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Sangbum Cho and **Darryl McCullough*** (dmccullough@math.ou.edu), Department of Mathematics, University of Oklahoma, Norman, OK 73019. *Constructing knot tunnels using giant steps.*

In previous work, we used the disk complex of the genus-2 handlebody to give a new theory of tunnels of tunnel number 1 knots. The structure of the disk complex leads to a new invariant of tunnels, called the depth. Geometrically, the depth of a tunnel τ equals the minimum number of “tunnel moves” in the sense of Goda, Scharlemann, and Thompson needed to obtain τ , starting from the trivial tunnel of the trivial knot. We will show how to use combinatorial information about the disk complex to effectively compute the number of distinct minimal length sequences of tunnel moves needed to construct a given tunnel. (Received September 16, 2007)