

**PORTSMOUTH-KITTERY
16189B**

September 18, 2020

SPECIAL PROVISION**AMENDMENT TO SECTION 614 – ELECTRICAL CONDUIT****TRACER WIRE SYSTEM FOR COMMUNICATION CONDUIT**

This special provision provides for installation of tracer wire and associated equipment. All provisions of Section 614, except as modified or changed below, shall apply.

Add to Description:

1.2 This work shall consist of furnishing, installing, wiring, and testing water-blocking, reinforced tracer wire and associated equipment for underground conduit installations at the locations indicated and details shown on the Contract Documents, or as directed by the Engineer. The work shall include furnishing, installing, and testing all ancillary items needed to establish a complete, functional tracer wire system.

Add to Materials:

2.7 Tracer wire shall be a 19 AWG tin-coated solid copper conductor, surrounded by a nominal 6 mil thick polyethylene insulation meeting ASTM D1248-16 and be suitable for direct burial and directional boring applications.

2.7.1 The tracer wire insulations shall be surrounded by a woven polyester strength element with water blocking polyester yarns. The strength element shall have a minimum tensile strength of 1800 pounds.

2.7.2 The tracer wire shall include a nominal 30 mil thick, abrasion-resistant outer jacket made of high density polyethylene (HDPE). The nominal diameter of the HDPE outer jacket shall be 0.25 inches.

2.7.2.1 The HDPE outer layer shall be orange in color, and shall have sequential length markings in units of feet. The HDPE outer layer may be red in color when the tracer wire is installed with conduits containing power cables for installed equipment.

2.7.3 Tracer wire shall be rated at 600 volts operating per UL 1581.

2.7.4 The tracer wire conductor shall be designed such that it vaporizes when the tracer wire is struck by lightning, thereby limiting the flow of electrical current that may create a hazardous condition for personnel.

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2.7.5 The tracer wire system shall include connectors for performing butt splices, lateral splices, and tracer equipment connections. Connectors shall be provided by the same manufacturer as the tracer wire.

2.7.5.1 Tracer wire connectors shall be of the insulation displacement type, negating the need to cut and strip the tracer wire conductors prior to splicing, and shall be capable of providing a watertight connection with the tracer wire.

2.7.6 The tracer wire shall be detectable at depths of up to 4 feet below finished grade regardless of top material.

2.7.7 Documentation shall be provided by the Contractor that includes instruction on the methods and equipment required to locate the fiber path using the tracer wire.

Add to Construction Requirements:

3.7 Tracer wire shall be placed in the same trench as the associated conduit.

3.7.1 Tracer wire shall be placed above the associated conduit, at a depth not to exceed 4 feet below finished grade, for the full length of the conduit from termination to termination.

3.8 The tracer wire shall be installed in a continuous run. Underground splices will not be allowed.

3.8.1 When splicing the tracer wire to pre-existing tracer wire of differing sizes, connectors manufactured specifically for that purpose shall be utilized. The connectors shall be installed following manufacturer recommended installation methods.

3.9 Tracer wire equipment connections shall be installed at the end points of all tracer wire runs, or as shown on the plans or directed by the Engineer. No single run of tracer wire shall exceed 2,000 feet without intermediate connection points.

3.9.1 For conduit runs exceeding 2,000 feet, tracer wire equipment connection points may be installed within an underground conduit installation delineator. Delineator shall be marked to identify the connection point.

3.9.2 All tracer wire equipment connection points shall be installed in a water tight enclosure a minimum of 36 inches above grade, and shall be external to pull boxes, splice vaults and manholes. Tracer wire equipment connection points may be installed inside equipment cabinets, provided the tracer wire enters the cabinet through a conduit specifically installed for that purpose.

3.9.3 All tracer wire equipment connection points shall be connected to a grounding system, with a maximum resistance to ground of 25 ohms.

3.9.4 Tracer wire equipment connection points shall be clearly labeled indicating the opposite termination point of each tracer wire installed in the system.

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3.10 The tracer wire system shall have an orange 360 degree identification tag added to each terminus of the tracer wire and “smart” fiber optic delineator with the message: “Warning Tracer Wire System – Before Excavating, Call Dig Safe.”

Add to Method of Measurement:

4.3 Tracer wire will not be measured, but will be considered subsidiary to the associated conduit item.

Add to Basis of Payment:

5.3 Installation of tracer wire, including all connection equipment, tracer wire connectors, splicing to pre-existing tracer wire systems, grounding, and labeling will be subsidiary to the associated conduit item.