



alternative
environmental
solutions

STORMWATER INFILTRATION CARBONATE TERRAIN

Overview

AES was hired to assist the Developer's engineering firm to determine whether the onsite carbonate geology (limestone) would present undue obstacles for site development and to provide an evaluation and assurance that the local and federal regulations for the proposed stormwater infiltration management structures could be appropriately attained.



Site Plan

Challenge

AES was challenged to develop and implement a work scope aimed at succinctly gathering sufficient and pertinent data to develop stormwater infiltration BMPs and to minimize risk to the subdivision's improvements and future residents. Of particular concern was the existing sanitary sewer force main that bisects the site, which when coupled with topography and zoning requirements, limited potentially available stormwater infiltration areas.



Direct Push Soil Borings

Solution

To accomplish these tasks, AES completed an onsite investigation of the bedrock surface within the areas of the proposed stormwater infiltration BMPs, which included infiltration trenches, sediment forebays, and basin outlets. This detailed investigation consisted of the completion of electromagnetic surface geophysical surveys with recording of integral GPS locations to identify subsurface soil and bedrock anomalies. AES then installed a number of direct push soil borings to gather subsurface information regarding soil hydrogeologic characteristics. The potential infiltration areas then underwent stormwater infiltration rate testing, the information from which was then completed and incorporated into the overall geologic assessment. An assessment report was prepared and presented to the Pennsylvania Department of Environmental Protection (PADEP) for discussion and consideration.



At Depth Infiltration Rate testing

Results

The resulting work completed by AES enabled the engineering firm to adjust its proposed plan in a fashion that was acceptable to PADEP and ultimately enabled the developer to move forward with property development.

