

## 3S Trailer Suspension

### Meeting # 14

**Start Date & Time:** Thursday, 7/9/2020, 9:30am

**Members Present:** Caitlin, Robert, Anson, Kirk

**End Time:** 1:00pm

#### **Last Meeting:**

- Finalized Bolts, washers, axles, 2000lb model, bearings, and 1 set of tubing
- Finalized lever ratios
- Discussing and finalize springs

#### **Today's Objectives:**

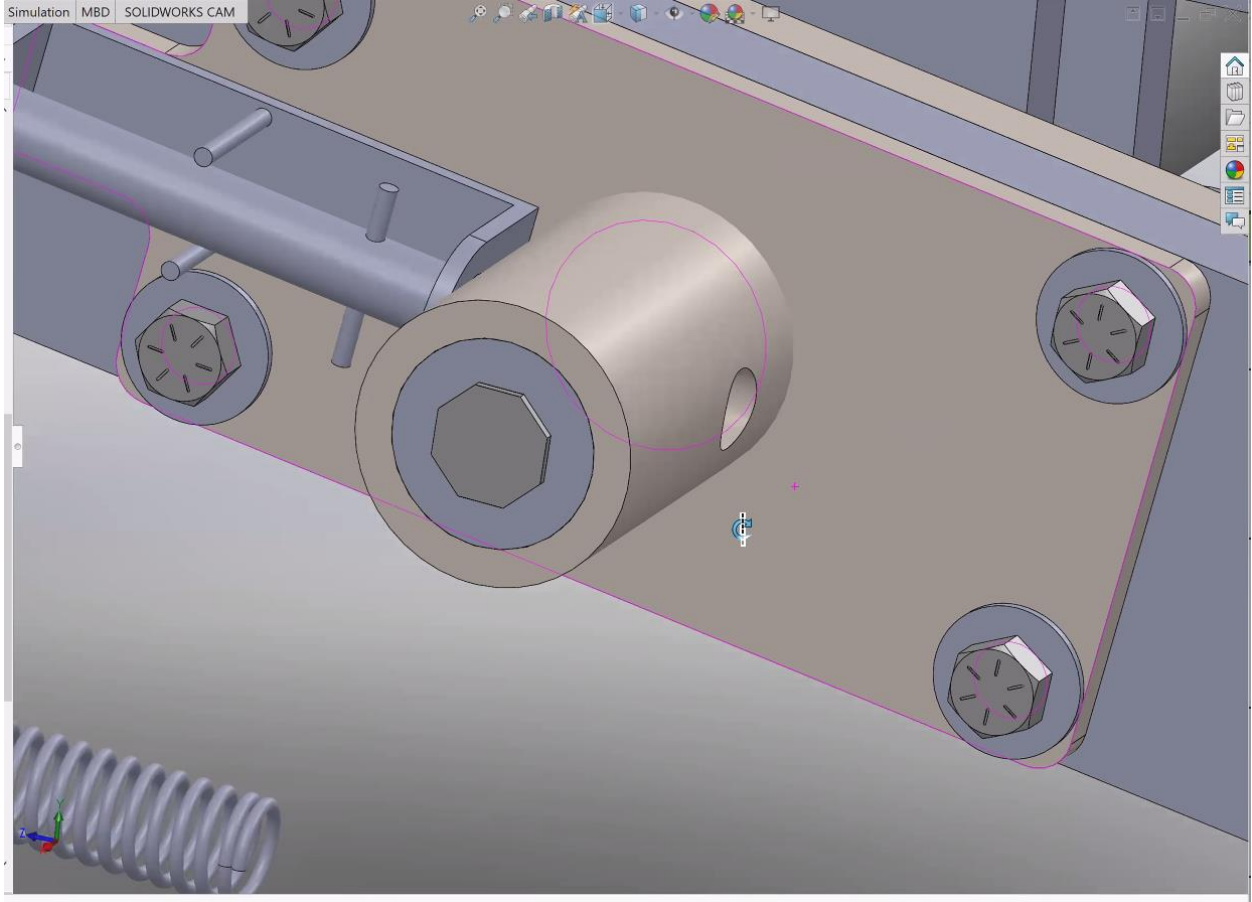
- Finalize springs
- Meeting with our client
- Progress check
- Date for our Design Review

