

APPENDICES

Cathedral Place

Milwaukee, WI
Steven Puchek – Senior Thesis Project

Appendix D – Electrical

TYPICAL LOADCENTER

Unit Panel	Condo (Typ)		
Voltage	208/120V 3P,4W		
Breaker	100A		
Load	VA	Demand	Demand Load
Dishwasher	1092	0.75	819
Refrigerator	1800	1	1800
Disposal	720	0.75	540
Range	8320	0.8	6656
Range Hood	250	0.75	187.5
Kitchen Recept	1500	1	1500
Kitchen Recept	1500	1	1500
Washer/Dryer	5000	1	5000
Exhaust Fan per Bath	300	0.75	225
Water Heater	3800	0.75	2850
Total Demand Load			21077.5
Total Demand Current			58.51

Residential Lighting Load Calculation					
Unit	Area (sf)	NEC Design Load (VA/sf)	Load per Unit (VA)	Demand	Demand Load
300	1848	3.0	5544	A*	3890.4
301	691	3.0	2073	A*	2073
302	1026	3.0	3078	A*	3027.3
303	1652	3.0	4956	A*	3684.6
400	1848	3.0	5544	A*	3890.4
401	691	3.0	2073	A*	2073
402	1026	3.0	3078	A*	3027.3
403	1652	3.0	4956	A*	3684.6
500	1848	3.0	5544	A*	3890.4
501	1719	3.0	5157	A*	3754.95
502	1652	3.0	4956	A*	3684.6
600	1848	3.0	5544	A*	3890.4
601	1719	3.0	5157	A*	3754.95
602	1652	3.0	4956	A*	3684.6
700	1848	3.0	5544	A*	3890.4
701	691	3.0	2073	A*	2073
702	1026	3.0	3078	A*	3027.3
703	1652	3.0	4956	A*	3684.6
800	1848	3.0	5544	A*	3890.4
801	1719	3.0	5157	A*	3754.95
803	1652	3.0	4956	A*	3684.6
900a	2541	3.0	7623	A*	4618.05
902	1026	3.0	3078	A*	3027.3
903	1652	3.0	4956	A*	3684.6
1000	3335	3.0	10005	A*	5451.75
1001	2945	3.0	8835	A*	5042.25
1002	2985	3.0	8955	A*	5084.25
All	45792	3.0		Total	98923.95

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Residential Total Load Calculation						
Unit	Lighting Load (VA)	Power Load (VA)	Total Load for Unit (VA)	Load Per Floor	Demand	Demand Load (kVA) Per Floor
300	3890.4	21077.5	24967.9			
301	2073	21077.5	23150.5			
302	3027.3	21077.5	24104.8			
303	3684.6	21077.5	24762.1	96985.3	0.34	32.98
400	3890.4	21077.5	24967.9			
401	2073	21077.5	23150.5			
402	3027.3	21077.5	24104.8			
403	3684.6	21077.5	24762.1	96985.3	0.34	32.98
500	3890.4	21077.5	24967.9			
501	3754.95	21077.5	24832.45			
502	3684.6	21077.5	24762.1	74562.45	0.34	25.35
600	3890.4	21077.5	24967.9			
601	3754.95	21077.5	24832.45			
602	3684.6	21077.5	24762.1	74562.45	0.34	25.35
700	3890.4	21077.5	24967.9			
701	2073	21077.5	23150.5			
702	3027.3	21077.5	24104.8			
703	3684.6	21077.5	24762.1	96985.3	0.34	32.98
800	3890.4	21077.5	24967.9			
801	3754.95	21077.5	24832.45			
803	3684.6	21077.5	24762.1	74562.45	0.34	25.35
900a	4618.05	21077.5	25695.55			
902	3027.3	21077.5	24104.8			
903	3684.6	21077.5	24762.1	74562.45	0.34	25.35
1000	5451.75	21077.5	26529.25			
1001	5042.25	21077.5	26119.75			
1002	5084.25	21077.5	26161.75	78810.75	0.34	26.80
All	98923.95			668016.45		227.13
				Total Load from Residences (kVA)		454.25

NEC Total Load - 10-17 House and Office Space ONLY						
Floor	# Receptacles - House	House Receptacle Load (VA)	Approximate House Power Load (VA)	Office Receptacle Load (VA)	Approximate Office Power Load (VA)	Total Load (kVA)
10	12	2160	995	22450	33675	47.44
11	12	2160	995	22450	33675	47.44
12	12	2160	995	22450	33675	47.44
13	12	2160	995	22450	33675	47.44
14	12	2160	995	22450	33675	47.44
15	12	2160	995	22450	33675	47.44
16	12	2160	995	22450	33675	47.44
17	12	2160	150	11500	33675	40.91
Subtotal Recept Load (kVA)		17.28		168.65		185.93
NEC Demand (kVA)		13.64		89.33		97.97
Total Office Load (kVA)						373.01

