

Hopewell Township Underground Service Handout Based on 2005 NEC

Dear Homeowner,

This informational handout is provided in order to help guide the homeowner only. It is not totally inclusive and is not intended for design purposes. When in doubt, obtain the services, of a N.J. Licensed Electrical Contractor. :

CALL BEFORE YOU DIG 1-800-272-1000



A. METER ENCLOSURE

1. Verify with utility company for height and installation requirements.
2. Verify with utility for trench requirements.
3. Verify which of the two utilities that serve you: PSE&G or JCP&L

B. CONDUIT OR CABLE TO UTILITY POLE OR TRANSFORMER PAD

1. Conduit should be ridge steel or schedule 40 PVC
2. Typically utility companies require a minimum cover of 24" for conduit and 30" for direct burial cable.
3. Conduit at pole should be schedule 80 PVC or ridge steel with sufficient cable length to reach the top of utility pole. Conduit clamps typically should be galvanized metal.
4. Conduit clamp is required within 36" of meter for support.
5. For direct burial installations; the conduit at meter is required to extend 18" below grade.
6. The trench for direct burial cable typically requires sand 3" below and 6" above cable.
7. Underground service installations not encased in concrete and that are buried 18" or more below grade shall have their location identified by a warning ribbon placed in the trench at least 12" above the underground installation.
8. Verify conduit sizes with utility company but typically they are:
100AMP-1 1/4" I.D. 150 AMP -1 1/2" I.D. 200 AMP -2 1/2" I.D.
300 AMP -3" I.D. 400 AMP -4" I.D.

C. SERVICE ENTRANCE CABLE FROM METER TO PANEL

1. May require protection if installed near sidewalks, walkways or driveways.
2. Cable strap within 12" of meter and straps spaced not more than 30" apart.
3. When conduit is used support within 36" of meter.

D. SERVICE PANEL

1. Disconnecting means located inside or outside but must be "readily accessible", which means, must be capable of being reached quickly, without having to climb over or remove obstacles or use portable ladders.
2. If installed inside must be at nearest point of entry, typically located within 2 to 3 ft. upon entrance of dwelling.
3. Service disconnecting means not permitted in bath rooms.
4. Clear working space required is 30" wide, 36" in front and 6 ft. 6" in height.
5. Adequate illumination of service panel is required for safety.

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K. GROUNDING AND BONDING

1. Typically only one (1) neutral conductor is allowed per terminal but grounds may be multiple conductors. Check listing and labeling of service panel.
2. Generally based on soil conditions (2) ground rods are required and must be installed a minimum of 6 ft. apart.
3. Ground rods to be 5/8" galvanized *or* 1/2" copper and a minimum of 8 ft. in length.
4. Rods must be driven the full length with connectors rated for direct burial.
5. Grounding electrode conductor outside to the ground rods required to be copper conductor only.
6. Grounding conductor must be install to cold water piping, bonding jumpers are required to jump out the following: hot water pipes, metal drain pipes, interior side of metal gas pipe and around city water meter.
7. Grounding conductor to cold water pipe and ground rods to be installed without splices.

SERVICE ENTRANCE, GROUNDING AND BONDING SIZES

A. Typically dwelling, service size conductors and types for 120/240 volt, 3-wire single-phase services entrance conductors and feeders

<u>Service size or Feeder</u>	<u>Conductor size</u>	
	<u>Copper</u>	<u>Aluminum</u>
100 amp	#4	#2
150 amp	#1	#2/0
200 amp	#2/0	#4/0
300 amp	#250 kcmil	#350 kcmil
400 amp	#400 kcmil	#600 kcmil

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B. Grounding electrode conductor sizes for 120/240 volt, 3-Wire single-phase dwelling services.

National Electric Code Table 250-66 ,

<u>Size of largest service conductor</u>		<u>Conductor Size</u>	
<u>Copper</u>	<u>Aluminum</u>	<u>Copper</u>	<u>Aluminum</u>
2 or smaller	1/0 or smaller	#8	#6
1 or 1/0	2/0 or 3/0	#6	#4
2/0 or 3/0	4/0 or 250 kcmil	#4	#2
Over 3/0 to 350 kcmil	Over 250 to 500 kcmil	#2	#1/0
Over 350 to 600 kcmil	Over 500 to 900 kcmil	#1/0	#3/0
Over 600 to 1100 kcmil	Over 900 to 1750 kcmil	#2/0	#4/0
Over 1100 kcmil	Over 1750kcmil	#3/0	250 kcmil