

PROJECT:

Forge Road Culvert Replacement

LOCATION:

Kinnelon, NJ

DEVELOPER:

Darmofalski Engineering Associates

SERVICES:

Site Civil



PROJECT SUMMARY:

In Kinnelon, near the entrance into the Smoke Rise community, there was an undersized culvert system for natural stream flow. Three 5-foot-diameter pipes allowed the stone house brook to pass beneath the road of a dead-end street.

In 2011 there were two major storms, Irene and Isaac, which put a strain on the culvert system. The three pipes did not allow water to pass quickly enough which created a vortex. The water backup generated enough pressure to cause the pipes to dislodge from their place, washing away the road.

SESI took action to make sure this would not happen again. Conducting water flow studies and modeling, SESI designed a solution. A 9-foot high by 20-foot wide opening would be put in place under the road. This would allow 1.25 times the maximum predicted water flow to pass beneath the street. DEP permits were acquired and construction began so the local residents could resume regular use of the road and feel safe during future storms.

