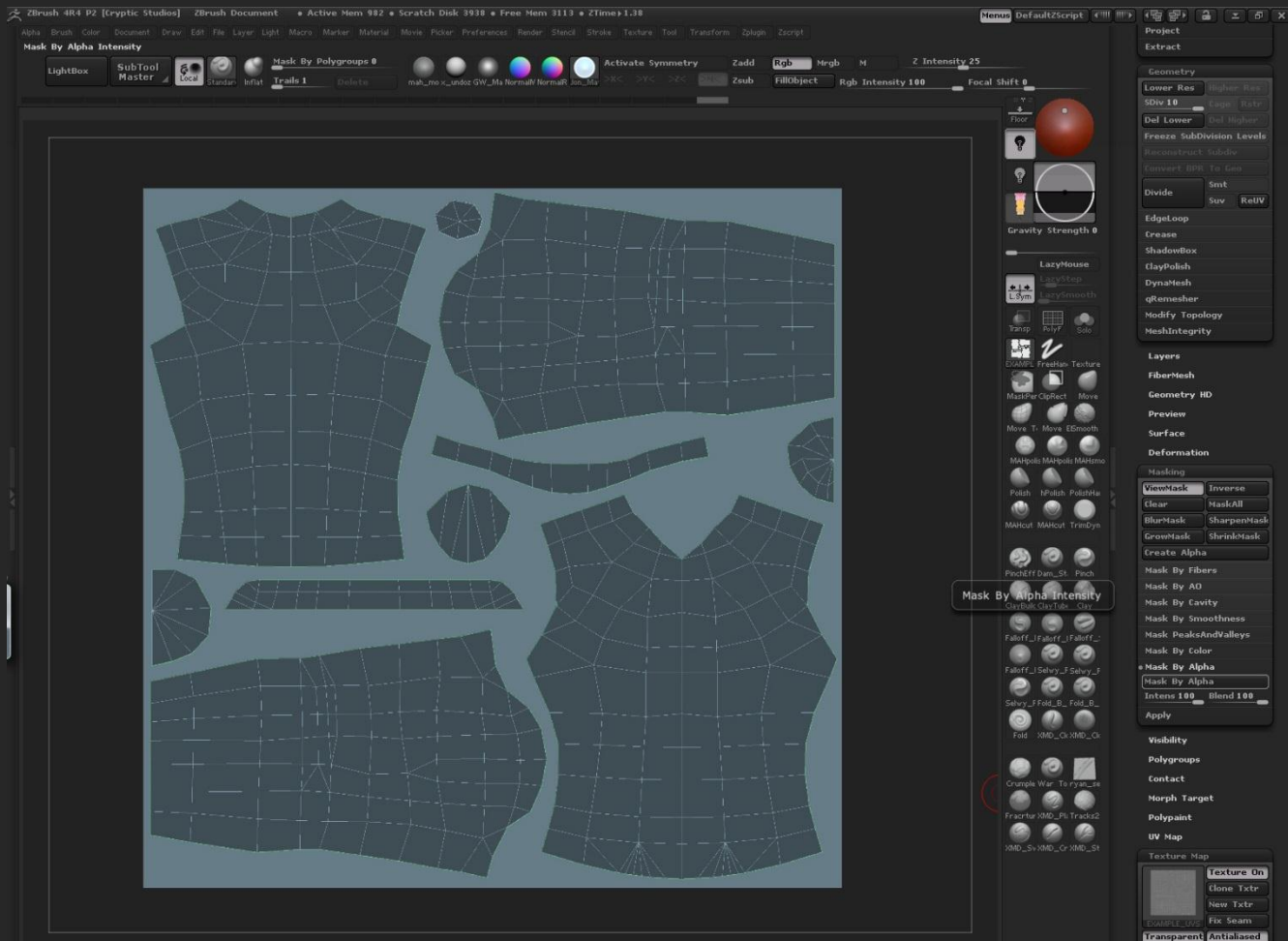
6. Once in Zbrush open up tool bar and import your poly mesh plane OBJ. Now we want to divide up in subdivision this plane to get more resolution. First within the “Tools” bar menu open the geometry tab and deselect the button SMT (it will be on by default). This button will smooth as you divide up, and we don’t want that for best results. After that button is turned off divide as high as you can, in this case my plane with to subdivision 10.