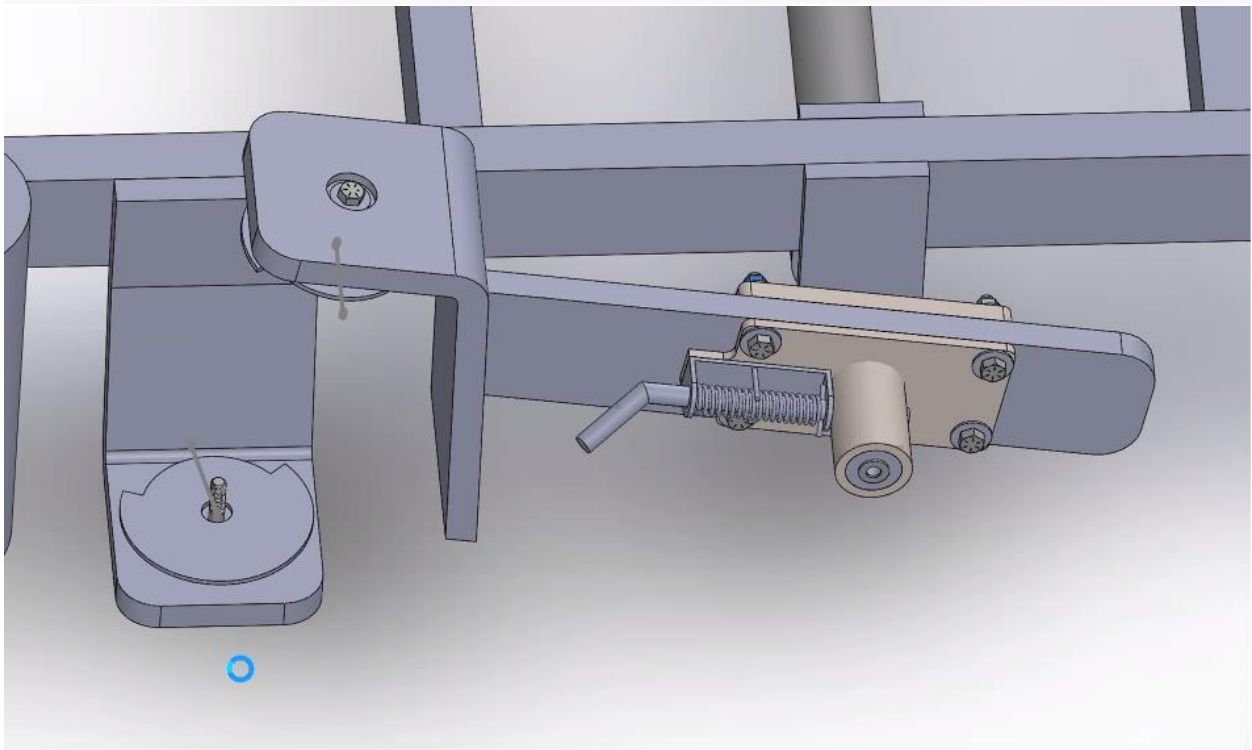
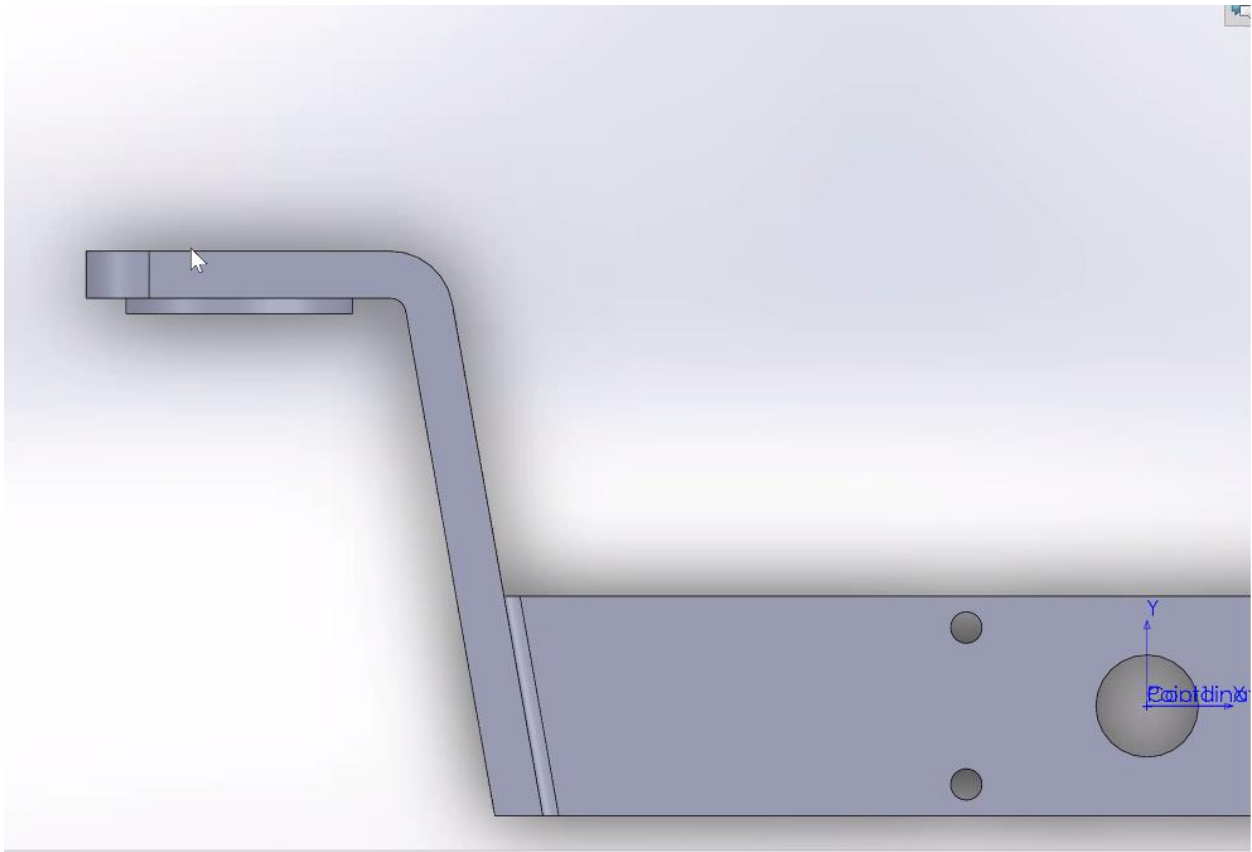
#### **Notes:**