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NEC Receptacle Count - House and Office Space ONLY					
Floor	# Receptacles - House	Load (VA)	Approximate Office Load (VA)	NEC Factor	Total Load (kVA)
Bsmt	43	7740	0	0.519	4.01706
1	49	8820	0	0.519	4.57758
2	14	2520	0	0.519	1.30788
3	14	2520	0	0.519	1.30788
4	14	2520	0	0.519	1.30788
5	14	2520	0	0.519	1.30788
6	14	2520	0	0.519	1.30788
7	14	2520	0	0.519	1.30788
8	14	2520	0	0.519	1.30788
9	14	2520	0	0.519	1.30788
10	12	2160	22450	0.519	12.77259
11	12	2160	22450	0.519	12.77259
12	12	2160	22450	0.519	12.77259
13	12	2160	22450	0.519	12.77259
14	12	2160	22450	0.519	12.77259
15	12	2160	22450	0.519	12.77259
16	12	2160	22450	0.519	12.77259
17	12	2160	11500	0.519	7.08954
Subtotal Recept Load (kVA)		54.00			115.55535
NEC Demand (kVA)		32.00			62.78
Total Receptacle Load (kVA)					169.56
Total NEC Demand Recept Load (kVA)					89.78

NEC Receptacle Count - Parking and Retail ONLY				
Floor	# Receptacles - House	Approximation for Retail	Approximation for Parking (VA)	Total Load (VA)
Bsmt	3	0	540	540
1	4	11329.77	720	12049.77
2	4	0	720	720
3	4	0	720	720
4	4	0	720	720
5	4	0	720	720
6	4	0	720	720
7	4	0	720	720
8	4	0	720	720
9	5	0	900	900
10	1	0	180	180
Total Receptacle Load (kVA)				18.71
Total NEC Demand Recept Load (kVA)				14.35

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NEC Retail Receptacle Calculations					
Floor	Space	Area of Space	Display Window Length (ft)	NEC Factor	Load Approximation
1	Retail 1	1750	15	0.519	2465.25
	Retail 2	2325	15	0.519	2763.675
	Retail 3	2325	0	0.519	1206.675
	Retail 4	4080	0	0.519	2117.52
	Retail 5	5350	0	0.519	2776.65
Total Recept and Display Load (kVA)					11.33

NEC Retail Lighting Calculations					
Floor	Space	Area of Space	NEC Design Load	NEC Factor	Approximation
1	Retail 1	1750	2.5	1.25	5468.75
	Retail 2	2325	2.5	1.25	7265.625
	Retail 3	2325	2.5	1.25	7265.625
	Retail 4	4080	2.5	1.25	12750
	Retail 5	5350	2.5	1.25	16718.75
Total Recept and Display Load (kVA)					49.47

Load Criteria	Factor
Lighting (assume all continuous)	1.25
Motors	
First Motor	2.5
Remaining motors	1
Receptacles	0.519
Retail Load	3
Office Load	0.85
Condo Load	0.34

Lighting	Motors	Receptacles	
NEC	NEC		
		House Total	17299
		Office Total	168650
		Residential Total	45792
		Parking and Retail Total	18710
		TOTAL	250451
		NEC Demand	
		10kVA + 0.5(X-10kVA)	130225
			Factor = 0.5200
Condo			
NEC			
Retail		Office	
**Assume upsizing factor for two large restaurants, one spa, and two electronic boutiques.		**Assume tenant fitout area will have 15% floor area reduction for partitions, "dead space", etc.	