7. Import the UV map we made in Photoshop as a texture in Zbrush. To do so click on “Texture Map” under “Tools” and click on Image>Import> “pick your UV map”. Now select your UV map image and click “Texture On”. You should now see the texture applied to your plane. If you ever want to see the plane without the texture on it just click on and off the “Texture On” button.



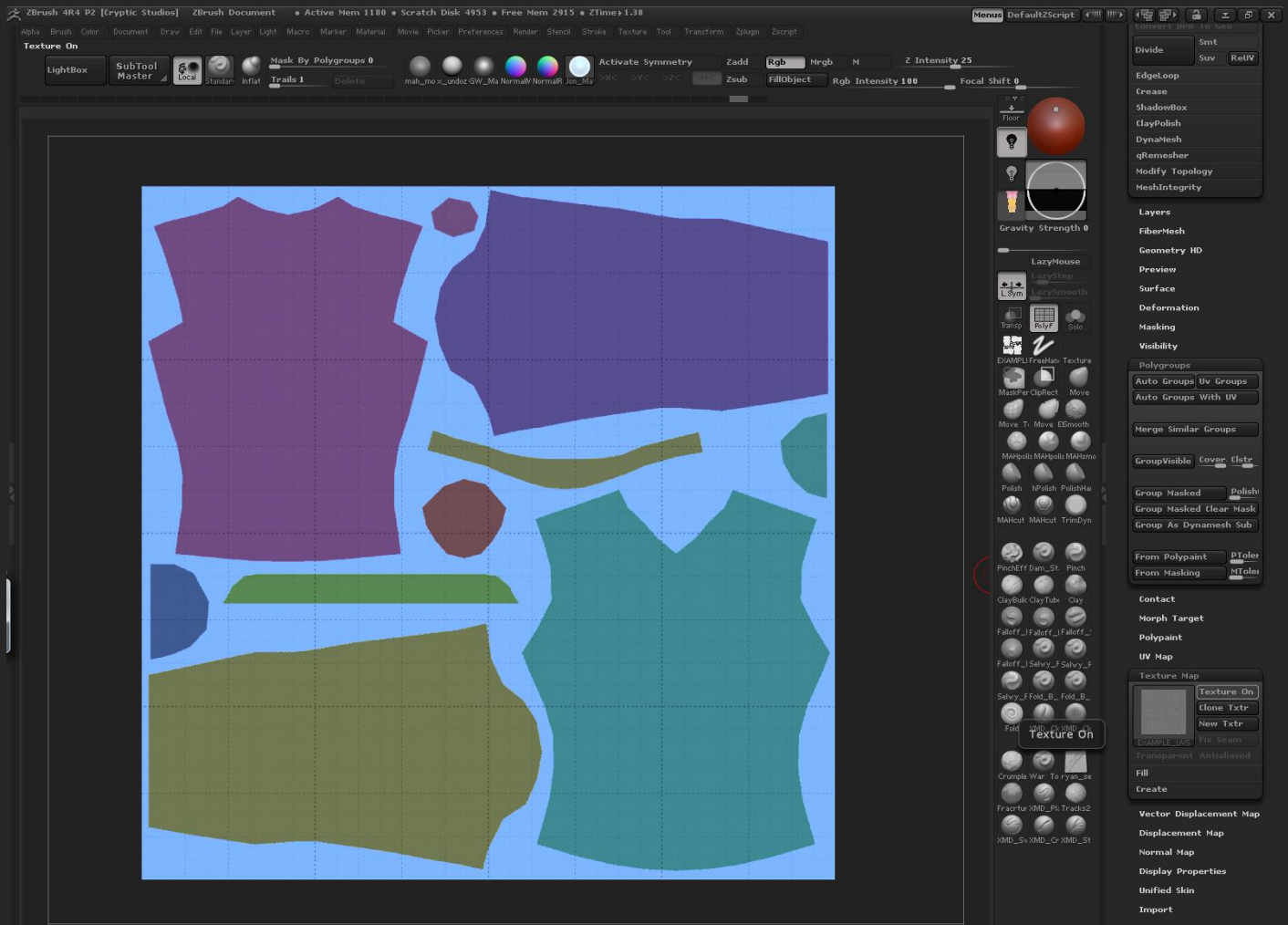
- Now that we have the texture applied to our plane we need to create “Polygroups” for the UV shells. This will help isolate parts of the texture, as well as make using “locale symmetry” possible when sculpting on the plane. To do this we will click on the “Alpha” window >import> “pick your Alpha map”.



