

Installation Requirements for Underground Conduit Systems

- 1** Contractors shall call the district office of the Cooperative a minimum of 24 hours before trench is started to make arrangements for on-site inspection.
- 2** Underground (buried) conduit shall be Schedule 40 PVC or other corrosion resistant duct suitable for the intended environment as approved by the Cooperative. All 90 degree bends shall be electrical grade, schedule 40 PVC or Rigid galvanized steel sweeps with minimum bending radius of 36 inches.
- 3** Minimum size for buried conduit shall be 3 inches for all conductor smaller than 500 MCM, and 4 inches for primary or conductor 500 MCM or larger.
- 4** Conduit minimum depth 36 inches. Any conduit crossing under a road shall be Schedule 80. Conduits installed less than 36 inches in depth require Cooperative engineering approval and shall be encased in concrete to Cooperative specs. Depths specified are to finished grade.
- 5** Trenches to be in as straight and direct a line as possible. Routes through unstable soil such as mud, shifting soils, or other hazards should be avoided.
- 6** Longitudinal runs of conduit should not be located directly over or under other underground facilities such as gas, water sewer lines and septic systems. Whenever possible the horizontal distance between these facilities should be a minimum of 6 feet to permit access and maintenance of either facility without damage to the other. Under special circumstances, controlled horizontal separation of down to 12 inches will be allowed providing all parties are in agreement as to the method.
- 7** Underground conduit systems shall not be installed within 5 feet of any building foundation, swimming pool, etc., except for where service conduit merges to intercept the service equipment.
- 8** Caution Ribbon shall be installed above the conduit, a foot below finished grade. In trenches for primary cable, a continuous No. 6 AWG copper grounding conductor shall be directly buried in the bottom of the trench, prior to installation of any conduit, with adequate length at each end for connections by the Cooperative.
- 9** When electric facilities are installed in the same trench as communication facilities, a No. 6 AWG copper bonding conductor, readily accessible at both ends shall be installed at each vault, pad mounted equipment location between electric and communication facilities.
- 10** A pulling rope, 1/4 inch diameter polypropylene, shall be installed in each conduit.
- 11** The ends of the conduit shall be plugged during construction to prevent the entrance of foreign matter. The conduit shall be terminated as follows:
 - a** Conduit shall terminate not more than 3 inches inside a vault. Whenever possible the conduit should run straight into the vault without sweeps or bends. Where the conduit enters the vault, it shall be grouted to prevent water, soil and rock intrusion.
 - b** At meter locations, the conduit shall terminate as per appropriate meter installation specs. If the meter socket is at a lower grade than the pad mounted equipment location or part of the underground conduit system, provisions shall be made as necessary so that the conduit will not fill with water and run into the meter socket.
- 12** All ends, joints and internal finish of the conduit shall be free of sharp edges or burrs which could damage the cable.
- 13** All buried joints shall be glued with cement as recommended by the conduit manufacturer.
- 14** Any change in direction between lengths of straight rigid conduit greater than 5 degrees shall be made in electrical sweeps, or with a very gradual sweeping change of

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direction. Any single run of conduit will contain no more than two 90 degree sweeps. If the secondary runs of conduit are less than 150 feet in length then schedule 40, PVC sweeps are acceptable. For runs of conductor sized 500MCM and larger that exceed 150 feet in length, all sweeps shall be steel. For runs of conductor smaller than 500MCM size and that exceed 200 feet in length, all 90° sweeps shall be steel.

- 15** The consumer shall be responsible for having the conduit/vault system ready, prior to NHEC personnel installing the cable. Any changes, repairs or other work required to the underground conduit/vault system in order for NHEC personnel to pull the cable into the conduit shall be the responsibility of the consumer.
- 16** A drainage system must be installed in all vaults and structures. In areas of high water table, vaults and conduit may need to be elevated to promote effective drainage.
- 17** If a reduction in the service conduit is required, it will occur at the top of the slip joint/expansion fitting utilizing a reducing bushing. The slip joint/expansions fitting will remain the same size as the conduit installed in the trench with the transition occurring above ground. (Refer to IU Service Reduction drawing on page 53.)
- 18** Member shall be responsible to enclose and cover any open holes and secure any hazardous conditions until such time NHEC completes their work.