



## Engineering and Land Rights

### 115 kV transmission line specifications

Design component	Steel single pole structure
Right-of-way	70 feet
Estimated distance between poles	600-900 feet
Pole height	80-140 feet
Poles per mile	6-9
Ground clearance (beneath conductor under max operating conditions)	31-57 feet
Maximum width of power line cross arms	31 feet, 2 inches (15'6" each side)

### Design and Construction

Xcel Energy proposes to use steel single poles for the 115kV transmission line.

After necessary right-of-way is acquired, construction will be completed in several phases:

- Brush and vegetation clearing
- Pole hole auguring
- Foundation construction where soils warrant
- Pole erection
- Stringing conductor
- Reclamation and cleanup
- Construction of the transmission line is expected to last approximately 18 to 24 months.

### Project right-of-way

The project right-of-way (ROW) is based on several factors, including transmission line, structure spacing, conductor tension, operational safety and maintenance. A 70-foot ROW will be required.

### Easement acquisition and survey permission

An easement is a permanent right authorizing a utility to use the ROW to build and maintain a transmission line. Access easements will be needed for construction and long-term maintenance of the transmission line.

To assist with transmission line engineering and design, the companies and/or consultants will acquire temporary access or survey permission from landowners.

### Working in the right-of-way

Normally, landowner access within the transmission line easement is not restricted. Activities not permitted within the easement are those that jeopardize the integrity of the structures or reduce the ground-to-line clearance, such as construction of buildings.