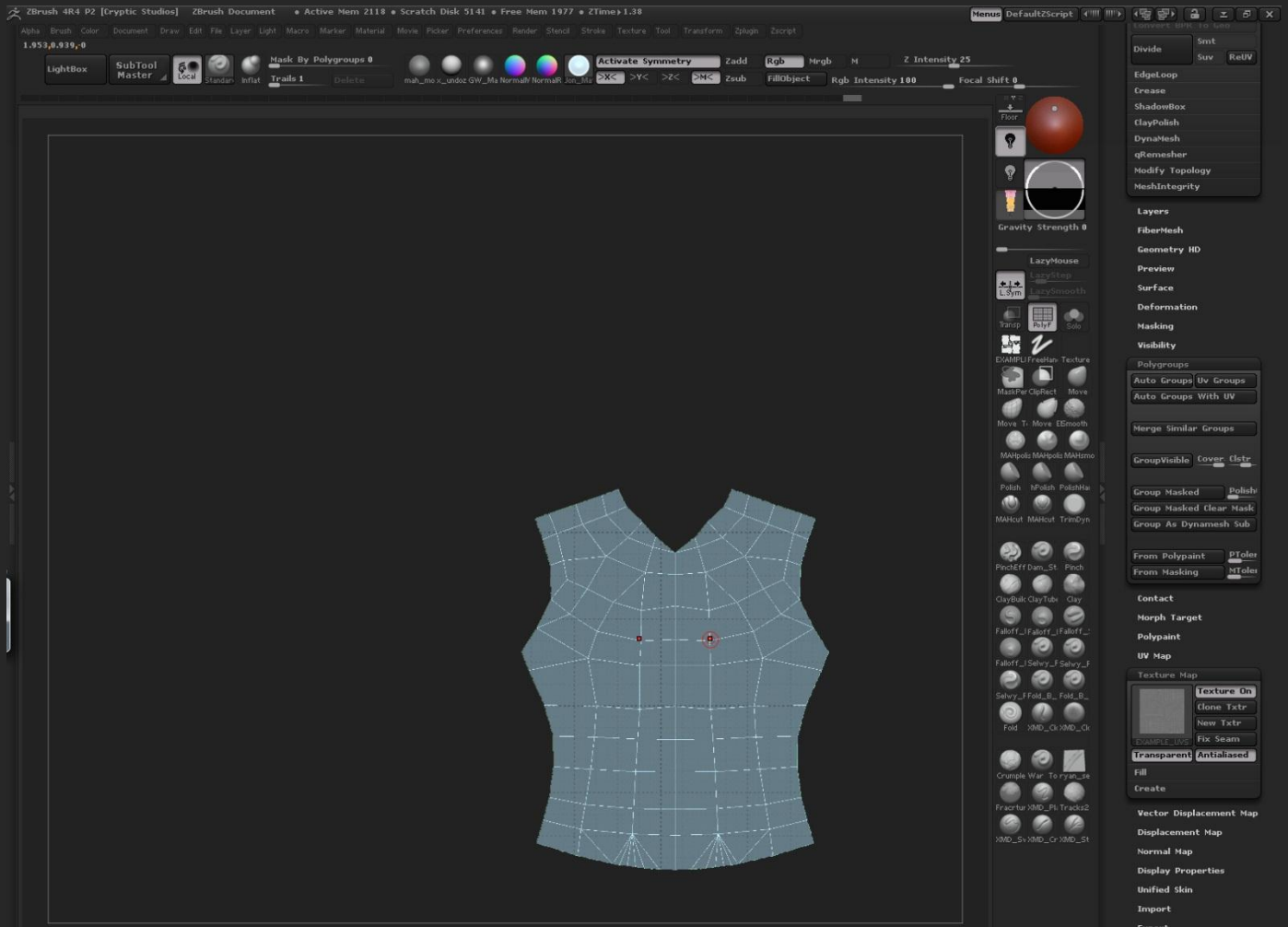
9. Now we will start the process of converting the mask into polygroups. Under “Tools” select “Masking” and then click the “Mask By Alpha” button.



