# DOTA 2 - Character Color Texture Guide



TM

How to create a consistent color texture from a high resolution sculpted source.

# Defining Color





BASE COLOR

Dota 2's in-game lighting is pretty subtle, and as a result we tend to lose a lot of the sculptural detail in the character's normal maps. We offset this by baking--or painting--the light into the color texture. This short guide describes a method for quickly creating a consistent color texture from a high resolution sculpted source to the low resolution in-game asset.
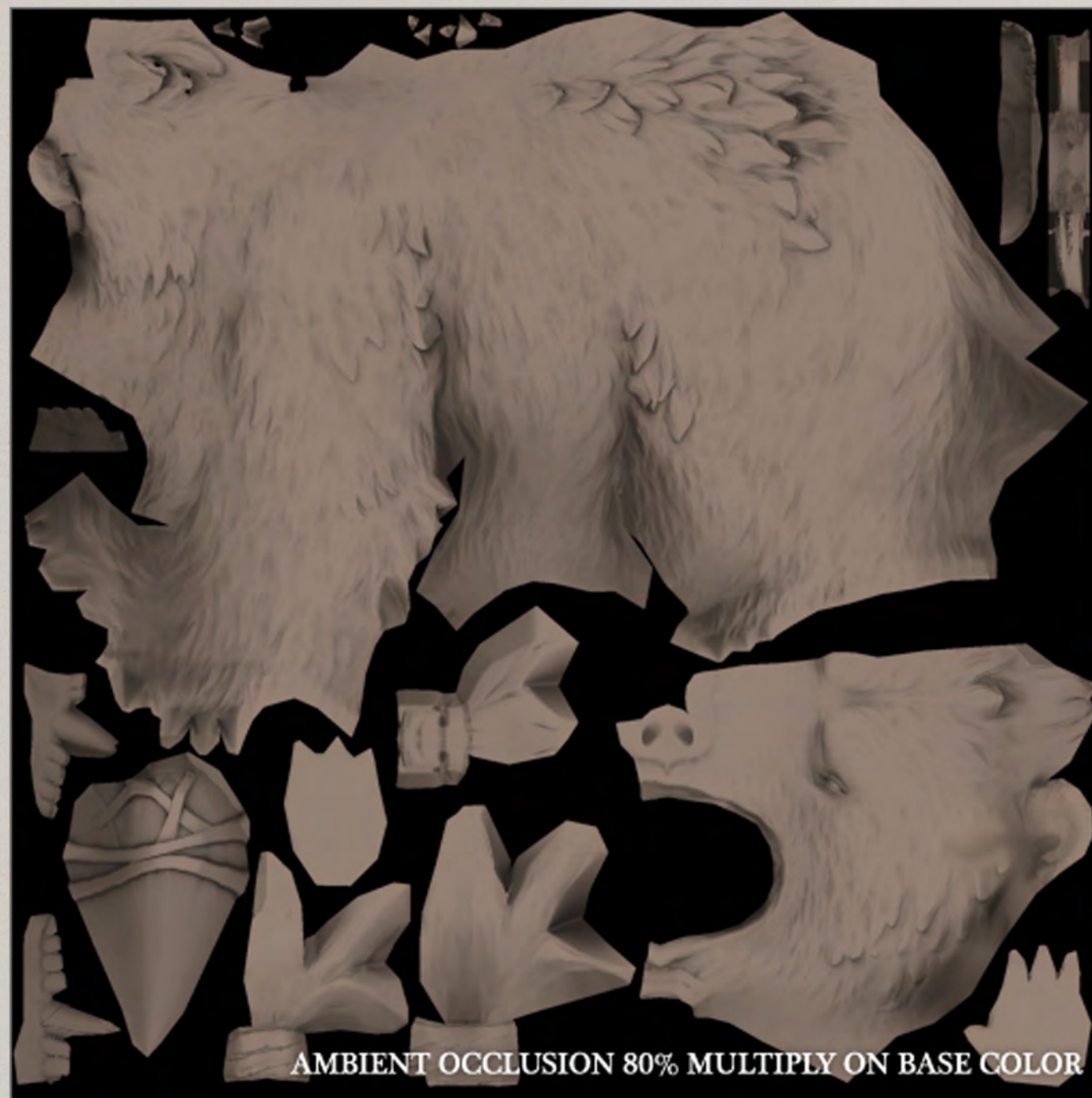
Start with the the predominant color of the character.

