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LARGE DIAMETER MICROTUNNELING FOR THE WEST SIDE CSO TUNNEL PROJECT IN PORTLAND, OREGON

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ABSTRACT: The City of Portland's \$32 million West Side Combined Sewer Overflow (CSO) Pipelines Project required 2 miles of 72-, 84-, and 108-inch microtunneling to complete its West Side CSO Tunnel Project. This paper looks at how the microtunnel work went for the project and lessons learned. In particular it describes the effectiveness of large diameter microtunneling in an urban setting and the need for access to the face of the machine for removal of obstructions; slurry mixtures for varying between fine-grained to open coarse-grained soil matrices; shaft break-ins and machine retrieval procedures using different techniques in open matrix soils below the groundwater; and use of secant pile shafts and jet grouting to provide deep, watertight shafts. The paper also provides a breakdown of the various cost components associated with the work as well as describing jacking forces for the numerous long drives including two drives over 1,500 feet in length.