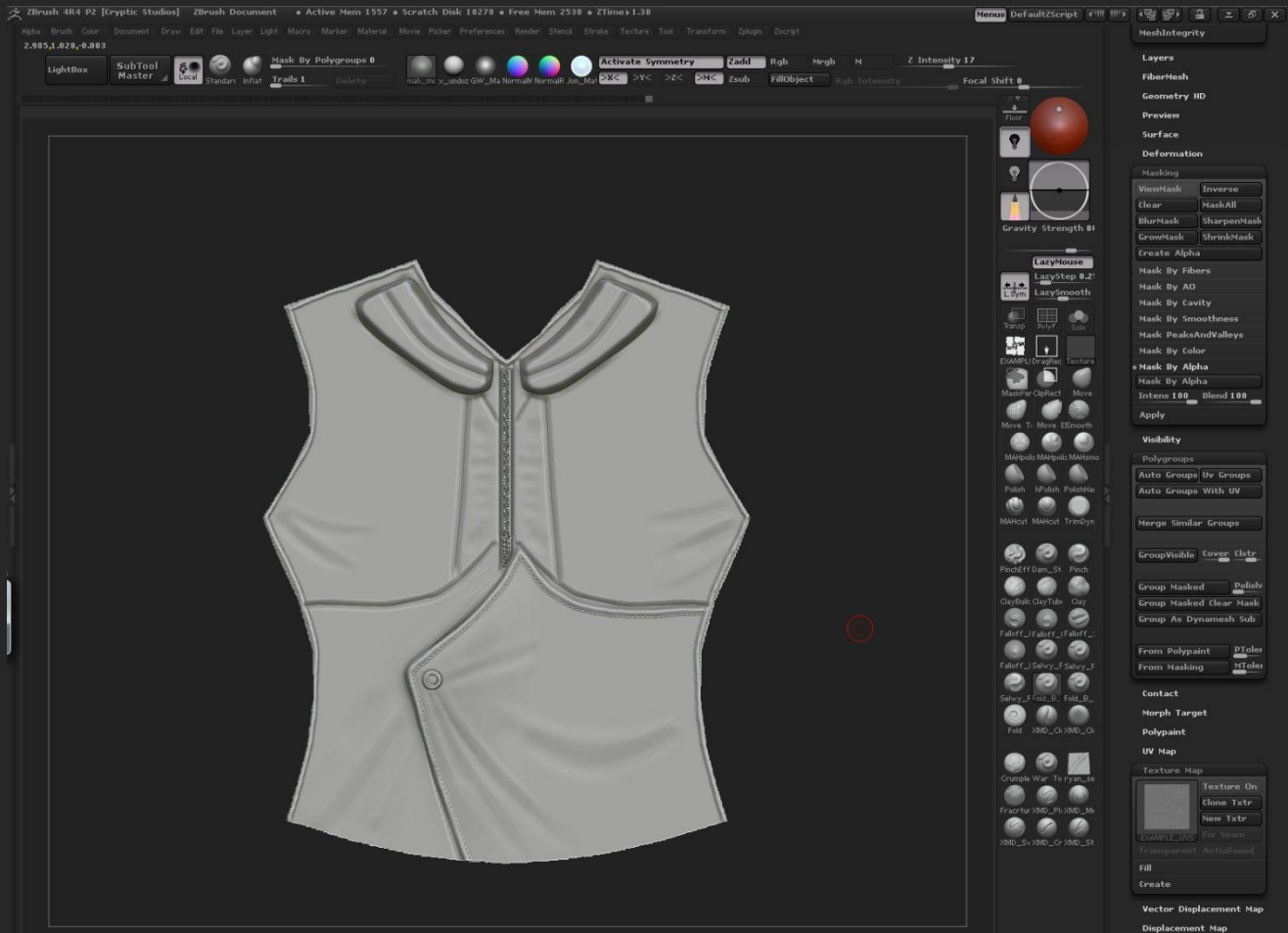
10. While masked, under “Tools” click on “Polygroups” then “From Masking”. When that’s done click on the “Transform” on the top menu and select “Draw Polyframe” (Shift + F). You should now see UV’s group into two polygroups, one for the UV shells and one for the negative space. We now need to separate them into separate groups. To do this hold down SHIFT+CTRL and LEFT mouse click on the inside of any piece of the UV shell. Once that’s done click “Auto Groups” (This will now randomly create separate polygroups for each piece so you can select them individually). This may take some time since out divisions are at 10.



