



CONDUCTOR/CONDUIT SIZES
Residential Electric Services
Single Phase 120/240 volt only
1999 National Electric Code

INFORMATION
GUIDELINE

May 2004

City of Concord • Building & Neighborhood Services • 1950 Parkside Drive, MS/51 • Concord, CA 94519 • (925) 671-3107 • Fax (925) 680-4877

Per Table 310-16 & Table 310-15(b)(6) – Single-phase Dwelling Service & Feeders

Refer to
Notes
Below

	Panel Amperage	100	125	150	200
a	Conductors in mast (copper)	4	2	1	2/0
a	Conductors in mast (aluminum)	2	0	2/0	4/0
a, b	Feeder to sub-panel (copper)	3	2	1	3/0
a, b	Feeder to sub-panel (aluminum)	1	0	2/0	4/0
c	Mast and Weatherhead (copper cond.)	1¼"	1¼"	1¼"	1½"
	Mast and Weatherhead (alum. cond.)	1¼"	1½"	1½"	2"
d	Underground Feeder Conduit	2"	2"	2"	2"
e, f	Grounding Electrode conductor (copper)	8	8	6	4
	Water line Bonding Conductor (copper)	8	8	6	4
	Gas line Bonding Conductor (copper)	See 250-80 (b), #6 recommended			
g	Sub-panel Feeder Grounding Conductor	8	8	8	6 (copper)
g	Sub-panel Feeder Grounding Conductor	6	6	6	4 (aluminum)

NOTES:

- a. All wire sizes are 75°, see Table 310-16 for other approved sizes.
- b. From Table 310-15b for sub-panel feeders which carry the total current supplied by the service.
- c. **The 1" mast is not approved within the City of Concord** due to inadequate strength, 1 ¼" minimum size.
- d. P.G. & E. minimum size, rigid electrical conduit or Schedule 80 PVC only.
- e. This conductor connects the steel ufer, ground rod, etc. to the ground/neutral buss in the main panel. This conductor cannot be spliced. #8, if used, shall be enclosed within protective conduit to a ground rod with ground termination fittings or must be completely enclosed within the structure.
- f. If the grounding electrode is a rod or plate, the grounding electrode conductor can be a #6 copper, regardless of service size.
- g. Separate grounding conductor is not required if solid, continuous, metal conduit installed as feeder raceway.



**Load Calculations For Additional Loads to
Existing Single Family Dwelling
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Quantity	Load	Min, Rating	Column #1	Column #2
	Dwelling Square Footage	3 watts sq. ft.		
	Appliance circuits – 2 minimum	1500 each		
	Electric Cook Top(s)	* 5100 each		
	Electric Oven(s)	* 8000 each		
	Dishwasher	* 1200 each		
	Garbage Disposal	* 800 each		
	Laundry Circuit	1500		
	Dryer	5000		
	Forced Air Unit	* 500		
	Air Conditioner			
	Pool Equipment			
	Space Heating			
	Microwave	* 1600		
	Trash Compactor	* 1500		

Totals _____

First 8000 watts of column 1 @ 100% =		
(Column 1 minus 8000) x 40% =		
Column 2 x 100% =		
Total watts		
Total amps		

Divide watts by 240 volts for amp rating of service

Based on CEC 2001
The above schedule is intended as a guide only.

* Note: Use name plate rating or minimum rating, which ever is greater.