

# Ground Penetrating Radar

Ground penetrating radar (GPR) uses high frequency electromagnetic energy to acquire subsurface information. Energy is radiated downward into the ground from a transmitter and is reflected back to a receiving antenna. Reflections of the radar wave occur where there is a change in the dielectric constant between two materials. The reflected signals are recorded and produce a continuous cross-sectional image of shallow subsurface conditions.

GPR provides high-resolution images of the shallow subsurface, typically within the upper 20 feet (much deeper depths can be obtained under ideal conditions). Applications include mapping shallow stratigraphy, identifying near surface anomalies such as soil raveling and voids, and locating man-made structures such as utilities and underground storage tanks.



- Non-invasive and quick method to scan large areas of the shallow subsurface
- Highest resolution of the surface geophysical methods
- Position and depths of subsurface features can be accurately delineated from GPR data
- Data can be acquired along survey lines or survey grids to provide 2D cross-sections, plan-view depth slices, and 3D images
- Survey procedures outlined in ASTM D6432-99