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Start Point	End Point	Length	Conductors	#	Neutrals	Conduit	Conductor Cost	Neutral Cost	Conduit Cost	TOTAL
Bus	Bus	401	2500	1						
P / HA	Lights B	247	#12	1		3/4"	\$ 89.91		\$ 881.79	\$ 971.70
	Lights 1	259	#12	1		3/4"	\$ 94.28		\$ 924.63	\$ 1,018.91
	Lights 2	280	#12	1		3/4"	\$ 101.92		\$ 999.60	\$ 1,101.52
	Lights 3	292	#12	1		3/4"	\$ 106.29		\$ 1,042.44	\$ 1,148.73
	Lights 4	302	#12	1		3/4"	\$ 109.93		\$ 1,078.14	\$ 1,188.07
	Lights 5	312	#12	1		3/4"	\$ 113.57		\$ 1,113.84	\$ 1,227.41
	Lights 6	323	#12	1		3/4"	\$ 117.57		\$ 1,153.11	\$ 1,270.68
	Lights 7	333	#12	1		3/4"	\$ 121.21		\$ 1,188.81	\$ 1,310.02
	Lights 8	343	#12	1		3/4"	\$ 124.85		\$ 1,224.51	\$ 1,349.36
	Lights 9	354	#12	1		3/4"	\$ 128.86		\$ 1,263.78	\$ 1,392.64
P / HB	Lights B	583	#12	1		3/4"	\$ 212.21		\$ 2,081.31	\$ 2,293.52
	Lights 1	579	#12	1		3/4"	\$ 210.76		\$ 2,067.03	\$ 2,277.79
	Lights 2	575	#12	1		3/4"	\$ 209.30		\$ 2,052.75	\$ 2,262.05
	Lights 3	575	#12	1		3/4"	\$ 209.30		\$ 2,052.75	\$ 2,262.05
P / HC	Lights 4	575	#12	1		3/4"	\$ 209.30		\$ 2,052.75	\$ 2,262.05
	Lights 5	574	#12	1		3/4"	\$ 208.94		\$ 2,049.18	\$ 2,258.12
	Lights 6	575	#12	1		3/4"	\$ 209.30		\$ 2,052.75	\$ 2,262.05
P / HD	Lights 7	575	#12	1		3/4"	\$ 209.30		\$ 2,052.75	\$ 2,262.05
	Lights 8	575	#12	1		3/4"	\$ 209.30		\$ 2,052.75	\$ 2,262.05
	Lights 9	574	#12	1		3/4"	\$ 208.94		\$ 2,049.18	\$ 2,258.12
HS/ HA	Elev 10	346	#4	3		1-1/4"	\$ 1,058.76		\$ 2,127.90	\$ 3,186.66
	Elev 11	362	#4	3		1-1/4"	\$ 1,107.72		\$ 2,226.30	\$ 3,334.02
	Elev 6	55	#4	3		1-1/4"	\$ 168.30		\$ 338.25	\$ 506.55
	Elev 7	48	#4	3		1-1/4"	\$ 146.88		\$ 295.20	\$ 442.08
HS / HB	CT-0.1	91	#4	3		1-1/4"	\$ 278.46		\$ 559.65	\$ 838.11
	CT0.2	103	#4	3		1-1/4"	\$ 315.18		\$ 633.45	\$ 948.63
	EFC-R.1	88	#1	3		1-1/2"	\$ 426.36		\$ 640.64	\$ 1,067.00
	F-R.1	151	#12	3		3/4"	\$ 164.89		\$ 539.07	\$ 703.96
	F-R.3	148	#8	3		3/4"	\$ 253.52		\$ 528.36	\$ 781.88
	F-R.4	145	#12	3		3/4"	\$ 158.34		\$ 517.65	\$ 675.99
	F-R.5	137	#12	3		3/4"	\$ 149.60		\$ 489.09	\$ 638.69
	Elev 1	131	#4	3		1-1/4"	\$ 400.86		\$ 805.65	\$ 1,206.51
	Elev 2	137	#4	3		1-1/4"	\$ 419.22		\$ 842.55	\$ 1,261.77
	Elev 3	142	#4	3		1-1/4"	\$ 434.52		\$ 873.30	\$ 1,307.82
	Elev 4	146	#4	3		1-1/4"	\$ 446.76		\$ 897.90	\$ 1,344.66
	Elev 5	150	#4	3		1-1/4"	\$ 459.00		\$ 922.50	\$ 1,381.50
EMDP	HS / HB	313	500	4	#3	3-1/2"	\$ 7,812.48	\$ 359.95	\$ 6,995.55	\$ 15,167.98
	HE / HD	262	#8	4	#10	1"	\$ 598.41	\$ 112.40	\$ 1,231.40	\$ 1,942.21
	HS / HA	209	4/0	4	#4	2-1/2"	\$ 2,750.44	\$ 213.18	\$ 2,946.90	\$ 5,910.52
	HE / HC	178	500	4	#3	3-1/2"	\$ 4,442.88	\$ 204.70	\$ 3,978.30	\$ 8,625.88
	HE / HB	146	#8	4	#10	1"	\$ 333.46	\$ 62.63	\$ 686.20	\$ 1,082.30
	HE / HA	85	#8	4	#10	1"	\$ 194.14	\$ 36.47	\$ 399.50	\$ 630.11
RTDP	Tenants	407	3/0	4	#6	2-1/2"	\$ 4,493.28	\$ 311.36	\$ 5,738.70	\$ 10,543.34
Main	P / HA	394	#1	4	#6	2"	\$ 2,545.24	\$ 301.41	\$ 3,431.74	\$ 6,278.39
C / LC	Condos 9	180	#3	4	#8	1-1/4"	\$ 828.00	\$ 102.78	\$ 1,107.00	\$ 2,037.78
	Condos 8	172	#3	4	#8	1-1/4"	\$ 791.20	\$ 98.21	\$ 1,057.80	\$ 1,947.21
	Condos 7	208	#3	4	#8	1-1/4"	\$ 956.80	\$ 118.77	\$ 1,279.20	\$ 2,354.77
C / LB	Condos 6	208	#3	4	#8	1-1/4"	\$ 956.80	\$ 118.77	\$ 1,279.20	\$ 2,354.77
	Condos 5	172	#3	4	#8	1-1/4"	\$ 791.20	\$ 98.21	\$ 1,057.80	\$ 1,947.21
	Condos 4	180	#3	4	#8	1-1/4"	\$ 828.00	\$ 102.78	\$ 1,107.00	\$ 2,037.78
C / LA	Condos 3	208	#3	4	#8	1-1/4"	\$ 956.80	\$ 118.77	\$ 1,279.20	\$ 2,354.77
	Condos 2	200	#3	4	#8	1-1/4"	\$ 920.00	\$ 114.20	\$ 1,230.00	\$ 2,264.20

