SP-150776
(New)

SPECIAL PROVISIONS
FOR
TRACER SYSTEM FOR SANITARY SEWER GRAVITY MAIN AND SERVICE STUBS

Clayton County
STPN-076-1(16)--2J-22

Effective Date
November 16, 2021

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150776.01 DESCRIPTION.

To assist in locating buried pipe, a tracer wire shall be laid for all sanitary sewer gravity main and service stubs.

150776.02 MATERIALS.

A. General: Tracer wire shall be No. 12 AWG, annealed copper-clad high carbon steel. Copper shall conform to ASTM B170, oxygen free electrolytic copper. The HDPE coating shall be solid green (sanitary sewer). The wire shall be rated for 30 volts. Wire surface shall be free of any defects. Tracer wire shall be as manufactured by Copperhead Industries, LLC; Pro-line Safety Products; or equal.

B. Open Trench: Tracer wire for open trench shall be high strength tracer wire with a minimum breaking load of 450 pounds, with 30 mil thick HDPE insulation. Copper clad wire shall conform to ASTM B910/B910M.

C. Horizontal Directional Drilling/Boring: Tracer wire for directional drilling / boring shall be extra high strength tracer wire with a minimum breaking load of 1150 pounds, with 45 mil thick HDPE insulation. Copper clad wire shall conform to ASTM B869.

D. Connectors: Connectors shall be as manufactured by Copperhead Industries, LLC; Pro-line Safety Products; 3M DBR; or equal.

150776.03 CONSTRUCTION.

A. Placement of Wire: Place the along the bottom half of the pipe and attach in 5 foot intervals with at least three overlapping wraps of standard PVC electrical tape or plastic ties.

B. Wire to Surface: Surface wire every 400 to 500 feet. Wire shall typically surface at services or locator boxes.

C. Wire Termination/Access: All trace wire termination points must utilize an approved tracer wire access box (above ground access box or grade level/in-ground access box as applicable), specifically manufactured for this purpose. Appropriately identify all grade level/in-ground access boxes with “sewer” or “water” cast into the cap and color code. A minimum of 2 feet of excess/slack wire is required in all tracer wire access boxes after meeting final elevation. All tracer wire access boxes must include a manually interruptible conductive/connective link between the terminal(s) for the trace wire connection and the terminal for the grounding anode wire connection. Connect grounding anode wire to the identified (or bottom) terminal on all access boxes.

1. **Sewer Service Laterals on Public Property -** Terminate tracer wire at an approved grade level/inground trace wire access box, located at the edge of the road right-of-way, and out of the roadway.

2. **Sewer Service Laterals on Private Property -** Terminate tracer wire at an approved above ground tracer wire access box, affixed to the building exterior directly above where the utility enters the building, at an elevation not greater than 5 vertical feet above finished grade, or terminate at an approved grade level/inground trace wire access box, located within 2 linear feet of the building being served by the utility.

3. **Long-runs, in excess of 500 linear feet without service laterals -** Provide tracer wire access utilizing an approved grade level/in-ground trace wire access box, located at the edge of the road right-a-way, and out of the roadway. Delineate the grade level/in-ground tracer wire access box using a minimum 48 inch polyethylene marker post, color coded per APWA standard for the specific utility being marked.

D. Connectors: Minimize splices. Install tracer wire systems as a single continuous wire except where using approved connectors. Join all tracer wire using dielectric silicon filled connectors to seal out moisture and corrosion and to prevent any uninsulated tracer wire exposure. Interconnect all mainline trace wires in intersections, at mainline tees and mainline crosses. At tees, join the three wires using a single 3-way lockable connector. At crosses, join the four wires using a 4-way connector. Use of two 3-way connectors with a short jumper wire between them is an acceptable alternative. Direct bury wire connectors shall include 3-way lockable connectors and mainline to lateral lug connectors specifically manufactured for use in underground trace wire installation. Connectors shall be dielectric silicon filled to seal out moisture and corrosion and shall be installed in a manner so as to prevent any uninsulated wire exposure. Non locking friction fit, twist on or taped connectors are prohibited.

E. Grounding: Properly ground racer wire at all dead ends/stubs. Achieve grounding of tracer wire by use of a drive-in magnesium grounding anode rod with a minimum of 20 feet of No. 14 red HDPE insulated copper clad steel wire connected to anode (minimum 0.5 pound) specifically manufactured for this purpose, and bury at the same elevation as the utility. When grounding the tracer wire at dead ends/stubs, install the grounding anode in a direction 180 degrees opposite of the tracer wire, at the maximum possible distance. When grounding the tracer wire in areas where the tracer wire is continuous and neither mainline trace wire or the grounding anode wire will be terminated at/above grade, install grounding anode directly beneath and in-line with the tracer wire. Do not coil excess wire from grounding anode. In this installation method, trim the grounding anode wire to an appropriate length before connecting to tracer wire with a mainline to lateral lug connector. Where the anode wire will be connected to a tracer wire access box, a minimum of 2 feet of excess/slack wire is required after meeting final elevation.

F. Testing: Locate all new tracer wire installations using typical low frequency (512Hz) line tracing equipment, witnessed by the Contractor and Engineer, prior to acceptance. Perform this verification upon completion of rough grading and again prior to final acceptance of the project. Continuity testing in lieu of actual line tracing is not acceptable.

150776.04 METHOD OF MEASUREMENT.

A. Tracer Wire.
Measurement of tracer wire installed will be in linear feet along the centerline of the wire.

B. Magnesium Grounding Anodes.
Each magnesium grounding anode will be counted.

C. Tracer Wire Locator/Access Boxes.
Each tracer wire locator/access box will be counted.

150776.05 BASIS OF PAYMENT.

A. Tracer Wire.

1. Payment will be the contract unit price per linear foot.

2. Payment is full compensation for install including electrical tape, connectors, and final testing of tracing system.

B. Magnesium Grounding Anodes.

1. Payment will be at contract unit price for each magnesium grounding anode.

2. Payment is full compensation for the supply of 20 feet of red No. 14 red HDPE insulated copper clad steel wire, installing anode and connecting to tracer wire.

C. Tracer Wire Locator/Access Boxes.
Payment will be at contract unit price for each tracer wire locator/access box.