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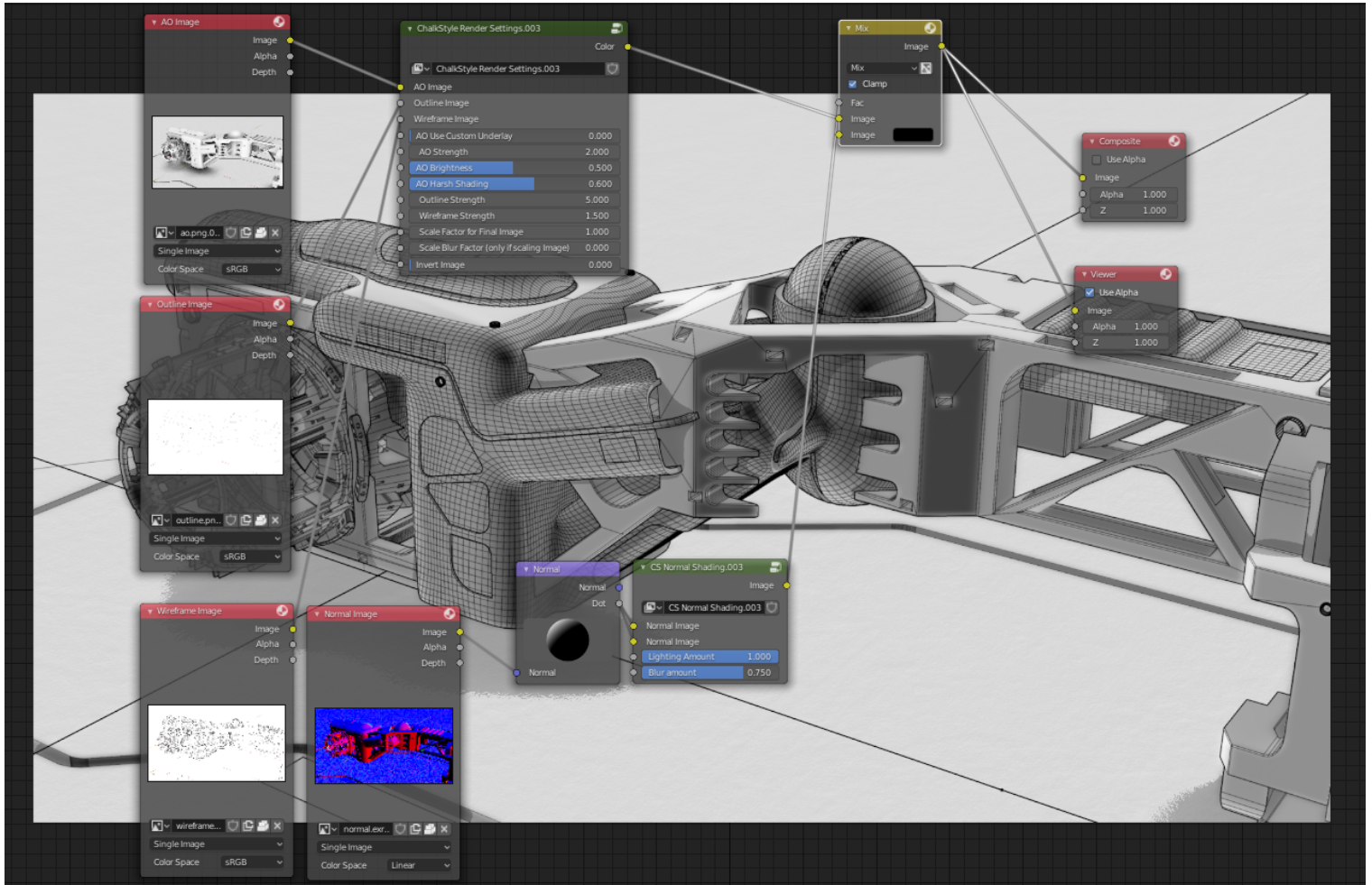
CHALK

STYLE

PRO

Documentation

by Chipp Walters

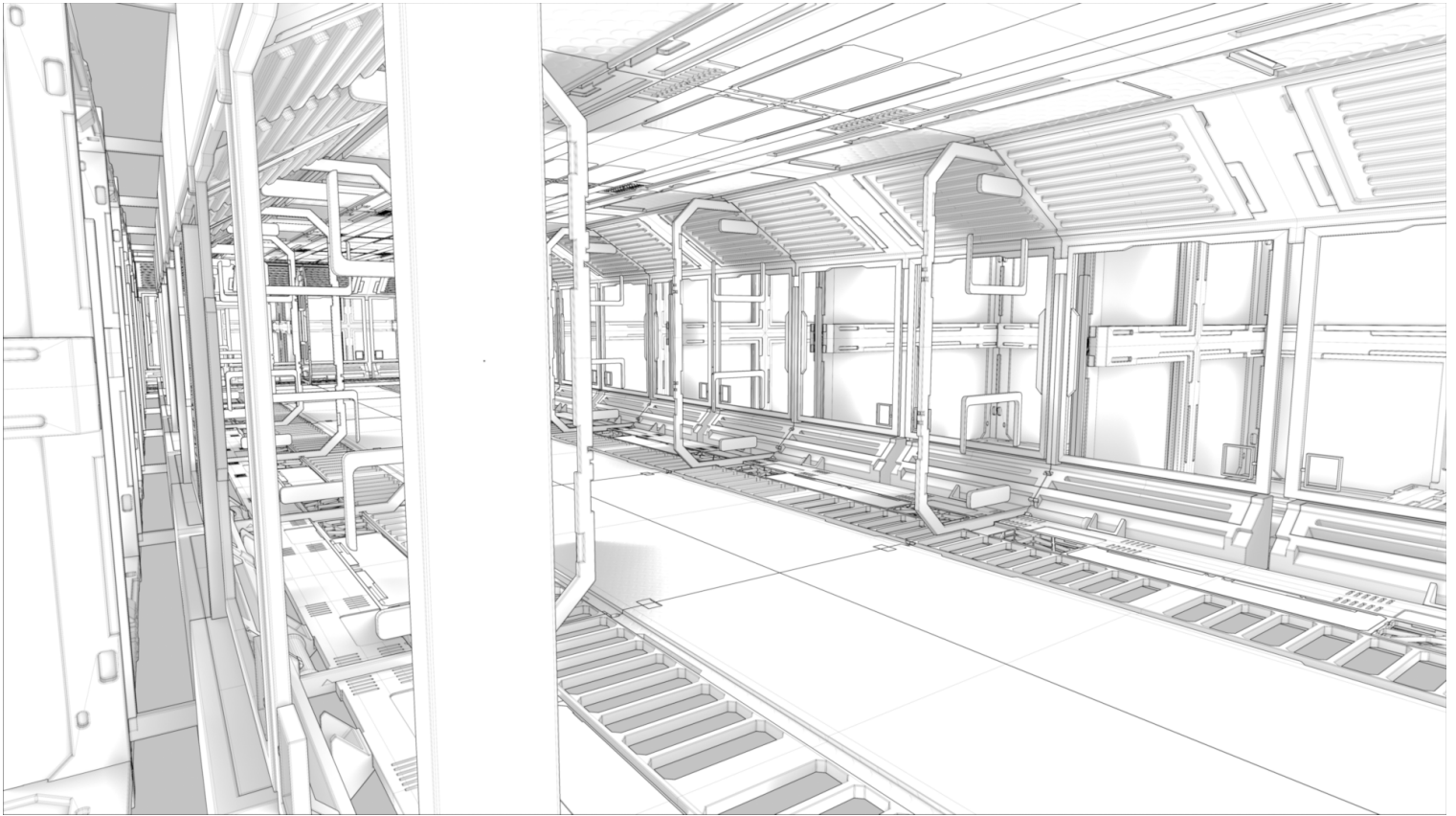


**CHALK STYLE PRO AO + Outline + Wireframe Rendering Addon
Specifications and Design Doc.**

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WHAT does this addon do?



