

SVPS Documentation

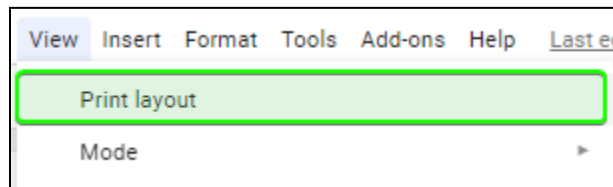


Latest Revision: 11/2/2021

Support: support@badrhinogames.com

Discord: <https://discord.gg/pwGMqPqmmms>

Note: This is best viewed with "Print View" disabled



1. Project Structure

1.1. Content

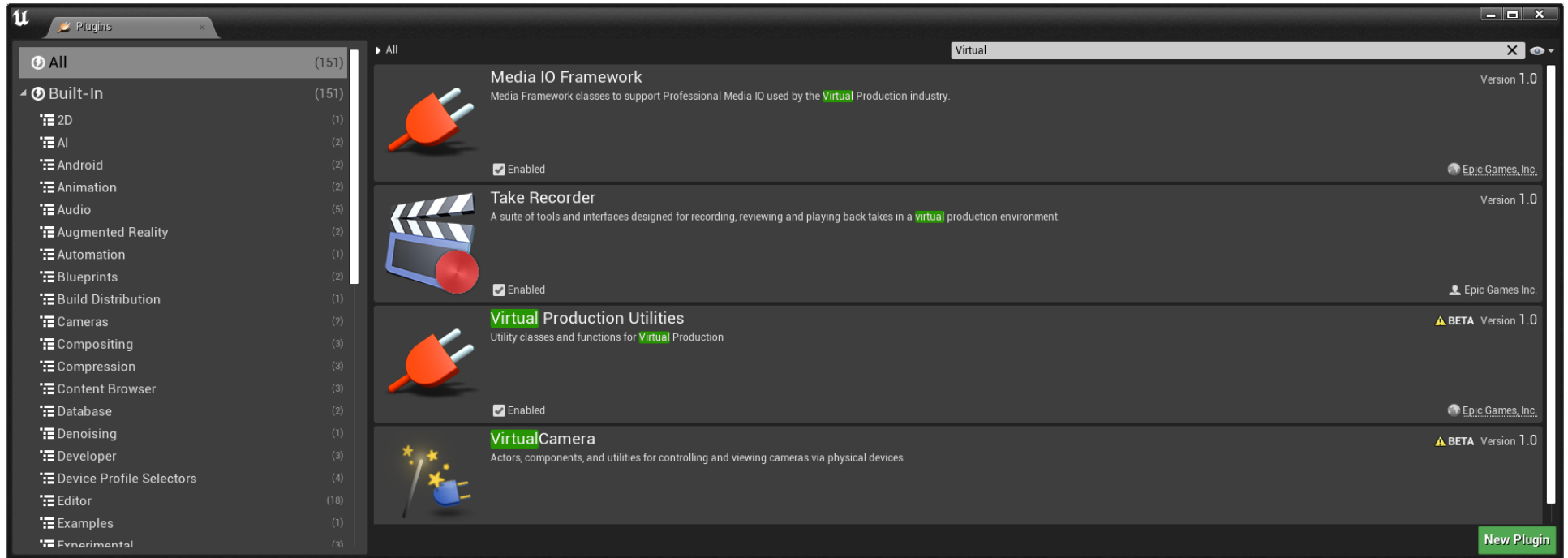
Content/SVPS/

- **.../BPs**
 - Various Blueprint/Prefabs
- **.../Characters**
 - All necessary character rigs, materials, and textures for both Jack & Dog
- **.../Cinematics**
 - **Camera Modifiers:** Camera Shake for aesthetic visual effects
 - **RenderPreset:** Movie Render Cue presets used for rendering the final videos
 - **TOD:** An example short Time of Day sequence used for validating materials
 - **Trailer:** Contains the Master Sequence and Subtrack used for the Trailer Cinematic
- **.../Environment**
 - All meshes and materials used for environment--based assets
- **.../Maps**
 - **Assets:** Asset zoo of all assets contained in the project
 - **Demo:** The virtual production set.
- **.../MasterMaterials**
 - Standardized material library used across all assets included in this project.
- **.../Props**
 - All propping and set dressing assets
- **.../Terrain**
 - All Terrain Based assets, including vegetation, materials, and shaders

2. Virtual Production Set Configuration

The Demo map included in this project contains several key elements that will enhance your Virtual Production workflow.

2.1. Plugins



The project has various plugins enabled specific to the Virtual Production workflow. The critical ones are:

- **Virtual Production Utilities**
- **Virtual Camera (if you want to use LiveLink)**
- **Movie Render Queue**
- **Movie Render Queue Additional Render Passes**

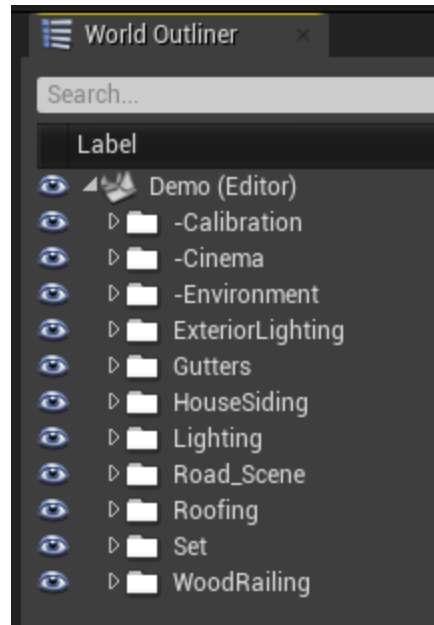
2.2. Virtual Set



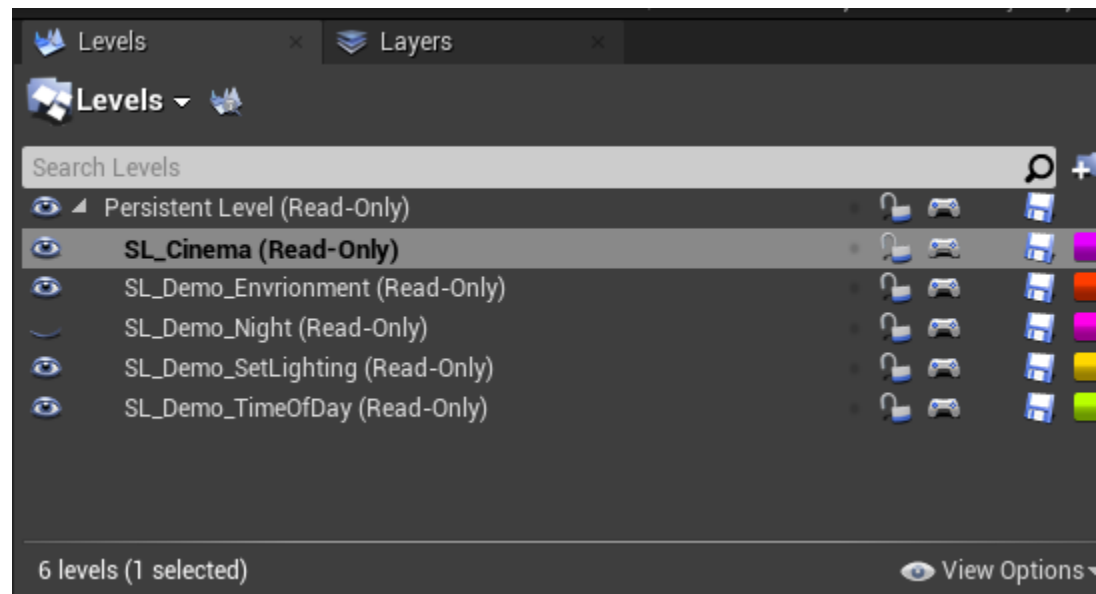
As a general best practice, the persistent level (“Demo”), is setup with the minimum core assets needed for the virtual set. Any additional assets needed for a shot are added to a separate Shot Track in the Sequence itself as a “Spawnable” item. This allows for a more complete virtual set, but with the ability to add assets in on a per-shot basis.

2.3. Organization

The Demo map includes nested folders in the World Outliner for easy asset reference.



