PROJECT OVERVIEW AND CHALLENGES

Bradshaw completed construction of two storm drain tunnels under Interstate 89 to replace the failing 72 inch CMP stream culverts. The total excavation was 20.5' wide x 13.5' high horseshoe tunnel. The lengths were 136 and 100 feet. The finished inner diameter of the precast culverts were 15' wide x 8.5' high. The tunnels were constructed using the sequential excavation method (SEM) consisting of reinforced shotcrete initial tunnel support. The project is a design-build collaboration for Vermont Department of Transportation. Bradshaw submitted the SEM as an alternative technical concept and it was accepted by VTRANS in-lieu of a jacked concrete box (base technical concept). Subsurface conditions consisted of marine silts, sands, clays and buried trees. Vacuum dewatering was used to control groundwater inflows during tunneling. The D/B team consisted of J.A. McDonald, Bradshaw, & Stantec.