CONDUIT AND FIBER OPTIC CABLE PLOWING

Once a set of plans have been handed over to the contractor and contracts signed, what's next?

EXECUTIVE SUMMARY

The demand for high-speed internet connections is greater now than ever before. Carriers are rushing to install fiber optic connections to homes, businesses, government facilities, smart cities, and educational institutions.

In the power and energy industry, solar and wind farms are becoming more in demand as the push for cleaner energy is a priority in the private and public sectors. Power and fiber optic cable is the primary method utilized to connect the solar panels and wind turbines back to a central control center.

To meet this demand, BPG has invested in plowing equipment to meet our customer's needs. Conduit and fiber optic plowing is a cost-effective installation method that is advantageous to our customer's budgets and installation timelines.

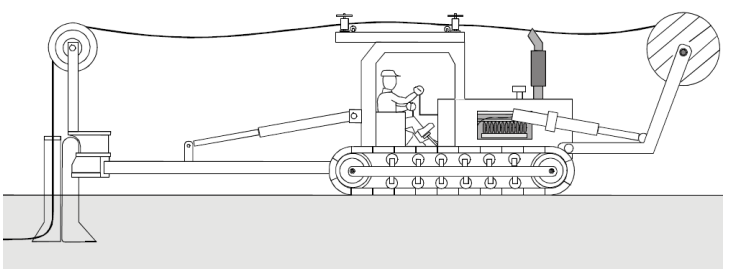
TECHNICAL ASPECTS

What is Plowing?

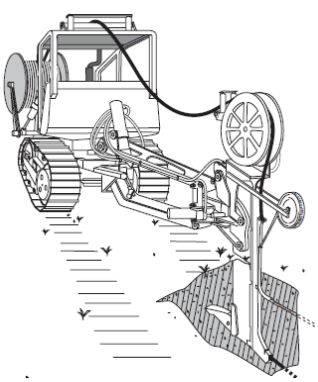
Cable Plowing is an alternative to trenching or boring that utilizes a plow system to excavate and bury conduit and fiber optic cable.

The cable plowing process uses a vibrating blade to split the ground and cut a narrow slit that can be packed as the plow moves along very quickly. As the ground is being cut, the cable or duct is placed at the desired depth by feeding it down a chute, which is located on the back of the blade.

The cable plowing process can be completed quickly, with effortless cleanup and minimal disturbance to the original surface area. This method is more cost-effective than either trenching or drilling and is most effective in open spaces.



How Does It Work?



Depending on the size and number of conduit or fiber cables used for placing in a single pass, this method is very productive with less material handling. One or more reels are mounted on the plow and are guided safely over the plow tractor and fed directly into the plow chute. When the end of the reel or reels is reached, the tails are brought up and eventually coupled or joined to the starting ends of the next reel or reels.

Plowing Best Practice Overview.

1. **Pre Survey -** A pre-survey of the fiber cable route is very important in planning for a direct buried optical fiber cable project. Each section of the route from splice location to splice location must be adequately prepared before cable installation begins. It is essential to identify all conflicts and obstructions along the route before installation is underway. Conflicts and obstacles will influence the preliminary selection of splice locations and directly affect the route's overall transmission design. Splice cases should not be located where the splicing vehicle will have to be parked in a hazardous area. This would include: over a hilltop, around a sharp curve, near an intersection, too close to the road, a hidden area in an unsafe neighborhood, or anywhere the splicing vehicle cannot get safely and entirely off the highway.

2. **Blue Staking -** It is important to notify all other utilities that may occupy the same right-of-way (ROW) that a fiber optic cable will be placed. If there is a "1-call-center" or a local utility location and coordination committee active in the area, they should be notified 72 hours before plowing operations begin. This will provide them with enough advance notice to locate and mark their route along the ROW before construction.

3. **Cable Installation -** Take care to avoid cable damage during handling and installation. Fiber optic cable is sensitive to excessive pulling, bending. And crushing forces. Any damage may alter the characteristics to the extent that the cable section may have to be replaced. To ensure that all specifications are met, consult the cable specification sheet for the cable you are installing.

4. **Buried Warning Tape -** Buried Warning Tape: The use of a warning tape is a recommended option. A bright orange (preferably "ULCC" orange) warning tape with a minimum width of 3 in (7.6 cm) may be buried approximately 12 in (30.5 cm) below the existing grade. As a minimum, the tape should be marked "WARNING OPTICAL CABLE BURIED BELOW."

5. **Post Installation Inspection -** The final step in completing a direct-buried cable installation is a thorough inspection of the entire route from start to finish. Engineering personnel and involved parties should examine the "as-built" drawings for conformance to the engineering plans, codes, regulations, and general accuracy.

*For more information regarding best practices, please email us info@bpgdesigns.com

Contact Us

BPG is committed to being the most innovative, forward-thinking, and technologically advanced provider of surveying, mapping, design, construction, fiber optic splicing, and installation services serving the Southwest. From concept to connection, BPG has the expertise to design, build and maintain your fiber optic infrastructure. For more information, please visit our website www.onebpg.com or email us at info@bpgdesigns.com.