2.4. Sub Levels



SL_Cinema: Contains Post Processing Volumes and Standard Cinema Cameras for easy duplication

SL_Demo_Environment: All environment-based assets including terrain and foliage

SL_Demo_Night: Exterior nighttime lighting

SL_Demo_SetLighting: All accessory lighting excluding the Day/Night Exterior Lighting

SL_Demo_TimeOfDay: Exterior daytime lighting

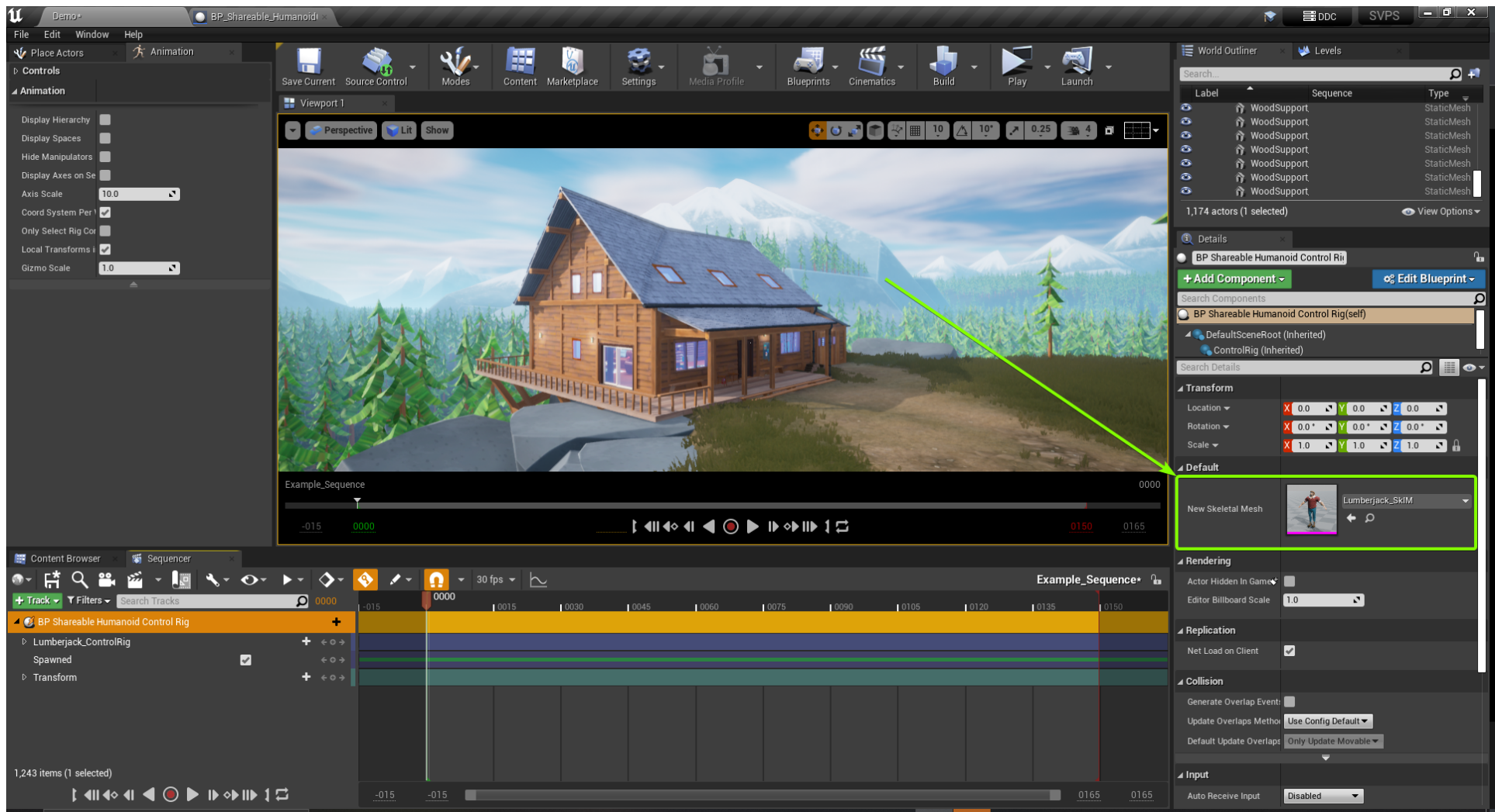
2.5. Lighting

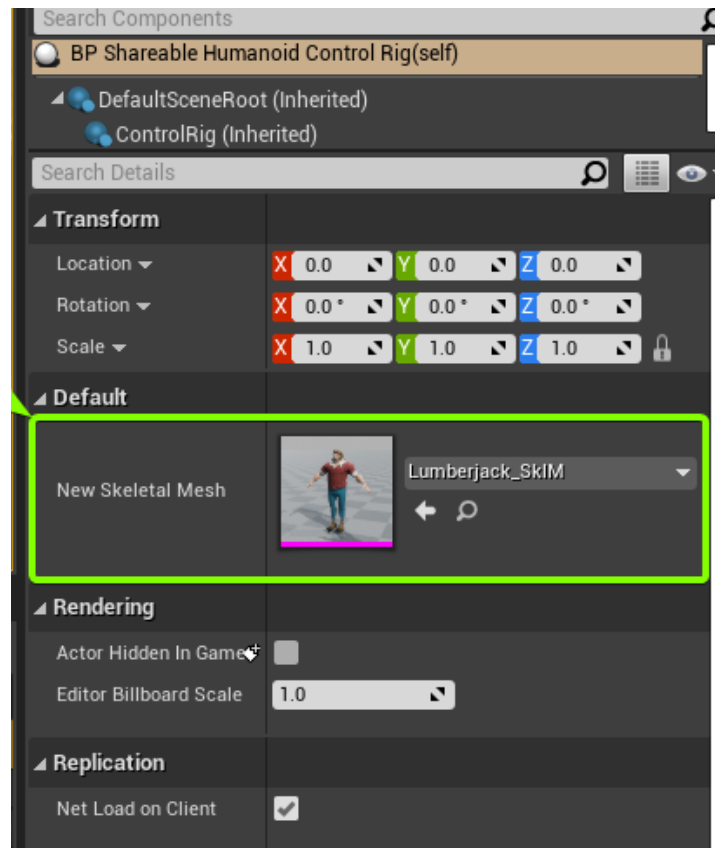
The Demo map was setup to leverage 100% dynamic light, thus never having to bake your lights. Enjoy!