CHALK STYLE PRO Render is a Blender **2.82+** addon which provides a workflow to **quickly** create **Ambient Occlusion (AO) “chalk” and “sketch” type renderings**. (Note: CHALK STYLE PRO does not work on versions < 2.82)

The workflow is straightforward.

1. Position your camera
2. Press the Render CHALK STYLE PRO button
3. The CHALK STYLE image is instantly rendered and shown in a new window and the compositing workspace scene displays the resulting 4 rendered images in the CHALK_STYLE.blend compositor where you can continually tweak the settings for the final wireframe render.

What is the difference between CHALK STYLE PRO and CHALK STYLE FREE?

Feature	CHALK STYLE PRO	CHALK STYLE FREE
Renders wireframes, outlines and AO pass as 3 different images	X	X
Has a customized compositor scene with user controls that allow for compositing and render.	X	X
Has ability to “re-light” scene after the render is completed using a 4th rendered normal EXR image	X	
Has one-button render without having to open a different version of Blender	X	
Has expedited workflow for creating multiple renders	X	

SKETCH STYLE has been deprecated due to the new Line Style rendering technique in Blender 2.9.3

~~What is the difference between CHALK STYLE PRO and SKETCH STYLE?~~

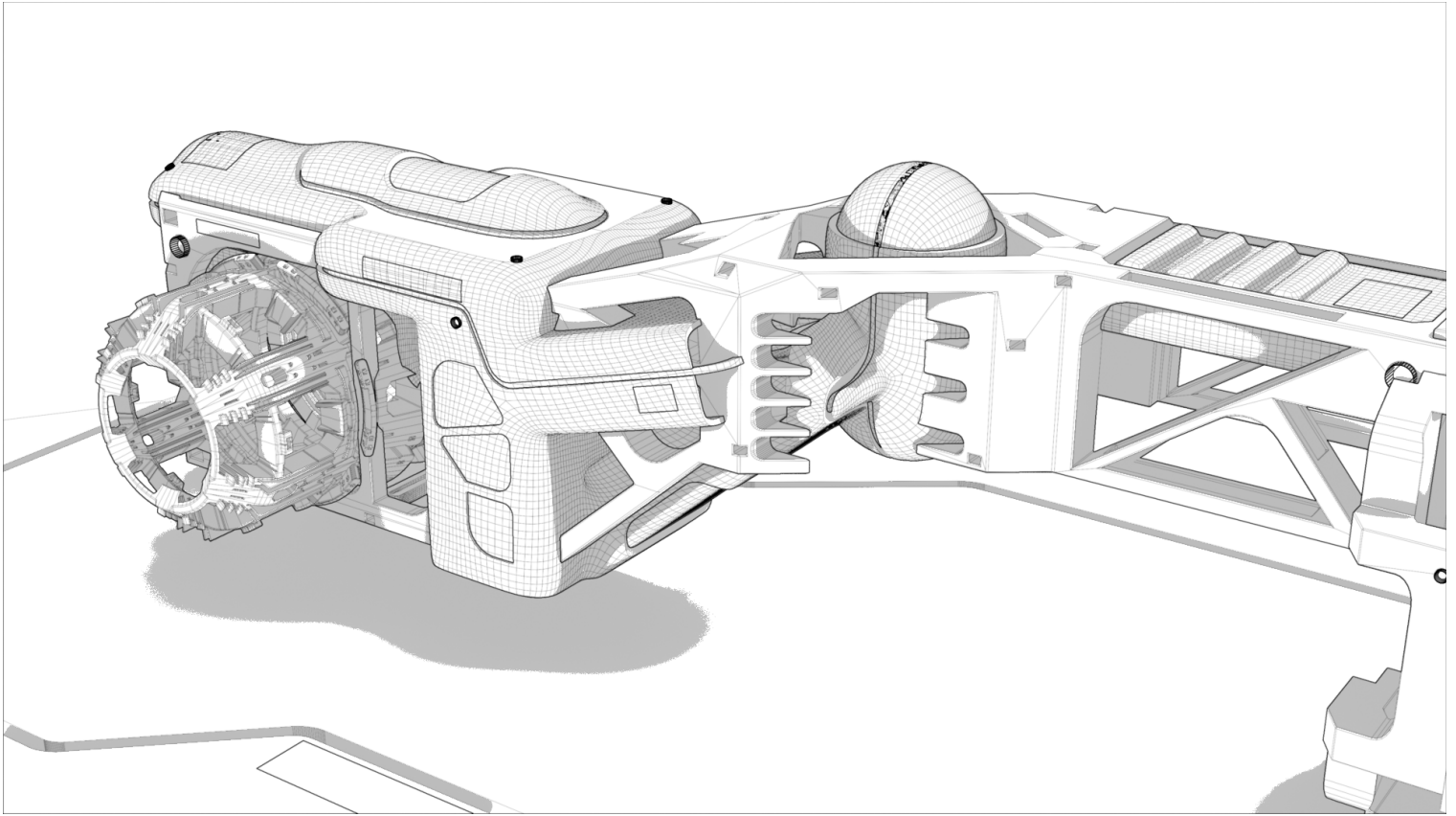
~~The two are created for different reasons:~~

~~SKETCH STYLE uses Blender’s internal Freestyle to create stylized renders all with a single button press. Creating a render that shows the model’s wireframe mesh, while possible in Freestyle is very difficult, requiring you to apply properties to each and every mesh. SKETCH STYLE can also create different looks, like a blueprint look or dashed hidden line look which CHALK STYLE PRO cannot do.~~

