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BUILDING THE BUSINESS OF

Featuring a New Micro-Trenching
Solution from Quanta Services

CONSUMER SERVICES
AND FIBER

BY **JOE SAVAGE**

President, FTTH Council

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Improving Micro-Trenching: The Vision Becomes Reality

A vision for less disruptive, less expensive and faster trenching becomes a reality when industry leaders Quanta Services and Ditch Witch team up to create a new sub-inch micro-trenching process.

By Kenneth W. Trawick ■ *Quanta Services*

From the overhead telephone lines of the early days to today's complex, multiservice underground networks, service providers have worked to meet customer demand through efficient deployment practices. As telecom technologies advance, so must the methods by which they are installed and delivered to end users. Increasingly, service providers rely on contractors to drive this process advancement.

To compete with triple-play service offerings and 4G networks, service providers need to push fiber deeper into their networks and to more homes. But with their capital expenditures curtailed in a struggling economy, providers are desperate for innovative ways to install fiber more efficiently, more economically and with superior results.

The latest development to stir up a buzz in fiber network deployments is micro-trenching. While narrow trenching is nothing new to the marketplace, micro-trenching, an emerging technology, allows trenches to be cut less than an inch wide and no more than 12 inches deep. The result is a faster, more efficient, cheaper way to install fiber.

Broadband service providers, whether they are large telcos, cable companies or government entities, benefit from this quick-moving deployment methodology. Permitting authorities are also drawn to micro-trenching because sub-inch trenches are cut in existing rights-of-way and above existing utilities, thus avoiding utility service interruption and minimizing city street disruption. Streamlined permitting enables

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fiber deployments to be completed more quickly, increasing the likelihood for meeting tight time constraints.

CHALLENGES TO OVERCOME

When micro-trenching entered the market, however, not everyone was convinced that it was a magic fix. Some deployers were worried shallow trenches wouldn't protect fiber networks from water damage or compression from traffic. Others feared the networks would be difficult to manage and prone to vandalism. Although these concerns have proved unjustified, micro-trenching is not a perfect science – yet.

Micro-trenching started to evolve when Dan Miller, vice president of telecom operations for Quanta Services, began incorporating micro-trenching applications into the company's telecom service offerings. "I became convinced that, with the right partners to collaborate on this initiative, we could create a more effective, more efficient and more economical way to micro-trench," says Miller. He envisioned a process in which

a single machine could cleanly cut and vacuum the sub-inch-wide trench in one pass, reducing the number of workers – and thus the budget – needed for a job.

"In addition to a trencher, we needed a better solution for backfill," Miller says. Materials used for backfill are prone to shrinkage and consolidation as they harden, requiring more asphalt sealer and increasing project costs.

