Voided Shafts for Transmission Structure Foundations – Feasibility Study

Joe Legner, P. E., S. E.

October 26, 2019

# Introduction

# Background

Background of the voided shaft concept and past demonstration project.

Applications in the power industry / typical loads and shaft diameters presently and where voided shafts could be used.

Possible structural code issues (is there a maximum internal cover thickness, does it need a central cage as well as the normal age?)

Methods of verification, testing. Things that a test may test: soil behavior, structural bending and shear resistance. Limits nt test configurations: may test soil well but does not impose the correct bending moment in the element. Power poles are weird,nt, moderate to high lateral forces, low axial load

Maybe a cost comparison: I recently got a quote for a cooling system for 7ft diameter, 25ft long shaft at $25k. So, savings can be not only concrete removed vs. the cost of a permanent central casing.

References