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CHALLENGING GEOTECH AND DIFFERING SITE CONDITIONS MICROTUNNELING SEATTLE'S GREEN RIVER REQUIRES TWO DIFFERENT HEAD CONFIGURATIONS

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ABSTRACT: This paper presents a challenging case history of crossing the Green River with microtunneling. When constructing the microtunneling shafts, large trees were excavated that were not identified in the geotechnical reports. The Contractor filed a Differing Site Conditions Claim for the tunneling due to the risk of encountering wood. Due to the existence of the wood in the shafts and the Contractor's claim, the Owner decided to change the elevation of the tunnel beneath the Green River and paid the Contractor to equip the head to excavate wood. However, when construction began, the "wood cutting head" was unable to excavate the native material. The microtunneling machine had to be retracted back to the jacking shaft and re-fitted with different cutters capable of excavating through cobbles, boulders, and wood. This paper details the events that conspired during tunneling, the unique contracting arrangement that was executed to handle the DSC claim that was filed prior to tunneling, and reflects on the lessons learned during the construction and contract management.