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**CGS-SOS Annual Event  
Innovations in Helical Pile Shaft Optimization  
By: Mr. Gary L. Seider**

**Date:** Thursday May 13, 2021  
**Agenda:** 12:00 – 12:20 PM CGS-SOS Annual Presentation  
12:20 – 1:20 PM Lecture  
1:20 – 1:30 PM Q&A

**Registration Link:** <https://www.eventbrite.ca/e/may-2021-cgs-sos-webinar-innovations-in-helical-pile-shaft-optimization-tickets-152731117885>

The link to access the webinar will be provided to the registrants in advance of the event.  
Registration will end on Tuesday May 11<sup>th</sup>.

**Abstract:**

The shaft type/size of a helical pile is critical to both the axial and lateral capacity – especially for compression in soft/loose overburden soils where lateral stability of the shaft must be considered. This presentation is a brief summary of the 4 different shaft types commonly used for helical piles and their relative advantages and disadvantages based on site conditions and application. The four types are: Square Shaft, Pipe Shaft, Combination of Square and Pipe Shaft, and Grouted Shaft Helical Displacement Piles.

Type 1 square shaft are foundation elements that range in size from 1-1/2" solid round-cornered-square (RCS) to 2-1/4" solid RCS. They are compact sections but have relatively large cross-sectional areas since they are solid bars. Type 2 pipe shaft range in size from 2-7/8" OD pipe shaft to greater than 8" OD pipe shaft with various wall thicknesses and material strengths. Low displacement size range is 2-7/8" to 4/5" OD; medium displacement is > 4.5" to 8" OD; large displacement > 8" OD. Pipe shaft piles have larger section properties and projected area compared to square shaft, so they are used to resist lateral load, or to provide stability when columnar buckling or potential unsupported length is a concern. Type 3 combo pile (Combination Pile) is a compression helical pile that has the advantages of both square shaft and pipe shaft. A combo pile has a square shaft lead section that is better at penetrating dense material and generating bearing capacity; and is then transitioned to a pipe shaft for the plain extensions where over- burden soils are softer/less dense and a larger section modulus is desired for buckling resistance; or when lateral load resistance is required. Type 4 grouted shaft helical displacement pile, or a Helical Pulldown Micropile has the shaft section encased in a small diameter grout column, typically 5" – 7" diameter. The added grout column provides greater section properties for shaft stability and lateral resistance in soft soils. The grout in contact with the soil will develop side resistance via a bond zone in suitable soil stratum.

It is very important to understand that helical pile installation must be considered in the design process. Four actual project design examples with different helical pile shaft types will be presented to demonstrate the decision-making process used for helical pile shaft optimization.

**The Canadian Geotechnical Society  
Southern Ontario Section**



**La Société Canadienne de Géotechnique  
Section Sud de l'Ontario**

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**Distinguished Speaker:**

**Gary L. Seider**

**Engineering Manager, Hubbell/CHANCE® Civil and Utility Helical Products  
Hubbell Power Systems, Inc. employee for 33 years, 26 years with Civil Construction**



Registered Professional Engineer, State of Florida & Missouri  
B.S., Mechanical Engineering, University of Missouri-Rolla (1987)

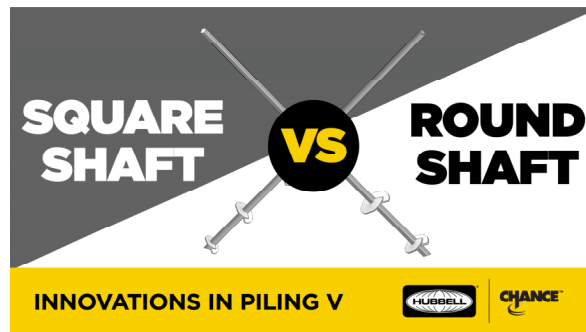
Membership: Member, American Society of Civil Engineers (ASCE)

Member, Deep Foundations Institute (DFI)

Helical Piles and Tiebacks Committee – former Chairman

Presently supervise the civil construction & utility application/project engineering staff whose duties include: assist owners, engineers, contractors, etc., with technical assistance, guidance and recommendations for the proper use of CHANCE® helical anchors/piles and Atlas Resistance® piers, engineering services, and development of new helical anchor/pile and pushed steel pier products and applications.

Holder of eight U.S. patents. Author of several technical papers and magazine articles on the application and use of helical piles & anchors.



**General Admission to Webinar**

**Free**

**Sponsorship**

Each Sponsor will have their logo prominently displayed on the first slide of the presentation accompanied with an acknowledgement, as well at the end during the Q & A session.

**\$150**

*If you have difficulties using Eventbrite, please contact Matt Macintosh (mmacintosh@recocanada.com) for assistance.*

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