CONDUCTOR TOTAL \$ 121,743.91

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Bus Duct	Size/Rating 3000	Length 398	Pow-R-Way III	Bus Cost \$ 447,153.00		
						TOTAL BUS \$ 447,153.00
Panels	Size/Rating	Breaker		Panel Cost	Breaker Cost	
P / HA	100	100	PRL2a-100	\$ 1,242.00	\$ 637.00	
P / LA	100	60	PRL1a-100	\$ 679.00	\$ 546.00	
P / HB	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00	
P / LB	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00	
P / HC	100	100	PRL2a-100	\$ 1,242.00	\$ 637.00	
P / LC	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00	
P / HD	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00	
P / LD	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00	
C / LA	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00	
C / LB	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00	
C / LC	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00	
H / HA	400	400	PRL2a-400	\$ 1,632.00	\$ 2,360.00	
H / LA	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00	
H / HB	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00	
H / LB	60	60	PRL1a-100	\$ 679.00	\$ 546.00	
H / HC	60	60	PRL2a-100	\$ 1,242.00	\$ 546.00	
H / LC	60	60	PRL1a-100	\$ 679.00	\$ 546.00	
H / HD	60	60	PRL2a-100	\$ 1,242.00	\$ 546.00	
H / LD	60	60	PRL1a-100	\$ 679.00	\$ 546.00	
H / HE	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00	
H / LE	60	60	PRL1a-100	\$ 679.00	\$ 546.00	
HE / HA	60	60	PRL2a-100	\$ 1,242.00	\$ 546.00	
HE / LA	60	60	PRL1a-100	\$ 679.00	\$ 546.00	
HE / HB	60	60	PRL2a-100	\$ 1,242.00	\$ 546.00	
HE / HC	60	60	PRL2a-100	\$ 1,242.00	\$ 546.00	
HE / LC3	400	400	PRL1a-400	\$ 1,310.00	\$ 2,360.00	
HE / LC2	400	400	PRL1a-400	\$ 1,310.00	\$ 2,360.00	
HE / LC	600	600	PRL3a-600	\$ 2,298.00	\$ 3,370.00	
HE / HD	60	60	PRL2a-100	\$ 1,242.00	\$ 546.00	
HE / LD	60	60	PRL1a-100	\$ 679.00	\$ 546.00	
HS / HA	400	225	PRL2a-400	\$ 1,632.00	\$ 1,367.00	
HS / HB	400	400	PRL2a-400	\$ 1,632.00	\$ 2,360.00	
HS / LB	60	60	PRL1a-100	\$ 679.00	\$ 546.00	
MAIN	4000	4000		\$ -	\$ -	
BUS	3200	3200		\$ -	\$ -	
EM / DP	800	800	PRL3a-800	\$ 3,676.00	\$ 4,370.00	
RT / DP	600	600	PRL3a-600	\$ 2,298.00	\$ 3,370.00	
						TOTAL PANEL \$ 88,306.00
Switchboards	Board	Breaker		Board Cost	Breaker Cost	
NONE				\$ -	\$ -	
						TOTAL SWBD \$ -
ATSs	Size			ATS Cost		
ATS1	60			\$ 3,072.00		
ATS2	60			\$ 3,072.00		
ATS3	60			\$ 3,072.00		
ATS4	60			\$ 3,072.00		
ATS5	60			\$ 3,072.00		
ATS6	225			\$ 4,900.00		
ATS7	60			\$ 3,072.00		
ATS8	600			\$ 10,200.00		
						TOTAL ATS \$ 33,532.00
Main Dist	Board	Breaker		Board Cost	Breaker Cost	
Main	4000	4000		\$ 7,425.00		
						TOTAL MAIN \$ 7,425.00

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Xfmrs	Size		Xfmr Cost	
THS / LB	15	H48M28T15A	\$ 2,665.00	
TH / LE	15	H48M28T15A	\$ 2,665.00	
THE / LD	15	H48M28T15A	\$ 2,665.00	
TH / LD	15	H48M28T15A	\$ 2,665.00	
TH / LC	15	H48M28T15A	\$ 2,665.00	
TP / LD	75	H48M28T75A	\$ 6,280.00	
THE / LC	225	H48M28T22A	\$ 17,130.00	
TP / LC	45	H48M28T45A	\$ 4,445.00	
TP / LB	75	H48M28T75A	\$ 6,280.00	
TP / LA	15	H48M28T15A	\$ 2,665.00	
TH / LA	45	H48M28T45A	\$ 4,445.00	
TH / LB	15	H48M28T15A	\$ 2,665.00	
THE / LA	15	H48M28T15A	\$ 2,665.00	
Medium Voltage	2000/2660		\$ 90,986.00	
Medium Voltage	2000/2660		\$ 90,986.00	
				TOTAL XFMR \$ 241,872.00
Emerg Generator	Size kW		Gen Cost	
C18 600kW	600	Caterpillar	\$ 114,850.00	GENERATOR TOTAL \$ 114,850.00