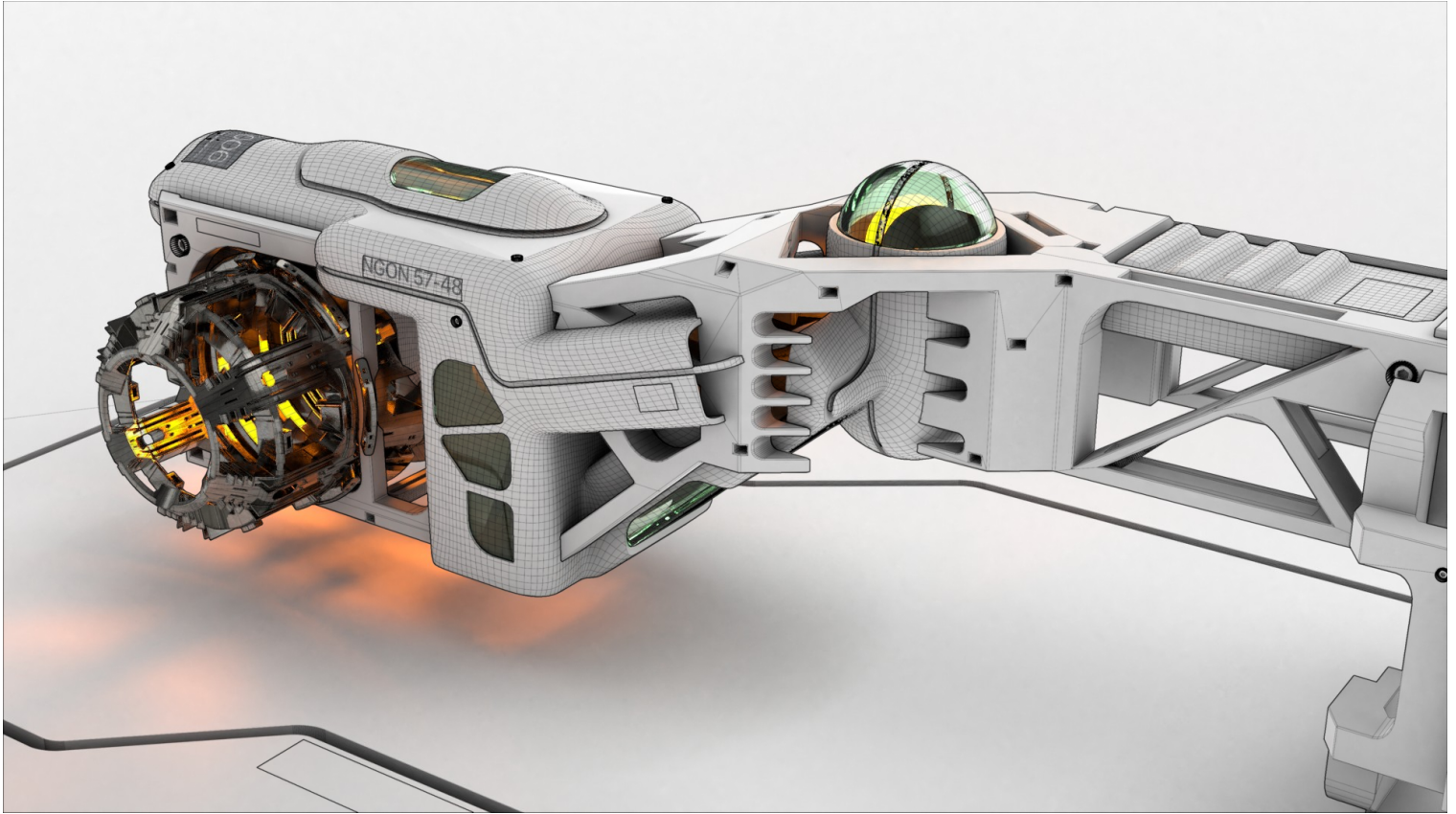
~~CHALK STYLE PRO can create wireframe ambient occlusion renders faster. Much faster because it doesn’t use Freestyle, nor does it use the CYCLES or EEVEE final render mode. Also, CHALK STYLE PRO creates both outline and wireframe passes which can be overlaid the original AO image in the compositor.~~

~~Also, SKETCH STYLE can generate overrides for materials, which means some materials can be left as they are—like glass or reflective mirrors, while everything else is rendered with a basic occlusion shader. This is not possible in CHALK STYLE PRO—though by combining the render result of SKETCH STYLE (with no lengthy post Freestyle effects) along with CHALK STYLE PRO, you can achieve some amazing renders.~~

And lastly, ~~SKETCH STYLE can do animations, while CHALK STYLE cannot.~~



Regular CHALK STYLE PRO with default settings.



Combining CHALK STYLE PRO with a SKETCH STYLE underlay.
Notice the use of material overrides including the colored lights, metallic and glass shaders.

WHO is this addon for?

This plugin is targeted at concept artists, illustrators, product designers and architects who like the look of wireframe renders. This render style is great for preliminary design phases and is much faster and easier to setup than creating a photoreal render. Furthermore, clients have an inherent understanding when looking at a line drawing that they are reviewing only concepts and not final designs.

WHY create this addon?

Creating wireframe renders that look good is very difficult in Blender. There are over 50 separate settings which need to be adjusted to create the files needed for this type of rendering, then they need to be meticulously layered in Photoshop or other raster editor to create the final image.

Furthermore, each of the different renderings have different combinations of settings. It takes too long to switch and adjust them, then turn them back to their default values. This addon does all this work for you without ever affecting your current scene settings, making the process as simple as pressing a single button.

Freestyle, Blender's custom line rendering post effect, doesn't handle wireframes particularly well and requires a lot of manual object tweaking to get it to work. CHALK STYLE PRO uses native OpenGL and EEVEE shade renders to create the necessary layers for compositing a final image.

HOW does it work?

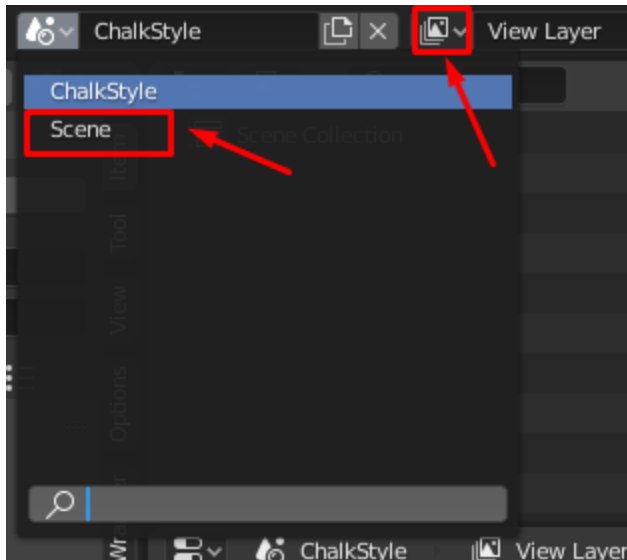
There are 2 main parts to this process:

1. Pressing the Render CHALK STYLE PRO button automatically renders 4 different images, imports a new ChalkStyle scene with compositor and loads the images into it then renders it.
2. After the render is displayed, you can continue to tweak it using the compositor controls, including changing the lighting.