3. Animation Tools

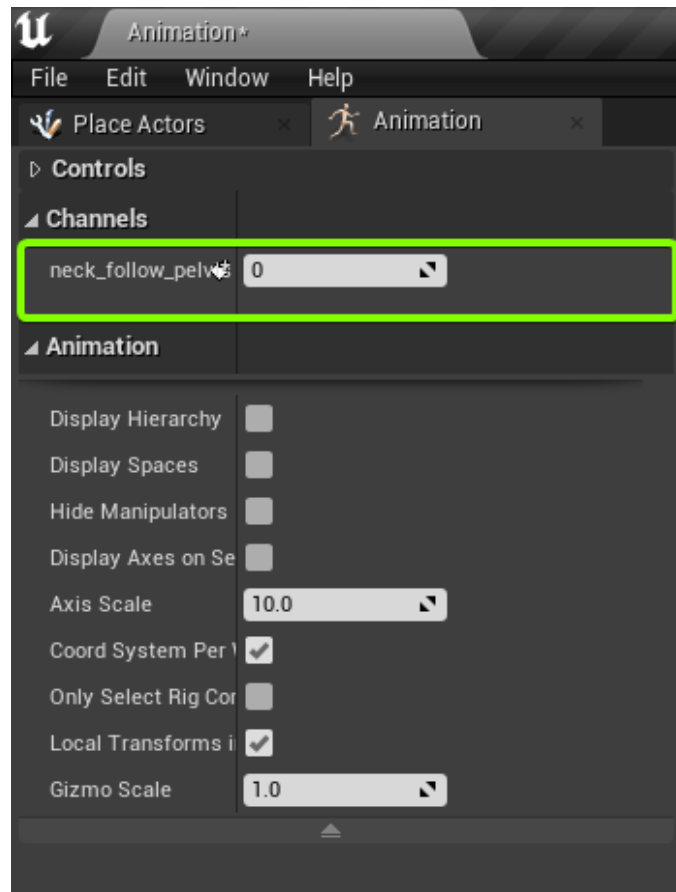
3.1. Lumberjack

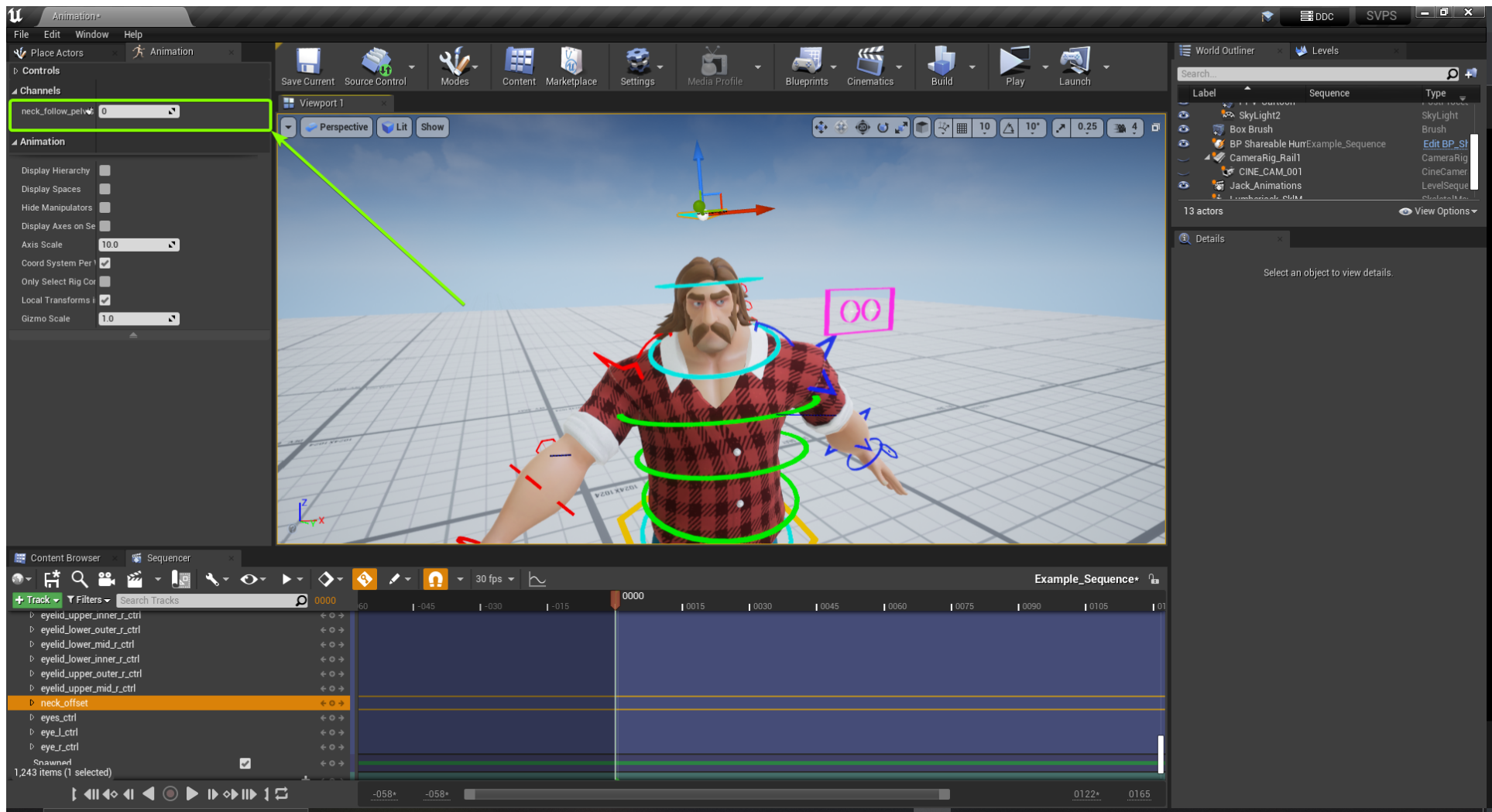
You can use our Control Rig with your own character, as long as it has the same skeleton set up and the Unreal Mannequin and the **Lumberjack_SkIM**. To do that, drag and drop the “**BP_Shareable_HumanoidControlRig**” to the Sequence and on the Details panel on the right, under “**New Skeletal Mesh**”, select the mesh you want:

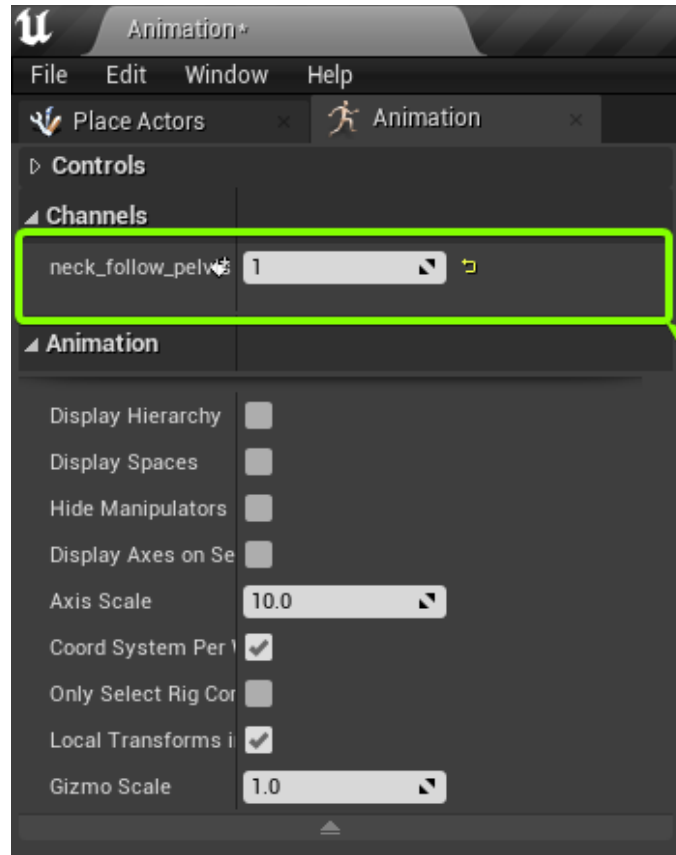


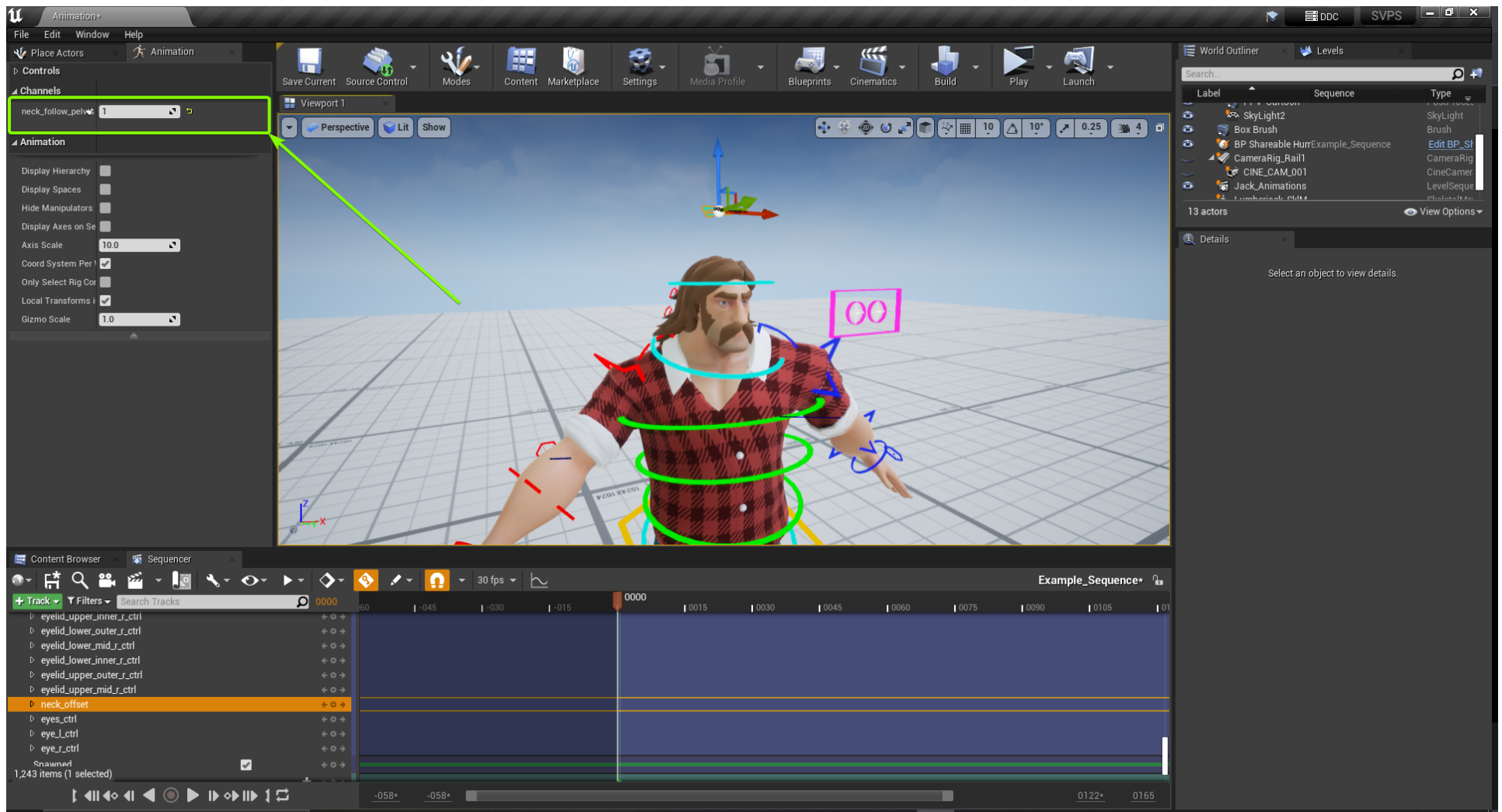


You can change what the neck controller will follow using the “Neck_Offset” control. If it’s set to **0**, the neck will follow the “**spine_03_ctrl**” controller. If it’s set to **1**, it will follow the “**body_ctrl**”:

