

Kentucky St. Fence Rebuild: Estimate, Design, & Construction

By: Michael Cerone & Andrew Shafer

Project Abstract:

This project was a design and rebuild of a residential fence on Kentucky street near Cal Poly's campus. The project was completed by two Construction Management students, Andrew Shafer and Michael Cerone, during spring quarter of the 2020 academic school year. The beneficiary of the fence was a local elderly woman who lives a few houses down from Cerone. Funding for the project came from Cerone's relationship with Labdesign, a bay area lab equipment installation company owned by the parents of two Cal Poly alumni. Confirmation the new fence would be completed within the footprint of the home and 3D modeled fence style designs for beneficiary choice as well as a cost estimate were completed before construction began. Shafer's model consisted of a similar design to her existing fence, and Cerone's featured a different, "low cost" design. The construction was based on Shafer's design per beneficiary choice, and consisted of demo, setting new fence posts, rails, pickets, and gate, as well as painting of the fence and landscaping of the surrounding garden. The project faced several obstacles, but the finished product was high quality with builders both obtaining valuable lessons in construction and the world as a whole.



Painting Pickets before securing to rails and posts



Completed Fence

Pre-Construction:

- ❖ Estimate/Securing Funding
 - Used Home Depot cost info to estimate materials
 - Lumber, Paint, Gate Frame/Hardware, etc.
 - Funding provided by Labdesign
- ❖ Design
 - ArchiCAD Models
 - 2 models for beneficiary choice

Construction

- ❖ Demo of existing fence
- ❖ Posts
 - 2 new 4x4 PT posts; reused undamaged existing posts
- ❖ Rails
- ❖ Pickets
- ❖ Gate
 - Hinged Frame versus sliding gate due to site conditions & owner preference

Challenges & Lessons Learned

- ❖ Slope of Grade
 - Keeping members level & same heights
- ❖ Drawbacks of Wood
 - Repurchasing material due to shrinkage/bowing
 - "Cut once measure twice"
- ❖ Unexpected Circumstances
 - COVID-19
 - Unworkable site conditions
 - Learned to adapt to variability to provide quality deliverable