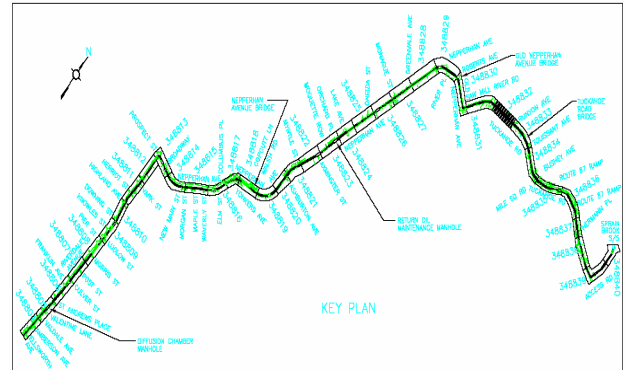




ConEd M-29 ELECTRIC LINE SUBSURFACE GPR MAPPING IN THE URBAN ENVIRONMENT

BACKGROUND

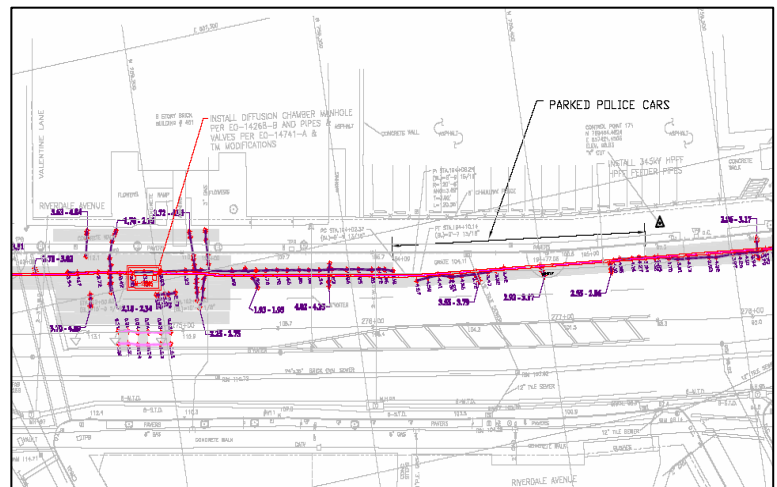
Con Edison contracted with UIT and Spectra Subsurface Imaging to scan the proposed alignment in the Yonkers section of the project in preparation for installation of the new M-29 underground 345KV electric transmission line in the metropolitan New York City area. The purpose of the work was to identify conflicting utilities that were not on existing maps of the streets under which the line is to be installed. Con Ed wanted to find and resolve conflicts ahead of construction operations in order to reduce or eliminate change orders.



Above: Index map showing the 5-mile alignment surveyed with TerraVision II®.

SCOPE & RESULTS

UIT and Spectra gathered data in a 10-foot wide swath along 26,000 linear feet of the new alignment, plus extra coverage on 14 sites of proposed connection vaults. This work resulted in finding greater than 30 conflicting utilities impinging on the alignment that require moving the third party utility or the Con Ed alignment. This effort saved Con Ed much more in avoided conflict construction costs than the survey itself cost.



Above: View of part of one of the 30+ delivered plates showing alignment in red and mapped utilities in blue. Notice the blue lines that overlay the alignment.

METHODOLOGY

The UIT 14-channel TerraVision II® GPR system was employed for this project. GPR data were positioned using both standard survey techniques and a Navcom GPS system. GPS and GPR data were collected together and recorded with the UIT DAS data acquisition shell software. Data was interpreted using the SPADE® 3D software and XYZ utility locations transferred as a CAD layer onto the existing utility plates.