

WVU DESIGN GUIDELINES & CONSTRUCTION STANDARDS

DIVISION 26 – ELECTRICAL

SECTION 260510 – UNDERGROUND WORK

PART 1 - GENERAL

1. Any deviance from the following instructions must be approved during design by WVU Facilities Management personnel.

PART 2 - PRODUCTS

2.1 Manholes for Electrical Distribution

1. Manholes shall be in accordance with Detail ELEC-D03. Manhole lids shall be in accordance with Detail ELEC-D04.
2. All aluminum doors shall be ¼" diamond plate. All aluminum doors shall be designed for ASTM Specifications and live loads shall be increased by 30%. Aluminum door hinges shall be aluminum piano type hinges welded directly to the door frame and door top. A ¼" diameter stainless steel hinge pin shall be used to connect the door and the frame.
3. All pulling eyes shall be designed and reinforced to withstand an ultimate tension of 21,000 pounds. All pulling eyes shall be designed and reinforced to permit lifting and setting of the vault.
4. Manhole knockout areas shall be provided as shown in Detail ELEC-D03. Knockout areas shall be reinforced with size 4x4 or 6x6 wire fabric, and have a minimum thickness of 2 ¼" concrete thickness.
5. Aluminum Frames – all frames shall be provided as follows:
 - A) Integral Frame – The frame encased in a removable concrete top shall be an integral part and anchored into the concrete top
6. All manholes shall have gravity drains.

PART 3 - EXECUTION

- 3.1 Any conduit over 600 volts or any building feeds will be concrete encased. Where 'x' voltage over 600 volts is installed inside of a building, it will be labeled, with the largest practical, preprinted labels as " 'x' volts" every six feet, 80 degrees apart. All duct banks will have at least one spare conduit.
- 3.2 All underground conduits will be schedule 40 PVC. Conduit installed in non-traffic (pedestrian) areas will be in accordance with electrical detail ELEC-D01. Conduit installed in traffic areas (vehicle) will be encased in concrete.
- 3.3 Underground conduit shall have a 200-pound test braided nylon line installed in each empty raceway.
- 3.4 Underground conduit for a branch circuit will have 2" inches of sand under the conduit and 4" inches of sand above the conduit. The conduit top will be 24 inches below grade.

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- Marker tape will be installed 8 inches below grade directly above the conduit. The owner's personnel will inspect the ditch to verify this condition before the ditch is filled.
- 3.5 If more than one conduit is in a ditch and they are to be concrete encased, they will be outfitted with racks to maintain separation between the conductors.
- 3.6 All concrete work shall be done in accordance with standard practices and this Specification (Refer to Section 3300.)
- 3.7 All reinforcement bars shall conform to ASTM Standards.

END OF SECTION 260510