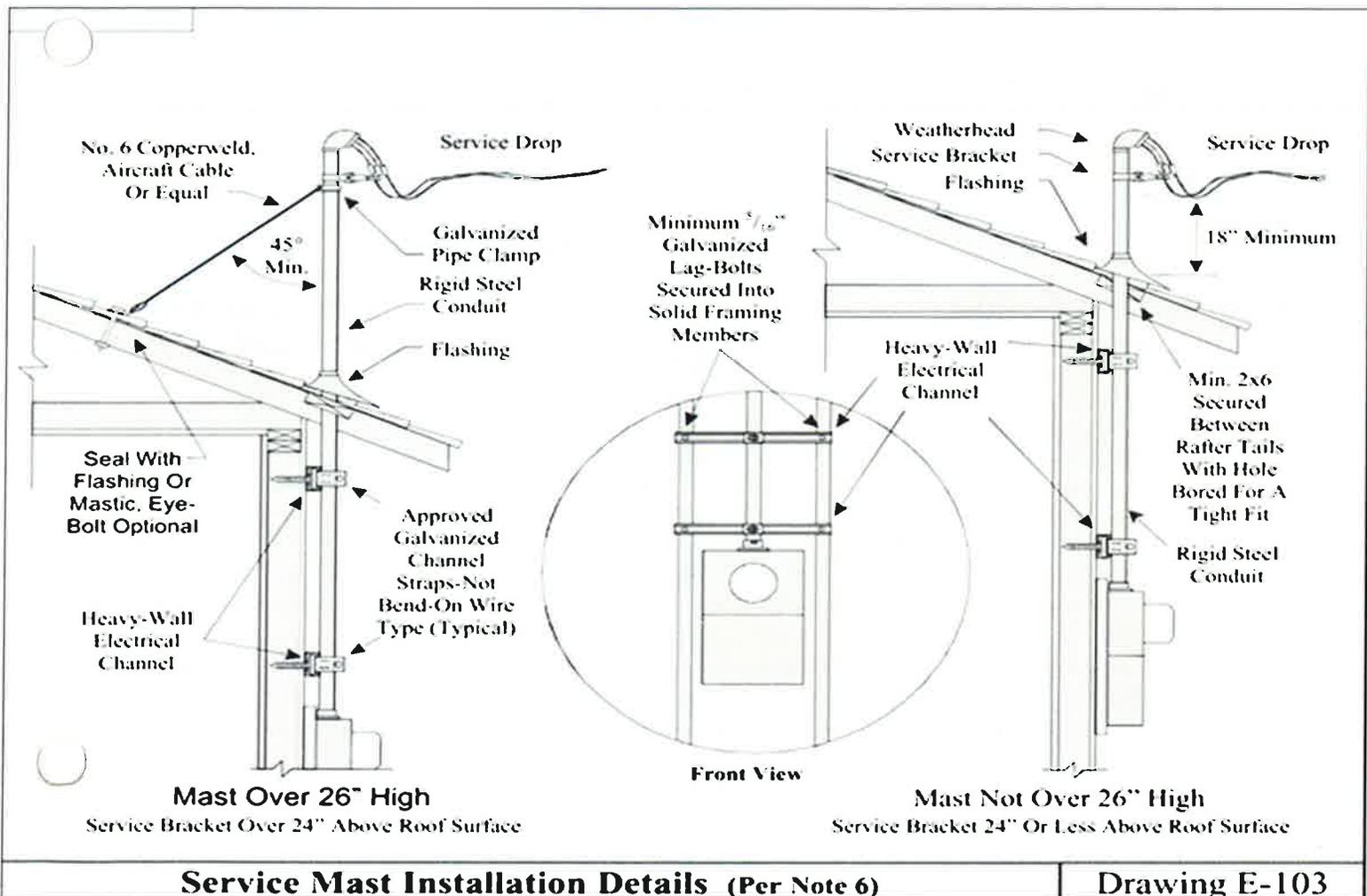


Residential Electrical Panel Replacement Requirements

- **General Requirements:** the main electrical service shall be installed with ridge galvanized steel conduit. The minimum service conduit shall be 1-1/4". The minimum size service entrance wire shall be rated for 100 amperes (for single family dwellings). For single family homes the service disconnect means shall have a rating of not less than 100 amperes and three wires. A larger service may be required for new homes or additions to existing homes based on the actual load calculations. [CEC230.79 (C)]
- **Service Entrance Conductors:** Conductors that extend across the roof shall have a minimum article clearance of three feet above the roof surface for roofs sloped 4:12 or more (18" clearance required when conductors enter through the roof overhang / eave). The service head shall be located so that the service drops, together with the open wires between the service head and the service drop, will have a minimum clearance of 10' vertically above the ground and 3' radius for doors, window and solar panels. (Article 230.24) The neutral conductor must be identified with white tap at both terminals. Service entrance conductors and cables shall be approved for wet locations and when exposed to direct sunlight, shall be listed and marked "sunlight resistant".



Minimum Size Equipment Grounding Conductors NEC Table 250.122

Overcurrent Rating (Amps)*	Size (AWG)	
	Copper	Aluminum or Copper-Clad Aluminum
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1

*Setting of automatic overcurrent device in circuit ahead of equipment, conduit, etc., not exceeding (amperes)

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Meter Location: Check with the service provider for proper location for the meter.

Working Space: The clear work space in front of the panel shall be 30" wide by 36" deep with a minimum headroom clearance of 6'-6".

Grounding and bonding: Grounding shall consist of an existing UFER ground or (2) ½" x 8' ground rods 6' apart, cold water bond and a gas line bond.

For New structure, a concrete encased ground electrode shall be installed. This shall consist of 20' x ½" rebar or #4 bare copper wire in the portion of the footing in contact with earth.

For existing structures, the ground electrode shall be nonferrous (copper), listed and not less than ½" diameter. The electrode shall be installed that at least 8' of length is in contact with the soil. Two of these electrodes will be required a minimum of 6' apart. If only one grounding electrode is used a resistance test of 25 ohms or less is required. The upper end of the electrode shall be flush or below grade level, unless the grounding electrode conductor attachment is protected against physical damage.

