**SHORING, BRACING AND UNDERPINNING**

1. In no event shall the Contractor excavate to any depth in an unsafe manner. The Contractor shall comply with the requirements of "The Trench Safety Act" (Laws of Florida) and such work shall be considered as included in the Base Bid. Whether the Contractor utilizes geotechnical information provided through the Owner or utilizes information by directly employing a geotechnical Engineering/Construction and Material Testing firm, the Contractor shall have full responsibility for all excavation, all slopes, all sheet piling, all shoring, and all bracing. Sound engineering and industry standards shall be adhered to. If the Project Architect/Engineer requests in writing (not for approval but for general reassurance), for excavations deeper than 5'-0", the Contractor shall provide, at the Contractor's expense, full calculations and details of shoring, sheet piling, and bracing prepared by a Professional Engineer registered in the State of Florida whose discipline is Structural Engineering.
2. Excavation Stabilization: Slope faces of excavations to maintain stability in compliance with requirements of governing authorities. Excavation for the structures shall be sufficient to provide a clearance between their outer surfaces and the face of the excavation, sheeting, or bracing (if required), of not less than two (2) feet. Materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by sheeting, stabilization, grouting or other approved methods.
3. Trenches shall be of necessary widths for proper laying of the pipe, and the banks shall be as nearly vertical as practical.
4. All excavations or trenches of 4’ or deeper shall be appropriately benched, shored, or sloped according to the procedures and requirements set forth in OSHA’S Excavation standard, 29 CFR 1926.650, .651, and .652.
5. The type of shoring, timber, aluminum hydraulic, Pneumatic, Screw Jacks, Single- Cylinder Hydraulic Shores, must be discussed and approved by the Geotechnical Engineer of Record (EOR).

1. Underpinning process involves stabilizing adjacent structures, foundations, and other intrusions that may have an impact on the excavation. As the term indicates, underpinning is a procedure in which the foundation is physically reinforced. Underpinning should be conducted only under the direction and with the approval of a registered professional engineer.
2. Also see Florida Building Code – Plumbing – Chapter 3 – General Regulations, Section 306, Trenching, Excavation and Backfill.

**END OF SECTION**