

CASE STUDY



FEATURING



OHIO DOT CULVERT REHABILITATION

ODOT: 50+ Year-Old Culvert in Remote Location Structurally Restored with GeoKrete® Geopolymer

PROJECT SNAPSHOT

Project

- Guernsey County, OH
Culvert Rehabilitation

Owner

- ODOT

Problem

- Culvert installed in 1963. Invert was completely deteriorated and there was extensive corrosion on the inner pipe wall.

Length & Size

- Diameter: 54"
- Length: 166 LF

Application

- QLS spin-cast process, two passes of GeoKrete® totaling 1.5" thickness

Contractor

- Shelly & Sands Inc.

Sub-Contractor

- Quadex Lining Systems®

Completed

- Summer 2016, only 3 days required

SUMMARY

A 50+ year old CMP storm culvert pipe in Guernsey County, OH was found to be in very bad condition. The invert was nearly gone and corrosion inside the pipe threatened a complete failure in the near future.

The contractor recommended this section be relined with the QLS process in order to address both the corrosion and structural integrity concerns. The pipe, 54" in diameter and 166' long, was located several hundred feet from the main road. The self-contained QLS rig and equipment were specifically designed for these kinds of projects, where access is limited and a small footprint is required. With no potable water nearby, the QLS crew also supplied its own water to mix the GeoKrete.

Once in place, the old culvert was cleaned, prepped and patched before the relining process started. In addition to rebuilding the invert, the QLS crew relined the 54" CMP pipe over period of three days. A total of two passes were made by QLS's advanced application sled, to achieve a thickness of 1.5".

When completely cured, the 54 year-old culvert is fully structural and ODOT can expect another 50 years of performance.



This old CMP culvert was completely corroded through in many areas.



QLS GeoKrete was spin-cast for a smooth, structural and corrosion resistant finish.



CASE STUDY



FEATURING



ODOT: 78" CULVERT RELINED WITH QLS

Failing 62-Year-Old Corrugated Metal Pipe Gets New Life

PROJECT SNAPSHOT

Project

- Loveland, Ohio 78" Culvert Rehabilitation

Owner

- ODOT

Problem

- Culvert installed in 1954. Invert was in poor condition and existence of corrosion on pipe's inner walls. Running beneath a roadway, a full structural renewal was required.

Length & Size

- Diameter: 78"
- Length: 60 LF

Application

- QLS process, spray-applied GeoKrete® to achieve 2" thickness. Smooth finished with trowel.

Prime Contractor

- RB Jergens Contractors, Inc.

Sub-Contractor

- Quadex Lining Systems®

Completed

- Summer 2016, only 2 days required

SUMMARY

A 78" CMP storm drain running beneath a road in Loveland, Ohio had begun to fail. With the invert in need of repair and corrosion eating at the inside, complete failure was imminent. The 62 year-old pipe had exceeded its design life and needed to be structurally restored, or ultimately it would need to be replaced.

RB Jergens, the prime contractor, recommended the Quadex® Lining System as an alternative to replacement. The system features GeoKrete® Geopolymer and possesses both excellent corrosion resistance and structural properties. In this case, GeoKrete was spray-applied to achieve a thickness of 2" to protect and restore the culvert to its original integrity. The roadway above was never closed, however a temporary traffic signal (to control traffic flow) was installed in conjunction with the lining work to ensure proper safety for all crews involved.



78" CMP was corroded and failing.



QLS GeoKrete was spray-applied, then troweled to achieve a smooth consistent thickness.



Compared to Baseline for
Trenchless Repair Systems for
Structural Rehabilitation of
Civil Infrastructure