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Bus Duct	Bus	Length		Bus Cost	
	2500	398	Pow-R-Way III	\$ 359,991.00	
	1200	186	Pow-R-Way III	\$ 86,304.00	
					TOTAL BUS \$ 446,295.00

	Panel	Breaker		Panel Cost	Breaker Cost
C/MSB	2000	2000		\$ -	\$ -
C/LA	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00
C/LB	100	100	PRL1a-100	\$ 679.00	\$ 637.00
CE/LB	50	60	PRL1a-100	\$ 679.00	\$ 546.00
P/HA	600	600	PRL3a-600	\$ 2,298.00	\$ 3,370.00
P/HB	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
P/LC	100	100	PRL1a-100	\$ 679.00	\$ 637.00
MAIN SWBD	3000	3000		\$ -	\$ -
H/HA	200	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
HE/LA	50	60	PRL1a-100	\$ 679.00	\$ 546.00
HS/HA	600	600	PRL3a-600	\$ 2,298.00	\$ 3,370.00
H/LB	100	100	PRL1a-100	\$ 679.00	\$ 637.00
HE/HB	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
H/LD	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00
H/HE	250	400	PRL2a-400	\$ 1,632.00	\$ 2,360.00
RT/DP	1000	1000	PRL4-1200	\$ 3,016.00	\$ 5,425.00
CS/HA	150	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
EM/DP	600	600	PRL3a-600	\$ 2,298.00	\$ 3,370.00
CE/LA	50	60	PRL1a-100	\$ 679.00	\$ 546.00
P/LB	225	225	PRL1a-225	\$ 834.00	\$ 1,367.00
PE/HA	70	60	PRL2a-100	\$ 1,242.00	\$ 546.00
P/HC	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
H/LA	200	225	PRL1a-225	\$ 834.00	\$ 1,367.00
H/HB	400	400	PRL2a-400	\$ 1,632.00	\$ 2,360.00
HE/HA	200	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
H/HC	200	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
H/LC	100	100	PRL1a-100	\$ 679.00	\$ 637.00
H/HD	225	225	PRL2a-225	\$ 1,360.00	\$ 1,367.00
HE/LB	20	60	PRL1a-100	\$ 679.00	\$ 546.00
HS/HB	600	600	PRL3a-600	\$ 2,298.00	\$ 3,370.00
HS/LA	20	60	PRL1a-100	\$ 679.00	\$ 546.00
OFFICE BUS DUCT	2500	2500		\$ -	\$ -
CONDO BUS DUCT	1200	1200		\$ -	\$ -
					TOTAL PANEL \$ 82,894.00

Switchboards	Board	Breaker		Board Cost	Breaker Cost
Condo	2000	1200		\$ 4,650.00	\$ 8,960.00
		800			\$ 7,205.00
					TOTAL SWBD \$ 20,815.00