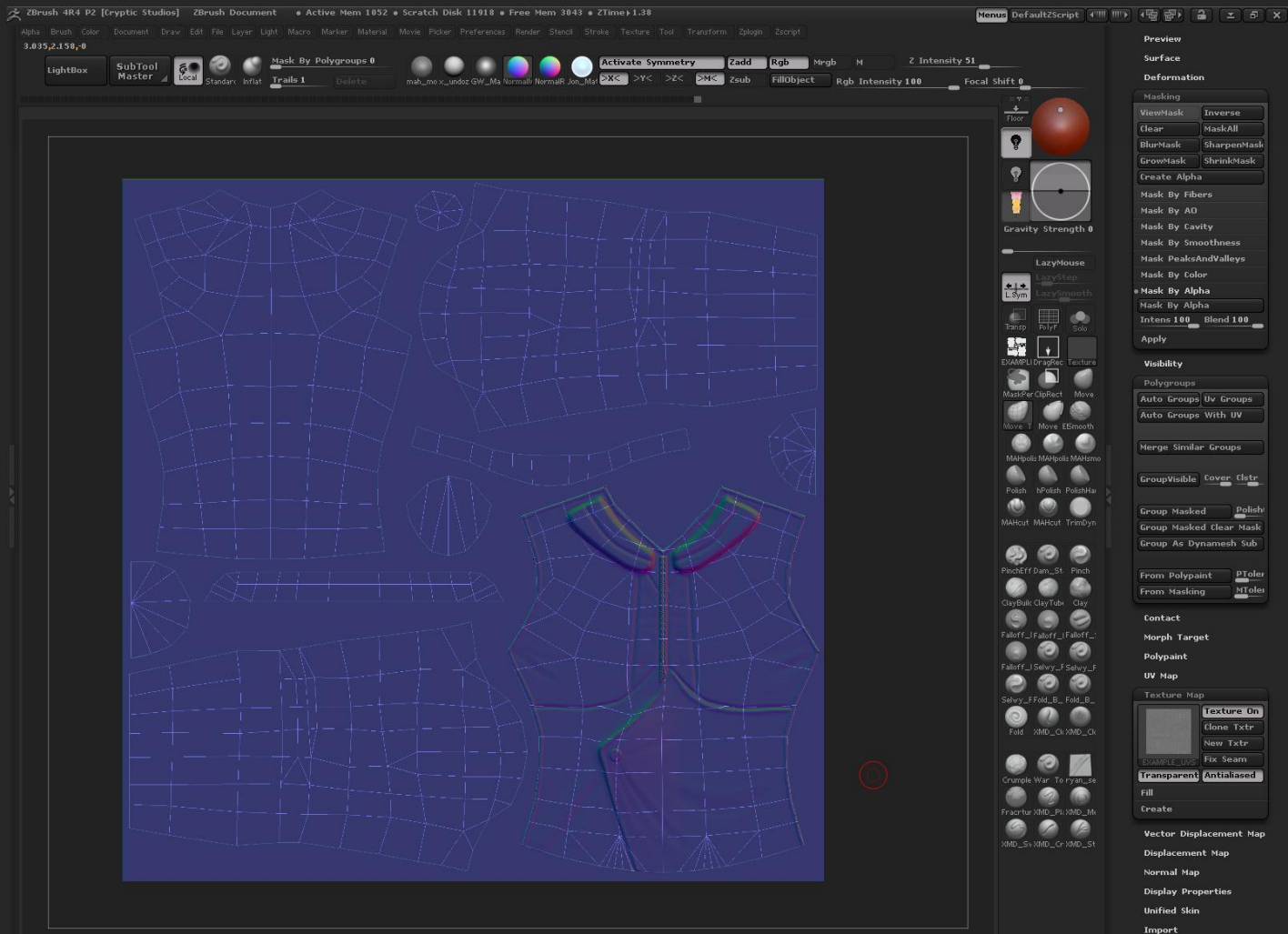
11. Your end result should look similar to the above image. You now have unique polygroup shells you can select however you see fit for easy editing and most importantly local symmetry!



12. Here is an example of selecting one polygroup from the plane and isolating the shell with local symmetry on to sculpt. You can apply any matcap you wish and use the texture map of the UV's as guide for sculpting details.