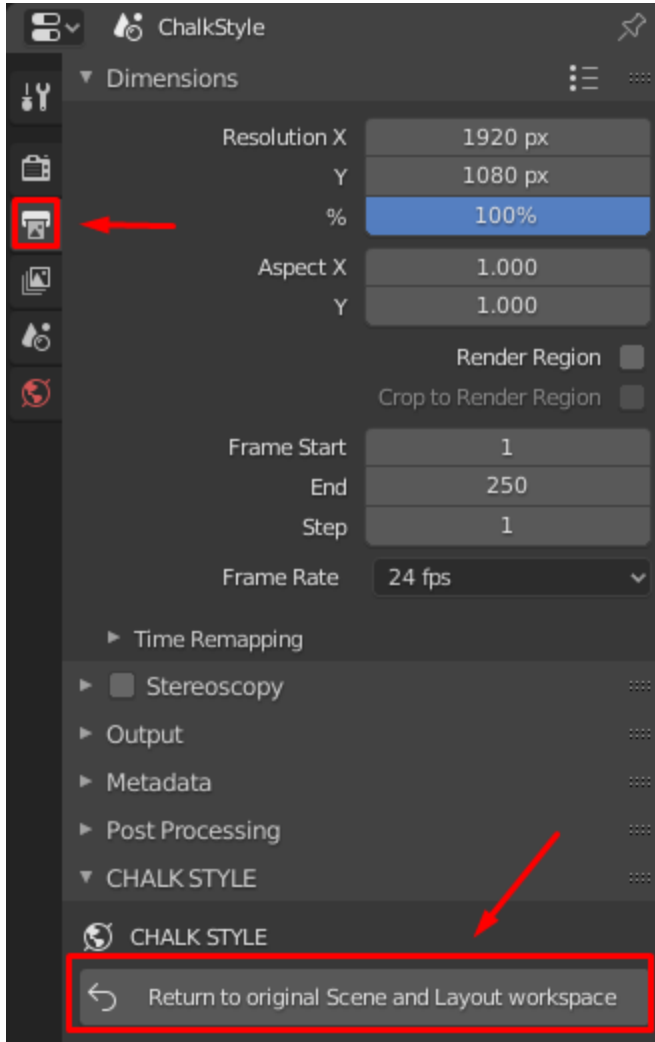
The first part is accomplished with the CHALK STYLE PRO addon. The second part is accomplished with the CHALK STYLE PRO compositing scene which is automatically loaded for you.

The detailed workflow

1. Position your objects on screen, or **use the current camera** view.
2. Choose what elements you want to render or not in the CHALK STYLE PRO addon settings.
3. Set your render resolution in the **Output properties>Dimensions** panel.
4. Press the **Render CHALK STYLE PRO** button Blender quickly renders four different images in a temp folder:
 - a. an Ambient Occlusion image at the designated output size
 - b. an Outline line drawing image at 2X the designated output size
 - c. a Wireframe drawing image at 2X the designated output size
 - d. a Normal EXR image at the designated output size
5. The ChalkStyle scene is loaded and the compositor workspace is shown, and all four rendered images are hooked up. At this time you can choose to make changes to the scene.
6. **After the render is completed, the user goes back to the original scene by either::**



A. choosing the Scene dropdown menu:



- B. Pressing the **Return to original Scene and Layout workspace** button in the **Output Properties** tab of the **Properties** panel

Installation

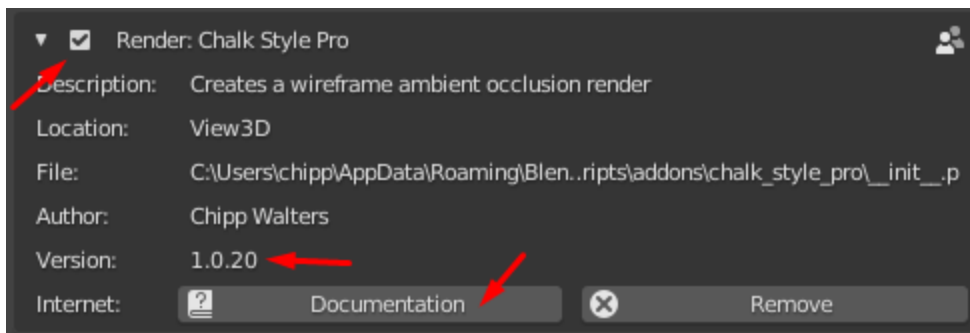
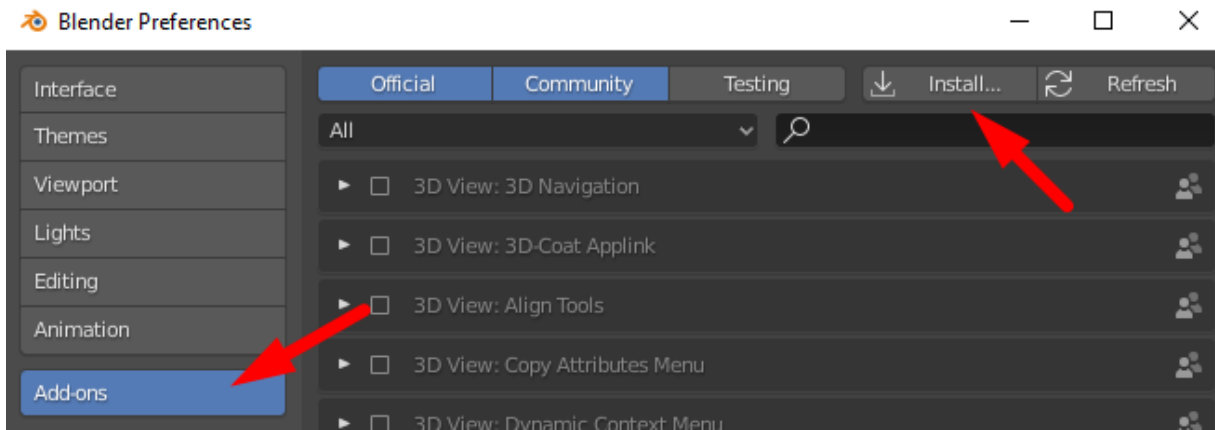
The addon consists of a set of python script files, and **ChalkStyleCompositor.blend** file. They are wrapped in a zip folder with the version appended at the end:

Quick install:

Here are the instructions for installing CHALK STYLE PRO.