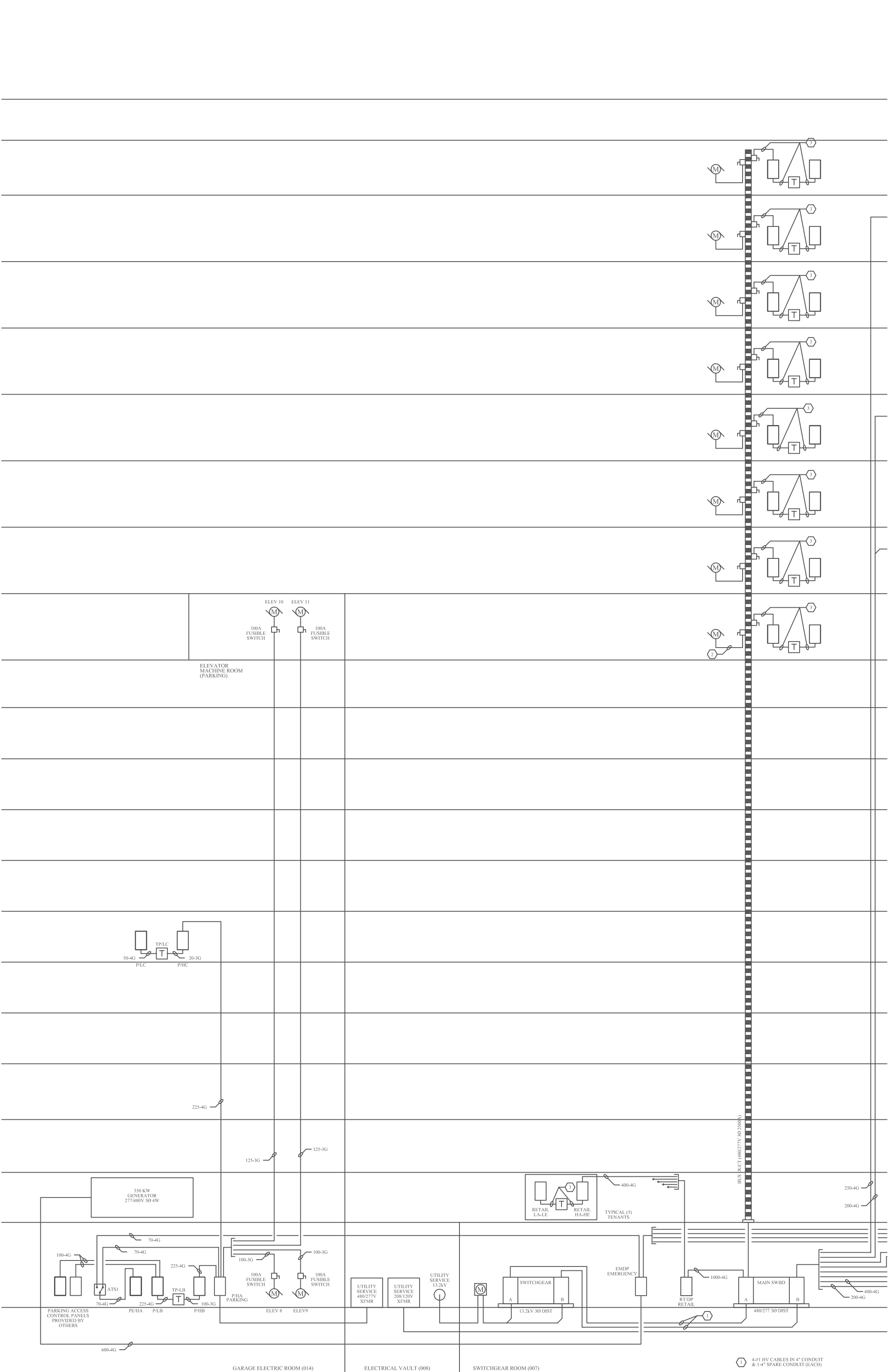
ATSs	Size		ATS Cost	
ATS1	225		\$ 4,900.00	
ATS2	600		\$ 10,200.00	
ATS3	100		\$ 3,151.00	
ATS4	225		\$ 4,900.00	
ATS5	100		\$ 3,151.00	
				TOTAL ATS \$ 26,302.00

Main Dist	Board	Breaker		Board Cost	Breaker Cost
Main	3000	3000		\$ 6,150.00	
					TOTAL MAIN \$ 6,150.00

Cathedral Place

Milwaukee, WI
 Steven Puchek – Senior Thesis Project

Xfmr	Size		Xfmr Cost	
T / LA	75	V48M28T75CU	\$ 6,320.00	
T / LB	30	V48M28T30CU	\$ 3,425.00	
T / LC	30	V48M28T30CU	\$ 3,425.00	
T / LD	30	V48M28T30CU	\$ 3,425.00	
TE / LA	15	V48M28T15CU	\$ 2,875.00	
TE / LB	15	V48M28T15CU	\$ 2,875.00	
TS / LA	15	V48M28T15CU	\$ 2,875.00	
TP / LB	75	V48M28T75CU	\$ 6,320.00	
TP / LC	15	V48M28T15CU	\$ 2,875.00	
TPE / LA	15	V48M28T15CU	\$ 2,875.00	
TCE / LA-B	15	V48M28T15CU	\$ 2,875.00	
TCS / HA	112.5	V29M47T12N	\$ 9,280.00	
Medium Voltage	3000		\$ 78,570.00	
Medium Voltage	112.5		\$ 78,570.00	
				TOTAL XFMR \$ 206,585.00
Emerg Generator	Size kW		Cost	
C15 350kW	350 Caterpillar		\$ 76,550.00	GENERATOR TOTAL \$ 76,550.00

