

SVERDRUP ENGINEERING SERVICES PROJECT EXPERIENCE



TEP HQ EV DC Fast Chargers

Tucson, AZ

Engineering design and construction support for two Enel X 175KW DC fast-charging stations. The chargers can recharge the average EV in less than an hour and are part of Tucson Electric Power's (TEP) commitment to promote the use of clean transportation. The chargers are located in front of TEP's headquarters and the parking spaces are designed to allow charging of vehicles with front, back, or side receptacle locations. Each charger has a single port with two adapter cables to accommodate vast majority of EV models. Tesla EV owners can use the Enel X charger adaptors that came with their vehicles. The chargers are free to use, compliments of TEP.

Design included specifying and reviewing initial site plan for pre-application permitting purposes and after approval continued with layout and trenching. Limited space with one-way parallel parking spots is a challenge for DC Fast Chargers with higher amperage requirements for the 'fast charge' leading to larger cable with limited reach. Numerous layouts with all different types of electric vehicles having front, back, and side charging receptacle's locations were evaluated before selecting the final configuration. Design and installation minimized disruption to public as conduits were trenched just off the sidewalk down the edge of the street to final charger locations. Spare conduits were included for future EV charger installations.

These EV fast charges utilized 100 amps in square wave type load requirement leaving little room for demand averaging and making power source selection more challenging. Source panels were located in basement with an accessible route through basement to the front of the building. Design drawings include; site plan, demolition, details, parking layouts, single line diagram, three-line diagrams, and plan views.

Owner: Tucson Electric Power Company

Design: September 2020

In Service: April 2021