- Thursday July 16<sup>th</sup> at 12:00pm is our Design review Date
- Coil spring mounts

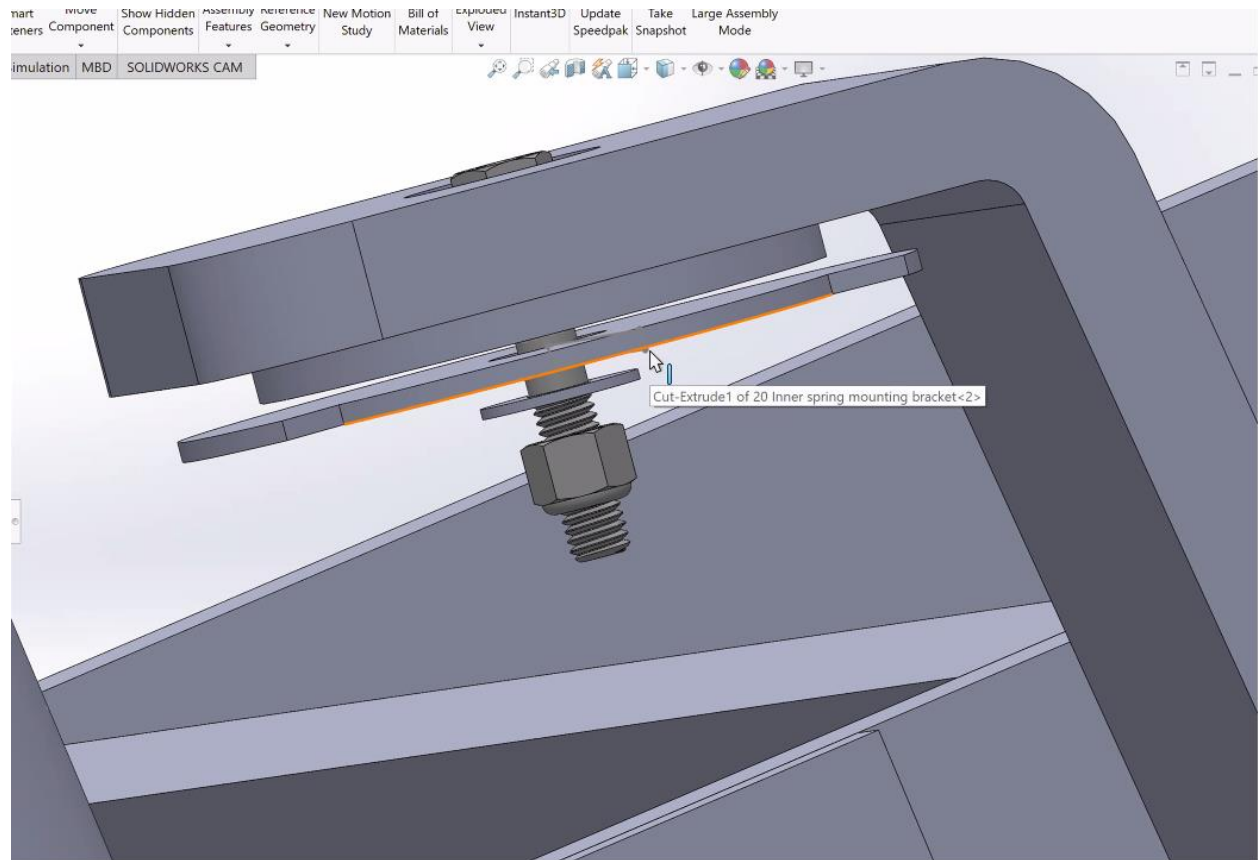


