

City of Fayetteville 48-inch Sewer Pipe Renewal

The City of Fayetteville, home to 100,000 residents, faced a critical threat from a failing 48-inch gravity sewer line located beneath an interstate highway.

An unusual rainwater intake led to an investigation into the source of the overflow. A video inspection revealed significant damage, including ovality, longitudinal cracking, and water infiltration, underscoring the urgent need for repairs.



Project Overview

- Investigate-Design-Build (IDB) repair approach
- Emergency repair
- Installation of STRUCTURAL TECHNOLOGIES' StrongPIPE® VWrap™ Carbon Fiber system

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STRUCTURAL TECHNOLOGIES was chosen for their expertise in similar renewal projects and ability to provide an Investigate-Design-Build (IDB) solution. With engineering support from Simpson Gumpertz & Heger (SGH), the team conducted a thorough inspection, designed an effective repair strategy, and carried the repairs in collaboration with STRUCTURAL, an exclusive licensee of STRUCTURAL TECHNOLOGIES.

The pipeline consists of a 48-inch sewer pipe encased in a 72-inch steel tunnel casing. The original design should have included grout to fill voids; however, the inspection confirmed this was missing, leading to the deterioration of the steel casing. The pipe was deemed unstable and unsafe for entry.

To address this, a bypass system was implemented to divert water away from the compromised section. SGH designed a shoring system to ensure safe working conditions. STRUCTURAL then injected cellular grout into the annular space between the pipe and the steel encasement, followed by soil stabilization.

Once the pipeline's stability was assured, STRUCTURAL installed STRUCTURAL TECHNOLOGIES' StrongPIPE® VWrap™ Carbon Fiber system and a chemical-resistant topcoat. This lightweight, robust material provided a fully structural standalone system, independent of the host pipe.

This trenchless restoration was a success, ensuring the pipeline's minimum design life of 50 years and providing the City with a safe, efficient sewer system for the community.

PROJECT INFO

- **Location:** Fayetteville, AR
- **Specialty Contractor:** [STRUCTURAL](#)

- **Engineering:** Simpson Gumpertz & Heger (SGH)
- **Inspection/Product Supplier:** STRUCTURAL TECHNOLOGIES

SOLUTIONS

[StrongPIPE® V-Wrap™ Carbon Fiber](#)



Location of sewer line beneath highway



Pipeline before restoration



Inspection of pipeline



Shoring system to ensure safe entry



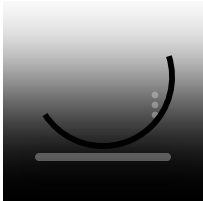
Installation of StrongPIPE® VWrap™ Carbon Fiber system



Topcoat installed for protection scaled



Completed restoration of critical sewer line



No Back-Up on the Highway:

Fayetteville Emergency 48-inch Sewer Rehabilitation

prompted an investigation

DESIGN-BUILD SUCCESS