Jakarta is the city of the Republic Indonesia and one of the largest cities in
Indonesia. Jakarta as a business, political and cultural center becomes a
metropolitan city on par with Singapore and New York City. There are development
of science, technology and economy in the city of Jakarta makes Jakarta the main
attraction by urban people. Important thing to realize the optimization of public
service is by mapping the underground utilities of the city, for example is Jalan
Sudirman in this research. One method that used is Ground Penetrating Radar
(GPR). This method is non-destructive and has a high resolution to the dielectric
contrast of the earth's material. GPR method is a geotechnical solution to get targets
in the form of: pipes, cables and other utilities.

This research uses 16 data of GPR, there 9 data are run through the
pavement and 7 data are cross the main street of Jalan Sudirman. 2D data processing
using Reflex-w software and 3D modeling using Voxler software. Map is visualized
by Autocad software.

Based on the results of data processing using GSSI SIR 3000 270 MHz, the
amplitude of the electromagnetic wave is obtained below the surface. Utilities that
appear on the radargram are cables, metal pipes and drainage. The utility will
provide a positive amplitude response when it concerns the metal material and the
negative amplitude response when it concerns a nonmetallic material. The depth of
utility ranges from 0.2 meters to 2 meters below ground level.

**Keywords**: Amplitude, Ground Penetrating Radar, GPR, Utility.