1. Put the zip file on your desktop (or wherever you saved it).

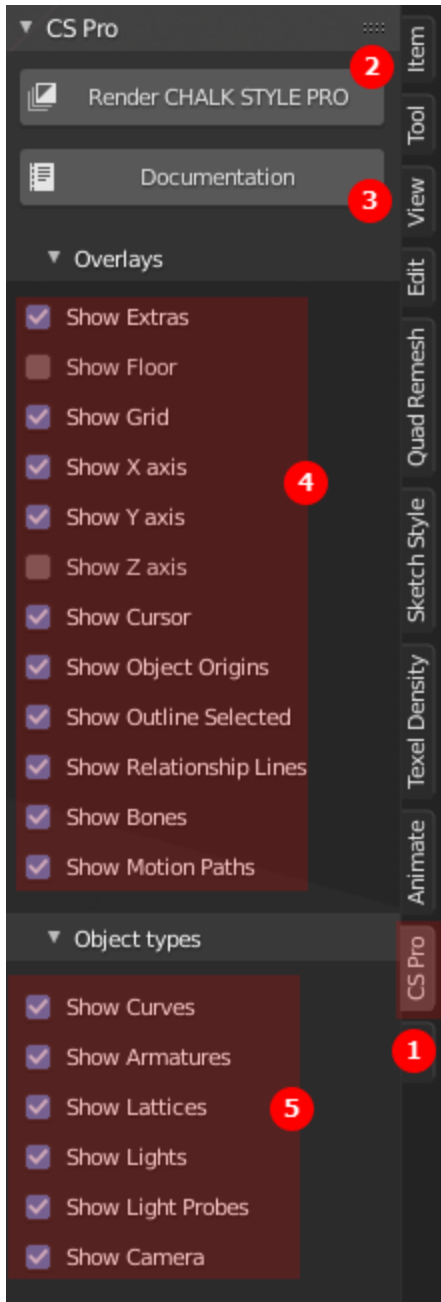
2. Launch Blender
3. Go to Prefs/Addons and make sure you turn off AND uninstall any old versions from the addons panel.
4. Click the install button and select the zip file and install it. This will unzip the files and put them in your addons folder.
5. Save preferences.
6. You can delete or archive the original zip.



You can expand the addon prefs to see the version number as well as a button to link to this documentation. It's always a good idea to REMOVE the addon before updating it. Keep in mind pressing the Remove button will also delete the ChalkStyleCompositor.blend file as well.

The Addon Interface

When first loaded, the CHALK STYLE PRO addon presents a simple interface.



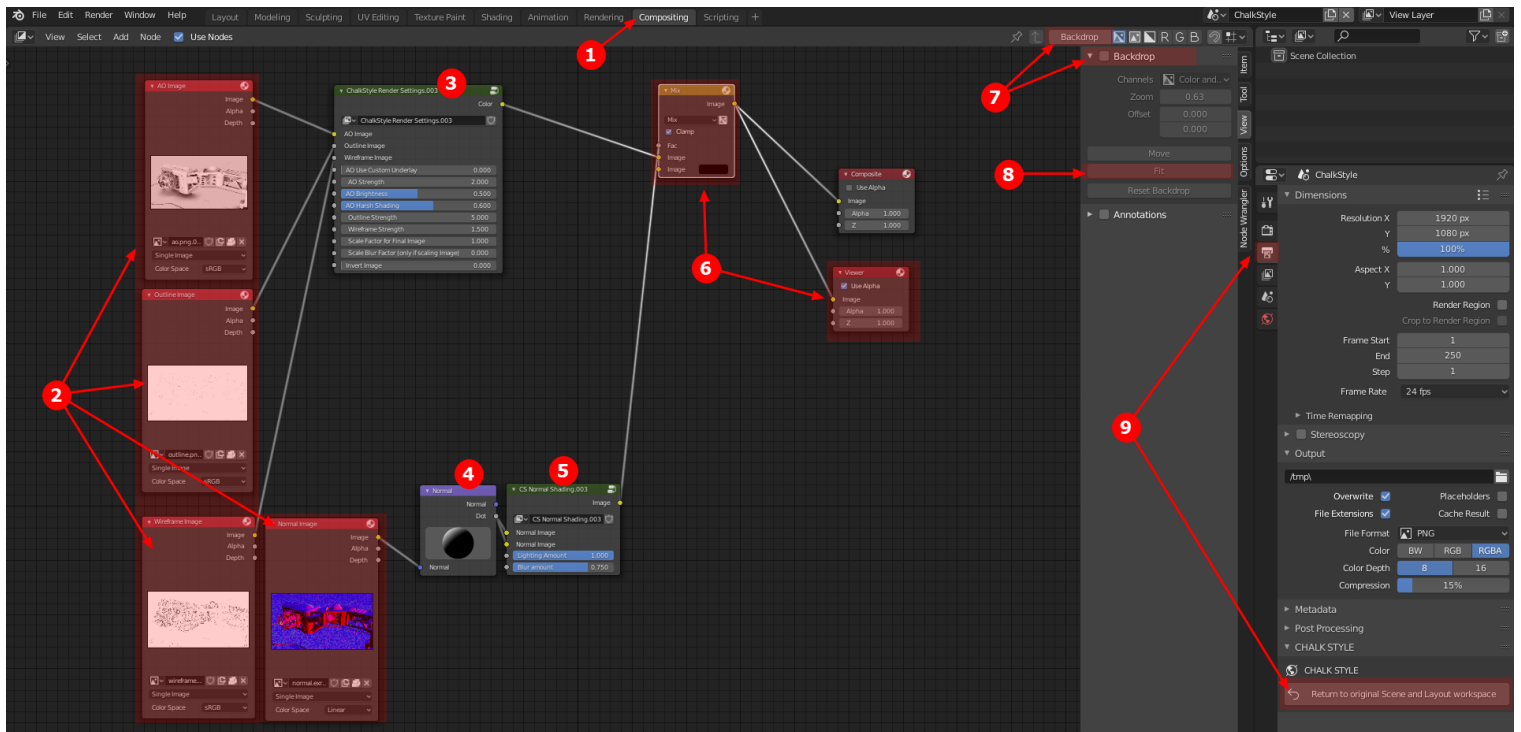
1. The addon is loaded in the Toolshelf panel and named "CS PRO"
2. The Render CHALK STYLE PRO button creates the 4 renders needed for compositing. They are stored in the folder designated in the output channel.
3. A link to the documentation (here)
4. Show Overlays. You can toggle them on and off. These are persistent and stay with the scene after the Renders have been completed.
5. Show Objects. You can toggle them on and off.
This panel is generally collapsed as typically unchecking Show Extras handles most all of these objects as well. It is here just in case you need finer control over visible objects in the renders.

