

HOUSTON, TX

Concrete Pipe Fault Line Solution

| Owner

Harris County

| Contractor

Harper Brothers

| Distribution Plant

Houston, TX

| Featured Products

17 Joints of 108" concrete pipe

Thriving and bustling Harris County is the most populous county in Texas. To plan for continued growth and increasing water management needs, the county required an expanded water line system to run under Beltway 8, part of an 88-mile freeway around Houston. Oldcastle Infrastructure was chosen for the job because of their ability to meet the specification requirements, operate within the required budget parameters, and complete the project by the deadline.



CHALLENGE

This was a highly complex project in many ways, as it required Oldcastle Infrastructure and the contractor to overcome a series of unique and difficult circumstances. These included:

- The waterline went through a fault line.
- Extensive tunneling was required underneath the busy Beltway 8 Freeway.
- The project location was in close proximity to high voltage transmission lines.
- The size and weight of the required concrete pipe made installation challenging.
- Hydraulics were required to jack the pipes in place.
- The pipe jacking machine required constant monitoring and maintenance.

SOLUTION

Oldcastle Infrastructure, working in tandem with Harper Brothers Construction, designed, manufactured, and installed 17 pieces of 108" concrete pipe as a Tunnel Liner or Jacket around the 84" water line. Normally, a trench would be dug to install the concrete pipe underground and the trench would be backfilled after the pipe was installed. Conditions in this case, however, called for a trenchless installation. The contractor had to tunnel under the Beltline 8 Freeway and hydraulically jack the 108' diameter concrete pipes into place. This had to be done one after the other – and all from one location at the side of the freeway. The hydraulic jacking required 12 hours to push each pipe into place.

This was a highly specialized application at a fault line crossing – and only the second time Harper Brothers Construction has used concrete pipe as a tunnel liner. After two months, the project was completed on time. The waterline was well-supported and protected across the fault line and the entire installation went smoothly without disrupting freeway traffic.

BENEFITS

Oldcastle Infrastructure's Concrete Pipe will provide a long-term, high-performing, and sustainable water management solution for the North Harris County Regional Water Authority.

Highest Built-in Structural Strength

The strength of the Oldcastle Infrastructure's concrete pipe contributes to its resiliency. It is particularly resistant to damage from external forces; therefore, it was selected to support the water line across the fault line protecting it from damage due to earth movement.

Highway Service Uninterrupted

The Beltline 8 Freeway was not disrupted during the pipe installation.

- Tunneling prevented the digging of a trench through the freeway.
- Traffic flowed normally on the freeway during the installation.
- The freeway did not need rebuilding after the installation.

“Oldcastle Infrastructure was always on time and easy to work with. They understand tight timelines and deliver with great dependability and reliability. Plus, their engineers were always available for questions or to resolve any issues. Overall, I was thoroughly impressed.”

Miguel Garcia

Project Manager

Harper Brothers Construction