# Ambient Occlusion



AMBIENT OCCLUSION MAP

Bake an ambient occlusion map (AO Map) of the model.



AMBIENT OCCLUSION 80% MULTIPLY ON BASE COLOR

Multiply the ambient occlusion layer on top of the base color at an 80% opacity.
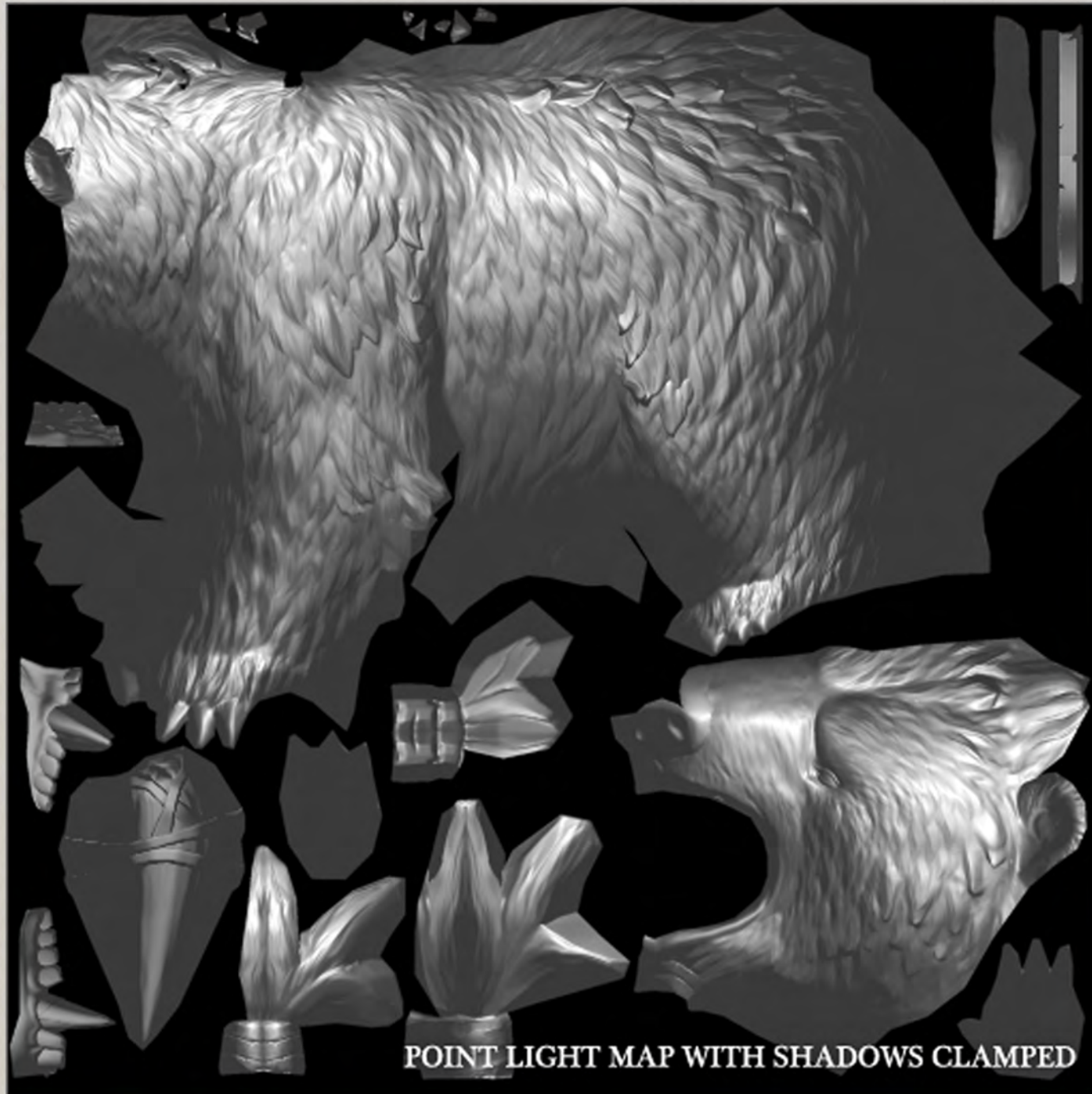
# Point Light Map



POINT LIGHT MAP



Place a couple of simple white point lights in your scene and render out a light map. We don't want ambient occlusion in this light pass, just pure point light information, preferably with a material that captures specular highlights. Turn off projected shadows. Typically, multiple point light maps are baked with lights in various positions then blended in photoshop into one map for more precise control.

