

CASE STUDY

TOPOGRAPHICAL AND GPR SURVEY



PROJECT AT A GLANCE

Project: Topographical and GPR Survey
Location: North East Lincolnshire
Year: 2017
Duration: 50 Days



PROJECT BRIEF

LSTC was approached by a major Wind Development company to produce Topographical and Underground utility survey for an onshore cable route totalling 40km in North East Lincolnshire.

CHALLENGES

- To deliver a complete package of drawings which reference the topographical and GPR data for the whole linear length of the route.
- To deliver to-standard drawings in a timely manner
- To liaise with landowners along the route and fit the survey in to the clients timeframes and expectations.

OUR APPROACH

Our surveyors recorded levels and features along the route using total stations and GPS instruments to the client's specifications. The LSTC underground utility team initially traced and recorded all utilities that were highlighted by the in house buried service search. The GPR survey was then conducted in every field along the 40km route to ensure that any underground utilities not picked up by the buried service search would be captured. The GPR equipment was fixed to a custom-built sled with the GPS receiver attached for geo-referencing, and was then pulled across each field in a grid pattern. The collected utility data then fitted seamlessly into the topographical survey data. A final sweep of each field was then conducted using Electromagnetic locator and transmitter to find any buried metallic objects that were either too deep or too small for the GPR to locate.

PROJECT OUTCOME / DELIVERABLES

The client was provided with a full drawing pack consisting of:

- AutoCAD DWGs of Topographical & Utility surveys to PAS128 and client specifications.
- Metadata geo-database files to client specifications.
- Extra topographical data for access tracks and laydown areas.
- Several detail drawings of ditches/streams for HDD design/drilling purposes.

The scheme successfully delivered all aspects of the survey accurately, efficiently, and within timeframes. However, further deliverables & efficiencies could be made using current technology; the use of drone-based LIDAR systems would minimise the need for walk-on access to land, and would quickly generate the data needed for the Topographical survey. Drone based photogrammetry would also offer extra benefits such as full orthometric photos of all the fields, which could then be used for condition/witness reports.