



Pauley Construction / Quanta Services “Q” Trench

An innovative new microtrenching procedure is proving itself on several broadband projects, facilitating installation of duct for fiber optic cable in developed areas where conventional construction techniques are unsuitable. In Phoenix, Pauley Construction is using Quanta Services Q-Trench™ system on a project a fiber optic telecommunications network. The patent-pending construction uses specially-developed equipment to simultaneously dig a 3/4-inch wide, 12-inch deep trench and remove spoils direct into a vacuum system. After conduits are placed in the trench, the excavation is filled with a special environmentally-safe grout that is immune to shrinkage, weathering, and erosion.

Crown Castle International is the owner of the project which ultimately will involve installation of 200 plus miles of fiber optic cable. Pauley’s portion of the contract is for approximately 25 to 30 miles with about 25 percent employing the Q-Trench process. Other methods of construction being used on the project include horizontal directional drilling (HDD), conventional trenching, and excavation with backhoes. A key component of the Q-Trench system is a 55 horsepower



Ditch Witch RT55 trencher with a specially designed saw trenching attachment equipped with industrial diamond carbide bits to cleanly cut trench to the project’s exact width and depth specifications.

The trenching attachment can offset to enable trenching near obstacles such as curbs and retaining walls. A vacuum hose connected to the trenching attachment removes spoil as the trench is cut, transferring it to a vacuum system to a special Ditch Witch vacuum excavator designed for the Q- trench process, where the spoils is contained in a storage tank for later disposal.



“The benefits of micro trenching are speed of installation, low-impact on right-of-way and in private, upscale residential developments, and cost savings compared to traditional construction methods,” said Rochelle Wilson, Pauley Construction regional manager.

Wilson said Pauley Construction has three Q-Trench crews working on the Phoenix project with each averaging about 2,000 feet per day. Cable routes are in city street right-of-way and on home owner association property. Cuts are being made parallel to and across streets. Surfaces range the full spectrum from new to badly-deteriorated asphalt.

“After duct or ducts are placed in the cleaned trench,” said Wilson, “it is sealed with a custom, environmentally safe grout that is immune to the erosion and weathering common with other backfill solutions. Twenty-four hours later, asphalt mastic is applied on top of the grout-cured trench.” The grout was developed for Quanta Services by Super-Grout Products. Wilson said if the Q-Trench system had not been available, rock saw equipment would have been the primary option of construction on segments where microtrenching is being used. “However,” he added, “rock saws would not have been allowed in many areas because of the dust and dirt they cause during construction and the lengthy cleanup and restoration necessary.”



In addition, Q-Trench provides significant reductions in project cost. “Time savings can be as high as 50 percent, and in some areas the labor and material savings was upward of 70 percent due to the rapid clean up and reduced quantities of backfill material required with microtrenching,” Wilson said. “Microtrenching not only showcased its capabilities in high-end, resident-sensitive areas, but it also allowed Pauley to secure a greater area of work. As an additional construction tool in our box, microtrenching opened a door that allowed areas to be issued in their entirety instead of being issued to multiple contractors.”

Pauley Construction has offices in Arizona, California, New Mexico, Texas, Montana, Colorado and Wyoming, specializing in the installation and maintenance of dry utility systems.

“Being part of Quanta Services allows Pauley Construction to utilize the patent-pending Q-Trench solution,” concluded Wilson. “These resources allowed Pauley to deliver proprietary construction methods and helped Pauley secure revenue opportunities during a time when construction opportunities were low.”

Quanta Services is a leading specialized contracting services company, delivering infrastructure solutions for the electric power, natural gas, pipeline, telecommunications and cable television industries. The company’s comprehensive services include designing, installing, repairing and maintaining network infrastructure nationwide.

Ditch Witch equipment is manufactured by The Charles Machine Works, Inc. The RT55 is a four-wheel drive vehicle powered by a quiet-running, Tier 4i compliant diesel engine that is well suited for use in noise sensitive areas. ***A Ditch Witch model FX 60, 800 gallon vacuum system equipped with special filters to eliminate airborne dust.*** In addition to the RT55, there is a full line of Ditch Witch trenchers ranging from compact 11-horsepower walk-along models through big 115-horsepower track machines, a



wide selection of vibratory plows, horizontal directional drills from 5,000 to 100,000 pounds pullback, electronic HDD tracking systems and utility locators, compact utility equipment, vacuum excavators, and related products and support equipment.

Crown Castle International owns, operates, and leases towers and other communication structures for wireless communications. Crown Castle offers significant wireless communications coverage to 92 of the top 100 U.S. markets and to substantially all of the Australian population.