Compositing

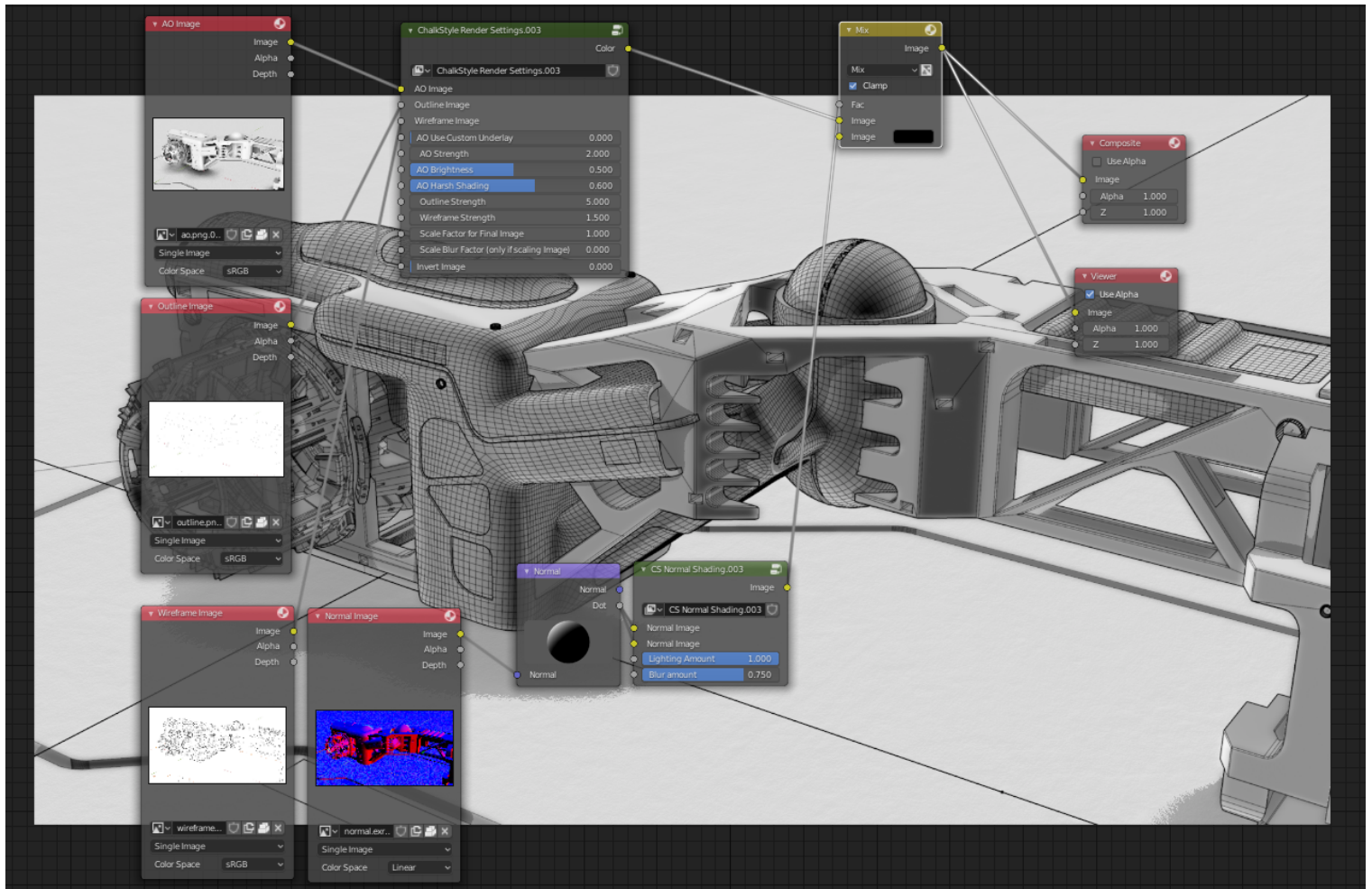
After the render button has been pressed and the file is done rendering the 3 images: ao.png, outline.png and wireframe.png, it is time to composite them together for a final image. This is done using Blender's compositing tools. There are a number of features which are automated for you, with the intent to give you the most control as possible of blending the 3 images.

The **Chalk_Style_xx.blend** file (xx is the version) is located in the same folder as the addon. You can move it wherever you like. Once the 3 images have been rendered, you can launch the **Chalk_Style_xx.blend** hopefully in a new instance of Blender to make it easy to go back and forth between rendering images and compositing them. Once launched be sure to be on the composite tab and you will see this screen:

Basic Interface



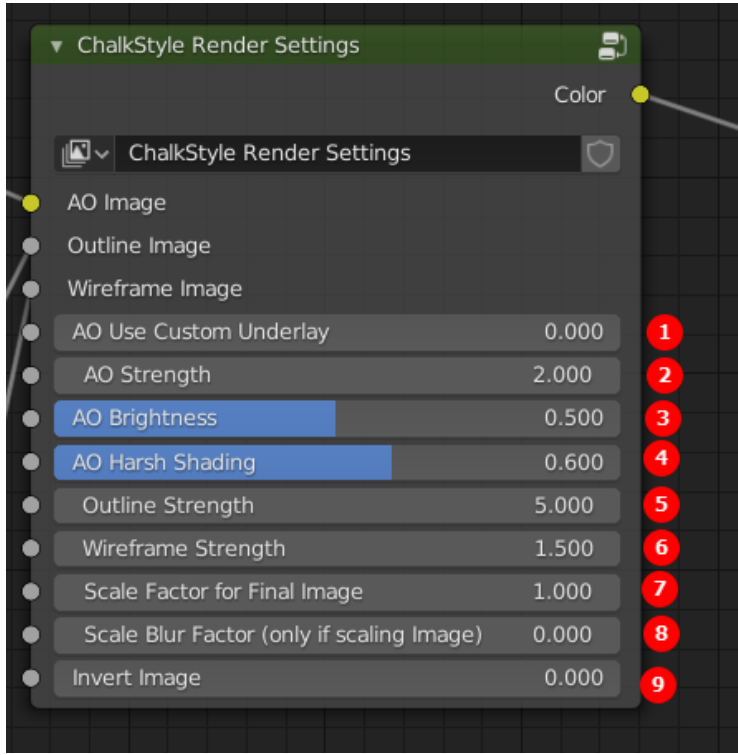
1. Be sure to be in the Compositing Layout
2. The AO.png, Outline.png, Wireframe.png and Normal.exr will be automatically loaded in these nodes.
3. The CHALK STYLE Render settings Node Group where you can do much of the configuring.
4. The normal lighting control. Click and drag to change the lighting of your rendered image (make sure Backdrop is ON)
5. The CHALK STYLE Normal Shading Node group where you can adjust effects for the lighting.
6. The Viewer node. If for any reason the Backdrop image is not updating, then delete this node, create a new Viewer node and hook it up as shown. This is a problem in Blender which can happen sometimes. FIX SHORTCUT: If Node Wrangler is installed, just Ctrl + Shift + Click on the Mix Node and it will refresh the Viewer node.
7. When the backdrop button is highlighted, you will see the full composite in the screen underneath the nodes. You can adjust the numerical zoom as well. 1.0 is full size. 0.5 is half size etc..
8. You can also press the Fit button to have the composite fill the panel view.
9. When you select the Output Properties tab, there is a new button at the bottom which when pressed will switch you to the original scene file and Layout workspace.



Then press F12 render key to see the final composite– and save from there.

CHALK STYLE PRO Node Group

The CHALK STYLE PRO Node Group is where all the compositing magic happens. Here you can adjust the strength of the different images, harshness of shadows, overall levels and gain and even resize the final output– which is handy for rendering complex scenes using super large images and downsampling them to something smaller and crisper.

