

**THE CITY OF HOLLAND BOARD OF PUBLIC WORKS (BPW)**  
**SPECIFICATION**  
**FOR**  
**UNDERGROUND UTILITY CONDUCTIVITY AND CONTINUITY – 33 05 26**

BPW:ARP

1 OF 3

9.22.2009

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This section includes the requirements for maintaining conductivity and continuity for public underground utility lines installed by on or behalf of the BPW. All work shall conform to BPW Standards & Specifications and MDOT Standards & Specifications as modified by the BPW. All non-itemized work will not be paid for separately.
- B. All work performed under this section shall be paid for as part of Water Main, \_ inch, DI, Tr Det G or Water Reuse Main, \_ inch, DI Tr Det G.

**1.2 SUBMITTALS**

- A. Record actual locations of underground utilities and top of pipe elevations (to USGS datum). Identify and describe unexpected subsoil conditions and uncharted utilities.

**PART 2 - PRODUCTS**

**2.1 TRACER WIRE & CONNECTIONS**

- A. Material shall be insulated, #10 solid copper core rated for underground service.
- B. Splices shall be made using properly sized, waterproof connectors rated for underground service.
- C. Connections to utility marker posts shall be made using the points provided.
- D. Connections to conductive utilities shall be made using waterproof welds rated for underground service.

**2.2 PROTECTIVE COATING**

- A. Material shall be water based coal tar suited for underground service.

**2.3 UTILITY MARKER POSTS**

- A. Consistency and uniformity in utility marking will reduce the number and frequency of damages and service interruptions. Accordingly, it is in the best interests of its customers for the BPW to single-source marker posts. Material shall be 72-inch Rhino Tri-View Marker Posts with 2 external terminals, color-coded in accordance with PA 53 of 1974, as amended. Caps shall be black in color. The BPW shall supply the decals.

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**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Tracer wire and marker posts shall be installed directly on top of the respective utility. In no case shall a discrepancy of more than 6 inches exist between the center of the utility and the tracer wire.
- B. Marker posts shall be installed per the manufacturer's instructions for direct bury installation. The tracer wire shall be connected to the external terminals. The external terminals shall be configured such that only the brass nuts and washers are visible from the outside of the post.
- C. In the event the utility is located entirely under a paved surface, the marker posts shall be installed in the nearest unpaved right-of-way/easement at least 12-inches from the edge of pavement.
- D. Marker posts shall be installed plumb with a clear line of sight to all surrounding posts. In no case shall tracer wire be installed on the outside of a marker post.
- E. Tracer wire shall be installed with 10 feet of slack on either side of all connection points.
- F. Direct connections shall be made by removing as little protective coating as necessary, welding the tracer wire ends to the conductive utility and coating the weld and the unprotected area as necessary.
- G. The tracer wires of parallel utilities shall not remain in contact.

**3.2 CONNECTION POINTS**

- A. Water Main (with regularly spaced fire hydrants)
  - 1. Tracer wire shall follow the fire hydrant lead from the main and connect directly to the lower standpipe section immediately below the swivel flange. This shall apply to all fire hydrants within the influence of construction.
- B. Water (without regularly spaced fire hydrants), Reuse, Force & Gas Mains and Electric & Fiber Lines
  - 1. Tracer wire shall extend upward from the main and connect directly to the points provided in the marker post.

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**3.3 TESTING & ACCEPTANCE**

- A. Testing and acceptance shall be performed solely by the BPW Water / Wastewater Services Group.
- B. Immediately prior to substantial completion, the tracer wire shall be tested to ensure conductivity and continuity. Any and all areas in which conductivity and/or continuity are compromised, the Contractor, at no cost to the BPW, shall excavate, repair and retest the tracer wire.
- C. Damage to the tracer wire of any utility shall be treated as damage to the utility itself. The Contractor shall inform the BPW of the damage immediately so that repairs may be witnessed, tested and accepted.