



Project Spotlight

Bridge Culvert - Hart's Location NH



Owner: State of New Hampshire
Installer and General Contractor: C.L.H. and Son, Inc.

Designer: New Hampshire DOT

Background Information

The smallest town in the state of New Hampshire, Hart's Location, is a hiker's paradise because of its proximity to the White Mountains. Earlier this year, hikers' access to those great mountains was disrupted as the New Hampshire Department of Transportation (DOT) began rehabilitation of the bridge carrying the headwaters of the Saco River under Route 302 in Crawford Notch. Installation efficiency was of the utmost importance to the DOT in completion of this project as the traffic along Route 302, as well as parking for commuters and hikers, would be disrupted during multiple phases of construction. The two main elements of this rehabilitation included rock scaling along Route 302 and the construction and installation of liners in the culvert's 950-foot-long, metal plate arch culvert.



Project Details



Local contractor C.L.H. and Son, Inc. was awarded the construction of this \$1.78 million project. After the Tunnel Liner Plate arch culvert, manufactured by Contech Engineered Solutions was installed, it was essential to stabilize the surrounding soils and fill voids in the existing pipe. The first step was to stage the grouting to reduce potential damage to the culvert liner due to any anticipated buoyancy forces. There was such a steep slope to the pipe that a lot of the grout would go to the bottom of the slope creating uneven buoyancy forces.

The team from C.L.H. and Son, Inc. chose to use a low-density cellular concrete (LDCC) mix designed by Aerix Industries due to its lightweight properties, installation flexibility, and ability to be pumped distances of more than 1,000 feet. Over a period of six days the installation crew pumped a total of 450 cubic yards of Aerix's non-pervious 40-pcf AERLITE-iX™ into the culvert. Grout ports were utilized to stabilize the liner and as locations to check the flow of grout across the length and slope of the culvert.

Aerix Added Value

When combined with a neat cement mixture, Aerix's AERLITE-iX produces a lightweight, low-density cellular concrete that is ideal for challenging geotechnical applications like this steeply sloped culvert. LDCC with AERLITE-iX is extremely flowable and flexible, providing efficient installation and minimal disruption. With this application, the LDCC with AERLITE-iX helped in stabilizing surrounding soft soils, ensuring strong and durable performance for this rehabilitated culvert.

