

New Construction of Railway Wye – Toronto, Ontario

May 1999

The Problem:

- A Canadian Pacific Railway track was to be rerouted, crossing a shallow 1200 mm (48") diameter watermain at two locations
- Existing utilities in the excavation area
- No vibration or spoils were allowed near these utilities
- Caissons - fine native soil could create a "boiling" condition
- Driven piles and auger press piles – too much vibration for local utilities



The Solution:

- Reinforced concrete structural slab bridging the watermain supported by **Chance® Helical Piers**
- Could be removed if watermain needed servicing
- No vibration and low noise level during installation
- No removal of impacted soil required
- Installed in close proximity to underground services
- Ability to confirm the capacity of each helical pier by measuring the installation torque
- Two axial load tests completed on two test piers according to ASTM D1143-S1

Product Used: (69) Chance® Helical Piers
All having 150 mm (6") diameter grout filled **Chance® Helical Pulldown® Micropiles**

Depth: 7 to 9 m (23 to 30 ft)

Loads: 330 KN (75 kips) allowable load (660 KN ultimate load)

Finishing: New construction bracket capped with reinforced concrete grade beam



Geotechnical Engineer: Soil-Mat Engineers and Consultants Limited
Structural Engineer: DS Lea Associates
Chance® Helical Pier Installer: EBS Engineering and Construction Limited