



48" PVC Saves Time, Space and Money on Storm Project

By Jerry Parkinson
Diamond Plastics Corporation

Voss Road is a heavily traveled surface road with access to Interstate 10 in Houston, Texas. The Village of Hunters Creek needed to install 1200' of 48" Storm Sewer under and along Voss Road. A major concern during this project was the duration of construction and the inconvenience to traffic lanes during installation of the large diameter pipe. It was also calculated that 48" diameter RCP would conflict with an existing line of telephone banks already installed in the right-of-way.

Tony Bonner, Project Superintendent for Jimerson Construction, had just installed some 48" PVC profile wall pipe in conjunction with a new wastewater treatment plant in Pearland, Texas. Bonner was also the superintendent for the Voss Road Storm Sewer. Because of his success in Pearland and the limited space available for storage and installation while construction was ongoing during the Voss Road job, Jimerson Construction approached the engineer about using 48" PVC instead of 48" RCP.

Bobby Deden, P.E., with Deden and Vandewater was the Chief Engineer on the job. George Bridges is the Director of Public Works for Hunters Creek Village. After reviewing all the possibilities and consideration of 48" PVC pipe, all parties



The longer lengths of PVC and its lighter weight reduced the installation time when compared with RCP.

were in favor of changing the specification to allow 48" ASTM F1803 profile wall pipe with a pipe stiffness of 46 psi and a Manning's "n" value of .009, allowing for more flow through the pipe.

Bonner said he was "well pleased with the decision to use 48" PVC pipe. The project went very well using the smooth profile wall PVC pipe. The project, with all 1200' of pipe installed, finished ahead of schedule." Bonner also said, "because of the lighter weight product, the construction crew was able to use lighter weight equipment for loading, unloading and trenching. This was really important in reducing some of the necessary traffic congestion. Besides the lighter weight, the longer lengths also helped speed up installation." The lighter weight pipe was also safer for the crew to use in the tighter confined spaces.

Bridges was pleased with the project. "We were able to keep two-lane traffic going while the pipe was being laid. By

using longer lengths, installation time was shortened, which meant less inconvenience for the nearby residents. Such major projects are inevitable and are bound to cause some problems. One of our main concerns in Hunters Creek Village is to keep these to a minimum, if at all possible, for the residents of our community. For these reasons," Bridges continued, "and for the fact that less space was required for storage of PVC pipe over RCP at the job site, we have plans to use this pipe in other projects developing over the next six to seven years." Bridges also expects the selection of PVC would provide a longer life for the infrastructure, which would lead to eliminating future inconvenience.

PVC sewer pipe used for storm applications is a significantly growing market in diameters through 60". The extremely tight joints and superior flow characteristics make PVC an ideal choice for communities wanting to lessen the environmental impact of leaking storm sewers.

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Sliplining Halts Sewer Infiltration in Tennessee Community

By John V. Kanzleamar and
David E. Beck, P.E

Knoxville, Tennessee—Sequoyah Hills, one of Knoxville's historic and distinguished communities, has an older infrastructure requiring periodic attention. However, work is often complicated by the unusual location of some utilities, bordering waterways that restrict equipment access, meandering roads and heavily wooded terrain.

Many properties in the southern part of Sequoyah Hills abut the Tennessee River. On most of these sites, houses are set deep within their waterfront lots and boathouses, gazebos and walkways extend to the water's edge. This carefully nurtured section of the community, renowned for its forested hills and stone shoreline bluffs, became a source of concern when groundwater infiltration into its older sanitary sewer resulted in significant overload at a downstream pump station during wet weather. Infiltration into the existing sewer was caused by degradation of the 50-year old masonry joints.

Although residents recognized the need to rehabilitate the aging sewer system, they were very anxious about the impact this would have on their individual properties and the entire community.

"Working space and access restrictions eliminated some usual rehabilitation methods from consideration," said Julie Childers, P.E., project engineer with the Knoxville Utilities Board (KUB). "After weighing remaining options, we decided that segmental sliplining was the best process for this project since it needs very small insertion pits and less equipment is involved. Also, since individual liner pipe sections can be supplied in short lengths, they are easy to handle in tight quarters." The sliplining process involves inserting new pipe into a deteriorated sewer to restore hydraulic properties, structural characteristics or to stop infiltration.

In the spring of 1999, KUB employed Consoer Townsend Envirodyne Engineers, Inc., of Nashville,