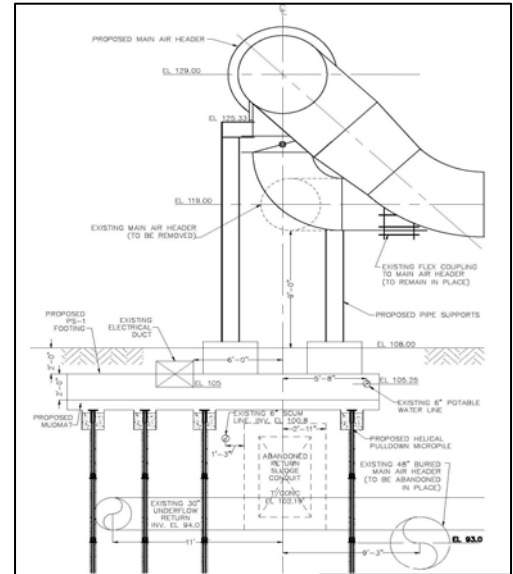
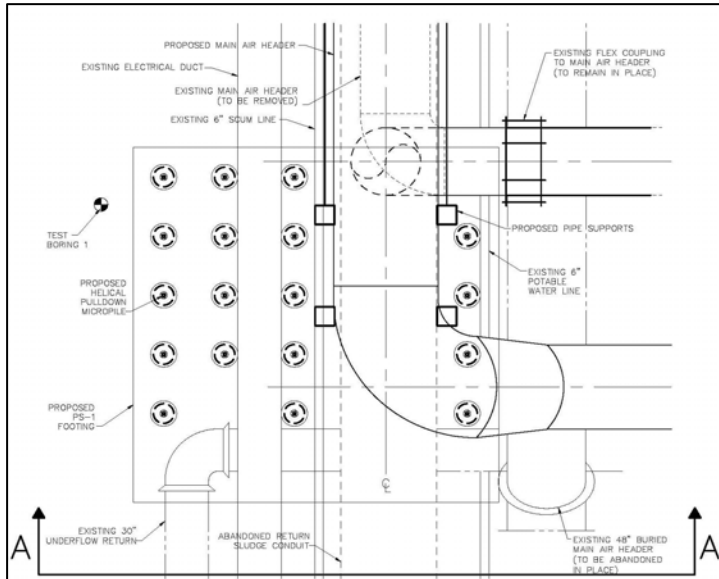


# NE WPCP Aeration Line

3895-3899 Richmond Street, Philadelphia PA 19137



**Project Description:** A new overhead aeration line was constructed to replace a leaking underground pipeline at the Northeast Water Pollution Control Plant. Loads on the two major footings ranged from 227 to 756 kips. Subsurface conditions consisted of miscellaneous fill and loose to medium dense, very fine to medium silty sand to a depth of 20 feet. A stiff silt was encountered beneath the sand. Groundwater was encountered approximately 12 feet below the ground surface. Helical Pull-down Micropiles (PDP's) were installed to support the two aeration line foundations. A total of 24 PDP's were installed to depths of 31.5 feet and consisted of a SS175 Chance 8", 10", 12" triple helix lead section, a 14" single helix extension section, and five plain extension sections encapsulated by a 5-inch diameter grout column. The PDP installation provided a 44-kip working load with a factor of safety of two. Helical piles had to be located around numerous existing underground utilities, obstructions, and overhead clearance problems.



**Owner:** Philadelphia Water Department (PWD)

**General Contractor:** C&T Associates, Souderton PA

**Helical Pile Contractor:** D'Angelo Brothers, Philadelphia PA

**Civil - Structural Engineer:** Malcolm Pirnie, White Plains NY

**Geotechnical Engineer:** Underwood Engineering Company, Mt. Ephraim NJ

**GeoStructures, Inc.**  
Engineered Earth Structures & Foundations  
413 Browning Court - Purcellville, Virginia 20132-6171  
tele. (703) 771-9844 fax (703) 771-9847  
[www.geostructures.com](http://www.geostructures.com)