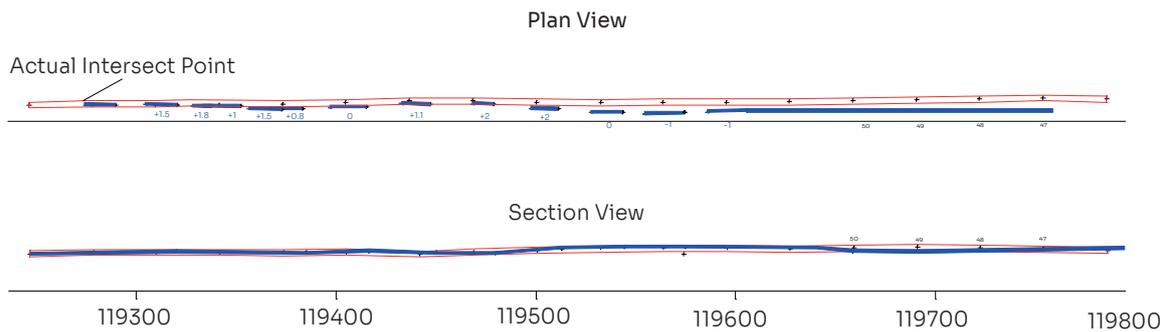


Boston Intersect



Michels Directional Drilling of Brownsville, WI, was contracted by Duke Energy to install a product line across a long stretch of water requiring an offshore crossing where casing was needed on each side of the crossing. The bore was drilled using conventional guidance techniques to a point about 3800 feet from entry. Difficult hole cleaning conditions prevailed requiring Michels to search for another solution.

An intersect of the borehole was planned using ParaTrack and rotating magnet technology. After drilling a pilot hole from the exit side to a point about 250 feet from the termination of the entry hole, trips were made on both sides to install the rotating magnet on the drilling side and a ParaTrack 2 steering tool on the entry side.

The VM Rotating Magnet source was used as a bit sub on a 6 ¾ motor pushed to bottom of the 3800' bore and while rotating, generated a magnetic target which was used by the VM steering tool sensors essentially as a homing device, only in reverse. Once the sensor reached a position where the magnetic field was measurable, the attitude of the two bore holes was accurately determined and approach vectors calculated. The intersect and entry were made in less than 36 drilling hours with less than one degree of incidental angular difference. After pushing into the target hole, the rigs were reversed and a connection made from entry to exit.

Once again, the accuracy of ParaTrack using various magnetic sources operating downhole proved the feasibility of underground intersect drilling where necessary.

Now, ParaTrack operations gives contractors the confidence, to guide the pilot hole with enough positive control to plan and achieve underground intersects, the first time.

Call Prime Horizontal for More Information about ParaTrack Guidance Services.