

MISSION 60 kV UNDERGROUND TRANSMISSION PROJECT

SILICON VALLEY POWER
CALIFORNIA

COMPLETION DATE: MARCH 2013

TRANSMISSION LINE RESUME



Key Facts and Highlights:

- 6,800 Lineal Feet of Two Conductors Per Phase, Double-Circuit 60 kV Transmission Line.
- Utilized 2,500 kcmil Segmental Cooper with Concentric Shield.
- Alignment Required Crossing.
- Busiest Intersection in Santa Clara (Approximately 40,000 Vehicles Per Day).
- Routed Cables Through Great America Amusement Park.

Project Description:

This project consisted of the tie-in of twin circuits of the Mission 60 kV underground transmission line into the new Mission Substation from the existing Juliette and Northern Receiving Substations. This transmission line and connecting substations serves the continuously expanding energy requirements for the numerous internet "Cloud" data banks and the new San Francisco 49ers Stadium located in California.

Two specialty riser structures, which allow the cables to be installed with the tubular steel structures, were required to be designed allowing for the two cables per phase to be terminated and connected to the existing overhead transmission line.

The routing alignment of this project presented several challenges. The route required approximately 2,000 lineal feet of the underground route through the Great America Amusement Park. (Formerly known as Six Flags over California). The next challenge related to routing and ultimately constructing the twin underground circuits through an extensive maze of buried fiber optic wires throughout the project. These same fiber optic cables served internet giants like Yahoo, eBay, and McAfee. Any disturbance to these critical communications links could have had substantial implications to these world-wide companies. In order to map and plan out the alignment of the route which would minimize the potential impact to the various buried fiber optic cables, ECI oversaw the exploratory potholing of over 150 potential conflict sites throughout the 1 mile plus route. This preplanning and attention to detail allowed the underground conduit systems to be constructed without disruption to any of these critical fiber optic cables.

The last and largest challenge came when a 1,000 foot section of the alignment had to be re-routed at the eleventh hour due to a breakdown in easement negotiations between land owners and the utility. ECI performed these last-minute design changes on site so as to develop and deliver the necessary details and drawings to the contractor as quickly as possible. ECI's responsibilities on the project include routing and siting work, subsurface utility investigation, scope development, interaction with, survey management, design engineering of both the overhead and underground transmission components of the project, field engineering during construction, material management, and construction inspection.



Electrical Consultants, Inc.
www.electricalconsultantsinc.com