# QA/QC Checklist

## DIVISION 33 – Utilities
### 33 71 00 – Elec Utility Transmission & Distribution

### 01 Ductbanks

1. Ductbanks shall utilize a separate concrete pours for the base and walls/cap. Prior to pouring the base, verify that the trench is generally level, free from protruding rock, and compacted.

2. Ductbanks MUST utilize a poured concrete base pad. The pad shall be a minimum 3” thick unless specifically approved by PSU Engineering Services.

3. Plastic chairs shall be used to support/carry the required conduit(s) for ductbanks. The chairs shall be attached to the concrete base.

4. Back-to-back 90 deg elbows ARE NOT permitted anywhere within or at the ends of ductbanks.

5. After the base is installed, chairs/supports are in place, conduits are installed and adequately tied down, the contractor MUST receive approval from OPP prior to pouring the walls/cap. Contact Dick Harris (rsh3@psu.edu; (814) 777-8742), OPP Utility Systems Engineer, and/or Kevin Hahn (kxh22@psu.edu; (814) 592-7145), OPP Supervisor Trades III Electrical Services, to visit the site and review/approve the installation.

6. After the installation is reviewed and approved, the walls/cap can be formed and poured. If the ductbank crosses a road, parking lot, or sidewalk that could see heavy vehicle use, the ductbank shall be designed w/ sufficient reinforcing steel and cover to handle vehicle traffic.

### 02 Manholes/Vaults

1. Due to safety and security of the Campus electrical distribution system, ONLY qualified, PSU electricians (OPP Utilities) may enter energized manholes/vaults. Contractors MAY NOT enter energized manholes. University electricians are available to assist contractors when necessary to install conduit/wire and make connections inside energized manholes/vaults; contact Kevin Hahn.

2. New (non-energized) manholes/vaults installed below grade without fresh air ventilation or alternative egress may be considered a Confined Space by OSHA standards (osha.gov/1926.21(b)(6)(ii)). Contractors shall follow their company’s confined space entry procedure. At a minimum, they must comply with OSHA 29 CFR 1926.956 (osha.gov/1926.956).

3. Ladder rungs shall extend to the top of the manholes/vaults.

4. Ladder rungs shall be grounded or non-metallic.
5. Manholes/vaults shall be installed with a ground ring.