Personal SolidWorks Project

The Golden Gate Bridge

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**Figure 1:** A view of the entire project
Figure 2: A close up view of the tower
Figure 3: A close up view of the road and sidewalk

Figure 4: A dimensioned drawing of the project
I picked the Golden Gate Bridge as my personal SolidWorks project because I thought that it would be a fun and challenging one to create. While it was one that required a lot of time, I felt that I would be able to complete the bridge if I gave it the necessary time and effort. I began by making the top half of the tower. This did not take too long, as I created the basic side view of the tower and then extruded it. I added some more extrusions on the sides to give it its look. I then moved on to creating the main span of the bridge. Creating the trusses took several attempts.

I ended up having success by drawing a rectangle and then patterning the triangular spaces between beams down its span. I then added extrusions for the horizontal base, road, barrier, sidewalk, and the side wall. I added small extrusions to create the lane markers. For this whole process, I only created one half of the bridge. Once it was finished, I mirrored it. After this, I moved on to the lower half of the tower. I used more extrusions and extruded cuts to give it its shape, and also added a top (road, sidewalk, walls) that would line up with the top of the bridge span. To create the ends of the bridge on either side of the towers, I took the existing bridge structure and cut it down to the length I needed it to be. I then assembled all of these parts to see how the structure looked. I made the sidewalk go around the towers and still connect to the existing sidewalk, using extrusions. I then moved on to making the cables. To make the two main cables, I used a sweep. I then patterned circles down the side wall and extruded them up to the main cables in order to create the thinner side cables. I repeated this process for the cables outside of the two towers. I then adjusted the appearances of the different components in order to best match the appearance of the actual bridge.

The most difficult part of the project was making the trusses. It took me several attempts, and I also had two files that became too large due to too many patterned cuts and extrusions (I
couldn’t even open the files after a while). Making the trusses took me the longest out of any of the parts in my project. The main technique that I learned in class and used when making my project was extruded solids. Several of the components of the bridge were created by sketching an outline and extruding it. I also used extruded cuts, sweeps, and mirroring. One new technique I became familiar with was patterning. I was introduced to this feature by one of the extra tutorials. I used patterning several times throughout my time working on the project.