Our first challenge that the team encountered was the fitment of our metal to build the arch. The team noticed after the final design had been chosen and all the members had been cut, the metal that was designated for the arch did not match what the team had ordered. This had caused the fittings at the connections to be larger than anticipated for the telescoping process. Now the arch had a lot of play in the sense of it not being able to stand on its own so modifications had to be made to make the fittings tighter. The team concluded that adding some welds on male portion of the telescoping pipes would allow for a tighter fit by providing more contact surfaces at those elbows.

The second challenge the team faced was the overall height of the bridge, from ground to top of arch. The top of the arch was over 5.5 feet, which was a problem since the maximum height per guidelines is 5 feet. The team had to adjust the arch, changing some 10-degree elbows to straight connections. The images below give an idea of how the arch was changed.

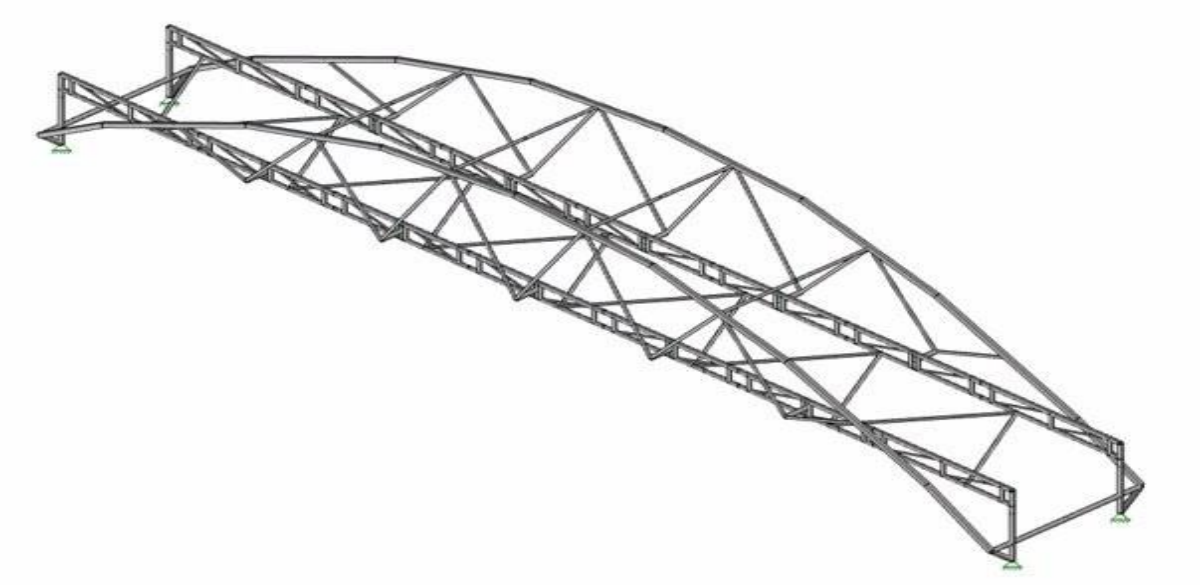

Figure 1: Initial Design

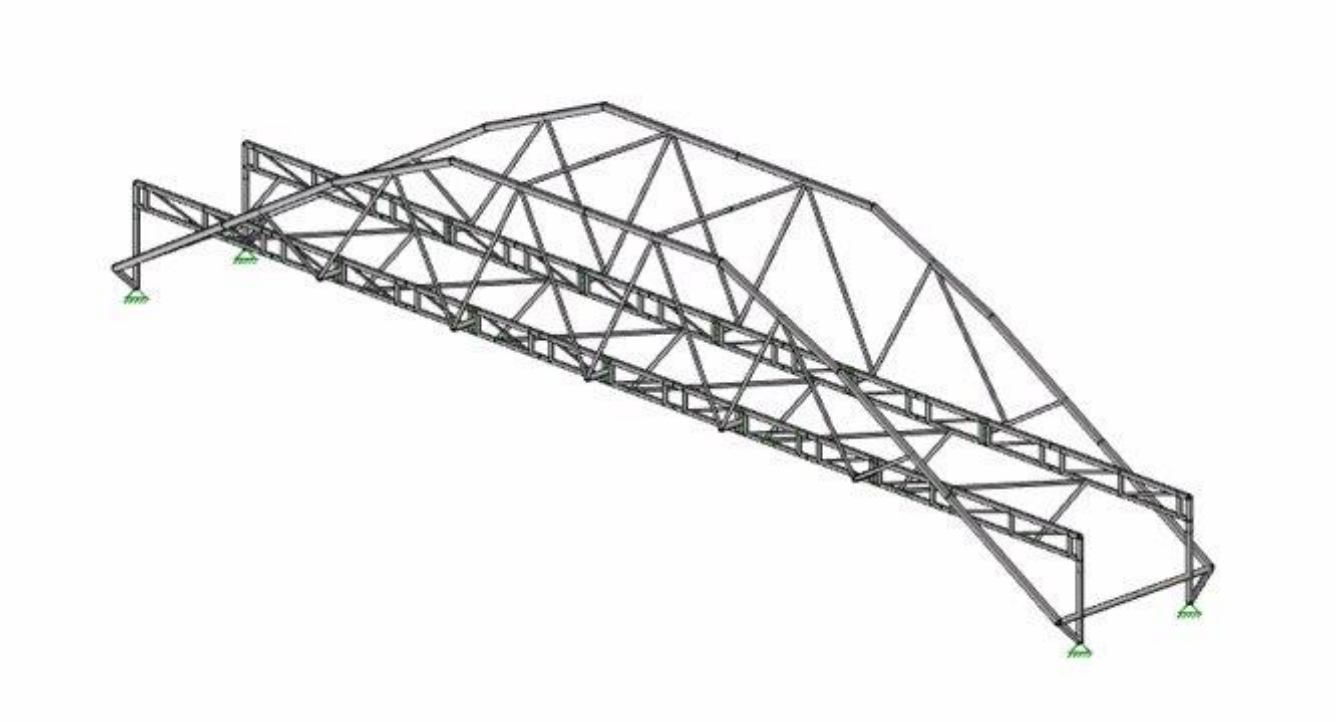

Figure 2: Final Design