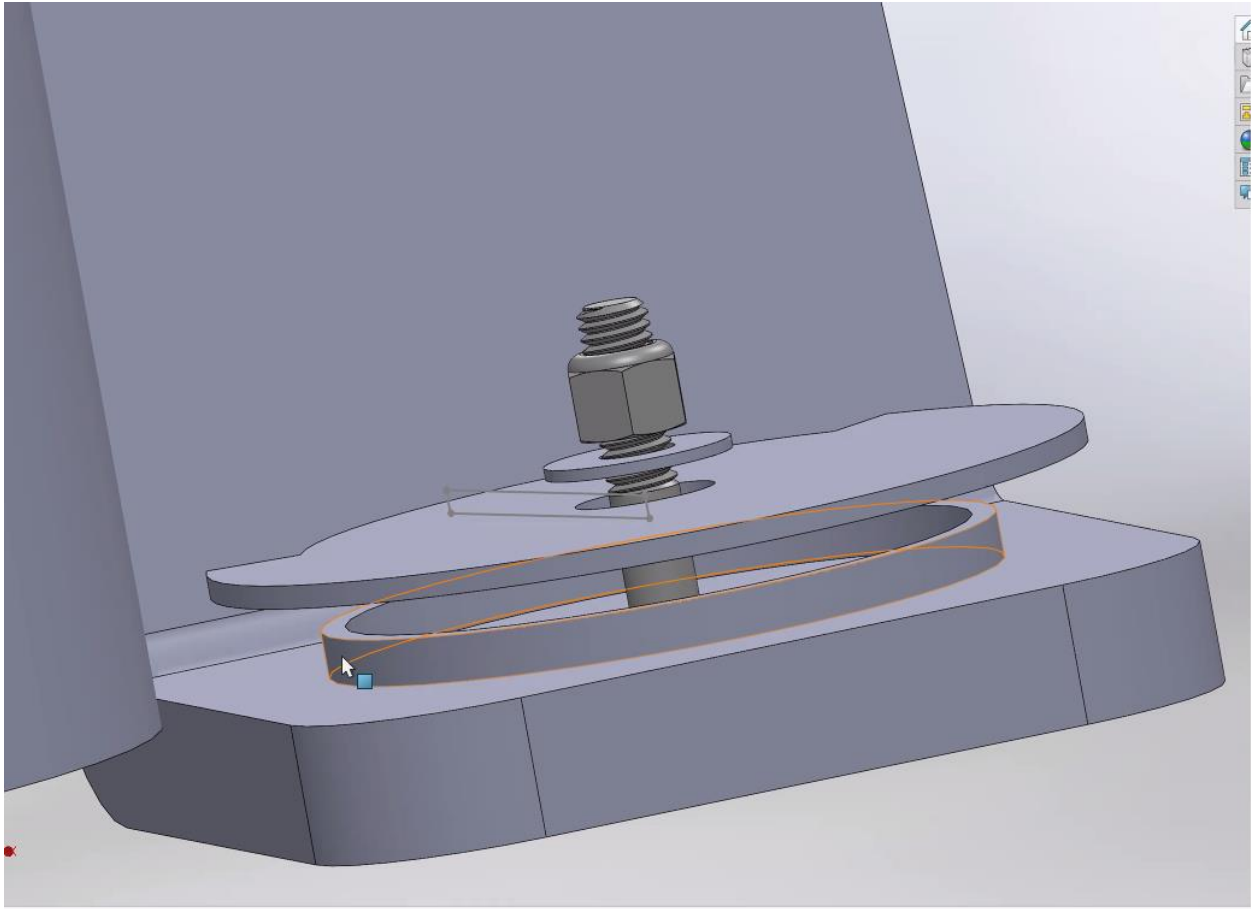
- Our 2000lb compression spring - OD = 4.687"