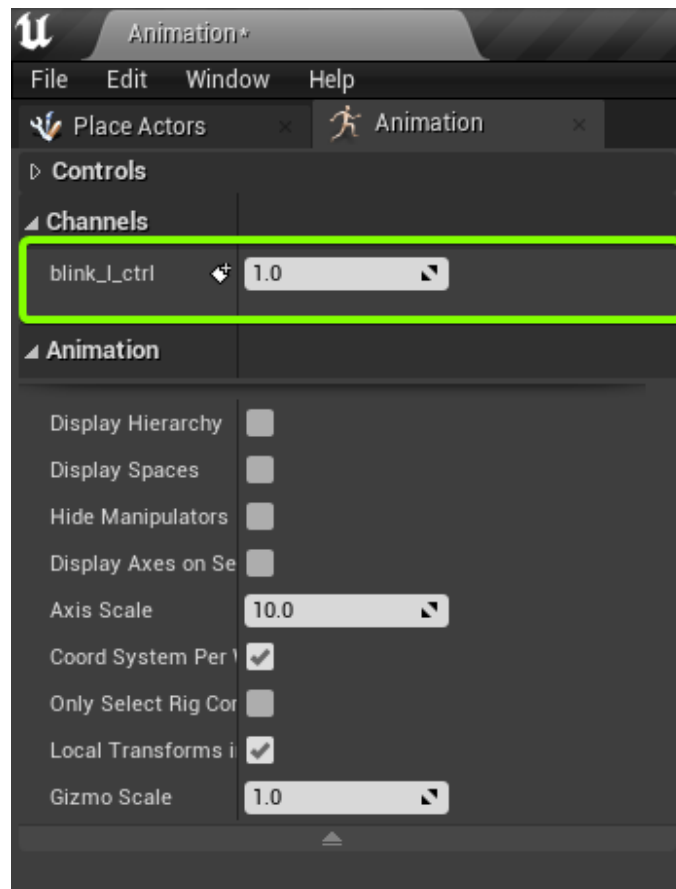


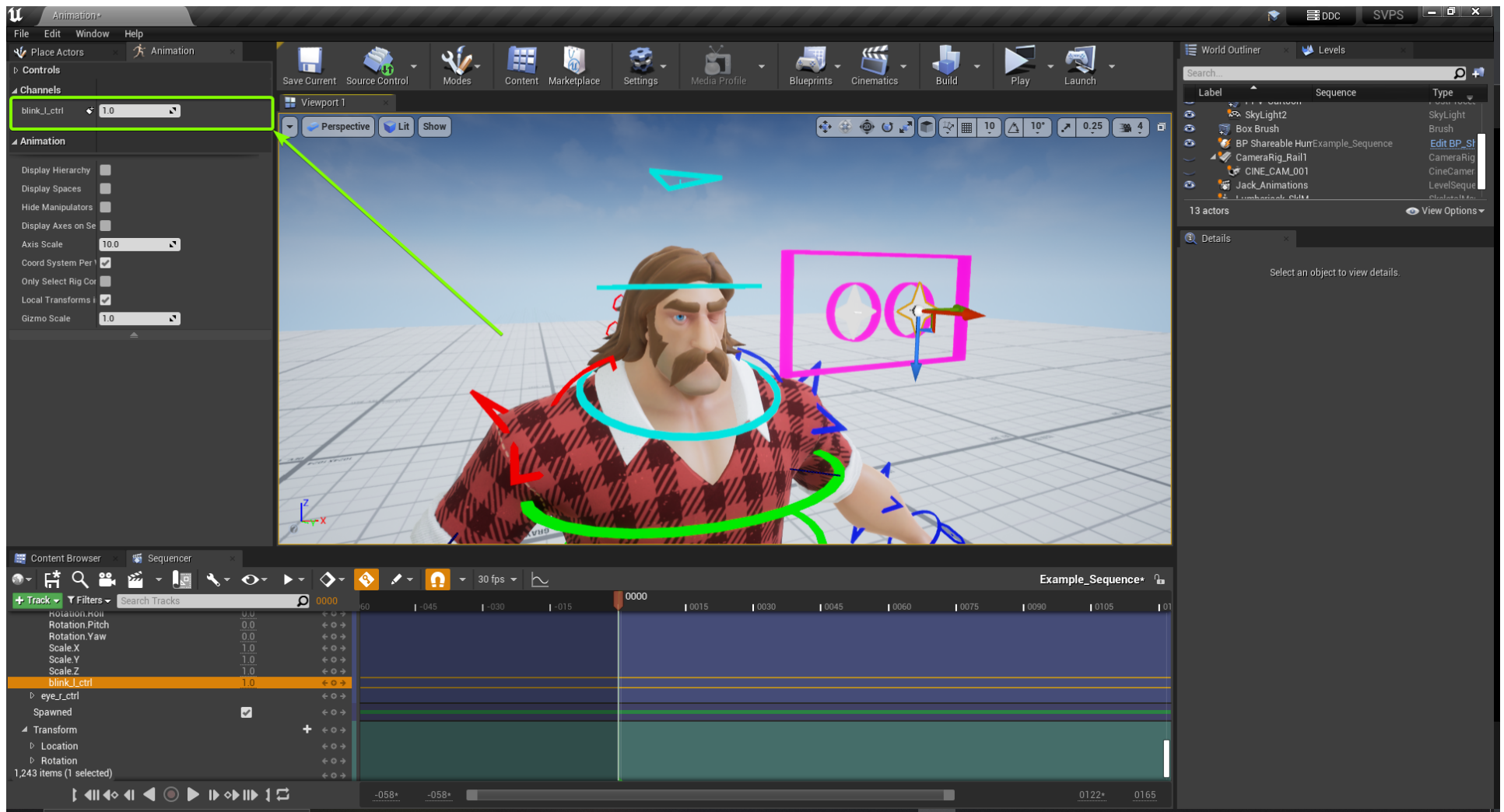




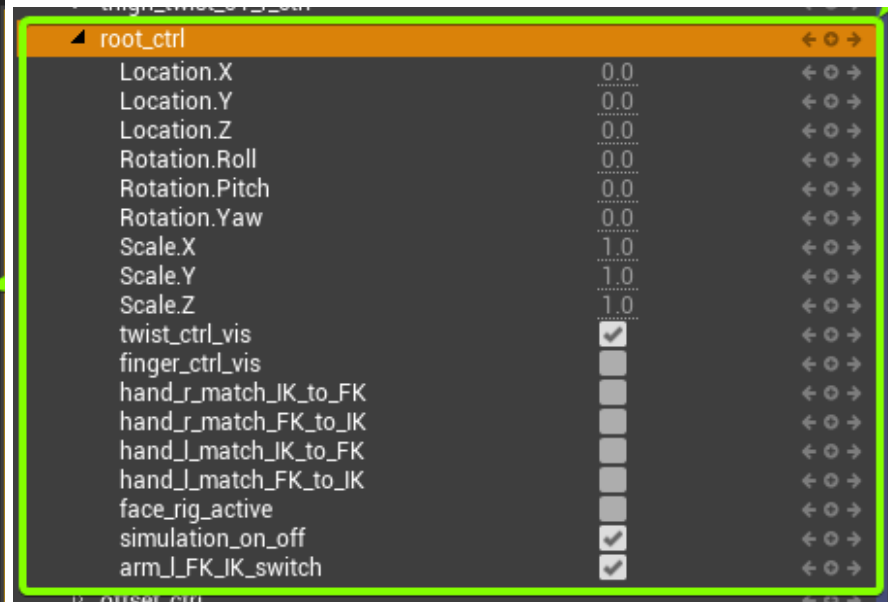
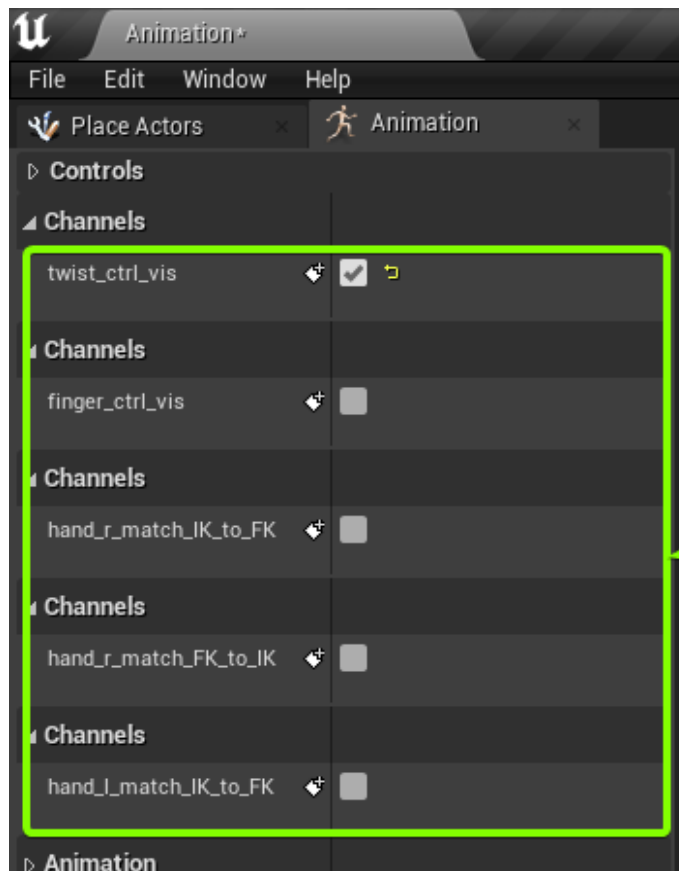


