

**DEVELOPMENT SERVICES – BUILDING INSPECTION****INSPECTION GUIDELINES:
CONSTRUCTION POWER – COMMERCIAL & MULTI-FAMILY****INSPECTION CODE:** 202, 246**SCOPE:** COMMERCIAL AND MULTI-FAMILY**APPLICABLE CODES:** 2016 CBC, CRC, CPC, CMC, CEC, CALGreen, CEnC, and PAMC

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.

WARNING

Meter removal and service disconnect/reconnect are to be performed by City of Palo Alto Utilities (CPAU) personnel only. Contractors who tamper with CPAU equipment will be issued a citation. Citations will be assessed at \$500.00 per incident. (PAMC 12.20.01.0)

Failure to complete the items below prior to inspection may result in a re-inspection fee.

DEFINITIONS

Construction Power: Electrical power used for construction power utilizing the existing permanent power or new permanent power. This is NOT a temporary power pole application. (This method must comply with Title 8 and the California Electrical Code.)

Temporary Power: Underground or overhead temporary power pole or pedestal. (This method must comply with Title 8 Article 33 and the California Electrical Code.)

INSPECTION

- If the Contractor converted or used the existing electrical service for construction power, make sure that the requirements for converting/using the existing electrical service have been met (see the “Construction Power – Commercial and Multi-Family Submittal” checklist for more information under the Electrical Inspection Guidelines in the [City of Palo Alto Building Inspection](#) website). (CPA Municipal Code)
- For new upgrades used as Construction Power, see the Conditional Meter Release checklist (under the Electrical Inspection Guidelines in the [City of Palo Alto Building Inspection](#) website). (CPA Municipal Code)
- If the overhead service is disconnected, a CPAU application load sheet will be required to be submitted to CPAU Electrical Engineering for review and/or approval. Otherwise, if the overhead service is not disconnected, it does not have to go to CPAU Electrical Engineering. (CPA Municipal Code)

- If the underground service is disconnected, a CPAU application load sheet will be required to be submitted to CPAU Electrical Engineering for review and/or approval. Additionally, it will require a CPAU underground inspection. Otherwise, if the underground service is not disconnected, it does not have to go to CPAU Electrical Engineering. (CPA Municipal Code)
- Verify that the equipment is rated at or above the short circuit current available (see the “Construction Power – Commercial and Multi-Family Submittal” checklist for more information under the Electrical Inspection Guidelines in the [City of Palo Alto Building Inspection](#) website).
- All underground conduits shall be sealed with duct seal or approved methods. Sealants must be identified for that use. (CEC 300.5 (G), CEC 230.8)
- Verify that the terminals for fine stranded conductors must be listed for that use. (CEC 110.14)
- Provide required working clearance in front of equipment. For a panel, the working clearance is 36” in depth, 30” in width, and 6’-6” in height. (CEC 110.26)
- For overhead service conductors, provide minimum clearance to grade. A minimum clearance of 12’ is required over property and driveways. (CEC 230.24 (B)(1))
- CEC 406.9(B): Outlet Box Hoods (While-In-Use)
 - Receptacles of 15A and 20A, in wet locations, shall have an enclosure that is waterproof. The outlet box hood (While-In-Use) shall be listed and shall be identified as “extra duty.”
- GFCI protection is required at all outlets for temporary and construction power. (CEC 590.6 (A), CEC 590.6 (B))
- Apply anti-corrosion grease or oxidation inhibitor on all conductors terminating at mechanical lugs. (CEC 110.3 (B))
- Install exterior-rated ground clamps at all exterior locations (all bronze clamps, including the screws).
- Panel box must be clean and free of debris.
- Verify grounding electrode conductor and the connection to grounding electrode are not subject to physical damage. (CEC 250.64(B))
- Provide the following clearances on panel height. (CPAU) ([CPAU Standard Drawing SR-TS-O-1006](#),
 - 48” minimum from grade
 - 75” maximum from grade
 - 6’-7” maximum height (from grade to top of handle in its highest position) for a disconnecting means. CEC 404.8(A))

- Utilize any of the following allowed conduits for entrance service conductors with positive attachments to pole as required. ([CPAU Standard Drawing SR-TS-O-1006](#))
 - Rigid galvanized steel
 - EMT
 - PVC Schedule 80 if subject to physical damage
 - PVC Schedule 40 if not subject to physical damage

- All separate structures, including each construction trailer and construction storage containers fed by more than one branch circuit require one ground rod that is 5/8" by 8' to be installed. ([CPAU Standard Drawing SR-TS-O-1006](#), CEC 250.32, CEC 250.52 (A)(5))

- Where electrical equipment is subject to vehicular traffic, provide bollards. Note that water barrier may be allowed in certain conditions; check with your CPA inspector prior to their use. ([CPAU Standard Drawing SR-MT-E-1035](#))

- When an existing service has been disconnected, to reconnect, verify and torque the service conductor lugs to manufacturer's specifications. See the Torque Requirements section below for additional information.

