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# **Residential Panel Changeout**

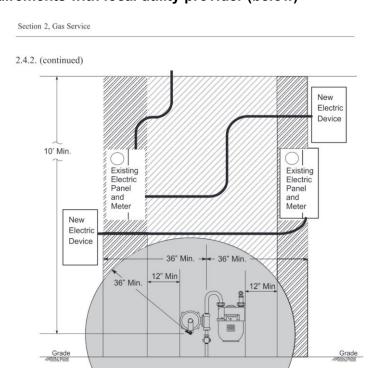
#### Required documents:

- Completed application
- Electrical load calculations may be required including all loads and circuits. CEC 220.1-61 New Construction, or 220.82 Existing No HVAC added, or 220.83 Existing HVAC Added.
- Site/floor plans showing size and location of electrical panel and gas meter.
- Provide information on re-establishing the grounding system and show locations.
- Provide elevation drawing showing electrical meter and required horizontal clearance to gas meter per PG&E Regulation Section 2-27.

## Code Requirements for new /upgraded service panels:

- Overhead or underground conductors for Utility Company (PG&E) may need to be replaced with a larger size. Contact local utility provider for further information.
- Service entrance shall be installed per CEC 230.
- Service entrance conductors can be sized per CEC 310.12
- Field verify metal water pipe grounding and gas pipe bonding.

### Examples – verify requirements with local utility provider (below)



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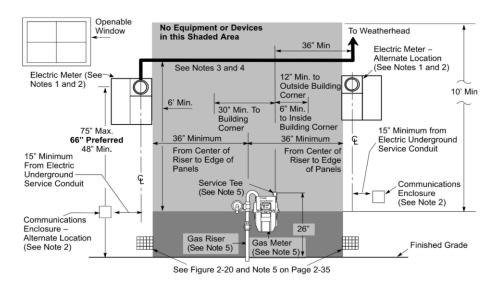
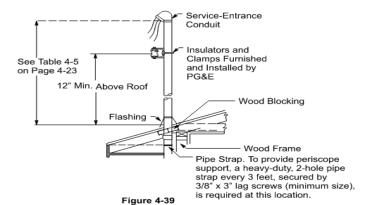


Figure 2-19 Electric and Gas Meter Set Separation Dimensions and Clearances

Table 4-5 Maximum Mast Height Above the Roof Without Bracing<sup>1</sup>

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(IPS) Conduit Size		Maximum Height
GRS <sup>2</sup> or IMC <sup>3</sup>	Aluminum	Without Bracing <sup>4</sup>
All Measurements in Inches		
1-1/4	2	42
1-1/2	2-1/2	42
2	3	54
Larger	Larger	78

- See Subsection 4.5.3. on Page 4-19 for snow-loading area requirements
- GRS: galvanized rigid steel
- IMC: intermediate metal conduit
- Periscope height, without bracing, is limited to 30 inches above the roof if the service drop is installed through trees or if tree branches may strike or cause loading on the service drop.



Unbraced Periscope Structure (Residential and Nonresidential)

#### **Grounding electrode system**

Re-establish grounding system with 2 - 5/8" copper coated grounding rods, 8 feet long driven in the ground, 6 feet apart (CEC 250.52) with grounding electrode conductor sized per CEC Table 250.66, or other approved grounding systems in CEC 250.52-58.

# Intersystem bonding Surge protection

Surge protection is required to be installed in all new and replacement main service panels per CEC 230.67

#### Breakers L/L for panel, Etc.