Introduction to the Design and Construction of Drilled Shafts

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The term “Drilled Shafts” refers to a particular foundation system constructed below ground (and often below water) using cast in place, reinforced concrete design and construction methodology. Drilled Shafts are basically circular, substructure concrete columns of varying diameter and length which offer considerable bearing capacity, are capable of providing substantial resistance to lateral and overturning forces, provide economies of scale due to reduction of material, and can be performed with minimal disruption to adjacent structures.

The use of Drilled Shafts as compared to driven piles has grown tremendously in the last two decades. Refinements in understanding soil/rock/steel/concrete frictional resistance, innovative drilling equipment, improved shoring techniques, improved load and integrity testing, have made Drilled Shafts a common foundation choice.

Dennis F. Murphy (Notre Dame Class of ‘71) began his career as a field engineer for Peter Kiewit Company, one of the world’s largest construction companies. He is now retired as President of Kiewit Engineering, which provides engineering, estimating, and quality assurance service for all Kiewit construction operations. A recipient of the Engineering Honor Award from the College of Engineering, Mr. Murphy serves as a member of the advisory council for the college.