

## QA/QC Checklist

PENNSYLVANIA STATE UNIVERSITY



Construction Services

# DIVISION 33 – Utilities

## 33 71 00 – Elec Utility Transmission & Distribution

General Information	Programming/Design	Bidding/Preconstruction	Installation/Construction	Closeout/Warranty
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### 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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Ductbanks MUST utilize a poured concrete base pad. The pad shall be a minimum 3” thick unless specifically approved by PSU Engineering Services.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Plastic chairs shall be used to support/carry the required conduit(s) for ductbanks. The chairs shall be attached to the concrete base.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Back-to-back 90 deg elbows ARE NOT permitted anywhere within or at the ends of ductbanks.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 ( <a href="mailto:rsh3@psu.edu">rsh3@psu.edu</a> ; (814) 777-8742), OPP Utility Systems Engineer, and/or Kevin Hahn ( <a href="mailto:kxh22@psu.edu">kxh22@psu.edu</a> ; (814) 592-7145), OPP Supervisor Trades III Electrical Services, to visit the site and review/approve the installation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 ( <a href="http://osha.gov/1926.21(b)(6)(ii)">osha.gov/1926.21(b)(6)(ii)</a> ). Contractors shall follow their company’s confined space entry procedure. At a minimum, they must comply with OSHA 29 CFR 1926.956 ( <a href="http://osha.gov/1926.956">osha.gov/1926.956</a> ).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Ladder rungs shall extend to the top of the manholes/vaults.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Ladder rungs shall be grounded or non-metallic.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Manholes/vaults shall be installed with a ground ring.

