

CITY OF PLANO US 75 WATER LINE

Fusible PVC® pipe used for challenging HDD Installation

Overview

Plano, Texas is located on the north side of the Dallas—Fort Worth Metroplex (DFW). It covers around 72 square miles and has a population of close to 270,000 people as of the 2010 census. Following the trend of the DFW area in general, Plano is growing at a very rapid pace and is expanding its infrastructure at the same time to ensure the highest standard of service for its citizens.

Plano is a member city in the North Texas Municipal Water District. Plano operates a 225 MGD potable water system through its Public Works/Utility Division. For the past 20 years or so, it has been diligent in expansion and upgrade projects within its system boundaries. As part of its capital improvements program (CIP), Plano planned a water main upgrade along US 75 to complete a needed loop in the water system. This upgrade consisted of approximately 4,600 feet of 12-inch water line and 12 fire hydrants.

The water line upgrade was part of the 2014 CIP budget and was awarded to CobbFendley & Associates for design and construction management. The water line is located in an easement parallel to US 75, with limited construction space available. Additionally, the right-of-way and easement are congested with fences and dense vegetation, making open-cut installation methods difficult and cumbersome. These obstacles previously prevented the city from installing the water line. Plano explored trenchless options for the installation and decided on horizontal directional drilling (HDD) as the preferred method of installation. Plano selected Fusible C-900® PVC pipe as the material of choice for the project. This solution provided a gasket-less pipeline for the city and met all performance requirements for the challenging HDD installation.



12-inch DR 18 Fusible PVC® pipe assembled lengths

Pipeline Details and Project Summary

Project:	US 75 water line
Location:	City of Plano, Texas
Length and Pipe Size:	4,545 LF 12-inch DR 18 Fusible PVC® pipe
Pressure:	150 psi
Installation:	Horizontal directional drill
Owner:	City of Plano
Engineer/ HDD Design:	Cobb Fendley & Associates, Scott Maynor, P.E.
Contractor/ Driller:	Pittard Construction Company

The project was designed in CobbFendley's Frisco, Texas office and was bid for construction in March 2017. Pittard Construction Company, the successful contractor, was awarded the project in April 2017 and was provided a notice to proceed in June 2017. The construction of the water line required close coordination with the Texas Department of Transportation throughout the HDD process, given the proximity of the alignment to the existing US 75 right-of-way. The contractor executed the work with zero safety incidents, on time and on budget.

The project was successfully installed, tested and accepted by the city of Plano and put into service.

“The location of this project and the sensitive nature of construction in such close proximity to residences presented construction challenges and really underscored the need for an alternative to open-cut. Through HDD and Fusible PVC® pipe, we were able to minimize disruption to the neighborhood and install a product that allows the owner to easily operate and maintain using existing equipment. Underground Solutions was collaborative and supportive throughout the project, and we are eager to use Fusible PVC® pipe on future projects.”

*Scott Maynor, P.E., Associate, Senior Project Manager
Cobb Fendley and Associates*

Location of project area



Underground Solutions, Inc. provides infrastructure technologies for water, wastewater and power cable conduit applications. Underground Solutions' Fusible PVC® pipe products, including Fusible C-900® pipe and FPVC® pipe, utilize patented technology to produce a fused monolithic, fully-restrained, gasket-free, leak-free piping system ideal for trenchless (horizontal directional drilling, pipe bursting and sliplining) or conventional "open-cut" installations and are available in 4-inch to 36-inch diameters. The combination of standard fittings and lower weight with higher flow for a given pressure class versus other thermoplastic pipes ensures that Fusible PVC® pipe brings greater economy to most pipeline projects.



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