

CASE HISTORY

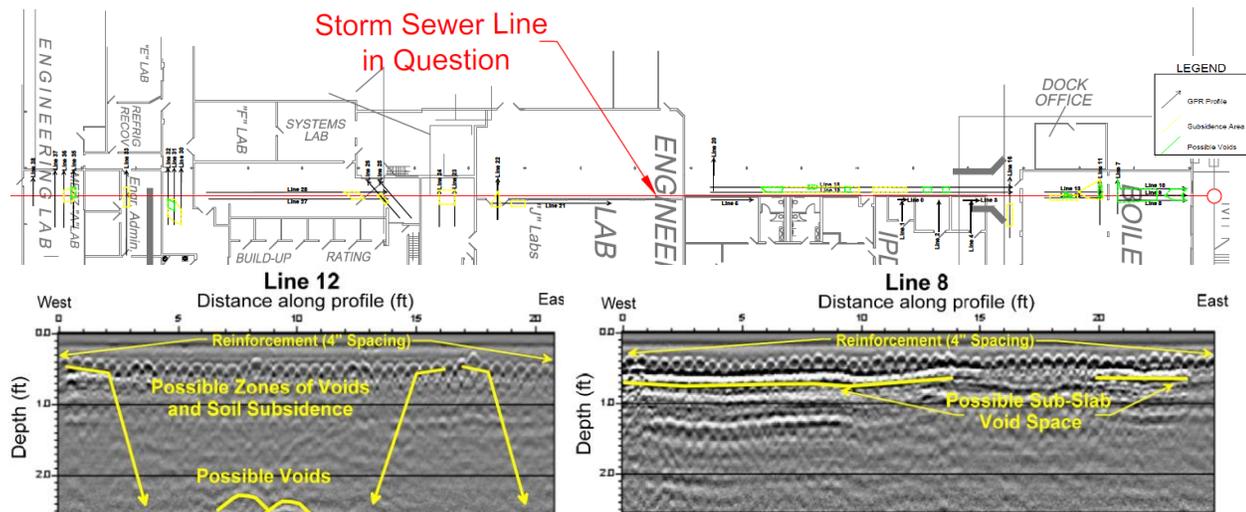
GPR Survey to Locate Voids and Subsidence Beneath an Industrial Facility Foundation

Challenge:

MUNDELL was contracted by an industrial facility located in central Ohio to scan along an interior storm sewer alignment trending beneath the footprint of the main site building. Recently, evidence had surfaced that the 24-inch storm sewer line in question may be deteriorating, potentially leading to shallow soil loss and washout, as well as the potential for subsidence/void development beneath the Site building foundation in the immediate vicinity of the storm sewer line and trench. Thus, the goal of this project was to map out any such areas, should they be present.

Action:

To accomplish the project objectives, Mundell personnel completed a high resolution ground penetrating radar (GPR) survey, utilizing a 1000-megahertz antenna, to view and characterize voids beneath the concrete surface. Given the limited room available for data acquisition along the sewer alignment, a gridded GPR survey proved to be impossible. Instead, GPR data were collected along thirty-eight (38) individual profile lines along the alignment, wherever sufficient room to scan was available.



Results:

The GPR results showed evidence of void development along 1/3 of the profiles collected, and evidence of subsidence along 1/2 of the profiles. It was noted to the client that while surficial interference only permitted imaging of the upper 2 feet of the subsurface, it is likely that the issues detected within the uppermost zone were representative of deeper features of potential concern, closer to the storm sewer itself.