SINGLE FAMILY SUBPANEL STANDARD LOAD CALCULATIONS
BASED ON THE 2026 NEC SECTION 120

PROJECT NAME SAMPLE
PANEL NAME SP1

GENERAL LOADS NEC 120.41 & 120.53	
TOTAL SQ FOOTAGE (1,000 SQ FT X 2 VA) =	2,000 VA
APPLIANCE CIRCUITS (2 X 1,500 VA) =	3,000 VA
LAUNDRY CIRCUITS (1 X 1,500 VA) =	1,500 VA
	6,500 VA
FIRST 3,000 VA AT 100%	3,000 VA
REMAINING VA AT 35% (3,500 VA X 0.35) =	1,225 VA
	4,225 VA
RANGE (1 AT 12,000 VA)	
PER TABLE 120.55 (8,000 VA X 1.00) = VA	8,000 VA
DRYER (1 AT 5,500 VA)	
PER TABLE 120.54 (1 X 5,500 X 1.00) =	5,500 VA
APPLIANCES FASTENED IN PLACE NEC SECTION 120.53	
240 VOLT LOADS	
AIR CONDITIONER (1 X 8 A X 240 V X 1.00) =	1,920 VA
LARGEST HEATING OR COOLING LOAD	0 VA
NET CALCULATED LOAD	19,645 VA
NET CALCULATED AMPS (19,645 VA ÷ 240 V) =	82.00 A

APPLIANCES FASTENED IN PLACE NEC SECTION 120.53

120 VOLT LOADS ON LINE L1	
AIR CONDITIONER (1 X 6 A X 1.00 X 120) =	6.00 A
TOTAL AMPS LINE L1	6.00 A
120 VOLT LOADS ON LINE L2	
DISHWASHER (1 X 10 A X 1.00 X 120) =	10.00 A
TOTAL AMPS LINE L2	10.00 A

LOAD SUMMARY	
NET CALCULATED AMPS	82.00 A
LARGEST 120 VOLT LINE AMPS	10.00 A
SUBTOTAL	92.00 A
FUTURE AMPS (0%)	0.00 A
DESIGN AMPS (ROUNDED)	92 A

HEATING & COOLING LOADS - NEC 120.82(C)	
(1) AC LOAD (0 VA X 100%) = 0 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 100%) = 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	0 VA

NEUTRAL LOAD NEC 120.61	
LIGHTING & SMALL-APPLIANCE LOAD	4,225 VA
RANGE DEMAND	
TABLE 120.55 COLUMN C	
70% OF TABLE 120.55 (8,000 VA X 0.70) =	5,600 VA
DRYER DEMAND	
TABLE 120.54	
70% OF TABLE 120.54 (5,500 VA X 1.00 X 0.70) =	3,850 VA
NEUTRAL LOAD VA	13,675 VA
NEUTRAL LOAD (13,675 VA ÷ 240 V) =	57 A
UNBALANCED MISC LOADS FROM LINE 2	10 A
NET NEUTRAL LOAD AMPS	67 A
FURTHER DEMAND FACTOR - NEC 120.61(B)(2)	
FIRST 200 A @ 100% (67 A X 1.00) =	67 A
REMAINDER @ 70% (0 A X 0.70) =	0 A
MINIMUM NEUTRAL CONDUCTOR AMPACITY	67 A

VOLTAGE DROP CALCULATIONS
(2 X 25' L X 0.2530 R X 92.0 A ÷ 1,000) = 1.2 VD
(1.2 VD ÷ 240 V X 100) = 0.5 % VD

FAULT CURRENT CALCULATIONS
((13,851 AFC X 1.10 UA) + 0 MC) = 15,236 AFC
(2 X 25 L X 15,236 AFC) ÷ (4,645 C X 1 N X 240 V) = 0.683 CF
(1) ÷ (1 + 0.683 CF) = 0.594 CM
(15,236 AFC X 0.594 CM) = 9,050 CLC

KEY
A - Amps
AFC - Available Fault Current
C - Conductor Constance
CF - Conductor Factor
CLC - Conductor Let Through Current
CM - Conductor Multiplier
L - Length
MC - Motor Contribution
N - Number of Conductors
R - Resistance
UA - Utility Adjustment
V - Volts
VA - Volt Amps
VD - Voltage Drop