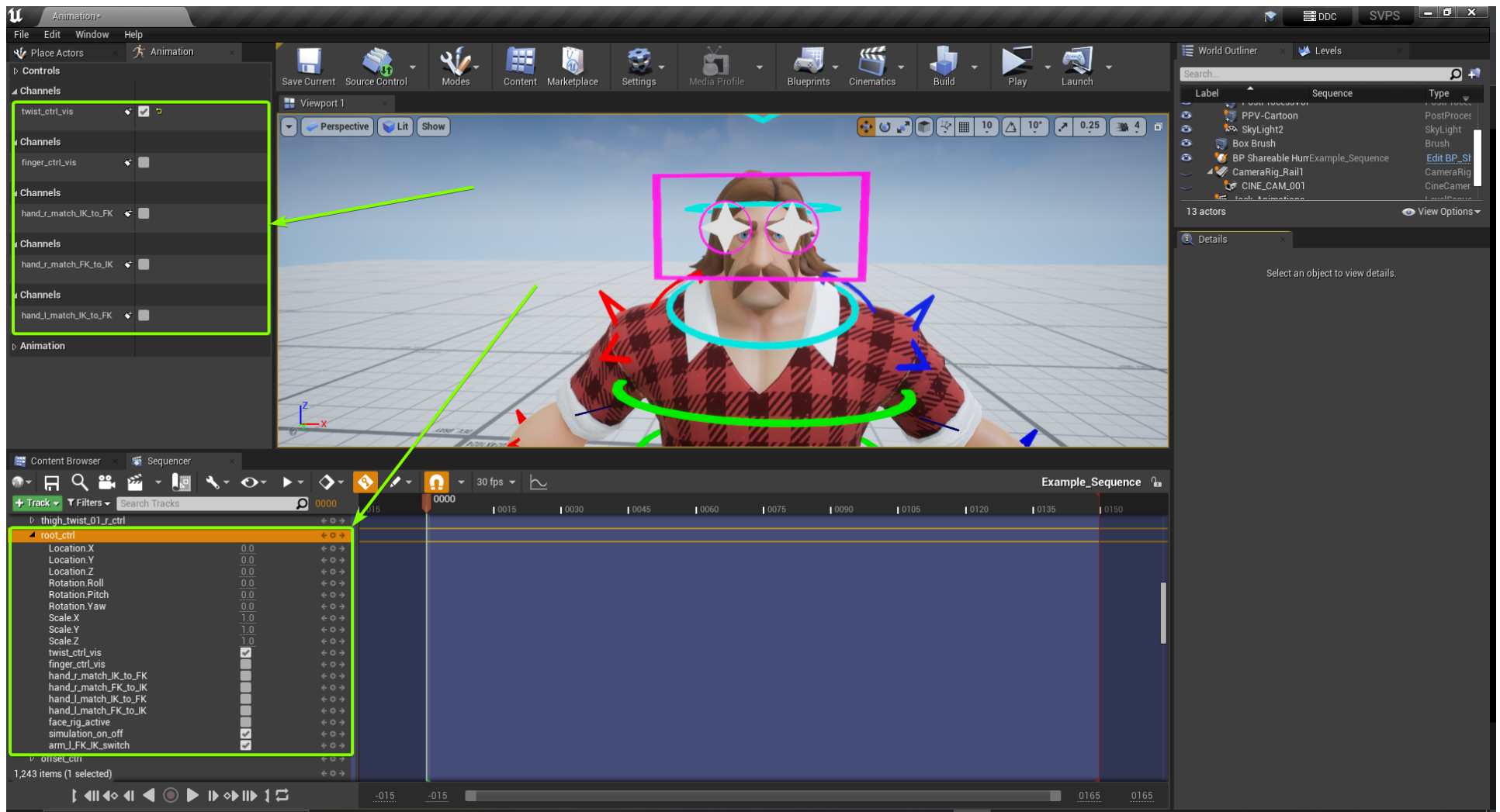
There's a morph target set up in the control rig that controls the blink of the Lumberjack. The controllers are inside the eyes controllers and are called "**blink_l_ctrl**" and "**blink_r_ctrl**":





Under the “**root_ctrl**”, you can toggle the visibility of some controllers like twist controls, face controls and finger controls, as well as toggle the simulation of the mustache.





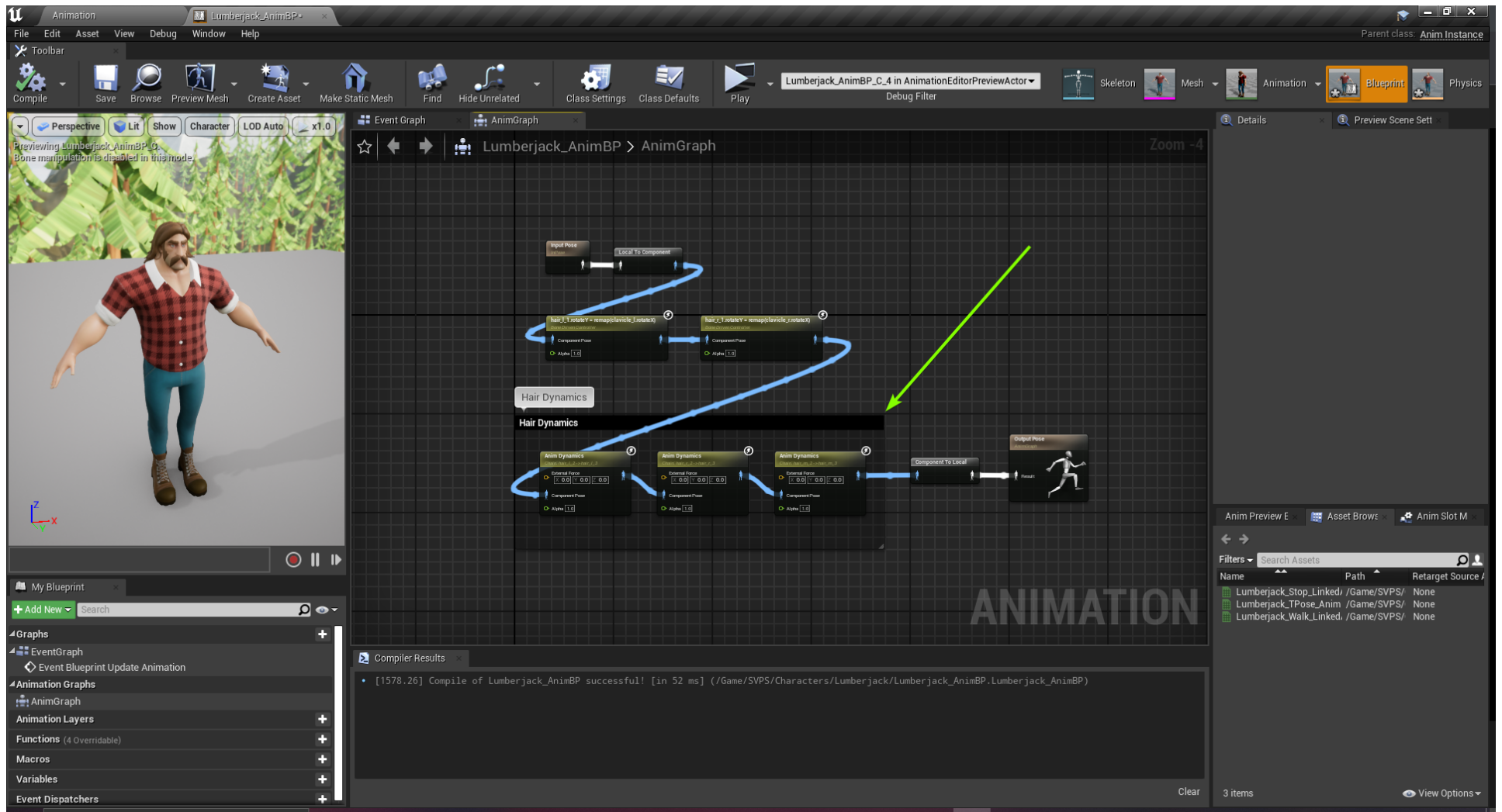
You can switch between IK and FK for the arms using the hexagon controller above the hands:

