

Culvert in Arizona Relined with Snap-Tite®, Local Environment Protected

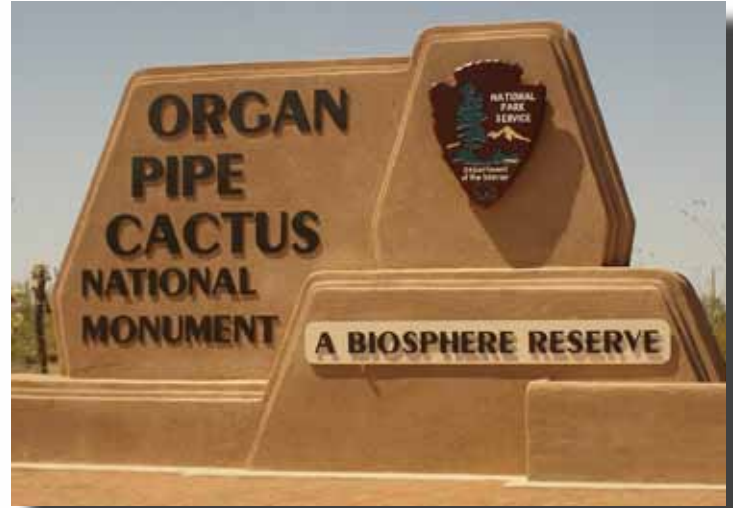
Organ Pipe Cactus National Monument, Arizona

The Organ Pipe Cactus National Monument, part of the U.S. National Parks system, is an International Biosphere Reserve in the Sonoran Desert in Southwest Arizona. The monument was created in 1937 by President Franklin D. Roosevelt to preserve a section representing the Sonoran Desert. The creation of this monument was part of a larger initiative within the National Parks to protect both the scenic and ecological areas of the United States. There are only a few Organ Pipe cacti in existence; so they are protected and cannot be damaged, especially since they only grow in this part of the world.

Within the reserve, the State of Arizona needed to rehabilitate an 18-inch culvert that had deteriorated. The state received funds from the American Recovery and Reinvestment Act (ARRA) and decided to allocate some of the budget to this project. This culvert repair is part of a larger project funded by the act to rehabilitate roads in the State of Arizona.

The Problem

The deteriorated culvert is located under a stretch of road that runs through the biosphere reserve. The road is also about two miles north of the Mexican border and is heavily traveled not only by tourists but also by U.S. Border Patrol. It was very important for the culvert repair project not to disturb road traffic flow or the environment in any way, which included avoiding any disruption to the protected Organ Pipe cacti in the reserve. Since the cacti are



The Organ Pipe National Monument

protected, excavation had to be kept to a minimal or non-existent level to avoid any potential damage.

The Snap-Tite Solution

The contractor chosen for the project was Technology Construction Inc. Marcos Nattress, project manager with Technology Construction, worked with Snap-Tite representative Michael Harriman to develop a solution for the culvert repair. Harriman suggested the use of 14-inch DR 32.5 high-density polyethylene (HDPE) Snap-Tite pipe to reline the existing damaged culvert, therefore eliminating the need to dig and replace the current culvert.

The Snap-Tite culvert lining system is a no-dig solution for repairing culverts because it is sliplined into the old culvert, and therefore, does not require extensive excavation. Without a need to excavate, Snap-Tite does not disrupt traffic or the environment. In addition, no extensive equipment or training is necessary to install the Snap-Tite pipe.



The deteriorated corrugated metal culvert in need of repair.

Snap-Tite's unique "snap" joint does not require any mechanical joints or a fusion process to join the pipe, increasing the speed and ease of installation. As each Snap-Tite pipe length is slid into place, the male end is connected to the female end of the preceding pipe section. The pipe, once slid inside of the old culvert, is then grouted into place. The Snap-Tite joint also features a water tight gasket to withstand the grouting application. In addition, once lined with Snap-Tite, the culvert has an increased flow rate even though the diameter of the pipe is smaller than before.



The Snap-Tite pipe 'snap' taking place on location at the culvert relining.

It took only one day to line the deteriorating 18-inch CMP with the 14-inch Snap-Tite pipe. The grouting between the liner and the old culvert was completed one week later when the rest of the road work was complete.

"With the use of Snap-Tite we were able to keep excavation to a bare minimum, which allowed us to not disturb the environment around the rare Organ Pipe Cactus," said Nat-tress.

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.

For more information about Snap-Tite®, please visit www.culvert-rehab.com.

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