

GEOSPRAY®

Geopolymer Mortar



PROJECT OVERVIEW

The North Carolina Department of Transportation (NCDOT) was looking for an initial challenging project to complete in North Carolina with GeoSpray mortar. Along the banks of the Roanoke River in the city of Weldon, NC, NCDOT was faced with significant issues of culvert failure and bank erosion that were beginning to threaten private homes. A 108-inch diameter CMP pipe approximately 85 feet in length connects incoming streams to the Roanoke River. The pipe is buried 25 feet below ground under the only access road to a commercial water treatment plant and a cotton and soy bean farm. The NCDOT had already repaired and stabilized the bank on the river side of the culvert with a steel embankment and was now confronted with the problem of extending the life of the failing culvert.

SOLUTION

The GeoSpray technology was selected over the open cut method. The 20-day disruption to the community would have been a significant hardship to the local residents and industries. In addition, using GeoSpray mortar provided a long-term structural solution at a fraction of the system cost. Once the decision was made to proceed, the NCDOT lowered the level of the Roanoke River in order to reduce flow through the culvert (often this culvert is completely submerged). After the water level was lowered, the north embankment was repaired by a DOT crew and the culvert rehabilitation was scheduled.

Day 1: Set up 8-inch hydraulic by-pass system.

Day 2: Pressure wash and clean the pipe, and investigate for water infiltration.

Day 3: Hand-spray GeoSpray mortar on the invert to stop water infiltration and smooth CMP corrugations.

Day 4: Apply first two passes of GeoSpray mortar.

Day 5: Apply 3rd pass of GeoSpray mortar to build thickness to 1.5 inch and repair small water filtration leaks.

Day 6: Apply 4th pass of GeoSpray mortar.

Day 7: Complete final pass to reach requested 2.5 inch thickness, hand trowel any imperfections and remove by-pass system.

RESULTS

The project was completed with little to no disruption of the private and commercial neighbors while on-time and on-budget.

CASE STUDY:

CMP Culvert Repair Weldon, NC

PROJECT DETAILS

Application: CMP Culvert Repair

Location: River Road, Weldon, NC

Client: North Carolina DOT

Installation: November 2013

Contractor: Inland Pipe Rehab, LLC



The NCDOT was faced with significant issues of culvert failure and bank erosion.



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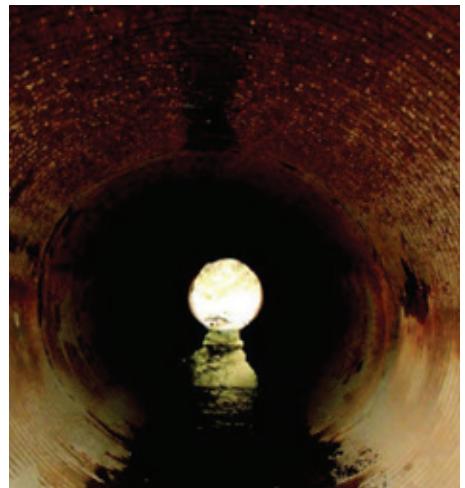


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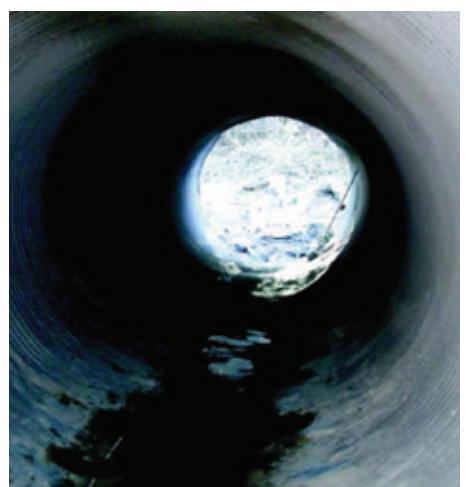
Head wall of pipe on river outfall.



Initial pipe condition with significant invert corrosion.



Initial conditions - pipe joint separation.



Completed culvert rehabilitation.



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