TORQUE REQUIREMENTS

- Verify and torque service conductor lugs and all connections to manufacturer's specifications. Torque will be verified for all electrical panels – including construction trailer electrical panels.

- Contractor to provide a written list of torque specifications on site for the inspection specific to each piece of electrical equipment, including: circuit breakers, equipment grounds, neutrals, and feeders.

- Contractor to torque all connections per the manufacturer's listings prior to the CPA inspection. The inspector will witness a spot check. If all terminations are found to be tight, no further torqueing will be required. If loose connections are found, all connections will be required to be torqued in the presence of the CPA inspector.

- The electrical contractor must be on site with the following tools (CEC 110.3 (B)).
 - Torque wrench
 - Torque screwdriver (with a range of up to 50 lb-in.) and be audible type (ratcheting)
 - Slip-joint pliers such as Channel locks to secure lugs in place when applying the proper torque

- Terminals for fine stranded conductors must be listed for that use. (CEC 110.14)

SKIDS

- ☐ Skids must be seismically secured.

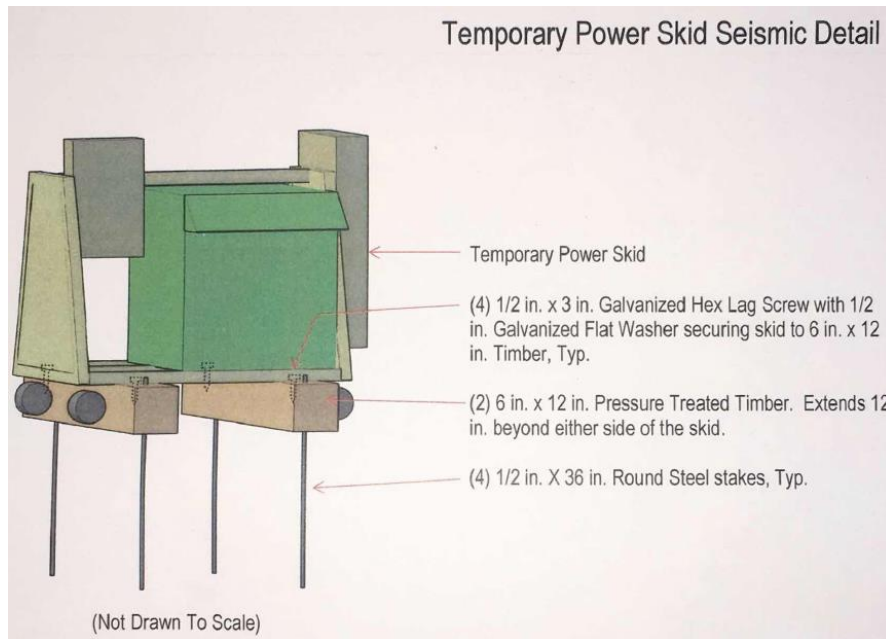


Figure CPA 012 – Suggested Skid Seismic Detail

PANEL CONNECTIONS

- ☐ See Figure CPA 011 for suggested connections to panels when using fine-stranded conductors.

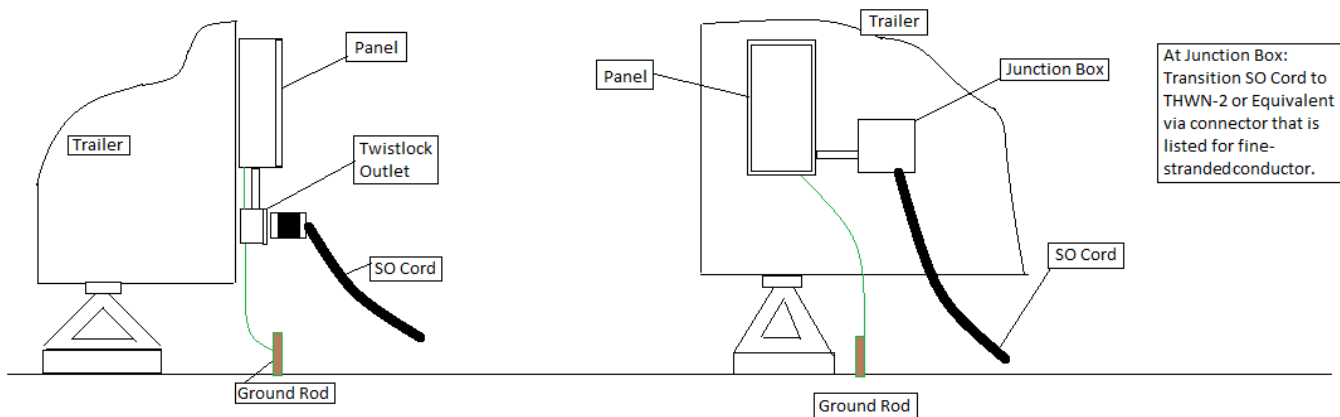


Figure CPA 011 – Suggested Connections to Panels when using Fine-Stranded Conductors