

SETTING PILES IN ROCK

Effective: November 14, 1996

Revised: April 1, 2016

This work shall consist of making shaft excavations through soil and rock, setting piles in rock and backfilling the shaft excavation.

The excavations for each pile shall be made by drilling through the overburden soils and into rock to satisfy the diameter and embedment depth in rock as indicated on the plans. All excavated material shall be disposed of by the Contractor.

The actual top of rock will be considered as the point where rock, defined as bedded deposits and conglomerate deposits exhibiting the physical characteristics and difficulty of rock removal as determined by the Engineer, is encountered which cannot be drilled with earth augers and/or underreaming tools configured to be effective in the soils indicated in the contract documents, and requires the use of special rock augers, core barrels, air tools, blasting, or other methods of hand excavation. When the top of rock encountered is above or below the estimated elevation indicated on the plans, the piles shall be cut or spliced per Article 512.05(a) to satisfy the required embedment in rock.

The Contractor shall be responsible for hole stability by using accepted drilling methods and temporary casing where site conditions warrant, no permanent casings or side forms will be allowed. All loose rock, earth, debris and water shall be removed from the hole prior to placing concrete. If the flow of water into the hole is excessive or if pumping operations are likely to cause hole instability, the level of water in the hole shall be allowed to stabilize and the concrete placed by tremie methods according to Article 503.08 of the Standard Specifications.

The bottom of each hole shall be filled with Class SI Concrete to a depth of at least 6 inches (150 mm) and then the piles shall be placed in the hole and properly located. The piles shall be securely braced and held in position prior to and during the placing and curing of the remainder of the Class SI Concrete until test specimens show that a modulus of rupture of 650 psi (4.5 MPa) has been attained. Any operations that might damage the concrete around the piles shall be deferred until the concrete attains the required strength. The hole shall be filled with Class SI Concrete up to at least 6 inches (150 mm) above the top of rock. The remainder of the hole, to the bottom of encasement, footing or abutment, shall be filled with Class SI Concrete or porous granular embankment at the option of the Contractor unless otherwise detailed in the plans.

Obstructions. An obstruction is an unknown isolated object that causes the shaft excavation method to experience a significant decrease in the actual production rate and requires the Contractor to core, break up, push aside, or use other means to mitigate the obstruction. Subsurface conditions such as boulders, cobbles, or logs and buried infrastructure such as footings, piling, or abandoned utilities, when shown on the plans, shall not constitute an obstruction. When an obstruction is encountered, the Contractor shall notify the Engineer immediately and upon concurrence of the Engineer, the Contractor shall mitigate the obstruction with an approved method.

This work will be paid for at the contract unit price each for SETTING PILES IN ROCK. The Class SI Concrete and any porous granular embankment backfilled around each pile shall not be paid for separately but shall be included in this item. The furnishing of piles is not included in this item but will be paid for elsewhere in this contract.

Obstruction mitigation shall be paid for according to Article 109.04.