The point light map captures more sculptural information than is possible with a pure AO map. We bake this map separately from the AO as we want to control the two elements differently. The point light map also gives you a good starting point to introduce your top-to-bottom, light-to-dark gradient.

# Point Light Map (cont.)



POINT LIGHT MAP WITH SHADOWS CLAMPED



POINT LIGHT MAP 100% SOFT LIGHT LAYER

Clamp the shadows so they don't darken the base map unnecessarily. A 90 90 90 (RGB) screen layer at 85% opacity on top of the point light map is a good place to start. You can group these two layers together to make them easier to blend onto the base map.

The point light group is layered above the AO map. Set the point light group's blending mode to 100% soft light. This constitutes the 'underpainting' of the texture. Because we have a strong sculptural base to the texture we don't need to paint too much in the way of lighting and shadow information.

# Color Map



ROUGH COLOR MAP

The majority of the painting is done in the color layers.



COLOR MAP 80% OVERLAY LAYER

The color group blended on top of other layers in overlay mode at 80% opacity.

# Color Map (cont.)



COLOR MAP DUPLICATED AS 30% LIGHTEN LAYER



COLOR MAP DUPLICATED AS 50% DARKEN LAYER

Dota 2 has a very bright and intense palette with lots of saturated colors. Layers with certain blend modes can blow out the palette into unusual colors, so it's worth clamping shadows and highlights to avoid excessive contrast. How aggressively you do this is best determined on a per character basis. For this character the color layer group was duplicated and given a blending mode of lighten at 30% opacity.

The color layer group was duplicated again and given a blending mode of darken at 50% opacity. This allows the shadows and highlights to be controlled independently.

