



I-35W TRAFFIC FLOWS BETTER WITH NEW RINKER MATERIALS® STORMWATER MANAGEMENT SYSTEM

The Texas Department of Transportation (TxDOT) continues to provide improvements to roadways across the state including the 26-mile stretch of I-35W in Tarrant County. Built more than a half century ago, I-35W was recently upgraded near Fort Worth with a new storm drainage system to manage large volumes of stormwater caused by heavy rain events. In order to limit traffic disruptions for the 165,000 vehicles that travel on I-35W each day, WSP designed this 54” RCP portion of the stormwater management system using trenchless technology.

After securing the bid, Ferrovial Construction immediately enlisted Rinker Materials® to help configure the storm drainage system according to project specifications. Leaning on previous experience with drainage improvement projects along I-35W, Rinker Materials provided nearly 500 linear feet of jack and bore reinforced concrete pipe (RCP) for installation by one of the state’s leading trenchless installation contractors, AR Daniel Construction.

WSP developed engineering plans for a double barrel run of 54” jack and bore RCP with steel bands. The steel bands are placed on the bell end of the pipe to provide tensile strength



for the bell end of the pipe. Approximately 1,200 cubic feet of soil were excavated to create the 223' double barrel pipeline that runs approximately 16 feet below top of grade. All the excavation of soil for this project was removed by hand. The pipe diameter, length of run, ground conditions and other factors were carefully considered when determining how much thrust should be used to jack a pipe through the soil.

Bo Davis, VP of Operations for AR Daniel Construction stated that “some hydraulic jacks can push around 5,000 psi while the bigger sets can push anywhere from 10,000 – 12,000 psi.” ASCE Section 27 “Standard Practice of Direct Design of Precast Concrete Pipe for Jacking in Trenchless Construction” was used in the design of the pipe for this project.

Davis also confirmed that “the workers will dig through the soil approximately 10 feet per day, if no issues occur. Each time the hydraulic jacks are used, the pipe is pushed around 12 to 18 inches. If excavated further than 12 to 18 inches, it can be more difficult to maintain the required alignment and grade.” After each piece of RCP was positioned in the trench, a quarter-inch piece of plywood was placed on the shoulder of the spigot end to provide cushion when jacking the pipe through the soil. After jacking a section of pipe through the soil, the annular space was filled with grout to strengthen the stormwater drainage system.

With heavy rainfall and severe thunderstorms common in this area, the new portion of the stormwater management system will make travel on I-35W safer and smoother moving forward. Installing the system using a trenchless technology plan executed through collaboration by TxDOT, WSP, Rinker Materials, Ferrovia Construction and AR Daniel Construction meant less disruption for average daily traffic and the local economy.

