

**SECTION 33 05 27****TRACER WIRE****PART 1: GENERAL**

## 1.01 SCOPE

- A. Install electrically continuous tracer wire with access points as described herein to be used for locating pipe with an electronic pipe locator after installation. Tracer wire shall be installed on all water mains and services, all wastewater lines and sewer mains and services and all wastewater force mains.

## 1.02 SUBMITTALS

- A. Submit shop drawings and manufacturer's literature to the Engineer for approval in accordance with Specification Section 01 33 00.

**PART 2: PRODUCTS**

## 2.01 TRACER WIRE MATERIAL

- A. Tracer wire shall meet minimum State requirements.
- B. Tracer wire to be twelve gauge minimum solid copper with thermoplastic insulation recommended for direct burial. Wire connectors to be 3M DBR, Copperhead SnakeBite or approved equal, and shall be watertight to provide electrical continuity.
- C. Tracer wire color shall be blue for all water construction and green for all wastewater construction.

## 2.02 TRACER WIRE ACCESS BOXES

For locations where valve boxes are not present, the tracer wire access point shall be composed of one SnakePit Tracer Wire Access Box, or approved equal, installed at each proposed access point.

## 2.03 TESTING REQUIREMENTS

- A. Contractor shall perform a continuity test on all tracer wire in the presence of AW or AW's representative. If the tracer wire is found to be not continuous after testing, Contractor shall repair or replace the failed segment of the wire at their own expense.

## PART 3: EXECUTION

### 3.01 INSTALLATION - GENERAL REQUIREMENTS

- A. Tracer wire shall be installed on all water and sewer mains and services. The wire shall be installed in such a manner as to be able to properly tracer all mains without loss or deterioration of signal or without the transmitted signal migrating off the tracer wire.
- B. Marking tape shall be installed in the same trench pipe during pipe installation. It shall be laid in the trench 12-inches above the pipe, to ensure that it is not damaged during future repair operations.
- C. The tracer 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 tracer wire access points.
- D. Tracer wire access points shall in general be no more than five-hundred feet and at every proposed concrete valve box collar (or manhole where required). 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. Tracer wire access points shall be within public right-of-way or public utility easements.
- E. At each valve location, (including fire hydrant isolation valves), a loop of wire is to be brought up the outside of the valve box and looped inside the box through a hole drilled 2-inch below the bottom of the lid.
- F. At the point of connection between cast or ductile iron mains, with any non-iron 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.
- G. 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 Work. No breaks or cuts in the tracer wire or tracer wire insulation shall be permitted. At service saddles, the tracer wire shall not be allowed to be placed between the saddle and the main.
- H. Except for approved spliced-in connections, tracer wire shall be continuous and without splices from each tracer wire access point. Where any approved spliced-in connections occur, 3M DBR water tight connectors, Copperhead SnakeBite or approved equal, shall be used to provide electrical continuity.

- I. At all 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 elevation as the water main.
- J. For directional drilling, auguring or boring installations, two #12 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 or cad welded to the steel casing pipe at both ends.
- K. 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 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.
- L. 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 33 05 27**