



**SPECIAL PROVISIONS
FOR
LOCATE WIRE FOR ALL NON-ELECTRIC SYSTEMS**

**Story County
BR-810-0(93)--7A-85**

**Effective Date
November 17, 2009**

THE STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

090014.01 GENERAL

Construct locate wire for all non-electric systems.

090014.02 MATERIALS

A. Wire

1. High strength steel cored copper coated AWG 12.
2. 45 mil high density polyethylene insulation.
3. Copperhead Industries Directional wire.
4. Locate wire will be provided by the Contracting Authority (ISU Material Stores #7998.9675).

B. Joints

1. Nicotap Sleeve TI-064. (ISU Material Stores #7998.4500)
2. Lawson 86502 heat shrink tube. (ISU Material Stores #7998.6950)
3. The Contracting Authority will provide tapping sleeve, crimping tool, and heat shrink tube.
4. Wire nuts or solder are not acceptable.

C. Anode Bag

1. 17 pound anode bag.

2. Bag provided by the Contracting Authority. (ISU Material Stores #7998.0550)

D. Locate Wire Box Assembly

1. Electrical handybox with hinged opening. An 18 inch length of 3/4 inch rigid conduit extends out the bottom of the box.
2. Grommet on end of conduit to avoid cutting wire.
3. Box provided by the Contracting Authority. (ISU Material Stores #7998.1065)

090014.03 CONSTRUCTION REQUIREMENTS

A. Locate Wire

1. Provide a locate wire as per the contract documents on all direct buried non-electrical pipe.
2. Tape the wire to the pipe with duct tape every 10 feet to assure that the wire is adjacent the pipe

B. Joints

1. Connecting two lengths of wire:
 - a. Strip ends of both wires.
 - b. Slide shrink wrap over one wire.
 - c. Insert ends of wire into each end of provided Nicotap fitting.
 - d. Crimp each end three times with provided crimping tool. No other tool to be used to crimp Nicotap fitting.
 - e. Slide shrink wrap over joint so it covers all bare metal surfaces and heat shrink wrap until it is tightly adhered to wire.
2. BRANCH wire tap near (within 10 feet) end of wire:
 - a. Cut main wire to final length.
 - b. Slide shrink wrap over main wire down to location of branch tap
 - c. Strip a 2 inch section of main wire. Do not strip all the way to end of wire, just the location where the tap is to be made. Strip end of branch wire.
 - d. Place open end of Nicotap fitting over main wire. Crimp three times.
 - e. Insert end of branch wire into other end of Nicotap fitting. Crimp three times.
 - f. Hold branch wire flat against main wire, slide shrink wrap over joint so it covers all bare metal surfaces and heat shrink wrap until it is tightly adhered to wire.
3. BRANCH wire tap NOT near end of wire:
 - a. Cut main wire. Install new branch as per Item 2 above.
 - b. Splice main wire back together using a separate Nicotap as in 1 above.
 - c. The Nicotap fittings shall not be used to connect three separate pieces of wire.
4. Wire nuts or solder are not acceptable.

C. Wire Ends

1. Building Entrance.
 - a. The locate wire shall end at the building wall and terminate in a locate wire box next to building.
 - b. Set locate wire box in backfill next to building wall. Run main locate wire up conduit into locate wire box and leave 12 inch coiled inside box.
 - c. Branch connection to an anode bag shall be made below locate wire box.

2. Manholes.
 - a. The locate wire shall end at each manhole, and so requires a branch connection to an anode bag at each manhole (2 anode bags per section of locate wire.). Each locate wire shall have it's own anode bag.
 - b. The main wire shall enter the manhole just under the rim, set in the mortar bed of any adjusting rings.
 - c. A 12 inch long length of wire shall be extended into the manhole at each location.
3. Direct Buried Valve Boxes.
 - a. A wire Branch connection shall be made onto the locate wire as it passes by a direct buried valve box. Run a single branch wire up the outside of the valve box and then extend this wire 12 inches into the valve box through a 1/4 inch hole drilled by the Contractor.
 - b. Hole for locate wire shall be directly below the valve box lid where it is easily accessible. Some valve boxes may be difficult to drill and require a cutting torch to make an opening. Saw cut hole is not acceptable.
 - c. Assure that wire will not be pinched by the lid.
 - d. Note that an anode bag is not typically required at this location.
4. Post Indicator Valve and Natural Gas Risers.
 - a. A wire Branch connection shall be made onto the locate wire as it passes by a direct buried valve box. Run a single branch wire up the outside of the valve box or riser.
 - b. Attach locate wire box assembly to the pipe or riser with stainless steel strap.
 - c. Run locate wire branch line up through conduit of locate wire box, and leave 12 inch coiled in locate wire box.
5. New pipe connection to existing main.
 - a. Case 1- Existing main has locate wire: Cut existing locate wire. Make branch connection for new branch wire. Splice existing wire back together.
 - b. Case 2- Existing main has no locate wire: Install anode bag at start of new wire right next to existing main

D. Anode Bag

1. A 17 pound anode bag shall be attached with a Nicotap sleeve to the locate wire at each end of the main locate wire as indicated in the above sections. The anode bag provides cathodic protection for the locate wire and an electrical ground for utility locating equipment.
2. Locate the anode bag 1 foot below the horizontal plane of the locate wire.
3. Anode bag hole is to be backfilled with native material and soaked with 5 gallons of water before remainder of trench is backfilled.

E. Quality Control

1. The entire length of the locate wire including the splices must be inspected by the Engineer prior to back filling.
2. The Engineer will coordinate a continuity verification of the installed locate wire system, generally within one week after the installation.
3. The continuity will be verified by utilizing the services of the Contracting Authority's utility locator.
4. The Contractor shall be responsible to expose and repair any defects.

090014.04 METHOD OF MEASUREMENT

Locate wire will not be measured separately for payment.

090014.05 BASIS OF PAYMENT

The Contractor will not be paid separately for locate wire, this shall be considered incidental to the domestic water system pay items.