

Project Status Report: CEEEn-2016CPST-005: Power Transmission Foundation Design

Team Members: McKay Harper, Daniel Pope, Todd Weichers

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1) Summary of technical/non-technical challenges encountered

- Understanding the Geotechnical report, especially the CPT.
- Finding design equations and parameters for piles. This was especially difficult as one of the sites is almost all saturated clays and silts.
- Meeting with our faculty advisor to ask questions was very difficult, and then when we got to meet with him it lasted about 5 minutes and wasn't as helpful as we would have initially hoped.
- Learning to use LPILE for lateral loads

2) Team approaches/resolutions to overcome challenges

- We have done a lot of online research regarding piles and have found some great resources for this. Our calculations are under way for the lattice tower (a change in schedule for us puts the lattice tower ahead of the monopole because it is a more difficult design).
- Instead of going to our faculty advisor we have turned to our sponsor for help on more intensive questions. This has resulted in a conference call on 1/24/2017 at 8:00 AM.
- LPILE will be researched and questions will be asked to our graduate advisor when they come up.

3) Status of challenge resolutions & potential project impacts

- Initial learning phase was longer than expected and may push back our design time, luckily the design is not as important as the calculations (according to notes from our sponsor on our proposal)
- A FHWA manual was found that has step by step equations for designing piles in different types of soil.

4) Project Status & Summary

- The monopole geotechnical foundation analysis has been delayed as well as the design for the monopole foundation.
- The order of design for the Lattice tower foundation has switched with the monopole due to perceived difficulty. The geotechnical analysis is complete for this site and the calculations are underway.