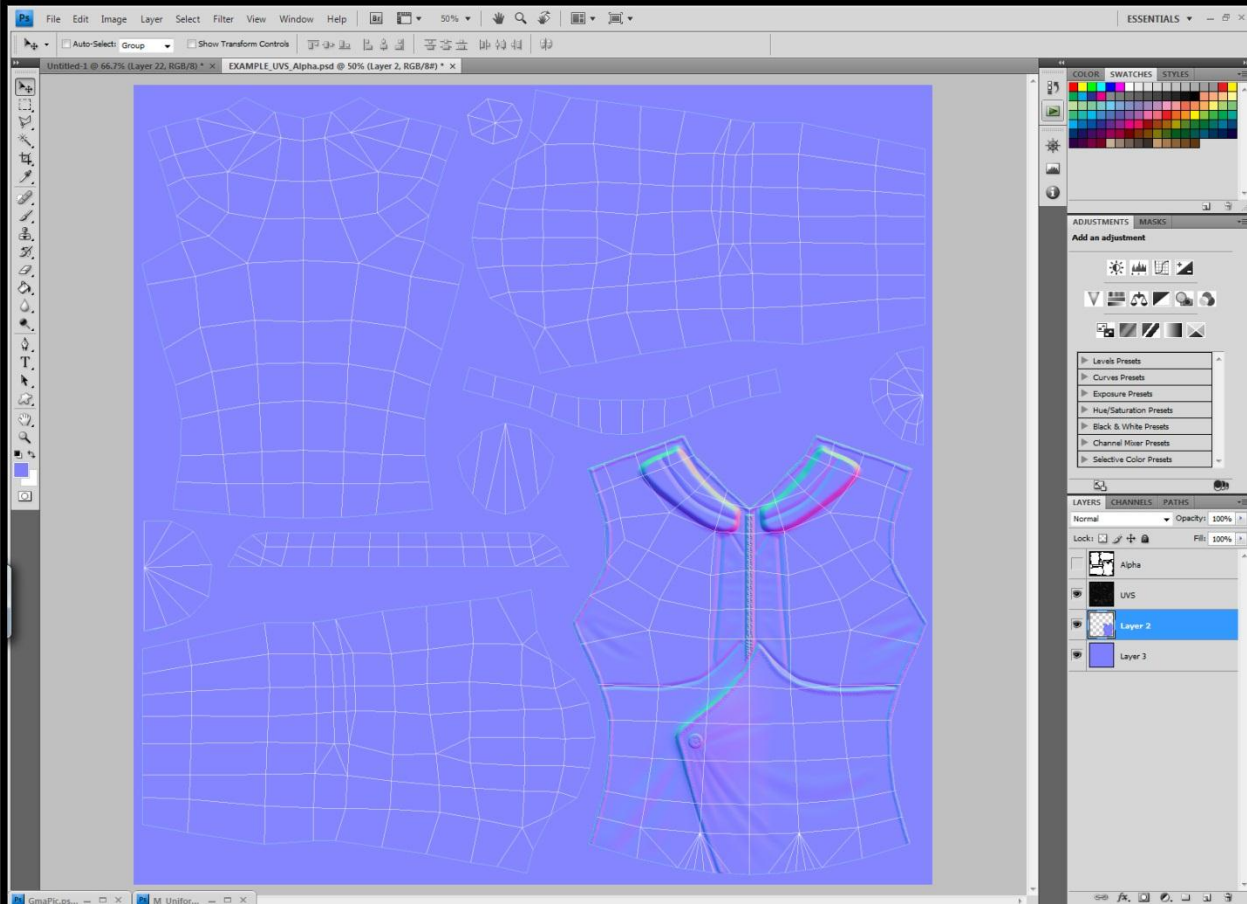
13. After you have done some sculpting on the plane like in the example above you are going to want to bring to bring the detail back into Photoshop to apply to your normal map texture.



