

SECTION 09 03 12

**CONDUCTIVE TRACE WIRE FOR
WATER PIPE INSTALLATION**

(Sentences and/or paragraphs that are double underlined indicate revisions that were made from the 2008 specification.)

PART 1 - GENERAL**1.1 DESCRIPTION**

- A. Install electrically continuous trace wire with access points as described herein to be used for locating pipe with an electronic pipe locator after installation.

1.2 MEASUREMENT

- A. There is no separate payment for the supply and installation of tracer wire on any construction or installation of water main by the Contractor. The Contractor shall consider the supply and installation of the tracer wire incidental to all construction of water main.

1.3 SUBMITTALS

- A. Submit manufacturer's data on materials furnished that indicate compliance with the specifications regarding materials used.
- B. Indicate on plans location of each trace wire test station.

PART 2 – PRODUCTS**2.1 MATERIALS**

- A. Trace wire to be fourteen (14) gauge minimum solid copper with thermoplastic insulation recommended for direct burial. Wire connectors to be 3M DBR, or approved equal, and shall be watertight to provide electrical continuity. Each trace wire access point to be composed of one Copperhead® SnakePit® Magnetized Tracer Box, Test and Monitoring Station or approved equal installed in each proposed 24"x24"x6" concrete valve box collar.

2.2 TESTING REQUIREMENTS

- A. Contractor shall perform a continuity test on all trace wire in the presence of the Engineer or the Engineers' representative. If the trace wire is found to be not continuous after testing, Contractor shall repair or replace the failed segment of the wire.

PART 3 – EXECUTION

- A. Trace wire shall be installed on all water mains. The wire shall be installed in such a manner as to be able to properly trace all water mains without loss or deterioration of signal or without the transmitted signal migrating off the tracer wire.

- B. Trace wire shall be installed in the same trench and inside bored holes and casing with pipe during pipe installation. It shall be secured to the pipe as required to insure that the wire remains adjacent to the pipe. The trace wire shall be securely bonded together at all wire joints with an approved watertight connector to provide electrical continuity, and it shall be accessible at all trace wire access points.
- C. Trace wire access points shall in general be no more than five-hundred (500) feet and at every proposed 24" x 24" x 6" concrete valve box collar. Concentrations of multiple proposed valves near pipe intersections, i.e. tees or crosses, may require more than one access point assembly in each concrete valve box collar. Trace wire access points shall be within public right-of-way or public utility easements.
- D. At the point of connection between cast or ductile iron water mains, with any non iron water main, the tracer wire shall be properly connected to the iron pipe with a cad weld or approved equivalent. Tracer wire welds shall be completely sealed with the use of an approved mastic type sealer specifically manufactured for underground use. Mastic shall be applied in a thick coat a minimum of 2 inches thick and shall be protected from contamination by the backfill material with the use of a plastic membrane.
- E. Tracer wire shall be laid flat and securely affixed to the pipe at 10 foot intervals. The wire shall be protected from damage during the execution of the works. No breaks or cuts in the tracer wire or tracer wire insulation shall be permitted. At water service saddles, the tracer wire shall not be allowed to be placed between the saddle and the water main.
- F. Except for approved spliced-in connections, tracer wire shall be continuous and without splices from each trace wire access point. Where any approved spliced-in connections occur, 3M DBR water tight connectors, or approved equal, shall be used to provide electrical continuity.
- G. At all water main end caps, a minimum of 6 feet of tracer wire shall be extended beyond the end of the pipe, coiled and secured for future connections. The end of the tracer wire shall be spliced to the wire of a six pound zinc anode and is to be buried at the same elevations as the water main.
- H. For directional drilling, auguring or boring installations, four #14 tracer wires shall be installed with the pipe and connected to the tracer wire at both ends, or cad welded to the existing iron pipe at both ends.
- I. Spliced connections between the main line tracer wire and branch connection tracer wire shall only be allowed at water main tees, crosses or at iron or copper water services where a portion of the branch connection water main or water service is replaced with a non iron or non copper material. The branch connection tracer wire shall be a single tracer wire properly spliced to the main line tracer wire. Where the existing branch connection is neither iron nor copper, then the new branch connection tracer wire shall be properly spliced to the existing tracer wire on the branch connection.
- J. At all repair locations where there is existing tracer wire, the tracer wire shall be properly reconnected and spliced as outlined above.

END OF SECTION