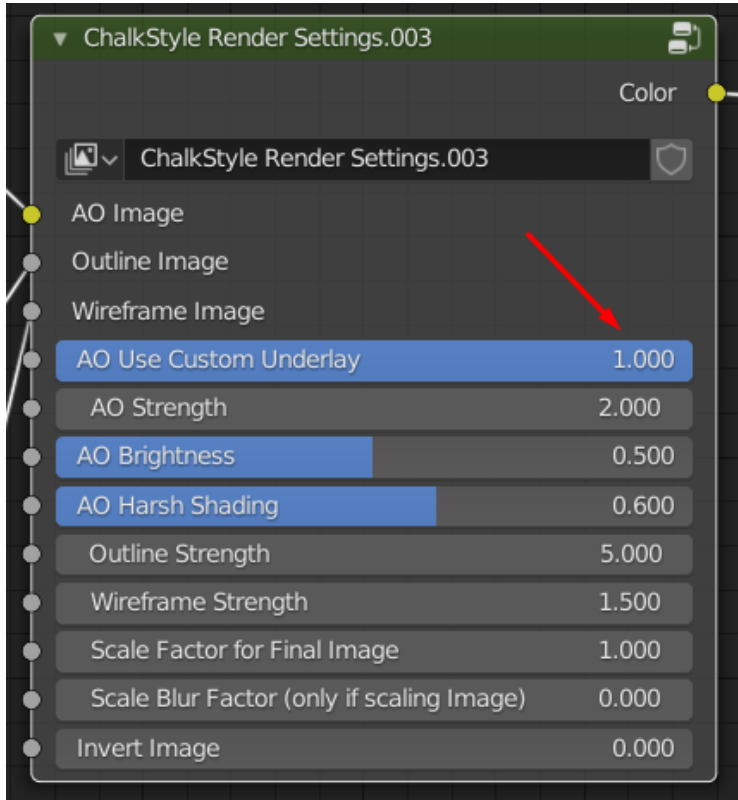


1. **AO Use Custom Underlay:** Set to 1.0 if you want to override the Brightness and Harsh Shading presets. Used for when you want a different Background image from the AO.png one CHALK STYLE PRO creates (set to 1 for SKETCH STYLE renders). Set to 0 and set AO Strength to 0 to turn off the AO layer.
2. **AO Strength:** Adjusts the overall contrast for the ao.png image. Setting of 0 turns it off.
3. **AO Brightness:** Adds / Removes white to the image to make it lighter / darker
4. **AO Harsh Shading:** Creates strong boundaries for AO shading and shadows.
5. **Outline Strength:** Makes the outline.png darker and increases the line width. Setting of 0 turns it off.
6. **Wireframe Strength:** Makes the wireframe.png darker and increases the line width. Setting of 0 turns it off.
7. **Scale Factor for Final Image:** Factor by which to scale the final rendered image. This is important if you rendered ao.png at a higher resolution than what you want to end up with.
8. **Scale Blur Factor:** Set to one if you've set the Scale Factor above to less than 1.0, otherwise keep it at 0.
9. **Invert Image:** Inverts the final image. You might want to turn off (set to 0) AO Strength and AO Use Custom Overlay (0).

TIPS and TRICKS

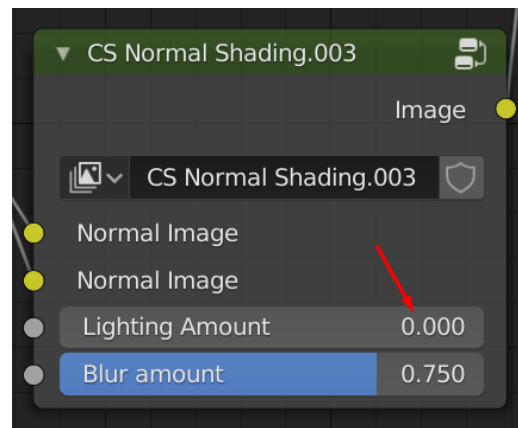
Higher quality ambient occlusion

If you want a higher quality Ambient Occlusion base image, try using SKETCH STYLE to render it for you. It can create very high quality AO renders, but they take quite a bit longer. Also, it can generate overrides for materials, which means some materials can be left as they are— like glass or reflective mirrors, while everything else is rendered with a basic occlusion shader. The advantage of this approach is it renders much faster without having to use the Freestyle post processor.