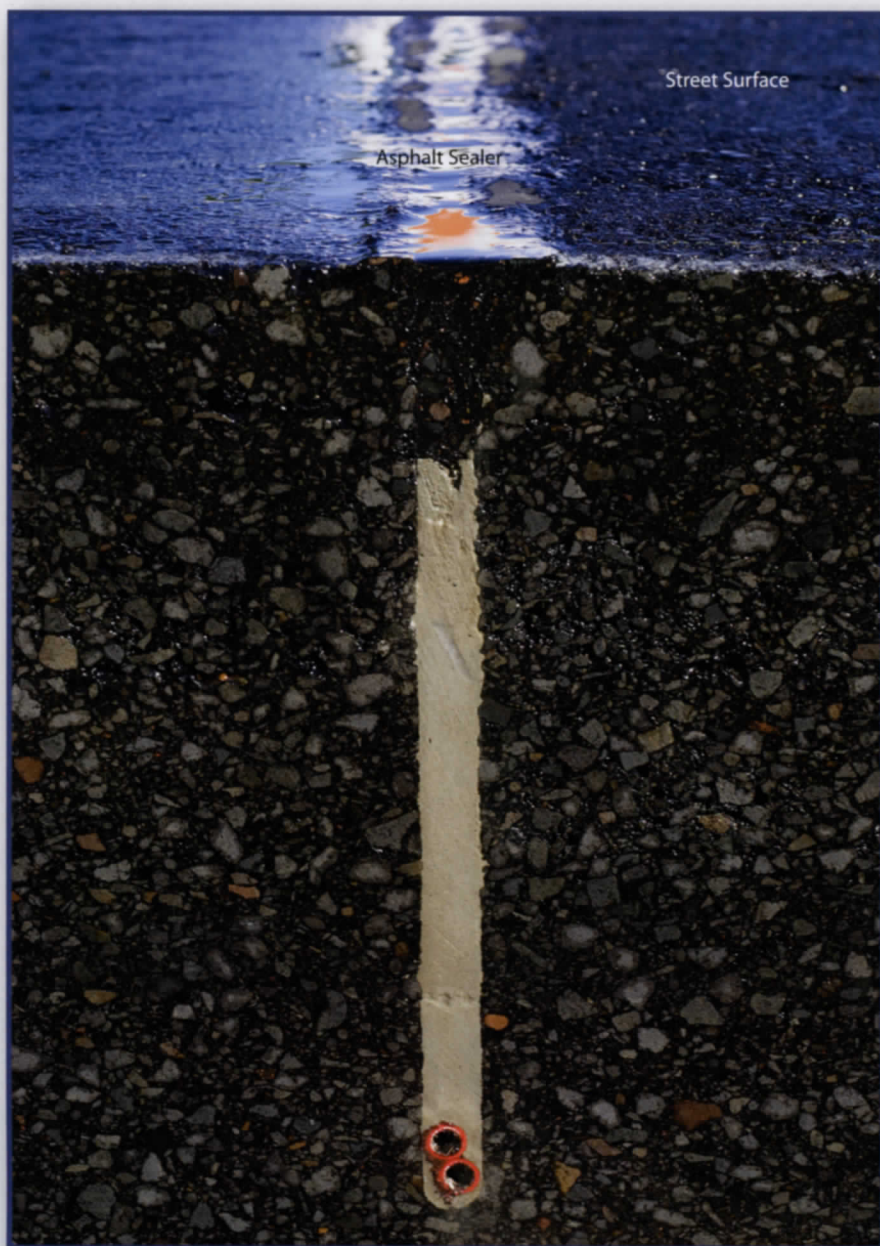
COLLABORATING WITH AN INDUSTRY LEADER

Quanta turned to long-time equipment supplier Ditch Witch to collaborate on a new, more economical micro-trenching solution. This manufacturer has revolutionized the trenching industry more than once since designing the first mechanized compact service line trencher in the early 20th century, and, according to Kevin Smith, product planning manager for Ditch Witch, it now saw another opportunity to do so.

"When we received the call from Dan, our team was in the early stages of developing a micro-trench product

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Quanta Services' micro-trench solution uses the Ditch Witch Micro-Trencher to cut a trench less than 1 inch wide and no deeper than 1 foot. The trench is sealed with a custom-made, environmentally safe grout immune to the erosion and weathering common to other backfill solutions.

to expand Ditch Witch's product line of narrow-trench solutions," says Smith. Ditch Witch had an existing product line of compact trenchers, but none that cut in the sub-inch specs that micro-trenching demands. No supplier in the marketplace offered a single piece of equipment that cut with precision and cleaned a trench in one pass.

Taking Quanta's need for a turn-key micro-trench solution into consideration, Smith and his team worked to

create a piece of equipment that could cleanly cut and vacuum a trench in the same pass to exact width and depth specifications using patented Ditch Witch technology.

MICRO-TRENCH SUPERGROUT

To solve the challenges of micro-trench backfill, Quanta turned to Jeff Konczak, a cement chemist and founder of SuperGrout, who had previously worked with Ditch Witch to create a geothermal borehole solution.

Using Quanta's specifications for its micro-trenching needs, Konczak engineered an environmentally safe grout that, when mixed with water, becomes the consistency of milk. A two-person crew then fills the trench with grout using a simple mixer and wand. The fluidity of the grout allows it to surround the cable track without jeopardizing the integrity of the fiber conduit.

In less than 12 hours, the grout becomes structurally sound and asphalt sealer can be applied. Because Micro Trench SuperGrout does not shrink, the amount of asphalt sealer needed is significantly decreased, reducing the cost per foot.

Micro Trench SuperGrout – a product exclusive to Quanta Services – also eliminates the possibility that fiber networks in shallow trenches will become exposed due to erosion and weathering. Although Konczak's grout is easier to remove than the roadways in which it will lie, it is immune to erosion and will keep fiber networks protected.

BRINGING THE SOLUTION TO MARKET

With Quanta's experienced crews putting the Ditch Witch equipment and Micro Trench SuperGrout to test in the field, the pieces all came together to form a complete solution that Quanta set out to develop for its customers.

The new and improved version of micro-trenching not only eliminates the concerns associated with its predecessors but also costs less. Crews can be reduced to one-third of the requirement for a traditional trenching product, project timelines are cut in half and costs are reduced by up to 75 percent compared with other solutions on the market.

The bottom line for service providers and permitting authorities: Fiber deployments can move forward quickly enough to qualify for broadband-stimulus funding, fulfill continued customer demand and meet aggressive deployment schedules, even in a time that demands more efficient use of capital resources. The result is a micro-trench solution performed in a manner that minimizes risk to other underground utilities and meets or exceeds high pavement-integrity standards. **BBP**



Faster

In the telecommunications industry, survival of the fittest is based on speed. Not only do providers need a contractor that can create faster connections for end users, they also need a contractor who can build that infrastructure at the speed necessary to accommodate outward growth and increasing demand for fiber networks.

Quanta Services is keeping pace. We literally laid the groundwork of the fiber optic network that we're expanding today by bringing fiber to the home, node and premise. Add in the experience of more than 14,000 employees working in all 50 states and Canada, and it's safe to say nobody can mobilize faster or work more efficiently than Quanta Services.

Enlist the speed and strength of Quanta Services to get further, faster.

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