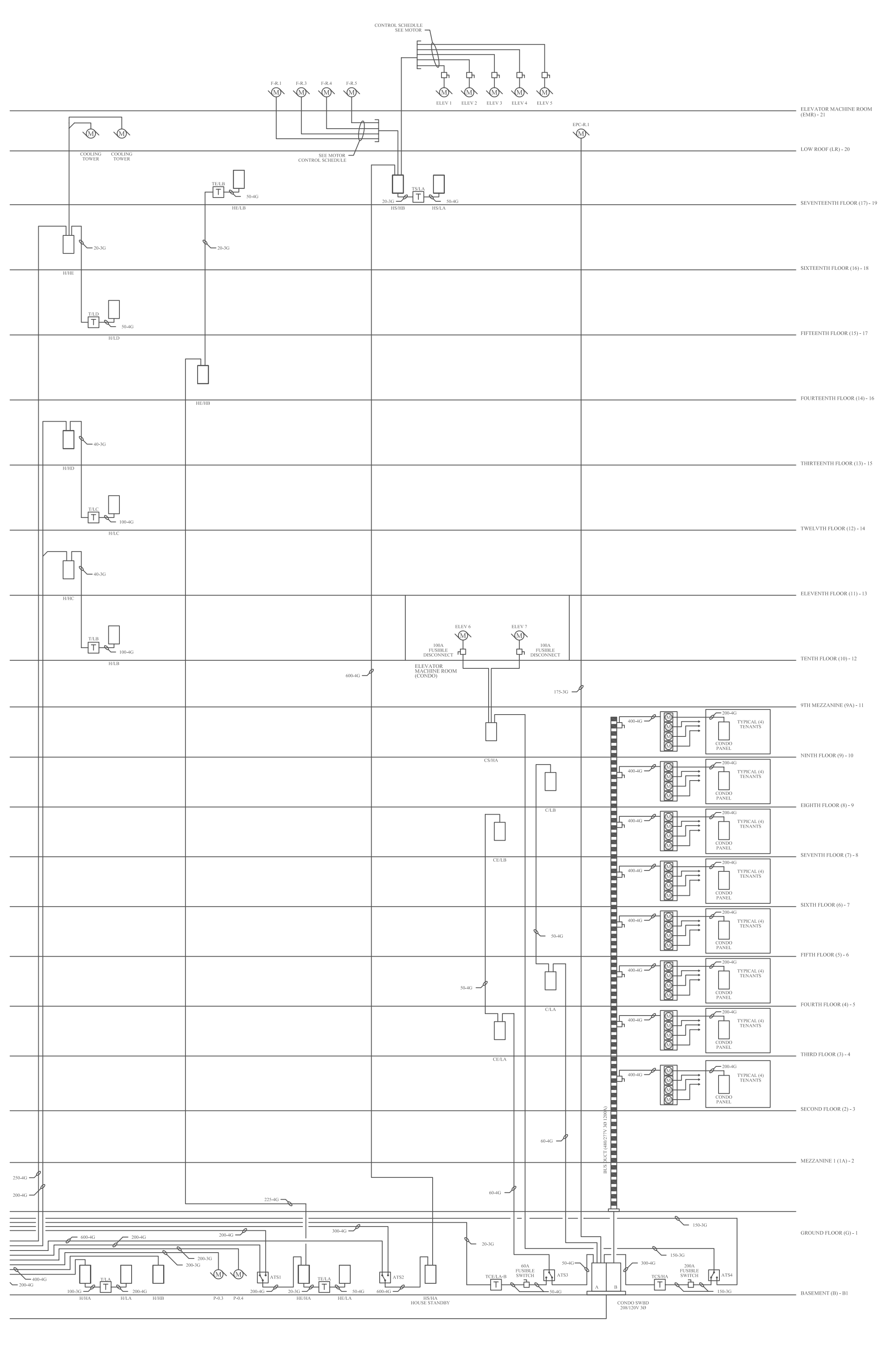


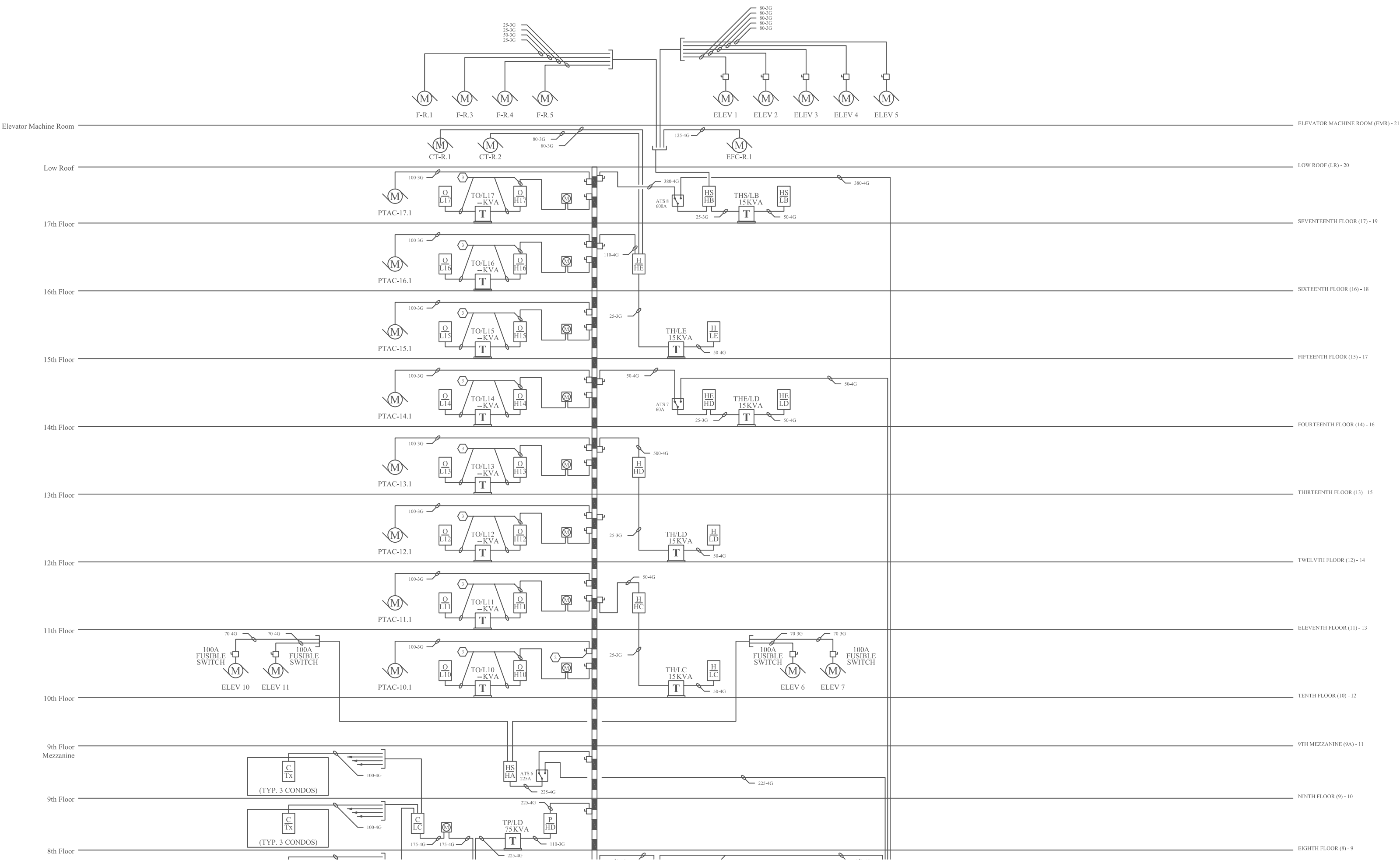
GARAGE ELECTRIC ROOM (014)

