

South Dakota DOT Maintenance Crew Relines Old Culverts with Snap-Tite Pipe

Chamberlain, South Dakota

Problem

Two corrugated metal pipe (CMP) culverts located under Highway 50 in Chamberlain, South Dakota were in danger of failing. One culvert was a 42-inch diameter CMP and the second culvert was a 30-inch diameter CMP. The culverts were located three-quarters of a mile apart from one another. The South Dakota Department of Transportation (DOT) regional office wanted to keep the lanes of traffic open during the repair, therefore digging and replacing the pipes was not an option.

Solution

Snap-Tite sales representative Guy Perna and Snap-Tite distributor Ross Eberle, P.E. from TrueNorth Steel in South Dakota, spoke with the SDDOT Mitchell Area District Office engineer, Tammy Williams, P.E., about using a



A "bullet nose" is cut on one end of the pipe liner in order to push it easily into the misshaped and damaged culvert.



The machined Snap-Tite ends are joined together using only come-a-longs and chains.

trenchless method of relining the pipes as an alternative to digging and replacing the damaged culverts. The material chosen to reline the 42-inch CMP was 56 feet of 40-inch Snap-Tite pipe and 68 feet of 24-inch Snap-Tite pipe to reline the 30-inch CMP.

The high-density polyethylene (HDPE) pipe Snap-Tite culvert lining system has patented male/female machining at each end of the pipe, which allows the ends to be 'snapped' together, piece-by-piece, and pushed into the full length of an existing pipe. Snap-Tite also meets American Association of State Highway and Transportation Officials (AASHTO) Standard M326 for rehabilitating culverts.

Installation

The installation also served as a demonstration for area DOT officials. Williams was interested in seeing the SDDOT own maintenance crew install the Snap-Tite pipe lining system; therefore,

Snap-Tite offered to demo the HDPE solid wall pipe liner installation along side the crew, and grout any annular space between the old culverts and new pipe, all within a 48-hour period, without closing down any lanes of traffic.

No extensive equipment or training is necessary to install the Snap-Tite pipe. All that is typically needed to snap the pipe together are come-a-longs and chains. During installation the crew also cut a "bullet nose" into the pipe. This helps push the pipe into misaligned or misshaped culverts.

Perna, Eberle and Snap-Tite representative Steve Cooney were on site to assist the SDDOT highway maintenance crew while the crew lined the existing host pipe. The crew also worked with its local ready-mix contractor to grout the annular space between the liners and old culverts.

Conclusion

Both culverts were lined and the bulk heads built on the first day of the installation (within eight hours). The grouting took place on the second day and both sites were done by noon that day.

"Snap-Tite seems to be a very viable maintenance option for lining many of our deteriorating CMP in South Dakota," said Williams. "We learned quite a few things during



Observers at the demonstration watch the 40-inch Snap-Tite pipe get inserted into the 42-inch CMP.

the demonstration project that you helped our maintenance crew complete. This learning opportunity is going to benefit us in the future with these types of projects."

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 on Snap-Tite® visit www.culvert-rehab.com.



Here observers watch the lining of the 30-inch CMP with 24-inch Snap-Tite pipe.

SnapTite®

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