County of Santa Cruz
Community Development & Infrastructure
701 Ocean Street 4th Floor, Santa Cruz, CA 95060
www.sccoplanning.com

EVCS Electrical Load Calculation Single-Family

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A. Project Information

Load Form: Use of this form is voluntary and can be used for single-family projects. Using this form is a method to estimate electric service load calculations. This estimate is at the user's risk and carries no implied guarantee of code compliance as conditions may exist that may not meet code requirements for your project. Users of this form/method are advised to seek professional assistance in determining service panel capacity.

APN: _____ Address: _____

Person completing checklist — License

Name: _____ Signature: _____ Type-No: _____

Engineer or Contractor — License

Name: _____ Signature: _____ Type-No: _____

B. Single-Family Electrical Load Calculations	Quantity	Volt-Amp or Watt	Volt Amps
Step 1: Small-Appliance & Laundry CEC 220.52			
General Lighting for House (square feet)		3	
Number of Appliance Circuits (2 minimum)		1500	
Number of Laundry Circuits (1 minimum)		1500	
		Step 1 Load:	
Step 2: Apply Demand Load Factors CEC Table 220.42			
First 3000 VA at 100%		100%	
Remainder at 35%		35%	
		Step 2 Load:	
Step 3: Fixed Appliance Loads – Dwelling Units CEC 220.53			
Refrigerator			
Freezer			
Mini Refrigerator			
Dishwasher			
Garbage Disposal			
Microwave			
Range Hood			
Vent Fan			
Elevator			
Jacuzzi Tub			
Other: _____			
Other: _____			
Other: _____			
Other: _____			
Other: _____			
Other: _____			
Other: _____			
Other: _____			
	75% (see note 1)	**Step 3 Load:**	
Step 4: Clothes Dryers CEC 220.54			
Number of Dryers at 5000 watts (minimum allowed for each dryer)		5000	
Number of Dryers at > 5000 watts and name plate rating			
		Step 4 Load:	

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B. Single-Family Electrical Load Calculations	Quantity	Volt-Amp or Watt	Volt Amps
Step 5: Electric Household Appliances CEC 220.55			
Cook Range			
Counter Cooking Unit			
Oven			
Other: _____			
Other: _____			
	(see note 2)	**Step 5 Load:**	
Step 6: Noncoincident Loads CEC 220.60			
Air Conditioning			
Air Conditioning			
Electric Heating			
Electric Heating			
Electric Heating			
	The Largest Load	**Step 6 Load:**	
Step 7: Largest Motor CEC 220.18(A)			
Largest Motor: _____			
	125% of Volt Amp	**Step 7 Load:**	
Step 8: EVCS – Other Loads CEC 220.14(A) & 625.42			
EVCS			
EVCS			
	125% of Volt Amp	**Step 8 Load:**	
Step 9: Size Conductors			
Sum of Volt-Amp Loads from Steps 2 through Step 8		VA Load SUM	
Minimum Service Ampacity: Sum of VA Loads ÷ 240V = AMPS	(see note 3)	AMPS Minimum	
Proposed Service Ampacity	(see note 3)	AMPS Proposed	
Service/Feeder Conductor Size CEC Table 310.16	(see note 4)	CU	
		AL	
Grounding Electrode Conductor CEC Table 250.66	GEC Size	CU	
		AL	

Notes:

1) A demand factor of 75% total for four or more appliances rated ¼ hp or greater, or 500 watts or greater, that are fastened in place, and served by the same feeder or service shall be permissible. This demand factor shall not apply to: 1) Household electric cooking equipment that is fastened in place 2) Clothes dryers 3) Space heating equipment 4) Air-conditioning equipment.

2) Appliances individually rated in excess of 1 ¾ KW shall be permitted to be calculated in accordance with Table 220.55.

3) The proposed service size can be either the existing service, or an upgraded service, as required for the minimum service ampacity. For one-family dwellings, the service disconnecting means shall have a rating of not less than 100 amps, 3-wire.

4) See article 310.12(A) & (B) for residential service/feeders rated 100A through 400A, supplying the entire load, to have an ampacity not less than 83% of the service rating. Table 310.12 shall be permitted to applied.