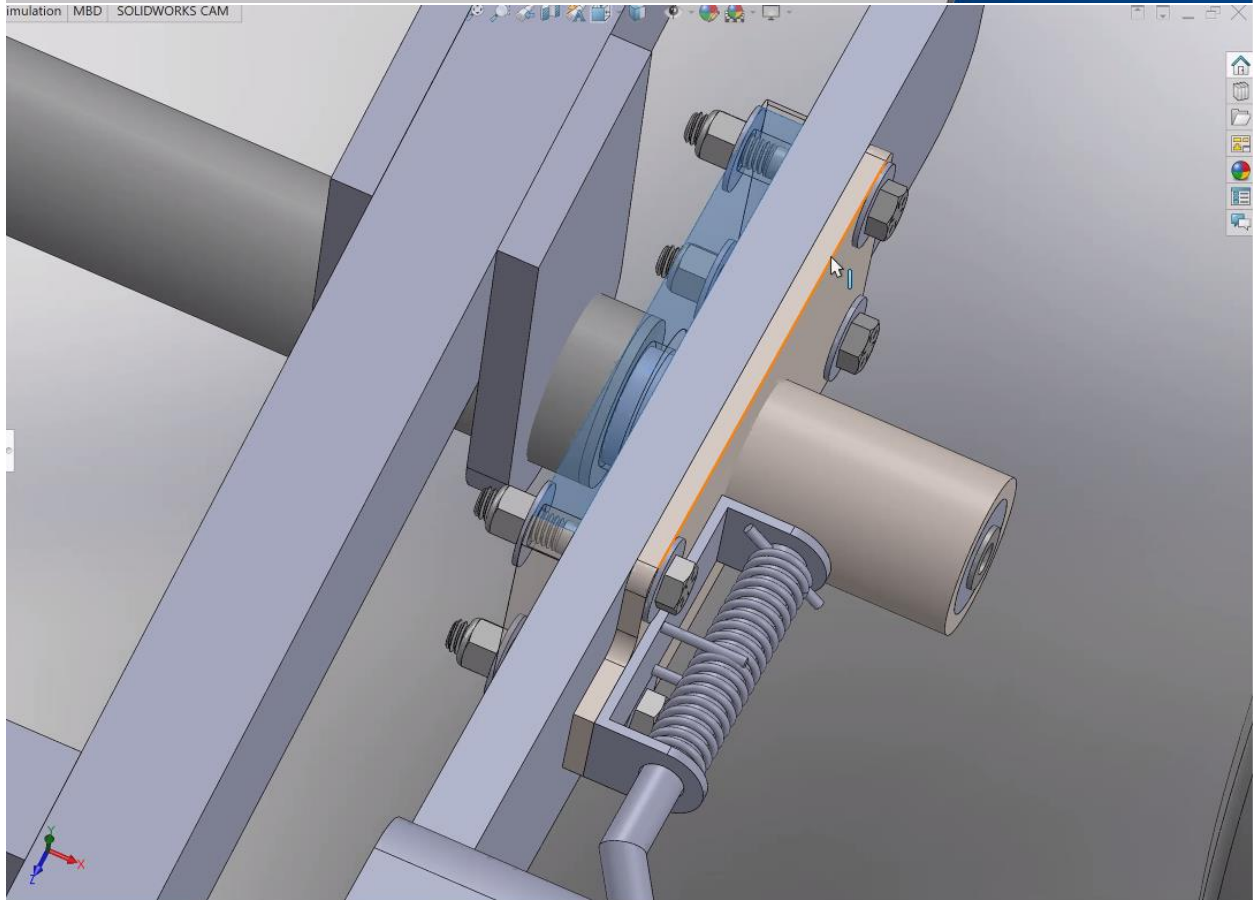
