Tech Corner

Municipal officials and engineers, please note:

Potential problems with

PLASTIC OUTFALL PIPE

During routine inspections, our Erosion Control Specialist Chris Droste uncovered what may be a **widespread problem in sediment basins and detention ponds with plastic outfall pipes leaking.**

When plastic pipe is installed in these particular applications,* contractors are not allowed to place backfill stone around the pipe, even though that would provide stability, because then the application would become a French drain (and that would create problems with water flowing outside the pipe).

Without backfill stone in basin and pond applications, the force of heavy rollers compacting the earth around plastic pipes sometimes causes the pipes to spread out horizontally, stressing the pipe joints to the point where they separate and allow water to seep into the earthen embankment around them.

In other instances, if the soil is not compacted correctly, water can flow around the outside of the pipe instead of only through it.

Over time, this outside-the-pipe water can form sinkholes in the pond or basin embankment or, worse, actually breech the integrity of this protective rim of earth that retains stormwater and prevents flooding.

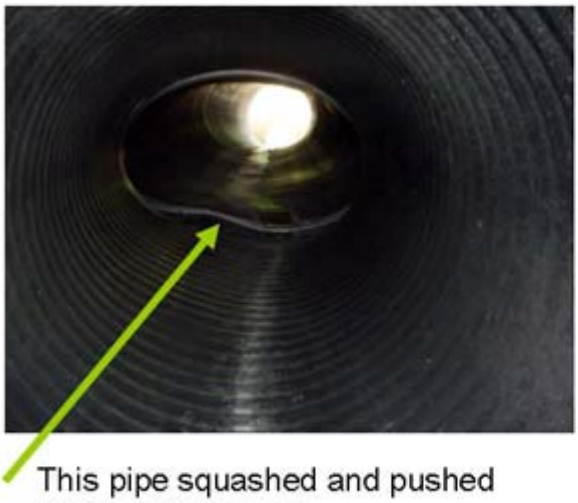
Chris has made a number of municipal officials and engineers aware of this problem, and has incorporated this information in the state's new Erosion and Control manual, which he is helping to develop.

Joe Dietrick, a member of our stormwater management advisory committee who is a professional engineer, also **created a design fix for the problem.**

It uses a concrete pipe (which keeps its shape and does not require stone to be backfilled around it), poured anti-seep collars, and a concrete poured cradle that the heavy concrete pipe rests on to keep it from sinking and washing out.

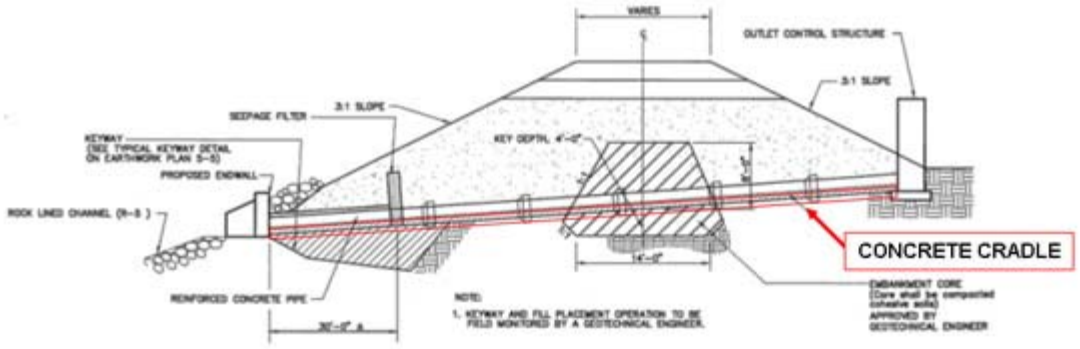
For more information, contact Chris Droste at 724-837-5271 or chris@wcdpa.com.

** When plastic pipe is used to convey stormwater in roadway applications, stone backfill is used to keep the pipe from becoming misshapen and collapsing. So plastic pipe used in this application does not experience the same problems that plastic pipe used in sediment basins and detention ponds does.*

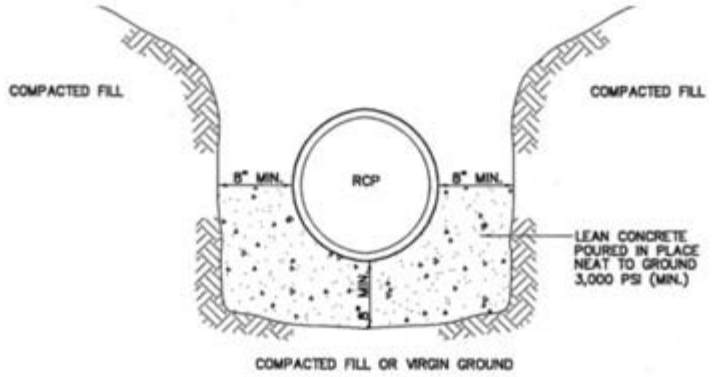


This pipe squashed and pushed
Up from the bottom

Contractor poured a concrete cradle
Around the bottom and sides of pipe
For rigidity.



TYPICAL BASIN EMBANKMENT
NO SCALE



CONCRETE CRADLE DETAIL
NO SCALE