# Graphic Patterns
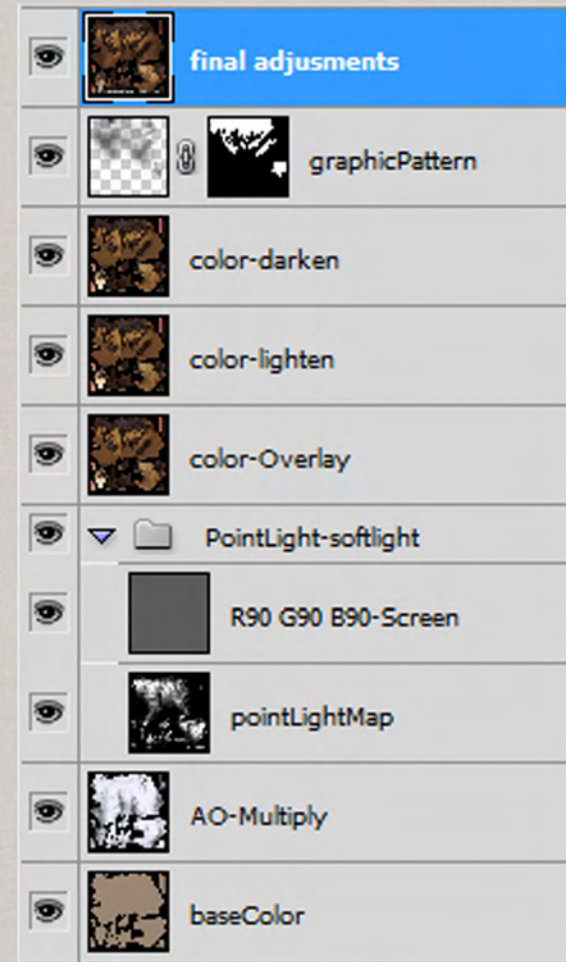




MASK LAYER   80% OPACITY NORMAL BLENDING MODE
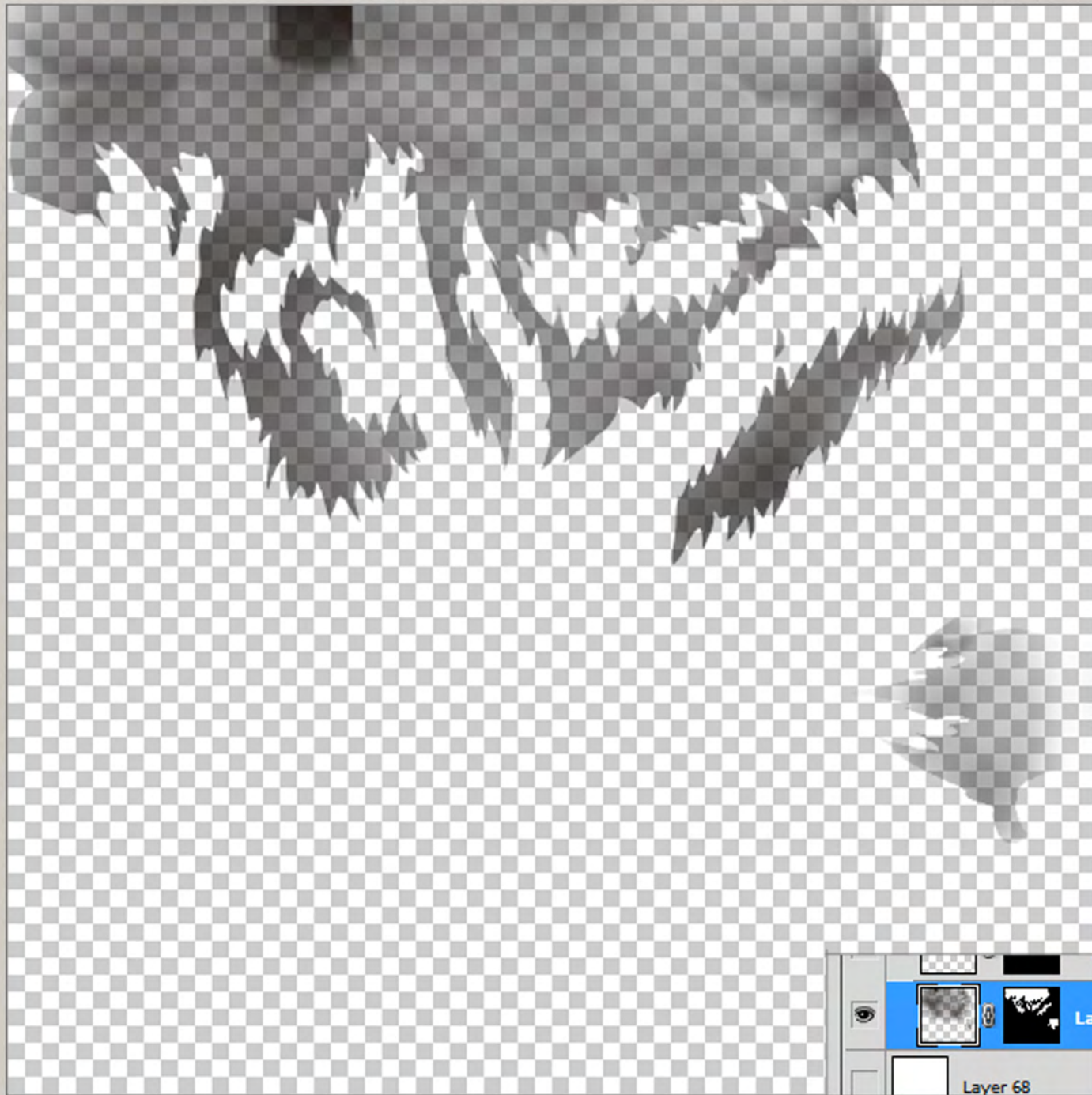
Most of Dota's characters have large crisp graphic patterns to aid legibility. These patterns can be blocked in loosely on the inital rough texture then later enhanced by a masked color layer. A layer mask is created using the lasso tool. Then color is painted on to sharpen edges and make colors more consistent.

Color loosely painted inside layer mask to preserve a sharp edge to the design. The blending mode is set to normal at 80% opacity.

# Final Adjustments



DETAILS AND COLOR CORRECTION IN A DIFFERENT LAYER GROUP

Make final adjustments to details like eye highlights, improve the value gradient overall, and adjust the saturation.



Layers

final adjusments
graphicPattern
color-darken
color-lighten
color-Overlay
PointLight-softlight
R90 G90 B90-Screen
pointLightMap
AO-Multiply
baseColor



This color texture is now perfectly synced to all of the details in the normal map.