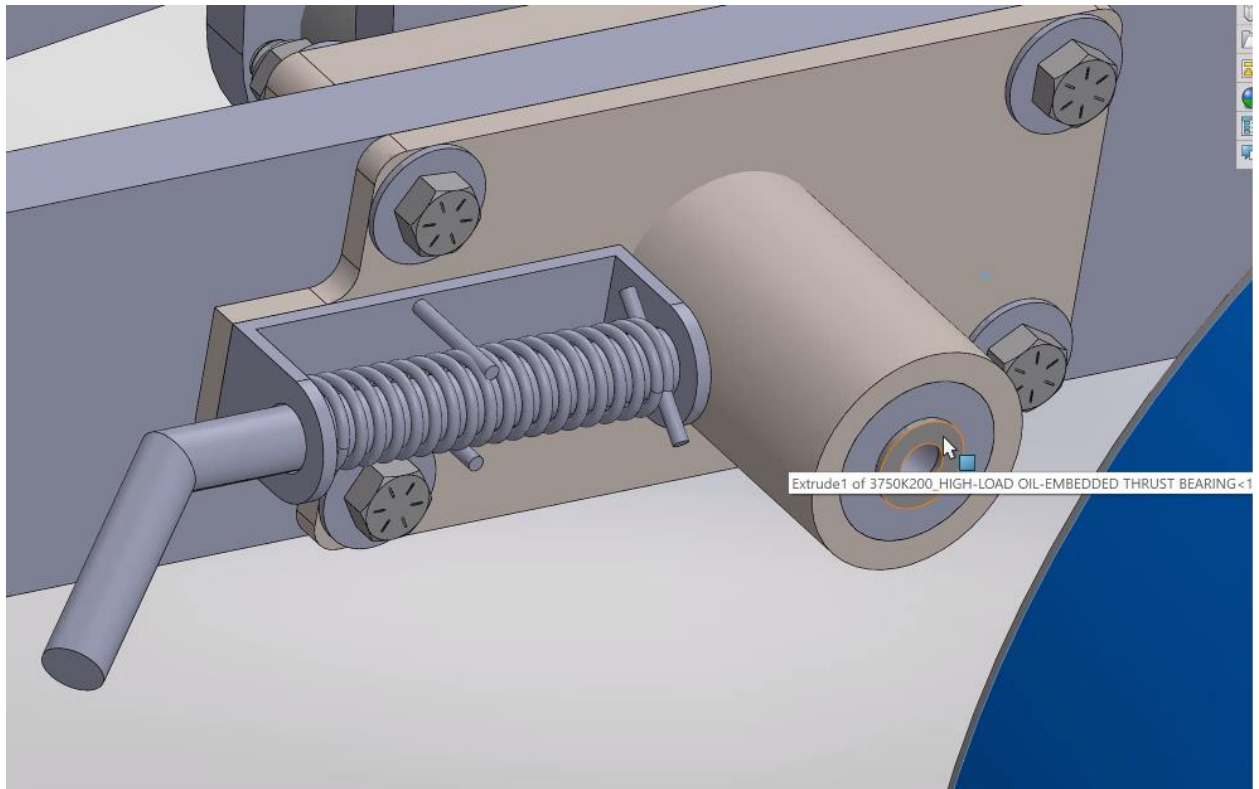


