

California Ag Mechanics CDE Electrical Board 2019

Contestants will provide the regulation board.

Host will provide:

- Wire nuts, grounding crimp sleeves/green wire nuts
- Wire. E.g.; 14 ga. THHN or NM cable

Host will specify the following as part of the contest area instructions:

- Device location
- Wiring circuit description in text (example: Switch will control the lamp, duplex receptacle is always hot), standard electrical plan, or other method.
- Project can use one or more of the boxes.

Materials (per board):

½ CC Plywood board (8 per sheet)

4 – 4" sq. Electrical boxes with ½" KO

2- ½" EMT Box connectors

30" of ½" EMT (3 – 8" long pieces; 2 – 3" long pieces)

5 – Grounding screws installed in the box

5 – ½" NM cable clamps

2 – Duplex Receptacle

1 – 20 amp, 240 Volt Receptacle

2- Lamp holder with pig tails (must be connectable with wire nuts like common light fixtures)

2 – SPST switch

2 – 3 way switches SPDP

1 – 4 way switch DPDT

1 – 70 amp subpanel with two 20 amp and two 15 amp circuit breakers capable of wiring the following circuits:

1. 15 amp, 120 volt
2. 20 amp, 120 volt
3. 20 amp, 240 volt

(Subpanel must have a separate grounding bus bar and an insulated neutral bus bar)

The following links are to the recommended Sub Panel and Breaker that should be used for the wiring boards:

The Square D Sub Panel:

<https://www.lowes.com/pd/Square-D-70-Amp-2-Spaces-4-Circuit-Main-Lug-Load-Center/3135851>

The Quad-breaker:

<https://www.lowes.com/pd/Square-D-Homeline-20-Amp-4-Pole-Quad-Circuit-Breaker/3471085>

The Eaton Sub Panel:

Eaton BR24L70SGP

<https://www.platt.com/platt-electric-supply/Load-Centers-Aluminum-Bus-1-Phase-Main-Lug/Eaton/BR24L70SGP/product.aspx?zpid=347203>

Quadplex Breaker (15 amp single pole-outer, and 20 amp center common trip)

Eaton BQC2202115

<https://www.platt.com/platt-electric-supply/Circuit-Breakers-Residential-Quadplex-Breakers/Eaton/BQC2202115/product.aspx?zpid=354629>

Boxes should be centered on the board and placed 8" apart (approximately 12" O.C.). The distance between boxes A and D and the Sub Panel is 3" max.