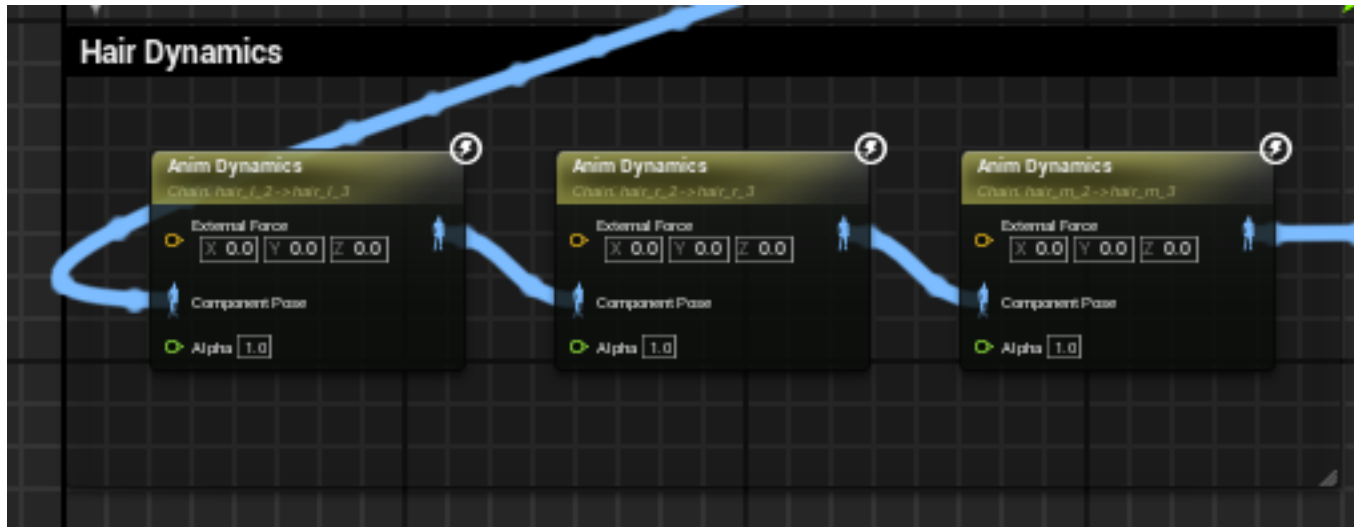
Video: https://drive.google.com/file/d/1hadXVyQb3x--tyeTKG4p1UDXr9dym_1K/view?usp=sharing

3.2. Hair Simulation

The hair simulation is being handled inside of a Post Process Animation Blueprint, called "**Lumberjack_AnimBP**". You can make tweaks to make it fit better your needs or disconnect the nodes to turn it off, or simply remove the post process animation blueprint from the skeletal

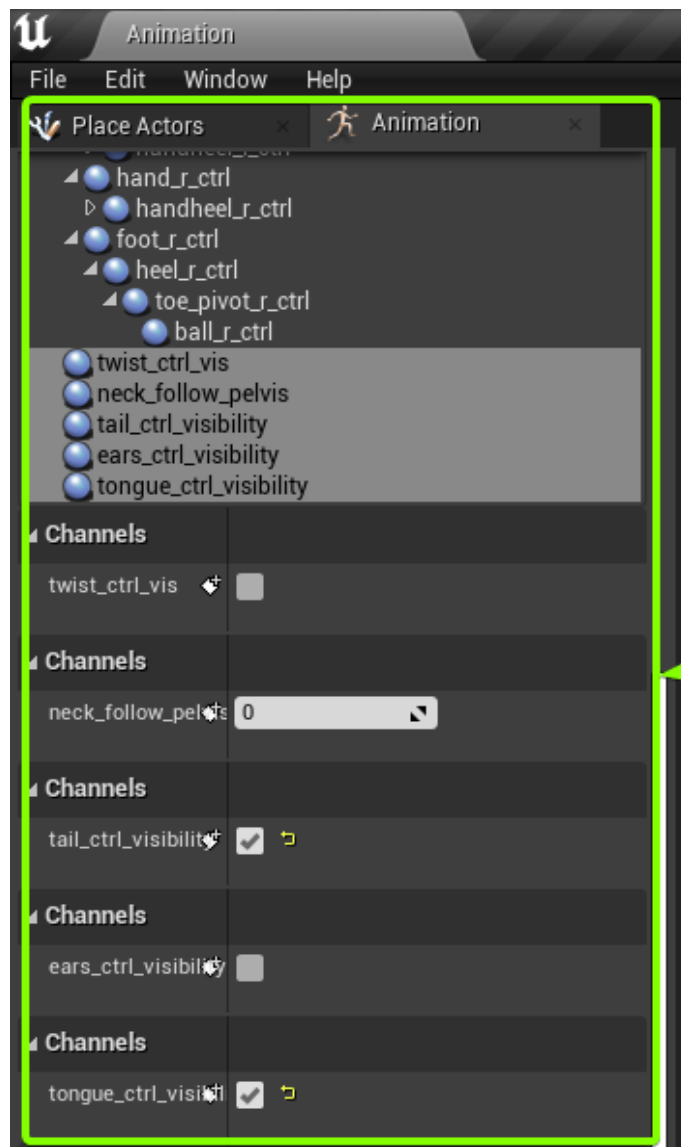
mesh:

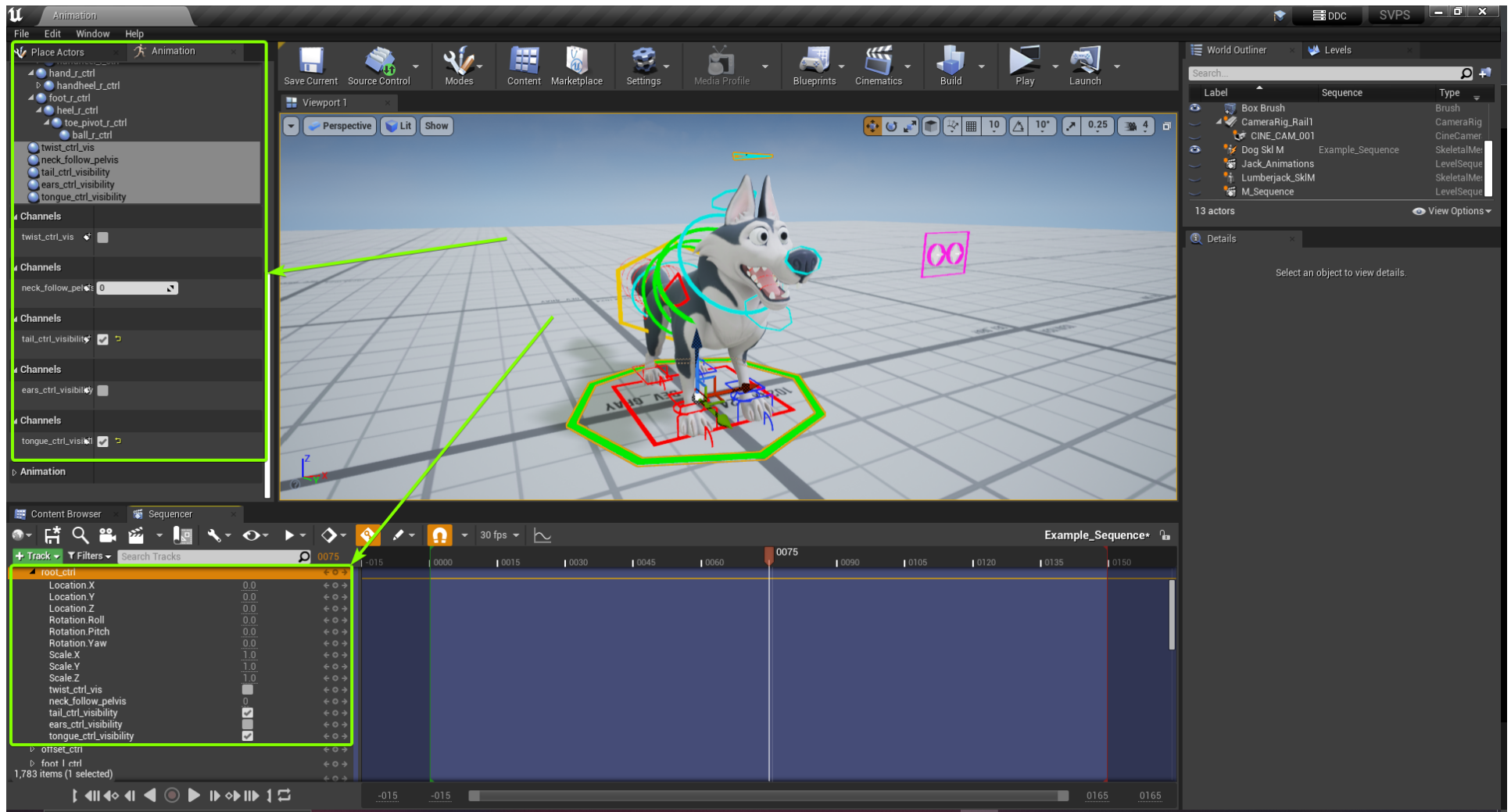




3.3. Dog

The dog control rig is similar to the lumberjack, but has a few different controls. In the “**root_ctrl**”, you can toggle visibility for the twist, tail, ears and tongue controllers. It also nests the control “**neck_follow_pelvis**” that switches the neck parent from the “**spin_03_ctrl**” to the “**body_ctrl**”:





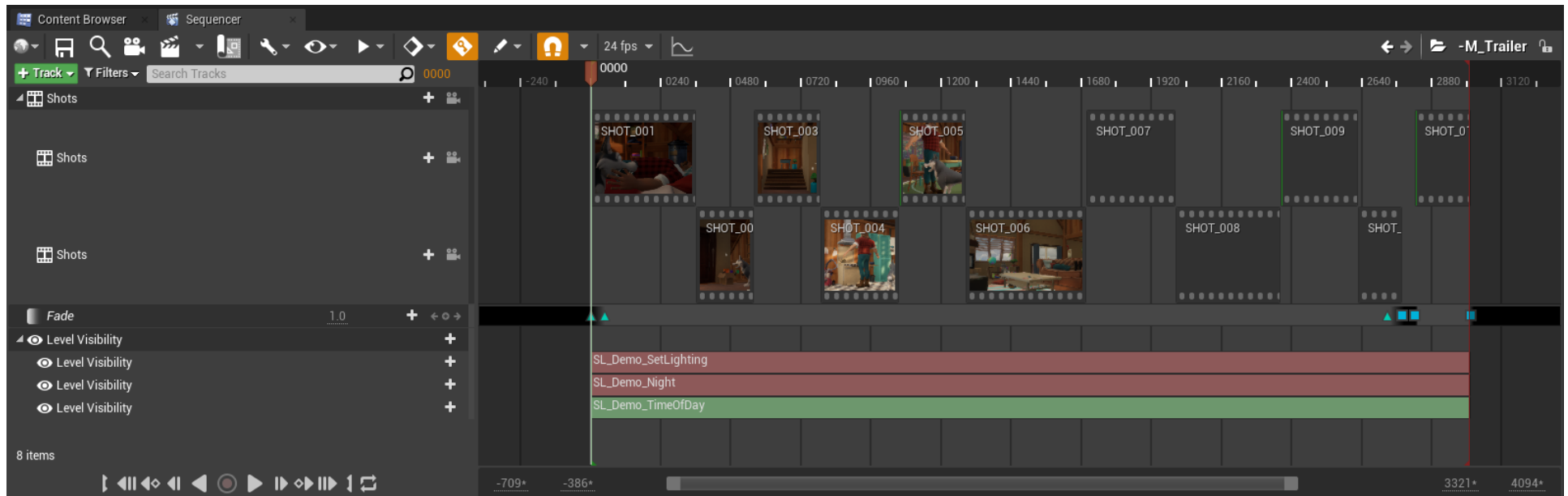
4. Cinematics

The “-M_Trailer” Sequence show in the project files is located here: **Content/SVPS/Cinematics/Trailer/**

We’ve organized the cinematics in the following way: **Master Sequence / Shots Master Sequences / Individual Shot Tracks**

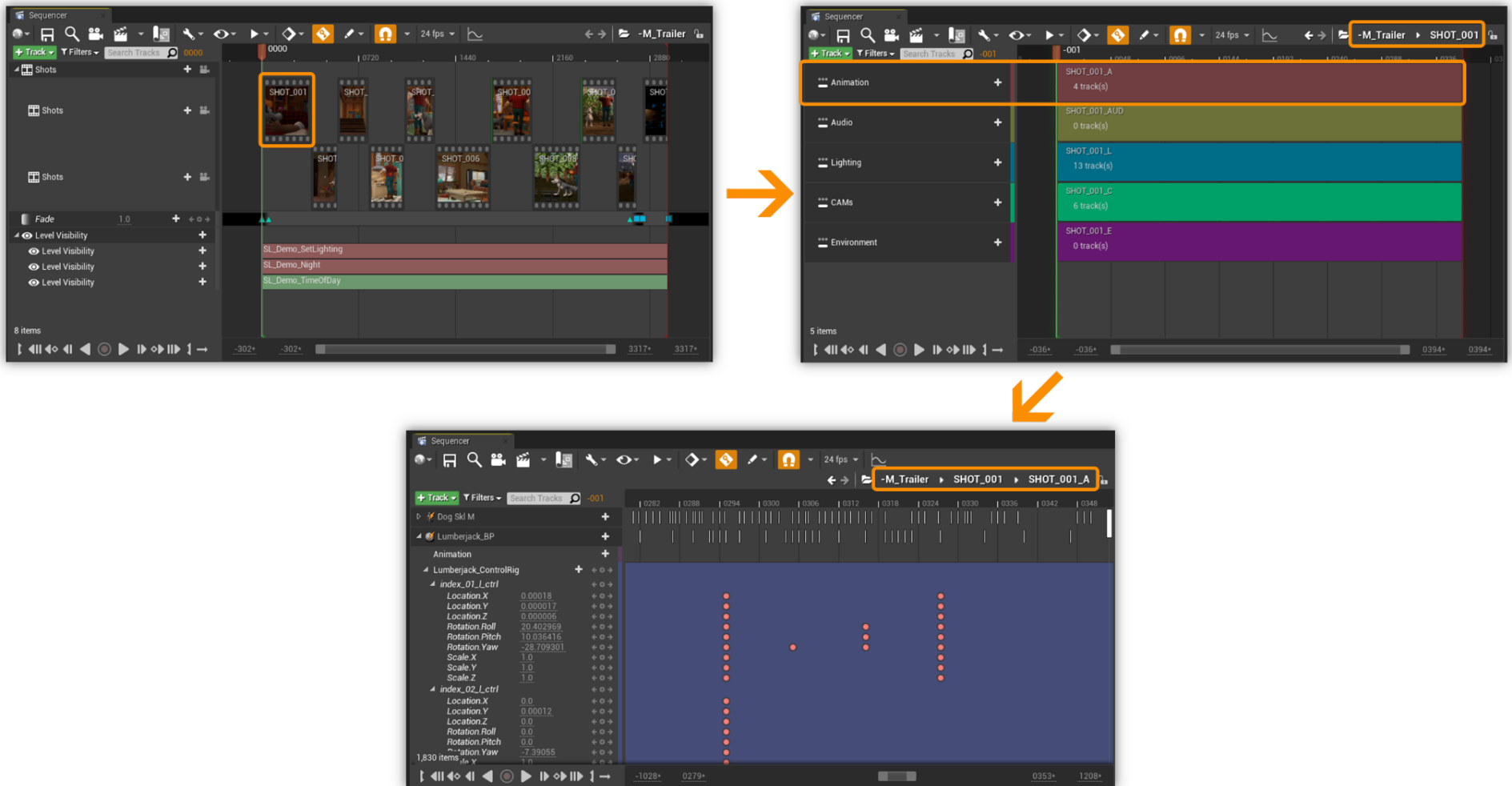
4.1. Master Sequence

The Master sequence for the “Trailer” cinematic includes all of the Shot Master Sequences, as well as fade tracks, level visibility tracks and any other tracks that affect the whole cinematic.



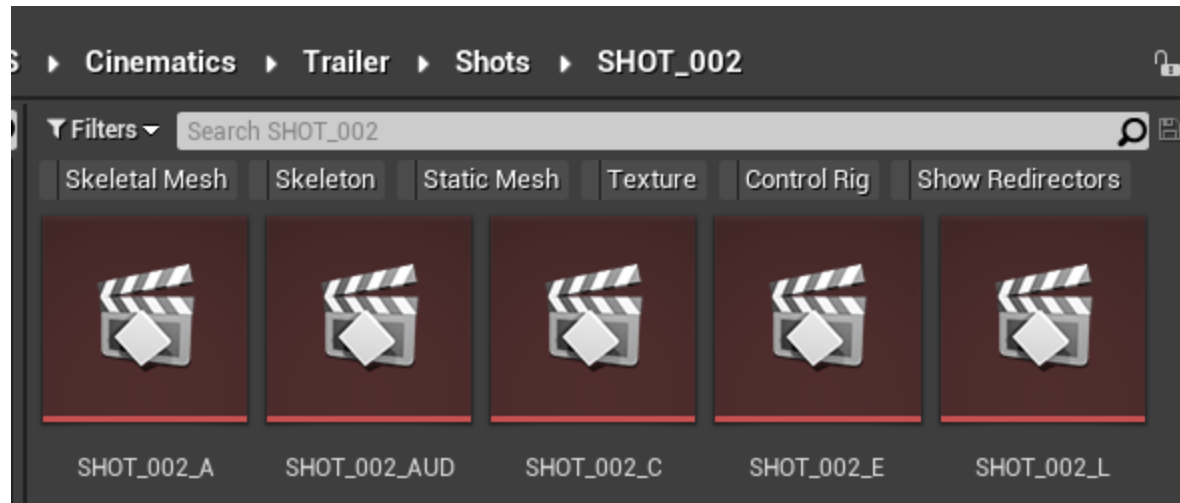
Each shot is divided into sub shots (Subscene Track in sequencer). Utilizing subscenes breaks each shot into logical production disciplines and keeps each shot better organized. The other benefit to this approach is that multiple disciplines can work on the same shot simultaneously without requiring the entire shot to be checked out in version control.

It's important to note that the Subscene tracks are simply nested Animation Sequences, but when used in this way can be used as an organizational tool for each shot. The image below shows how SHOT_001 is broken down into logical subscenes; Animation, Audio, Lighting, CAMS, and Environment.

