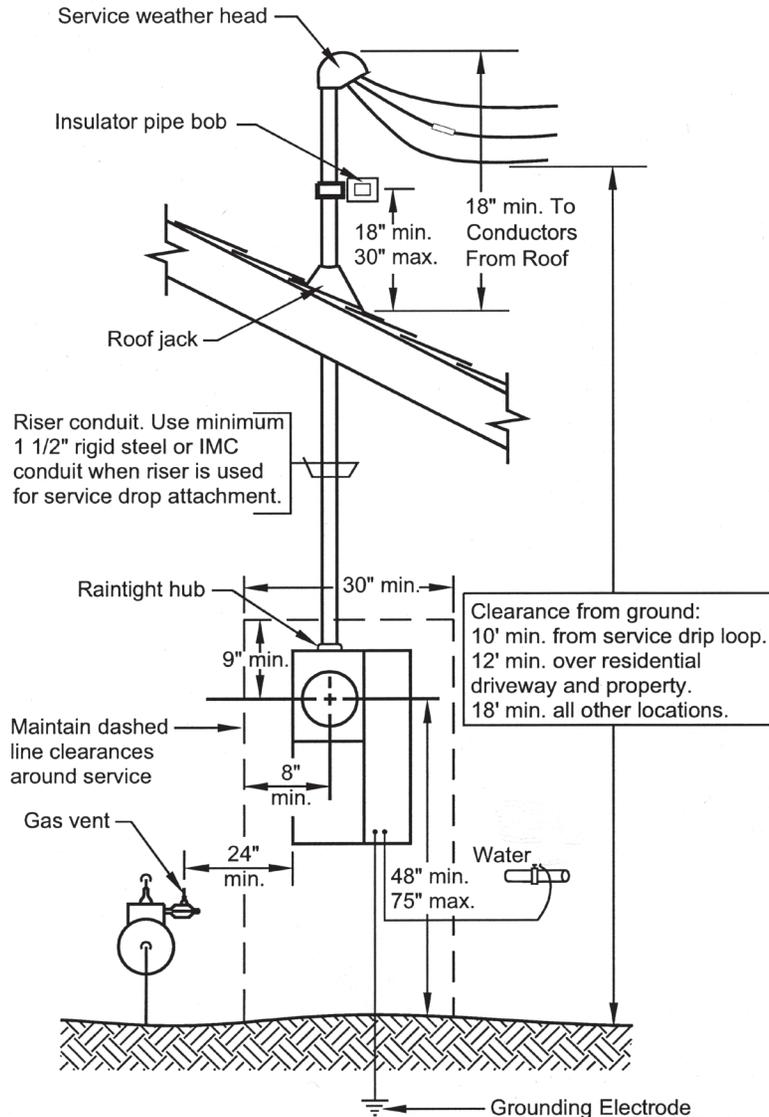


Service Entrance - Residential Overhead Example

SERVICE ENTRANCE - RESIDENTIAL OVERHEAD



Examples of
Typical Service Entrance
Conductors, Minimum Size
Conductors and Types.
THHW - THW - THWN - XHHW

Copper AWG	Aluminum AWG
100 amp 3-#4 1" conduit	100 amp 3-#2 1-#2 neutral 1" conduit
125 amp 2-#2 1-#4 1 1/4" conduit	125 amp 2-#1/0 1-#2 neutral 1 1/2" conduit
150 amp 2-#1 1-#3 neutral 1 1/4" conduit	150 amp 2-#2/0 1-#1 neutral 1 1/2" conduit
175 amp 2-#1/0 1-#2 neutral 1 1/2" conduit	175 amp 2-#3/0 1-#1/0 neutral 2" conduit
200 amp 2-#2/0 1-#1 neutral 1 1/2" conduit	200 amp 2-#4/0 1-#2/0 neutral 2" conduit
400 amp 2-#400 kcmil 1-#250 kcmil neutral 3" conduit	400 amp 2-#600 kcmil 1-#350 kcmil neutral 3" conduit

Electrical Service Entrance



Residential Permit Requirements



City of San Bruno

Community Development
Department

Building Division

567 El Camino Real
San Bruno, CA 94066
Phone (650) 616-7074

www.sanbruno.ca.gov

REVISED June 2014

Electrical Service

A permit is required. Plans and load calculations are not required for a service upgrade unless the inspector determines they are necessary. Electrical service equipment shall be installed in accordance with the manufacturer's installation instructions, Article 230 of the California Electrical Code, and PG&E regulations. All electric service installations require city inspection and approval before PG&E will make permanent connections. After passing the final inspection the inspector will provide a tag for the service and fax an authorization to PG&E. The property owner or contractor will be required to contact PG&E at 1-800-743-5000 and request permanent electrical connections in order to complete the process.

- The minimum size service for residential dwelling is 100 amps.
- Minimum size conductors for 100amp service are #4 AWG copper. Refer to Table 310-15(b)(6) for conductor size on larger ampere services. Identify all conductors at both ends.

- Minimum size grounding conductor for a 100amp service is #8 AWG copper. Refer to Table 250-66 for other grounding conductor sizes. The connection of this conductor to the grounding electrode must be permanently accessible. The water piping system is not allowed to be the sole grounding source.
- The grounding electrode (ground rod, UFER ground) can consist of one of the following:
 - (A) ½" non-ferrous metal rod embedded in 8' of soil.
 - (B) 20' of ½" steel reinforcing rod incased in 2" of concrete near the bottom of a footing.
 - (C) 20' or more of #4 AWG bare copper wire encased in 2" of concrete near the bottom of a footing.
- The grounding conductor of all electrical services is required to be bonded to the grounding electrode and to the metal underground water service within 5' of the entrance to the dwelling.
- The hot, cold, and gas pipes of the water heater need to be bonded together with the appropriate size conductor.
- Meter heights shall be a minimum of 48" and a maximum of 75" to center of meter.
- Every electrical panel must have a permanently clear working space in front of it at least 30" wide, 3' deep and 6'6" high. Multiple meter locations require permanent identification of each meter.
- Circuit breakers must be listed and approved for use in the panel for which they are installed. The loads controlled by each circuit breaker must be identified at panel.

