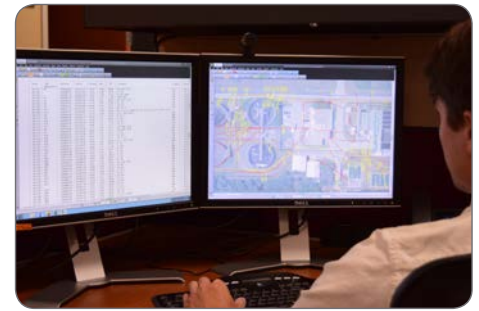


SUE SUBSURFACE UTILITY ENGINEERING

SOLUTIONS START HERE



Saving You Time and Money – At TBS, Subsurface Utility Engineering (SUE), combined with our surveying and engineering solutions, helps to manage the risks associated with underground utility mapping. Our SUE project team uses cutting edge geophysical prospecting tools and techniques to designate the horizontal position of subsurface utilities as non-destructive vacuum excavation is used to verify and record their exact vertical and horizontal location. Using our integrated project services approach allows TBS to accurately and precisely record, interpret, and manage data derived from SUE in accordance with DOT standards. All data is processed and housed within the TBS GIS system.



For every \$1.00 spent on SUE there is a related \$4.62 estimated cost savings.

Purdue University Study - Cost Savings on Highway Projects Utilizing Subsurface Utility Engineering, December 1999
<https://www.fhwa.dot.gov/programadmin/pus.cfm#conclusions>

SUBSURFACE UTILITY ENGINEERING SOLUTIONS

Utility Engineering Projects

- Electrical Lines
- Natural Gas Lines
- Petroleum Lines
- Water Systems
- Wastewater Systems
- Cable Lines
- Fiber Optic Lines

Data Management

- Records Research
- Horizontal and Vertical Surveying
- Post-processing and Interpretation
- CADD and Microstation
- GIS Mapping
- 3D Modeling

Utility Coordination

- Design Utility Relocation
- Cost Estimates
- Conflict Analysis
- Joint Project Agreements

Planning | Environmental | Surveying | Engineering | GIS/Mapping

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TBS SUE solutions are performed using four quality levels of utility depiction in compliance with the ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data. (CI/ASCE 38-02)

Quality Level D: Records Research/Data Collection – information is derived from existing records research or verbal recollections (oral history), providing an overall “feel” for the congestion of utilities, but is often limited in terms of comprehensiveness and accuracy.

Quality Level C: Visible Surface Feature Utility Survey – utility surface feature data is obtained from surveying and plotting above ground utility features (e.g. manholes, valve boxes, etc.) to assist with determining approximate horizontal position of underground utilities. Used with QL-D.

Quality Level B: Utility Designation – collected by thorough applications of appropriate surface geophysical sensing technology to determine the horizontal position of subsurface utilities. Example methods: RD 8000, GPR, Metrotech, Non-destructive probing, etc.

Quality Level A: Underground Utility Locating (Test Hole) – highest level of accuracy available and involves the use of non-destructive digging equipment at specific points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, material, and other characteristics.



UTILITY DESIGNATION EQUIPMENT



Metrotech Line Locator 810



Ditch Witch 970



Schonstedt GA-52Cx



RadioTech PCM PCM-Tx



Radio Tech Line Locator RD8000



Ground Penetrating Radar RD1000



Gradiometers



Tinker-Razor Oscillator

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