Screw Piles

A screw pile is a deep foundation that resembles a cork screw. The strength for resisting uplift and compression forces coming from the "flights" or helixes along the shaft. Small screw piles, such as the ones used by our crews when installing transmission and distribution guys have been used extensively; however the large capacity screw piles seen below are now becoming more popular.

![Triple helix pile with larger upper shaft](Pictures from http://www.almita.com) ![Quadruple helix with uniform shaft]

**Advantages**

- Fast install time - typically ten minutes with a two-man crew.
- No pre-excavation, spoils, or tailings results in less time onsite.
- Can be installed in all types if weather.
- Can be removed and relocated if required
- Possible cost savings if their rig can also be used to set our poles

**Disadvantages**

- This type of foundation is suitable for uplift and compression forces, but is less effective for resisting lateral loading. Lateral loading will govern most of our designs, due to wind loading on our structures. (Screw piles can work for lateral loads, but may require thicker shaft walls, concrete filled shafts, or a pile group to resist heavy lateral loads.)
- Only one vendor (Almita) for manufacturing and installation (installation cannot be done by Enmax crews)
- Travel time from Ponoka will require multiple installs per trip to make this a cost-effective alternative
- Use is limited by soil conditions – screw piles cannot be installed in areas with gravel or shallow bedrock (within 10m of the surface)
- Cannot design this type of foundation without site-specific geotechnical information (approx. $5000/site).
- An on-site welder is required to weld a base plate onto the top of the shaft to receive the pole anchor bolts.

While there are several strong disadvantages to this type of foundation, in some cases the advantages make this a very cost-effective alternative to traditional concrete pile foundations.