LOAD CALCULATIONS FOR - MAIN SWITCHBOARD

BASED ON THE 2008 NEC

	L1	L2	L3	NEC 220.61(A) NEUTRAL
CALCULATED LOAD (NEC 215.5)	89,740 VA	85,340 VA	79,240 VA	89,740 VA
CALCULATED LOAD WITH DEMAND FACTORS (NEC 215.5)				
GENERAL LOAD	22,000 VA	22,000 VA	14,200 VA	22,000 VA
RECEPTACLE LOAD (NEC TABLE 220.44)				
1ST 10,000W	3,554 VA	3,223 VA	3,223 VA	3,554 VA
REMAINDER @ 50%	6,293 VA	5,708 VA	5,708 VA	6,293 VA
CONTINUOUS LOAD (NEC 215.2)	30,000 VA	28,000 VA	28,500 VA	30,000 VA
PLUS 25% (L1, L2, L3)	7,500 VA	7,000 VA	7,125 VA	
PLUS 0% (NEUTRAL) NEC 215.2(A) EX NO 2				0 VA
MOTOR LOAD (NEC 430.24)	14,700 VA	14,700 VA	14,700 VA	14,700 VA
PLUS 25% OF LARGEST MOTOR	1,250 VA	1,250 VA	1,250 VA	1,250 VA
KITCHEN LOADS (NEC 220.56)				
L1 (6,900 X 0.65) =	4,485 VA			4,485 VA
L2 (6,000 X 0.65) =		3,900 VA		
L3 (7,200 X 0.65) =			4,680 VA	
TOTAL BALANCED LOAD (3-PHASE)	79,386 VA	79,386 VA	79,386 VA	
TOTAL BALANCED LOAD (1-PHASE)	6,395 VA	6,395 VA	0 VA	
TOTAL UNBALANCED LOAD (1-PHASE)	4,001 VA	0 VA	0 VA	
				82,282 VA
LINE AMPS BALANCED (3-PHASE)	286.5 A	286.5 A	286.5 A	
LINE AMPS BALANCED (1-PHASE)	26.6 A	26.6 A	0.0 A	
LINE AMPS UNBALANCED (1-PHASE)	14.4 A	0.0 A	0.0 A	
TOTALS	327.6 A	313.1 A	286.5 A	297.0 A
ADJUSTMENT FACTOR	0.0 A	0.0 A	0.0 A	0.0 A
TOTAL DESIGN LOAD	327.6 A	313.1 A	286.5 A	297.0 A

HARMONIC CURRENT CALCULATION (NEC 310.15 (B) 4 (C) & NEC TABLE 310.15 B (2) A)

(Harmonic Load 0 VA ÷ Connected Load 202,120 VA) X 100 = 0 %

Harmonic Load Does Not Exceed 50%

FAULT CURRENT CALCULATIONS

Available Fault Current at Starting Point ((44,903 AFC x 1.00 UA) + 212 MC) = 45,115 AFC

Conductor Factor CF - Formula (1.732 x 100 L x 45,115 AFC) ÷ (20,566 C x 1 N x 480 SV) = 0.792 CF

Conductor Multiplier CM - Formula (1) ÷ (1 + 0.792 CF) = 0.558 CM

Conductor Let-Through Current CLC - Formula (45,115 AFC x 0.558 CM) = 25,174 CLC

A - Amps
AFC - Available Fault Current
C - Conductor Constant
CF - Conductor Factor
CLC - Conductor Let-Through Current
CM - Conductor Multiplier
L - Length of Conductor
MC - Motor Contribution
N - Number of Conductors Per Phase
SV - Secondary Voltage
UA - Utility Adjustment
VA - Volt Amps