When the Tunnel Meets the Railroad, a Grouting Case History

Various grouting techniques have been employed to repair structures, seal dams, fill voids, and stabilize unstable fills. This paper examines the application of cement grouting in the Birmingham Water Works' Carson Loop Phase 6D Project, which involved installing approximately 3,650 feet of new 36-inch water main to connect the northern and southern BWWB water systems around metro Birmingham. During the installation, a 60-inch diameter steel pipe was to be jack and bored beneath an existing Norfolk Southern railroad track. However, it was discovered that the area beneath the track was filled with brick debris. To address this issue and facilitate tunneling, cement grouting was utilized to fill the voids and stabilize the brick fill. This case study underscores the effectiveness of cement grouting in such applications.