

>> What's on that pole?

This illustration shows basic equipment found on electric power distribution poles. Not all poles have all this equipment on them. They vary according to location and the service they provide.

>> **Primary wires** run on top. Each usually carries 7,200/14,400 volts of electricity from a substation.

>> A **crossarm** holds power lines, allowing required clearances between lines.

>> **Surge arrestors** protect the transformer from lightning strikes.

>> A **secondary service drop** carries 120/240-volts of electricity to the end user. It has two "hot" wires from the transformer, and a bare neutral wire connected to the ground wire on the pole.

>> **Telephone and cable TV lines** are typically the lowest wires.

>> A waist/head-high "**birthmark**" shows the size of the pole, as well as where and when it was made.

>> **40-foot poles** are sunk six feet into the ground.

>> **Fuse inline** between primary and transformer.

>> **Insulators** (made of porcelain or a composite) prevent energized wires from contacting each other or the pole.

>> The **neutral wire** acts as a line back to the substation and is tied to ground, balancing the electricity on the system.

>> **Fiber Optic Cable** carries critical utility system communications as well as internet services.

>> **Transformers** convert higher voltage electricity from primary wires to lower voltage for use by consumers.

>> **Guy wires** help stabilize poles. They also are connected to the pole's ground wire.

>> **Pole ground wire**—running the length of the pole—connects to the neutral wire to complete the circuit inside the transformer. It also directs electricity from lightning safely into the earth.

>> Co-ops are responsible for **keeping vegetation around poles trimmed** to avoid interference with the electric system.