

Superior hydraulics relieve neighborhood flooding

PROBLEM:

Several homes along Forrest Drive, a residential street in North Pekin, Ill., near Peoria, suffered serious flooding during periodic heavy rains. The land along the drive was very flat, and the village's old ditch-and-culvert drainage system was incapable of handling even 1.5" of rain, creating frequent floods for area residents.

THE CORRUGATED POLYETHYLENE PIPE SOLUTION:

The superior hydraulics of smooth interior corrugated polyethylene pipe helped relieve the flooding problems. Frank Hardy, North Pekin's Superintendent of Public Works, designed a new stormwater management system entirely of corrugated polyethylene pipe. Corrugated pipe's smooth interior provided maximum hydraulic capacity under minimal fall conditions. "This problem was solved...because of the superior Manning 'n' value of corrugated polyethylene pipe. We could make the water flow, with little fall at all," Hardy explained. The new system feeds into a nearby creek, and has eliminated the flooding problem completely. • Working with both coupling bands and bell-and-spigot joints, Hardy said his crews were able to install HDPE much faster than other types of pipe. He also felt comfortable stockpiling the pipe along Forrest Drive even though many children live in the area - he said he would have been hesitant to do that with metal or concrete pipe.

INSTALLATION DETAILS:

The new system consisted of 900 feet of 15" - 24" corrugated polyethylene pipe. The 15" pipe was laid at a pitch of 0.0028" per foot, and the 24" pipe at 0.0015" per foot. The pipe was laid beneath 12" of cover, using tees covered with metal grates as catch basins. "This let us real easily look right down into the pipe and inspect it for debris," Hardy said.

Project: Stormwater Drainage System

Location; Forrest DriveNorth Pekin, IL

Engineer: Frank Hardy, Village of North Pekin

Contractor: Village of North Pekin

Timing: Spring, 1997, October, 1997

"Now the homeowners don't worry about floods with every storm!"

Frank Hardy, Superintendent of Public Works, North Pekin, Il.