

Transmission Line

Public Utility Company

A primary wholesale provider of electricity in central Texas needed to complete a 34-mile rebuild of three sections of 138-kilovolt (kV) transmission line stretching along a route in Llano and Mason counties. Kleinfelder provided geotechnical and construction observation services for this fast-track project.

PROJECT RESULTS

Kleinfelder's innovative foundation system saved the client approximately \$4 million. Construction was completed in 11 months, enabling the utility to energize the new transmission line ahead of schedule. By adapting the foundation design so rock anchors could be adjusted based on soil conditions, construction activities were performed with minimal ground disturbance and cleanup, minimizing the impact on local landowners.



HARD ROCK AND NARROW RIGHT-WAY

The project is located along rugged terrain with very hard igneous bedrock. Constructing straight shaft or under-reamed drilled piers, typically used for transmission foundation systems in Texas, is difficult in hard rock and would extend the construction schedule. A narrow right-way required pre-planned de-energizing of the existing line, allowing only 13 days to complete drilling and data collection for the project's 202 steel monopole towers.

ALTERNATIVE, INNOVATIVE FOUNDATION SYSTEM

To collect the necessary subsurface data, Kleinfelder expanded the number of proposed borings from 40 to 202 and employed an alternative drilling strategy that provided more thorough geotechnical data for point of intersection structures. Kleinfelder utilized its national resources and completed the drilling program in 10 days. Based on Kleinfelder's recommendations and analyses of costs and industry trends, the utility decided to use an alternative foundation system of micropiles/rock anchors instead of drilled shafts.

Location:

Castell, Texas

Owner:

Public Utility Company