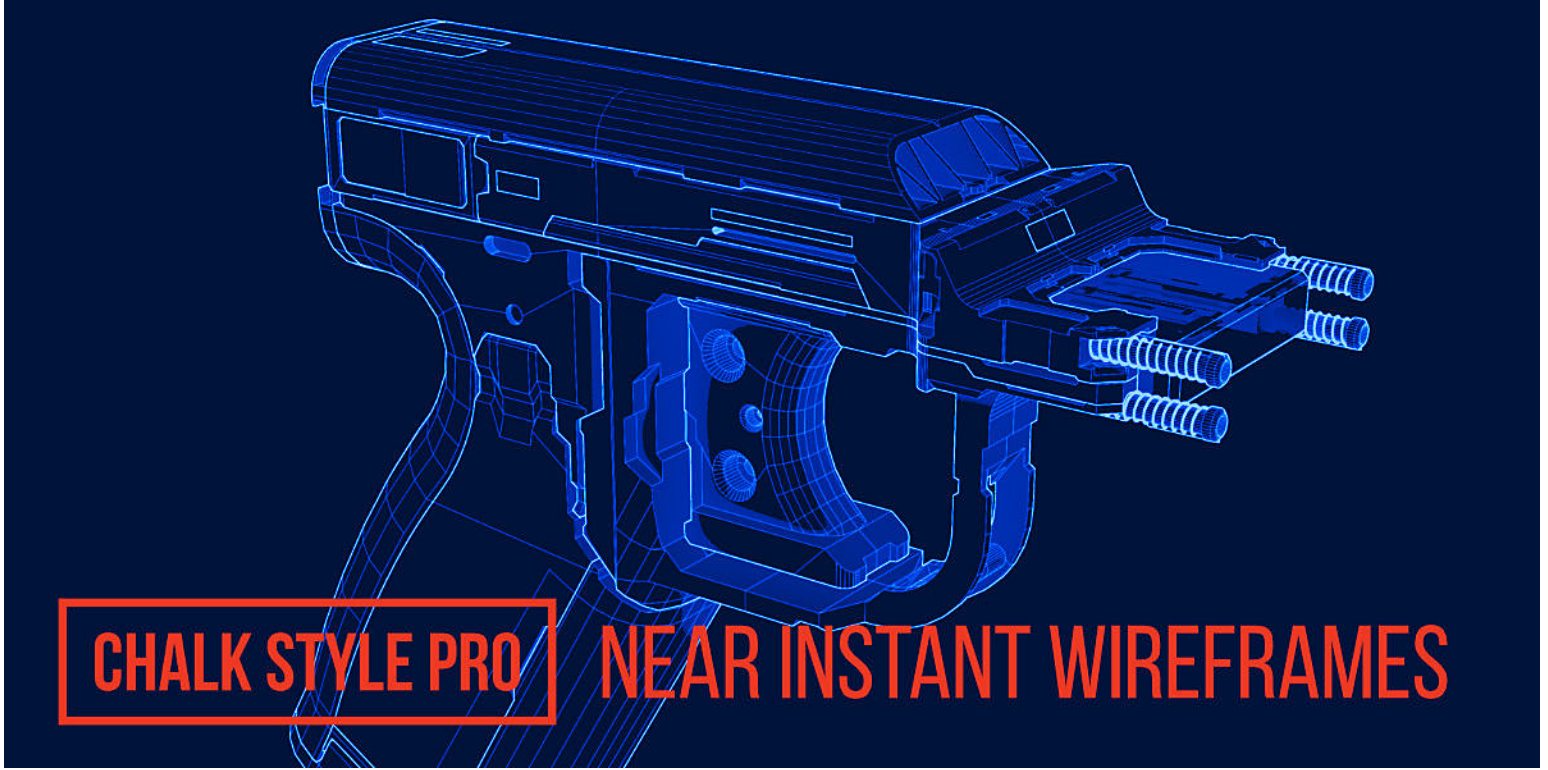


Just turn OFF all the Line Settings in SKETCH STYLE, and create a rendering, then use it in place of the ao.png file. Then set the AO Use Custom Underlay to 1.0 so that the AO Strength, Brightness and Harsh Shading aren't used. Make sure you render it at the correct resolution.

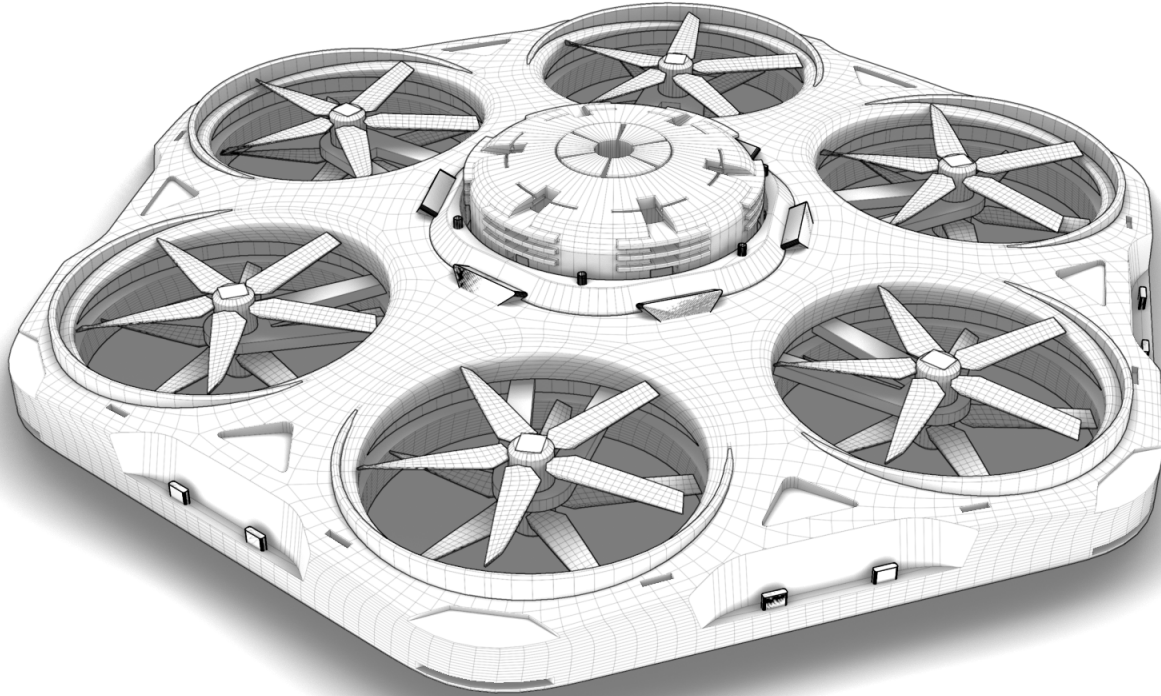
You probably also don't want to light it so you can set the Lighting Amount in the CS Normal Shading Group to 0



Blueprint Effect



Here's a quick video that shows how to get this effect
<https://youtu.be/DtNyy1uXLQM>



Support

You can get help for this add-on at Blender Artists:

<https://www.chippwalters.com/support>

And at DISCORD:

<https://discord.gg/XXNy5Tb>

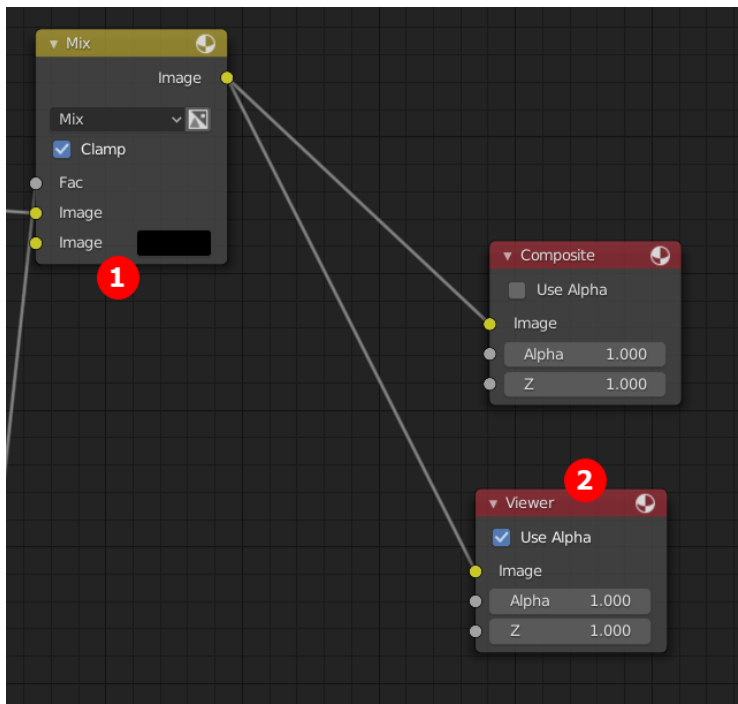
Troubleshooting

CHALK STYLE PRO Throws an error

Make sure you're running Blender 2.82. Also, you may be rendering using the Workbench renderer. If that's the case, switch to either EEVEE or Cycles *before* pressing the Render CHALK STYLE PRO button. You can then switch back when it's done.

Relighting not working

Sometimes the viewer node may not be updating the Backdrop image in the compositor.



1. The quick fix is (assuming Node Wrangler is installed) just CTRL + SHIFT + CLICK the Mix node.
2. If Node Wrangler is not installed, then delete the Viewer node and re-hook it up to the Mix node.

CHALK STYLE not working at all

First, make sure you're using the released version of Blender 2.82+. Any version before and it won't work.

If it's still not working then it's important to test on a default configuration of Blender. There are 3 possible issues which can affect the addon:

For troubleshooting, please see: <http://cw1.me/troubleshooting>