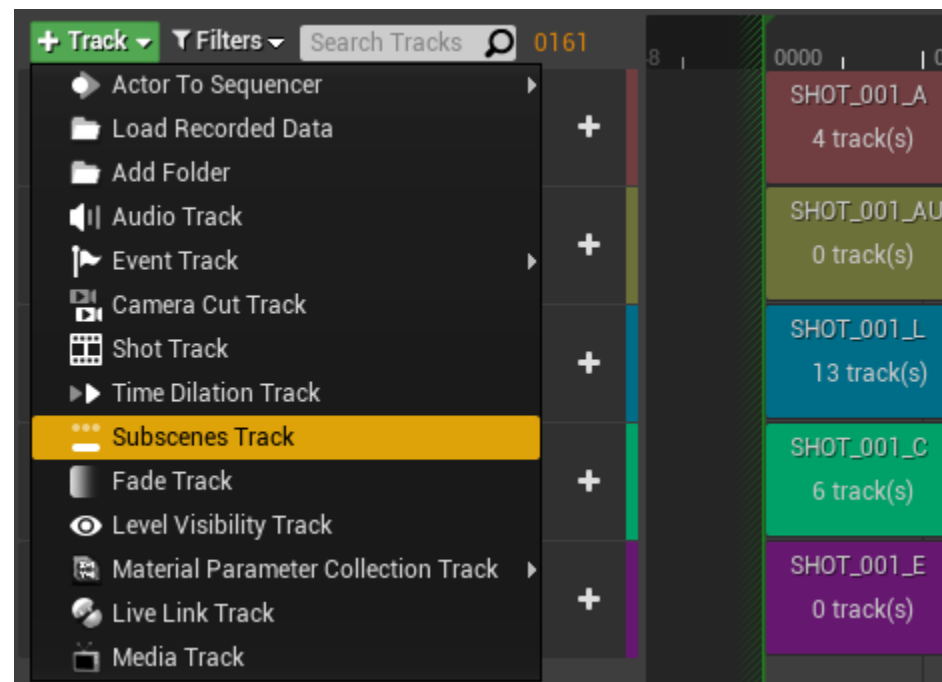


This is the naming convention used per shot is as follows:

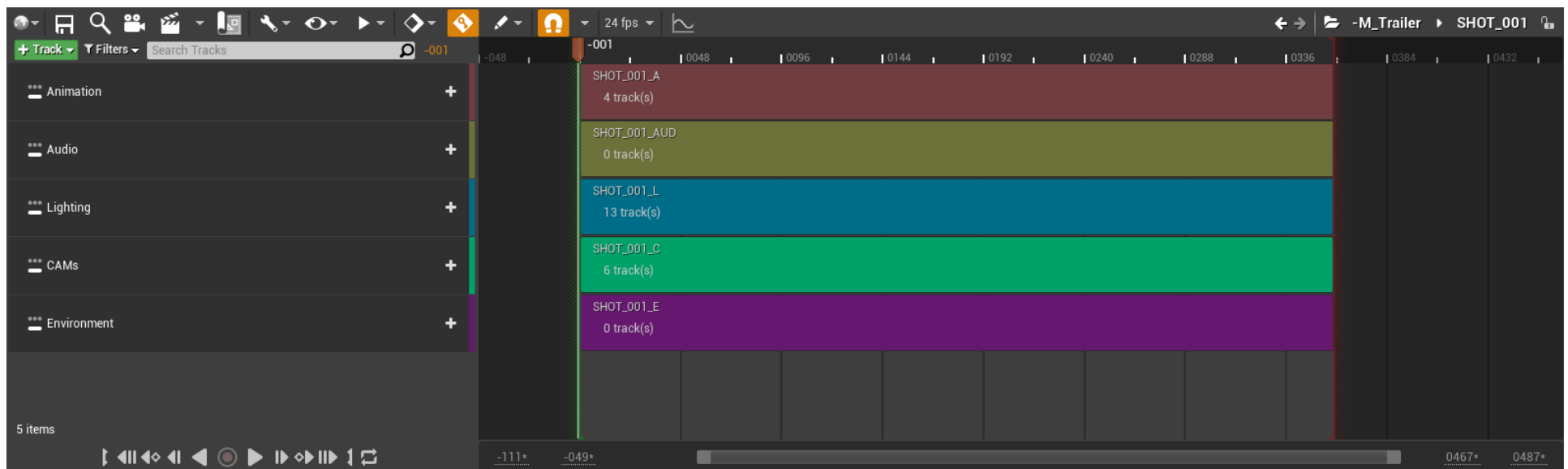
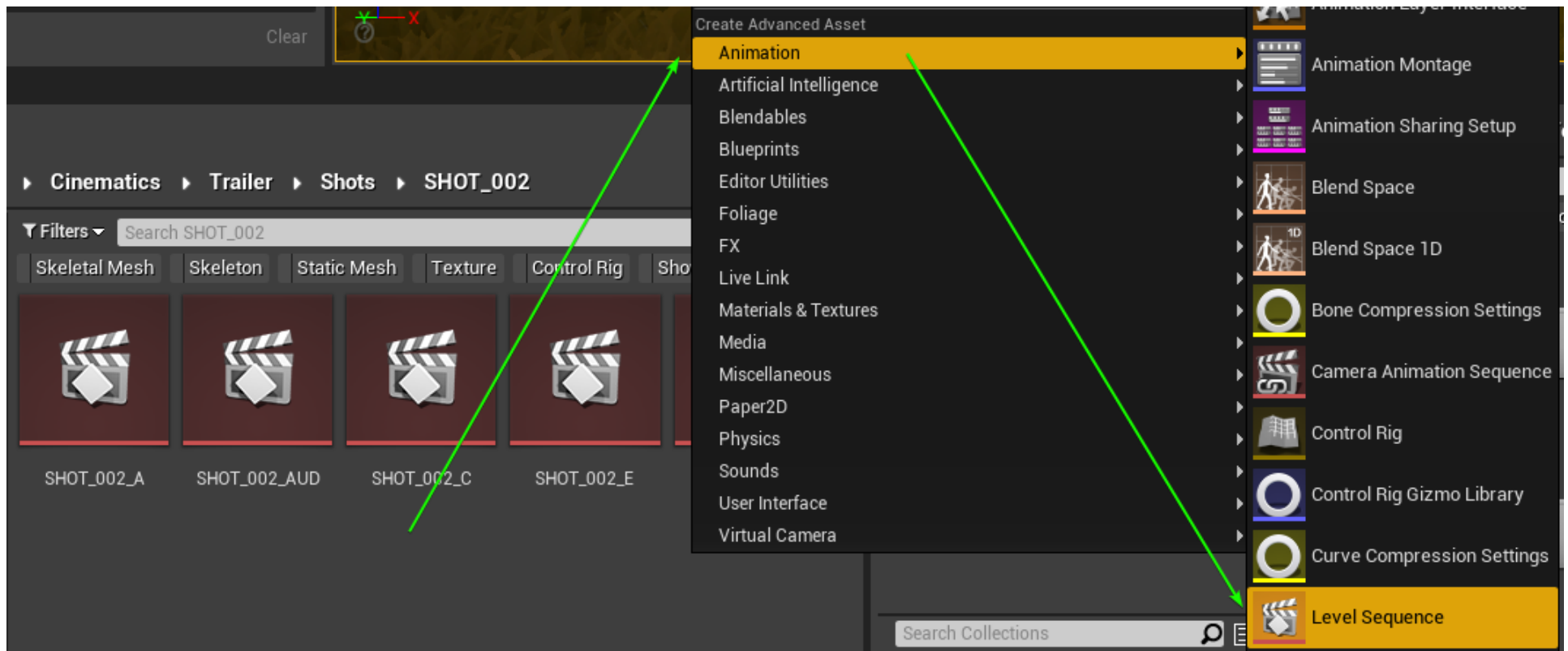
- SHOT_[number]_A:** Any animations specific to that shot are handled here, including Control Rigs and other actors;
- SHOT_[number]_AUD:** Any audio specific to that shot;
- SHOT_[number]_L:** Any lighting specific to that shot;
- SHOT_[number]_C:** All the camera work specific to that shot;
- SHOT_[number]_E:** Any changes in the environment or new additions to the scene specific for that shot;



To add additional sub tracks (ex: Blockout, VFX, etc.), simply click the “Track -> Subscene Track” in the Shot sequence.



Then add/create a new Animation Sequence, ideally following the standard naming conventions set forth in your pipeline



4.2. Notes

When making changes to the duration of the shot, you'll have to update all sub shots duration in the Master Shot sequence

Video: https://drive.google.com/file/d/11XotA6CrRwlabYFhN5jJn_muSfdnFUN/view?usp=sharing

That change will be necessary inside each of the sub shots as well (in case you're increasing the duration of the shot):

Video: <https://drive.google.com/file/d/1U05lAVY1B2z0X-clSfctgmHERABW6cCB/view?usp=sharing>

The folder structure that we adopted for the project is the following:

- **Trailer:** master folder for the cinematic that contains the “**-M_Trailer**” master sequence and the Shots folder;
- **Shots:** contains all master shot sequences, as well as all the folder for each specific shot;
- **SHOT_xxx:** contains all sub scenes for each specific shot (animation, audio, camera, environment and lighting);

We included a folder under SVPS > Cinematics > Trailer > Shots called “**-Template**” that contains templates for all sub shot tracks. If you want to add a new shot, simply copy the shot folder and animation sequence to the new shot folder, change the shot number as not to cause confusion, then add the sequences to the shot master sequence.

5. Exporting

The project includes a Movie Render Queue preset, suitable to virtual production workflows. Simply add your Master Sequence to the Movie Render Queue Cue and select the “SVPS_MRS_Master” Preset.

