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Finding Underground Utilities Before the Drilling Rigs Do

An automated people mover (APM) system, part of a \$2.6-billion capital development program, is currently under construction at the Dallas/Fort Worth International Airport. The project requires approximately 500 pier shafts to support the train system. Drilling these shafts, however, could result in conflicts with underground utilities, including airport's underground jet fuel distribution system.

The solution is to know exactly where these underground utilities are located - before drilling - to avoid conflicts. Experience has shown, however, that utility location information from existing plans and records may not be accurate. Once construction begins based on faulty input, unplanned "hits" on existing utilities can result in costly damage, delays, service disruptions, redesigns, claims, or even injuries.

On the APM project, general contractor Hensel Phelps Construction Co. turned to TBE Group, Inc., to accurately identify and verify the underground utilities. This locating procedure, known as Subsurface Utility Engineering (SUE), combines geophysics, surveying and civil engineering to provide accurate mapping of existing underground utilities.

"Of the APM's roughly 500 pier locations, we have completed 200 locate holes to date to confirm possible utility conflicts," said Jack Wolf, Hensel Phelps' utility coordinator. "If we find a major conflict, we try to relocate the proposed pier location. If this is not possible we construct a straddle footing to bridge the utility, or we reroute the utility."

"We have been performing SUE locating services for the airport's APM project since September 2000," said Jeff Vick, manager of TBE's Texas utility operations. "As a result of our SUE efforts, Hensel Phelps has been able to avoid costly utility conflicts."

"SUE has been a tremendous benefit to safety and to our construction schedule," Wolf said. "We are very pleased with TBE's professional SUE services while meeting our demanding design-build schedule."

Added Jerry Fleming, P.E., principal, Freese and Nichols, Inc., a member of the project's design team, "Subsurface utility engineering has proven to be an expedient, non-invasive method to locate subsurface utilities, especially in areas constrained by existing facilities and operational activities."

"As the aviation industry prepares for the growing demands of aviation travel, the use of SUE has proven that it works," said Nick Zembillas, senior vice president of TBE.

Credits

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Since 1999, the Georgia Department of Transportation (GDOT) has been incorporating Subsurface Utility Engineering (SUE) during the design phase of its highway construction projects.

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