

 <p><b>Building Division</b></p>	<p><b>ELECTRICAL SUB PANEL INSPECTION</b></p> <p>City of Palo Alto (CPA) Building Inspection Division 285 Hamilton Ave. Inspection Request: 650 329-2496</p> <p><b>IVR# 405, 406</b></p>	Revision Date: 12/31/12
		<p>General Requirements/Checklist for: <b>Residential/Commercial</b></p> <p>Codes Enforced: 2010 CEC/2008 NEC, Palo Alto Municipal Code (PAMC)</p>
<p>The information provided in this document is general and intended as a guide only. Each project is unique and additional requirements may be enforced as deemed appropriate.</p>		

### **WARNING**

- Failure to complete items below prior to inspection may result in a re-inspection fee.
- **CONTRACTORS WHO TAMPER WITH CPA UTILITIES EQUIPMENT WILL BE ISSUED A CITATION. CITATIONS WILL BE ASSESSED AT \$500.00 PER INCIDENT PER PAMC 12.20.010.**

### **TORQUE REQUIREMENTS**

- Contractor to provide a list of torque specification of circuit breakers at time of final inspection.
- Torque all connections per manufacturer's listing. (Electrical contractor to be onsite with torque wrench and torque screwdriver of the audible type. (Ratcheting). *CEC 110.3(B)*)
- Secure lugs with channel locks to hold lug in place when applying the proper torque

### **CPA INSPECTION** \* 2010 code requirements

#### ➤ **Equipment shall be de-energized for inspection.**

- Provide working clearances (36" deep x 30" wide x 6'6" high) *CEC 110.26*
- Where available short circuit current exceeds 10,000 amps, equipment shall be series rated by the same manufacturer or equipment not series rated shall have breakers rated at the available short circuit current rating. Provide label as required "Caution— Series Combination system rated \_\_\_\_\_ amperes. Identified replacement components required" *CEC 110.9 & 110.22*
- Disconnect switches and breakers shall be installed so that the center of the operating handle at its highest position is not more than 6'-7" above the floor or working platform and shall be located in a readily accessible location. *CEC 404.8(A)(1), 230.70(A)(1)*
- \*OCPD shall not be located over a stairway. *CEC 240.24(F)*
- \*An **intersystem bonding termination** is required. Provide a listed terminal at the meter enclosure or a bonding bar near the service equipment enclosure or near the GEC. Bonding bar connection is a minimum 6 AWG. Termination is required to have a minimum of three positions and shall remain accessible. *CEC 250.94*

- Where more than one branch circuit supplies a separate structure/building, a separate grounding electrode system is required at each building/structure (i.e. ground rods) *CEC 250.32(A)*
- Grounding electrode and GEC per *CEC Table 250.66 & Articles 250.64, 250.70*
- Ground rod connection to conductor shall be accessible. *CEC 250.68(A)*
- Verify panel is listed for use.
- The grounded conductor (neutral) sized #6 AWG or smaller shall be marked its entire length. Sizes larger than #6 AWG are allowed to be marked only at each termination. *CEC 200.6*
- Check wire size complies with *CEC 310 & Table 310.15(B)*
- Torque feeder conductor lugs per manufacturer's listing. (Electrical contractor shall be on site with torque wrench and torque screw driver for inspection)
- Conduits shall be sealed at entry for underground fed panels *CEC 230.8*
- \*Multi wire branch circuits:** Provide an approved handle tie (CEC 210 (B)), verify proper phasing (CEC 210.4(C)) Grounded and ungrounded conductors must be grouped together (tie wires) for easily identification. *CEC 210.4(D)*
- Enclosure shall be clean of debris
- Internal parts of electrical equipment, including busbars, wiring, terminals, insulators, and other surfaces, shall not be damaged or contaminated by foreign materials such as paint, plaster, cleaners, abrasives, or corrosive residues *CEC 110.12(C)*
- Circuit breakers shall be listed to be used with panel (usually the same manufacturer).**
  - Label service disconnect and all circuits. *CEC 110.22, 230.70(B)*
  - No double lugging unless terminal is listed for more than one conductor *CEC 110.14(A)*
  - \*AFCI** at *family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sun rooms, closets, hallways, or similar rooms or areas.* Exception: remodels using existing panels are not required to install AFCI breakers, unless panel is compatible for AFCI breakers. *CEC 210.12(B)*
  - \*All** receptacles located at kitchen counter tops, bathrooms, garage, unfinished basements and exterior receptacles are required to be **GFCI**. *CEC 210.8*
  - \*Tamper resistant (TR)** receptacles are required on all 15 and 20 amp receptacles. *CEC 406.11*
  - An approved handle tie at garbage disposal and dishwasher for single yoke *CEC 210.4(B)*
  - Provide separate circuit for FAU *CEC 422.12*
  - Verify main panel grounds and neutrals are terminated on the same bus bar *CEC 250.24(B)*
  - Grounds and neutrals located at subpanel and panels at separate structures shall be on a separate bus bar *CEC 250.6 & CEC 250.32(D)(1)*
  - All connections to be tightened to manufacturer's listing.
  - Unused k/o and openings to be sealed with listed plugs *CEC 110.12 (A)*
  - All unused circuit breaker opening shall be closed. (*CEC 408.7*)
  - Panel boards at separate structures require a main disconnect *CEC 250.32(D)*
  - Verify roof flashing at riser is sealed/watertight.
  - Supports:** EMT, IMC, and RMC shall be securely fastened in place at least every 10' and within 3' of each outlet box, junction box, device box, cabinet, conduit body or other termination. *CEC 342.30 (A), 344.30(A), 358.30 (A)*
  - Bollards** shall be installed when electric equipment is subject to physical damage.

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**See Attached CPA Electric Utilities DWG NO. DT-SS-C-1005 (approved bollard)**