

Popular Alaskan Park Relines 19 Culverts

Auke Bay, Juneau, Alaska

Background

The Auke Recreational Area is located in Tongass National Forest near Juneau, Alaska and is a popular scenic beach used by Alaskan residents and tourists. The national public park is also the site of an Auk Tlingit Native American village and burial ground. The area has historic, environmental and public significance.

Problem

There were 19 aging culverts located underneath a public access road that leads to the Auke recreational area. One of the culverts serves as a stream that drains into the Auke Bay through the park, while the other 18 culverts serve as drainage pipes under the roadway. The culverts ranged in size from 24-inch to 60-inch in diameter, with a total of 1200 linear feet. The 70-year-old culverts, though still intact, were badly deteriorated, visibly rusting at the invert. This was a problem because the road above the culverts was the sole access to the popular park.

The culverts were also approximately 100 yards from the salt-water Auke Bay, which is home to wildlife such as salmon, whales, harbor porpoise, harbor seals and more. Whale watching is a popular pastime. The peak season for this popular beach also coincided with the Alaska Department of Transportation's (AKDOT's) fish window for addressing the problem with these culverts.



Road to Auk Tlingit village.



One of the deteriorated culverts.

Taking into consideration the environmental and historical aspects of the site, the U.S. Department of Agriculture (USDA) Alaskan Forest Service and local tribal interests wanted to rehabilitate the culverts in a manner that did not require any digging. In addition, the Forest Service did not want to disrupt the public flow of traffic to the recreational park.

Solution

Grey Langemo of Greco, a Snap-Tite distributor, and Snap-Tite representative Steve Fischer, worked directly with Scott Jackson of the USDA Alaskan Forest Service to develop a cost and installation plan that would satisfy the specifications required for this project. The solution was to use high-density polyethylene (HDPE) culvert lining Snap-Tite pipe because it was the least invasive option when considering the environment, public access to the road, and respect for the sacred Native American sites.

Snap-Tite pipe has a patented male/female machining at each end of the HDPE pipe that is 'snapped' together, piece-by-piece, and pushed into the full length of an existing pipe. Any annular space and voids between the old culvert and new liner are filled in with grout. The pipe liner is available in lengths from two to 50 feet, and is available for culverts with diameters

from eight inches to 84 inches. Larger sizes are available on request. Snap-Tite also meets American Association of State Highway and Transportation Officials (AASHTO) Standard M326 for rehabilitating culverts.

Installation

Channel Construction served as the contractor on this project. John Morris, Sr., a tribal inspector and member of the Taku Kwaan Tribe, also attended the installation to ensure that the sacred tribal sites were not disturbed.

During installation for each of the culverts, the contractor first inserted one end of the Snap-Tite pipe into the damaged culvert. Next, the other end was "snapped" on to a new piece of Snap-Tite pipe, joining the male and female ends together. The process continued until each culvert was fully lined with the new Snap-Tite pipe. Finally, any annular space between the old culverts and new liner was filled in with grout. The contractor did not have to dig up or disturb the road in order to restore any of the damaged pipes.

The culvert that serves as a stream measured 60 inches in diameter and 100 feet in length. It was lined with 54-inch Snap-Tite pipe. The other culverts were lined with various sizes of Snap-Tite pipe ranging from 24 to 36 inches, with lengths averaging around 70 feet.

Conclusion

Snap-Tite provided the Alaskan Forest Service with a noninvasive culvert rehabilitation. The installation method allowed continued public access and use of the road and did not cause any disruption to the environment nor the Native American sites.

"We were pleased with how quickly the lining process went, and that sacred sites would not be disturbed through this process," said Morris.



Culvert relined with Snap-Tite pipe.

About Snap-Tite

- Meets AASHTO Standard M326 for rehabilitating culverts.
- Offers flexibility for insertion into misaligned concrete or rusted deteriorated corrugated metal pipe.
- Offers a safe method for installers and doesn't require traffic control.
- Tough but lightweight, the Snap-Tite joint makes a solid water-tight mechanical connection that can be pushed or pulled.

Due to the Snap-Tite system's installation flexibility and cost-effectiveness, it continues to provide successful results for many projects throughout the U.S. and internationally.

To learn more about Snap-Tite visit www.culvert-rehab.com.



A view of Auke Bay.

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