

# Conducting a Two-Person Sweep with a Pipe and Cable Locator

BY SCOTT RAUEN

The two-person sweep is an inductive method of locating, which means there is no direct connection between the underground conductor and the transmitter, so the electromagnetic signal needs to “jump” from the transmitter to the conductor. This method requires a high frequency; 27 kHz to 83 kHz is a good range to use.

The locate technician will get better results during the sweep if the direction of the pipe or cable is known, but it is still necessary to perform the sweep in several different directions to be sure that all buried conductors have been found. Aboveground clues that can assist the technician in determining the path of a conductor include pipeline markers, meters, manholes, pedestals and more.

In a two-person sweep, one technician carries the transmitter and one carries the receiver. They stand on a north/south plane about 30 feet apart to prevent air lock. Air lock occurs when the receiver is too close to the transmitter and picks up the signal directly from the transmitter instead of from the conductor below, resulting in a ghost reading.

Facing each other, with the equipment oriented to the other technician according to the manufacturer's operating manual and set at the same high frequency, both technicians will begin to move east at the same slow pace. Technician #2 should move the receiver from side to side in the same manner employed during a standard locate to increase the likelihood of detecting a signal. This movement searches for pipes and cables going in a north/south direction.

When Technician #1 gets close to a conductor, the signal will attach to the conductor and continue to get stronger until the technician is directly above the conductor. Technician #2 (holding the receiver) will notice a rise in signal strength when approaching a conductor. The receiver will start to pick up the signal traveling down the conductor. At this point, Technician #2 should tell Technician #1 to stop and then begin to move east a few feet at a time until the strongest signal strength is displayed on the receiver.

Moving the receiver in a compass-like rotation, Technician #2 can discover the true direction of the conductor. Once the strongest signal is located, Technician #2 should stand directly over it and have Technician #1 move slowly east until the receiver reaches its highest point. At this point, the two-person team has successfully located the conductor at each location. Technician #1 should set the transmitter on the ground and Technician #2 can now locate the conductor by walking away from the transmitter.

To complete the locate, the sweep must now be performed in an east/west direction. Technicians #1 and #2 align themselves on an east/west plane, at least 30 feet apart, facing each other and holding the transmitter and receiver per manufacturer's operating manual. The technicians walk slowly north, repeating the process above. The search can also be done



scanning at a diagonal.

Once the sweep indicates the presence of an underground utility, it should be followed out of the search area where it can often be traced to a point where a better signal can be applied to an aboveground connection point. The location of the line should then be confirmed using direct connection between the transmitter and the conductor. **DP**

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