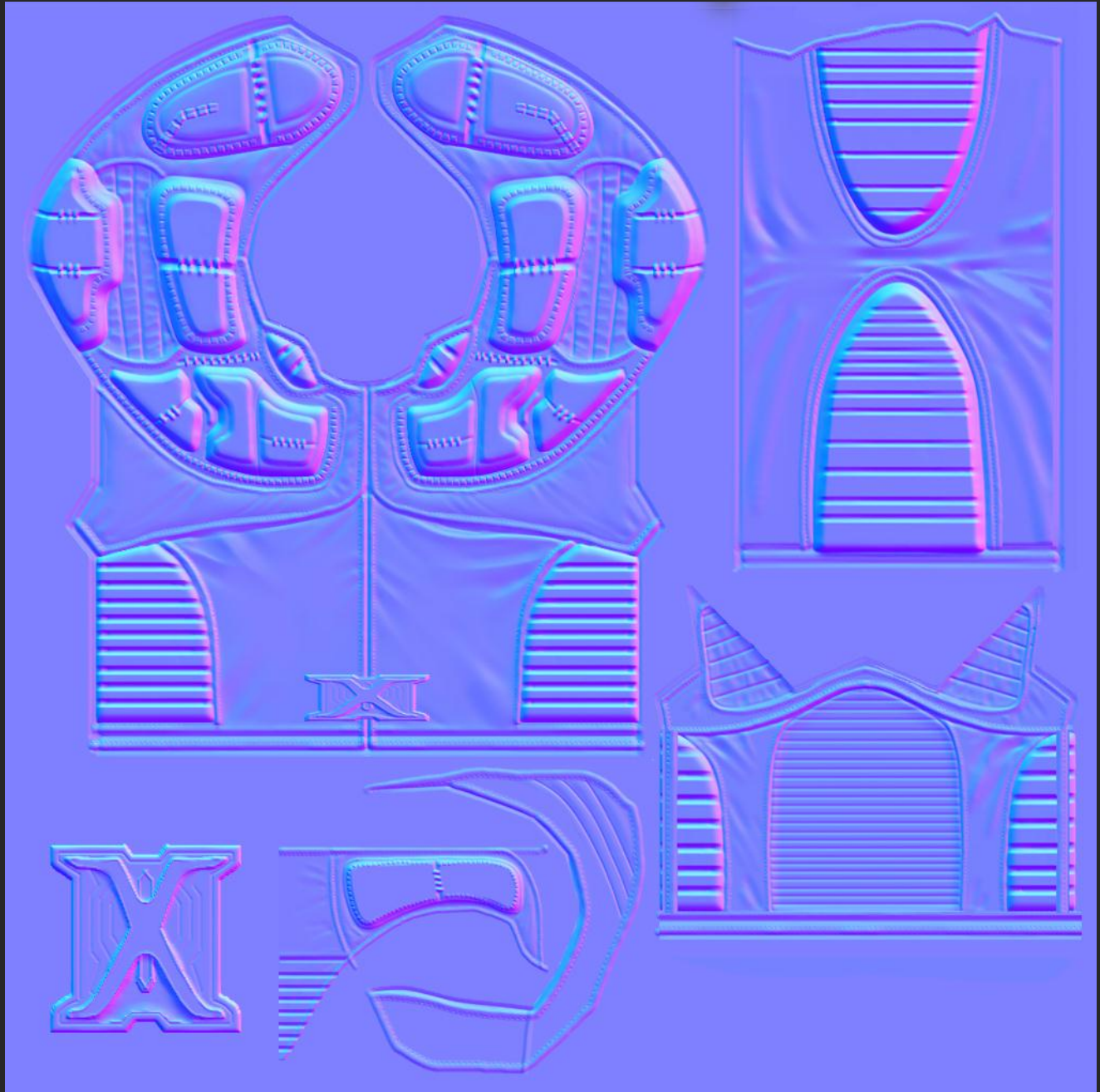
14. We need to apply a matcap onto our plane that will show as a normal map. I suggest downloading a great map cat [HERE](#) from user Phonix on Zbrush central. You will now see your plane with correct lighting information for your normal map. Now it's time to take screen grabs and edit in Photoshop, BUT before we do that we need to check 4 things:

1. Make sure under "Render">Render Properties uncheck shadows.
2. Turn perspective off on your view port.
3. SHIFT + LEFT mouse click to lock your view from the front.
4. Turn off you texture (UV template)

You can now click ALT + PRTSCN to copy to your clipboard.



15. Paste and resize your image to fit in your UV and edit away! I tend to go back and forth between Zbrush/Photoshop/3ds Max/Editor till I get the desired look I'm trying to achieve.



16. Here is an example of a finished normal map all done completely this way. As you can see the final result is clean, yet has a nice non-procedural feel (that you tend to get using only masks, gradients and filters in Photoshop alone).



17. Here is an example of normal map on the geometry in engine.

Have fun with this process and try out different techniques yourself. I'm sure you can also find ways to improve upon this method as well, if so please share them!