- Try a Sch 40 pipe - pipe is much more cost effective than the already sized metal tube





- Top and bottom coil spring mounts
- We are going to have to find different bolts because we need more threads
- Use the same bolt on top and bottom of the mounts



- If we were exclusively dependent, we wouldn't need that second sleeve bearing
- All the wheel hubs are different how they attach and mount?
- Do you want us to design something that attaches any type of wheel hub?
- Open aspect of the project - we didn't have that in the scope
- Not a requirement to do the tire mount - not in the scope of our project
- 1 inch of clearance from top of axle to bottom of frame
- Design review - Thursday the 16th as our meeting
- Anson is going to email George
- For the springs - FOS of 2?
- because everything is FOS of 3
- It's not going to be able to find 1 spring that fits all
- Different spring for each capacity - this is fine
- Shoot for a FOS of 3! But it's not 3 exactly that may be fine
- We need to have a trade-off discussion
- Don't want the lever to be more than 4 ft
- Can we do a 5ft lever?? If our bed is 8ft long
- Swenson is not opposed to that
- Axis of compression of the spring
- Can we find the exact angle of the top and bottom attachment points so that the spring wont buckle?
- Will it buckle?
- Small bend is manageable - too big will be the problem
- What is small?
- Make a design where it's always axial
- What if the bottom part is a pivoting joint?

#### For Next Time:

- Add a pivoting Joint to the suspension system
- Change the tubing to sch 40 pipe
- Individual Logbooks due Friday
- Wiki-page due Friday
- Portfolio due Friday

#### Comments/Concerns/Reflections from Today:

- We have minor things to fix for the 2000lb model then we can get started on our other models

Next Meeting Time & Date: **Monday, 7/13/2020, 9:30am**