

CASE STUDY

BAM Nuttall | WRC Sonding Survey – Dec 21

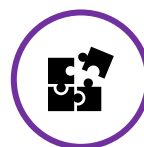
Introduction

The Arundel Bypass scheme needed to locate the Southern Water pressurized rising main utility. The Polyethylene utility was unable to be located using CAT & Genny equipment, nor Ground Penetrating Radar surveys from previous contractors completing Ground Investigation Works. The team were eager to locate the utility without the need for carrying out trial holes on site, reducing the potential of a utility strike.



Overview

- The team investigated the use of alternative methods for locating the service.
- Historically the scheme would have looked to slip trenches and a series of trial holes on the site to locate the service.
- Its location needed to be determined to allow boreholes to be conducted in the phase.
- The project has set out to minimise excavation in the design phase as much as possible as a target on the safety maturity matrix and in line with the common intent document



Challenges

- Permission was needed from the Statutory Undertaker to access the apparatus (including at the pumping station). This was combatted by using an authorised Subcontractor.
- Appointing a small new subcontractor on site in time to allow the Ground investigation to progress.



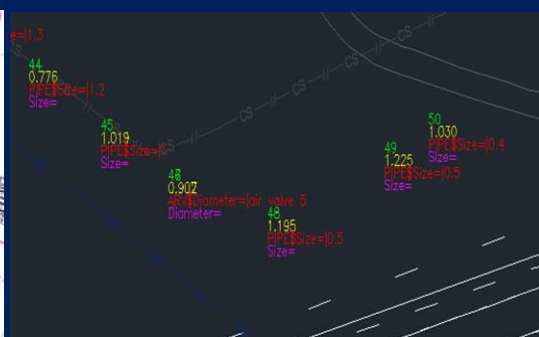
If faced with the same problem again, we would use this process again without question.



Sonde Survey Equipment



Location of the Pipeline



Depth of pipeline

Action Taken

- WRC Infrastructure was appointed to provide a solution to locate the service.
- A non-intrusive sonde survey using a Sahara Pipeline Survey System was recommended, minimising the requirement for costly and labour-intensive hand dug trial pits.
- The survey took place by isolating air valves upstream of the survey area to allow for the attachment of a sonde on an ambilocal cord. The sonde was then released into the pressurised system and located on the surface using a CAT and its position recorded with a GPS.
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Results

- Successful survey on site, both the location and depth of the pipeline was recorded. In general, the pipeline was as expected; however, in one location by western dog-leg the pipeline was closer to the proposed road by circa 10m.
- Eliminated the need of 42 trial holes to be dug over the length of 1050m.
- Eliminated the risk of utility strikes.
- Eliminated manual handling hazards.
- Reduced time and numbers of people on site, this method led to a reduction of time on site from 21 shifts to 2.
- Reliable location of Utility.
- Reduced time on the programme.
- Benefits realised £74,761.



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