

SPECIALIZED SERVICES COMPANY

Based in Phoenix, Arizona SSC is the leading underground construction specialist in the Southwest.

SSC operates three divisions: Directional Drilling, Auger Bore & Tunneling, and Vacuum Excavating/Utility Pothing. In addition to a variety of other trenchless services intended for various project conditions.

These include:

- ❖ Pipe Ramming
- ❖ Pipe Bursting
- ❖ Skidding
- ❖ Large Diameter Tunneling

Complementing its construction business, the company also offers Consulting and Subsurface Utility Engineering (S.U.E.) services. Arvid Veidmark III, co-owner and senior estimator is a strong advocate of Trenchless Technology and has been consulting on these applications since 1997. SSC clients range from large municipalities to small privately owned companies. Their valuable contributions have helped clients to redesign their structures, change their cultures, improve customer satisfaction, and increase their operational effectiveness.

SSC was founded in 1969, by the Veidmark family. Owners include Marcia Veidmark, Arvid III, and Aaron Veidmark, who all share in the daily operation of the company. Over the years the business has adapted to specialize solely in trenchless technology and has grown to 34 employees. It is recognized as the leading authority on Arizona's underground and has been the recipient of several awards including:

- ❖ AAAME: Academy for the Advancement of Small, Minority- and Women-owned Enterprises
- ❖ Phoenix Chamber of Commerce: Small Business Award for "Response to Adversity"
- ❖ Arizona State University: Spirit of Enterprise "Emerging Entrepreneur Award" ○

A Case for S.U.E.

By Arvid L. Veidmark, III

An "undisclosed" trash pile delays Specialized Services largest bore project and threatens a \$50,000 loss.



The Project:

Specialized Services (SSC) was hired in April of 2005 as a sub tier subcontractor by the Arizona Department of Transportation (ADOT) to install a Siphon under Loop 202, near Interstate 10. The 30-in diameter RGRCP pipe was intended to divert irrigation tail water from a Salt River Project retention basin to a pump station. The project called for a 502-ft jack & bore to install a 60" diameter casing.

The Company:

Before the Siphon project, a 310-ft bore with a 60-in steel casing was SSC's longest bore for this size casing, and that was using a conventional auger. In this case they had to increase the length by nearly 200-ft, and maintain line and grade to connect the basin on the other side of the I10 freeway. 39 years of experience in trenchless technology taught them that planning, preparation, and proper equipment were critical to success. So after carefully plotting a pathway under the freeway, they used an operator controlled BMTA and a laser set up on a fixed-base platform to control the accuracy of the bore. With two five-man crews working twelve-hour shifts, the bore was expected to take 30 days to complete. Then the unexpected happened.

struction crew, that progress came to a screeching halt. What should have taken three days turned into a painstaking eight. Large chunks of concrete shredded the costly bit, forcing SSC to have to remove much of the debris by hand. Dropping from 20-ft to around 7-ft per day, the company was forced to file for a condition change with ADOT to try and recoup some of the rising costs of the delay, which had now tolled over \$50,000. Although SSC was meticulous in their planning, and Salt River Project thoroughly surveyed the area, they were still reliant on "as-built" plans, which are notoriously unreliable (and in this case true to form).

The Solution:



Bore tunnel.

Over the years, it has become more and more unclear as to whose responsibility it is to specify appropriate solutions for specific project conditions. What was once left up to the contractor's discretion has now become the role of the design engineer, who in many cases has little knowledge of trenchless technology.

The Siphon project is just one of many examples where contractors have found themselves in a similar dilemma, although in most cases it is a damaged utility that causes the delay, not a pile of concrete. Without proper education and guidance, it is nearly impossible for busy design engineers to really understand all the requirements of trenchless construction.

Hence the birth of Subsurface Utility

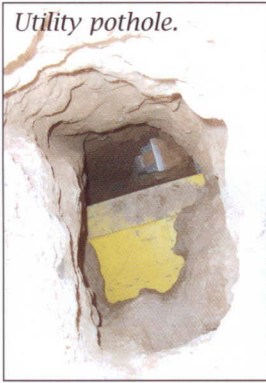


Damaged bit.

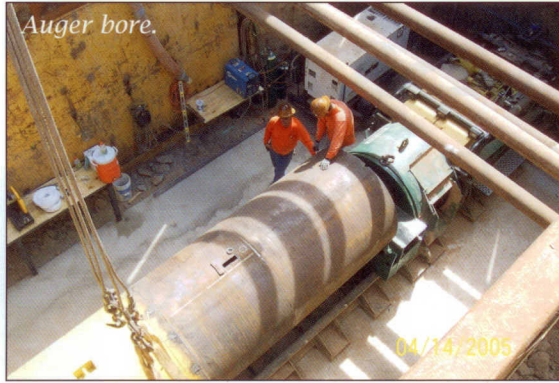
The Challenge:

It was slow going for the first 220-ft due to the hard Arizona soil, but it wasn't until they struck a 56-ft pile of concrete debris, left behind by a previous highway con-

Utility pothole.



Auger bore.



Engineering (S.U.E.), a process that accurately locates and maps underground utilities during the early design of a highway project. This relatively new branch of engineering offers a single, reliable source of mapping, coordination, assessment, and communication to concerned parties. It combines traditional methods such as records research, plotting, and design with methodology such as vacuum technology and utility mapping. Its benefits are enormous and it is now recognized as "Best Practice" by the Federal Highway Administration and the National Transportation Board, as well as ADOT, who has been utilizing a S.U.E. group since 1992.

ADOT's primary goal is to provide a transportation system that meets the needs of the citizens of Arizona. This is a tall order, considering that Phoenix is one of the fastest growing cities in the nation. Over a five-year period, ADOT plans to spend over \$2.8 billion for highway improvement projects in Maricopa County alone. Considering the fact that for every \$1.00 spent on S.U.E., the overall project can realize a savings of about \$4.62, how much can and has been saved on these projects? Fortunately for SSC, they were able to recoup about thirty percent of their losses from ADOT, but that is not always the case.

The Benefits:

Even with the problems SSC experienced, the bore was accurate to within 2-inches of its target, and the project was

considered a big success. Without even realizing it, SSC had been practicing S.U.E. processes for many years, which turned out to be a huge benefit for ADOT. One example is how their quality control practices, planning processes, and expertise in vacuum technology afforded them the ability to avoid a 48" storm drain that was directly in the path of the bore.

Prompted by this situation and the experiences of others in the field, SSC now offers this vital service. SSC is one of the few companies in Arizona with the in-house staff and equipment to provide Subsurface Utility Engineering. Because of this, SSC offers better service, better quality control, and better value to its clients in the performance of the S.U.E. process. Owner Arvid Veidmark, III, invests much of his time consulting and educating engineers and project managers on the benefits of utilizing S.U.E. when specifying trenchless technology.

Arvid Veidmark is co-owner and estimator of Specialized Services, a Phoenix based underground construction and consulting company, specializing in drilling, boring and vacuum excavation since 1969. Arvid has more than two decades of operational experience and has been consulting since 1997 when he succeeded Arvid Jr. as co-owner of SSC. He holds multiple licenses and certifications.

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The Federal Highway Administration (FHWA) commissioned Purdue University to find out how effective SUE is in reducing costs on highway projects. Free copies of Purdue's January 2000 report, "Cost Savings on Highway Projects Utilizing Subsurface Utility Engineering" Publication No. FHWA-IF-00-014, may be obtained from FHWA.

Water retention basin.



Let's Talk Trenchless!

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