



Project Title: Perforated Vertical Drain (Wick Drain) Design, Oxford Brook Overpass

Client: New Brunswick Department of Transportation (NBDOT)

Project Description:

The New Brunswick Department of Transportation proposed to construct a 13-metre-high approach embankment leading to a single span overpass structure. The site is underlain by up to 22 metres of compressible soils. Much of this soil is glacial till, which would normally suggest no settlement or stability problems. However, a detailed review of the existing soils information revealed that this glacial till is a so-called flow till, which is typically a relatively soft soil. To further compound this problem, the compressible layer was significantly less thick at the north abutment, and the differential settlement between the north and south abutments could be as much as 0.3 metres. This magnitude of settlement anticipated over a 20-year period was considered unacceptable by the NBDOT. To remedy this problem, vertical drains were used to expedite the rate of settlement. Settlement measurements showed primary consolidation ended in less than a year, agreeing well with predicted values.

The bridge foundation was constructed one year after embankment construction.

