

**SINGLE FAMILY SERVICE LOAD CALCULATIONS  
BASED ON THE 2008 NEC SECTION 220.82**

**GENERAL LOADS NEC 220.82(B)**

TOTAL SQ FOOTAGE ( 1,500 SQ FT X 3 VA ) = 4,500 VA  
 APPLIANCE CIRCUITS ( 2 X 1,500 VA ) = 3,000 VA  
 LAUNDRY CIRCUITS ( 1 X 1,500 VA ) = 1,500 VA

RANGE ( 1 RANGE X 8,000 VA ) = 8,000 VA

DRYER ( 1 DRYER X 5,000 VA ) = 5,000 VA

WATER HEATERS (1 X 2,500 VA ) = 2,500 VA

**MISC LOADS NEC 220.82(B)(4)**

DISHWASHER ( 1 X 10A X 120 V ) = 1,200 VA

**PROJECT NAME  
DWELLING UNIT**

**SAMPLE  
DP**

**NEUTRAL LOAD NEC 220.61**

TOTAL SQ FOOTAGE ( 1,500 SQ FT X 3 VA ) = 4,500 VA  
 APPLIANCE CIRCUITS ( 2 X 1,500 VA ) = 3,000 VA  
 LAUNDRY CIRCUITS ( 1 X 1,500 VA ) = 1,500 VA  
 TOTAL CONNECTED NEUTRAL LOAD 9,000 VA

FIRST 3,000 VA @ 100% ( 3,000 VA X 1.00 ) = 3,000 VA  
 3,000-120,000 VA @ 35% ( 6,000 VA X 0.35 ) = 2,100 VA  
 OVER 120,000 VA @ 25% ( 0 VA X 0.25 ) = 0 VA  
 SUBTOTAL 5,100 VA

RANGE DEMAND  
 TABLE 220.55 COLUMN C  
 70% OF TABLE 220.55 ( 8,000 VA X 0.70 ) = 5,600 VA

DRYER DEMAND  
 TABLE 220.54  
 70% OF TABLE 220.54 ( 5,000 VA 1.00 VA X 0.70 ) = 3,500 VA

UNBALANCED MISC LOADS 1,200 VA

NEUTRAL LOAD VA 15,400 VA

NEUTRAL LOAD ( 15,400 VA ÷ 208 V ) = 74 A

FURTHER DEMAND FACTOR - NEC 220.61(B)(2)  
 FIRST 200 A @ 100% ( 74 A X 1.00 ) = 74 A  
 REMAINDER @ 70% ( 0 A X 0.70 ) = 0 A

MINIMUM NEUTRAL CONDUCTOR AMPACITY 74 A

TOTAL GENERAL LOAD 25,700 VA  
 FIRST 10 KVA AT 100% 10,000 VA  
 REMAINDER OF LOAD AT 40% 6,280 VA  
 SUB TOTAL GENERAL LOAD 16,280 VA

**HEATING & COOLING LOADS - NEC 220.82(C)**

(1) AC LOAD ( 4,000 VA X 100% ) = 4,000 VA << LARGEST

(2) HEAT PUMPS NO SUPP ( 0 VA X 100% ) = 0 VA

(3) HEAT PUMPS ( 0 VA X 100% ) = 0 VA

SUPPLEMENTAL HEAT ( 0 VA X 65% ) = 0 VA

(4) ELECTRIC SPACE ( 0 VA X 65% ) = 0 VA  
 LESS THAN FOUR SEPARATELY CONTROLLED UNITS.

(5) SPACE HEATING ( 0 VA X 40% ) = 0 VA  
 MORE THAN FOUR SEPARATELY CONTROLLED UNITS.

(6) SPACE HEATING ( 0 VA X 100% ) = 0 VA  
 CONTINUOUS AT THE FULL NAMEPLATE VALUE.

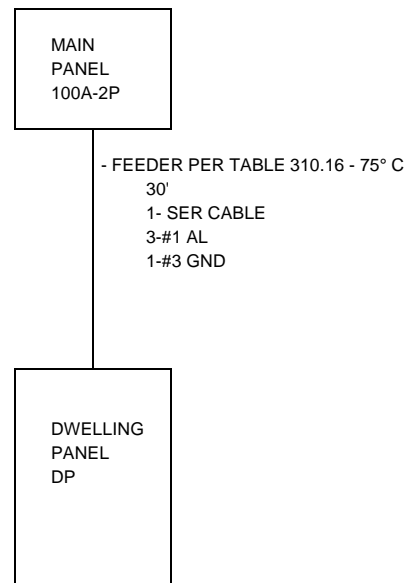
LARGEST HEATING OR COOLING LOAD 4,000 VA

TOTAL KVA 20,280 VA

TOTAL AMPS ( 20,280 VA ÷ 208 V ) = 98 A

FUTURE AMPS ( 0% ) 0 A

DESIGN AMPS 98 A



**KEY**  
 (N) - Neutral  
 A - Amps  
 VA - Volt Amps