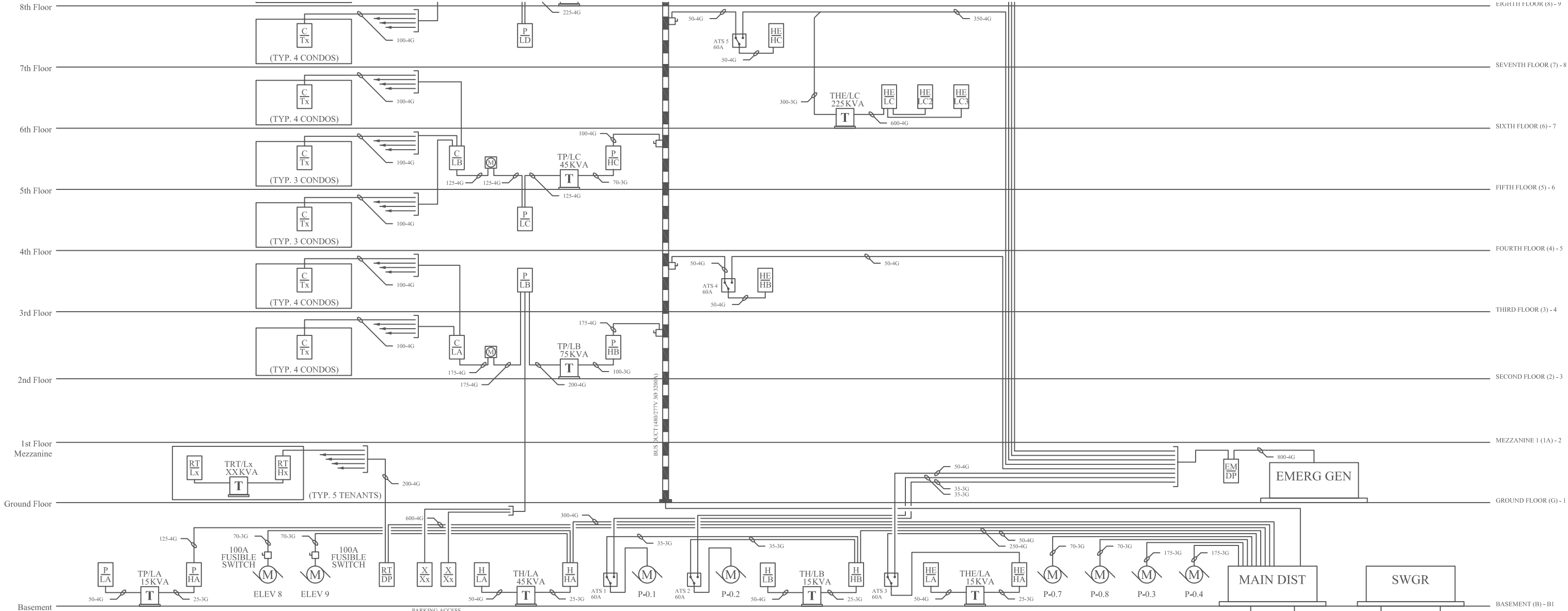
ELECTRICAL VAULT (008)

SWITCHGEAR ROOM (007)

① 4-#1 HV CABLES IN 4" CONDUIT & 1-4" SPARE CONDUIT (EACH)
 — 200A FUSIBLE BUS DUCT SWITCH



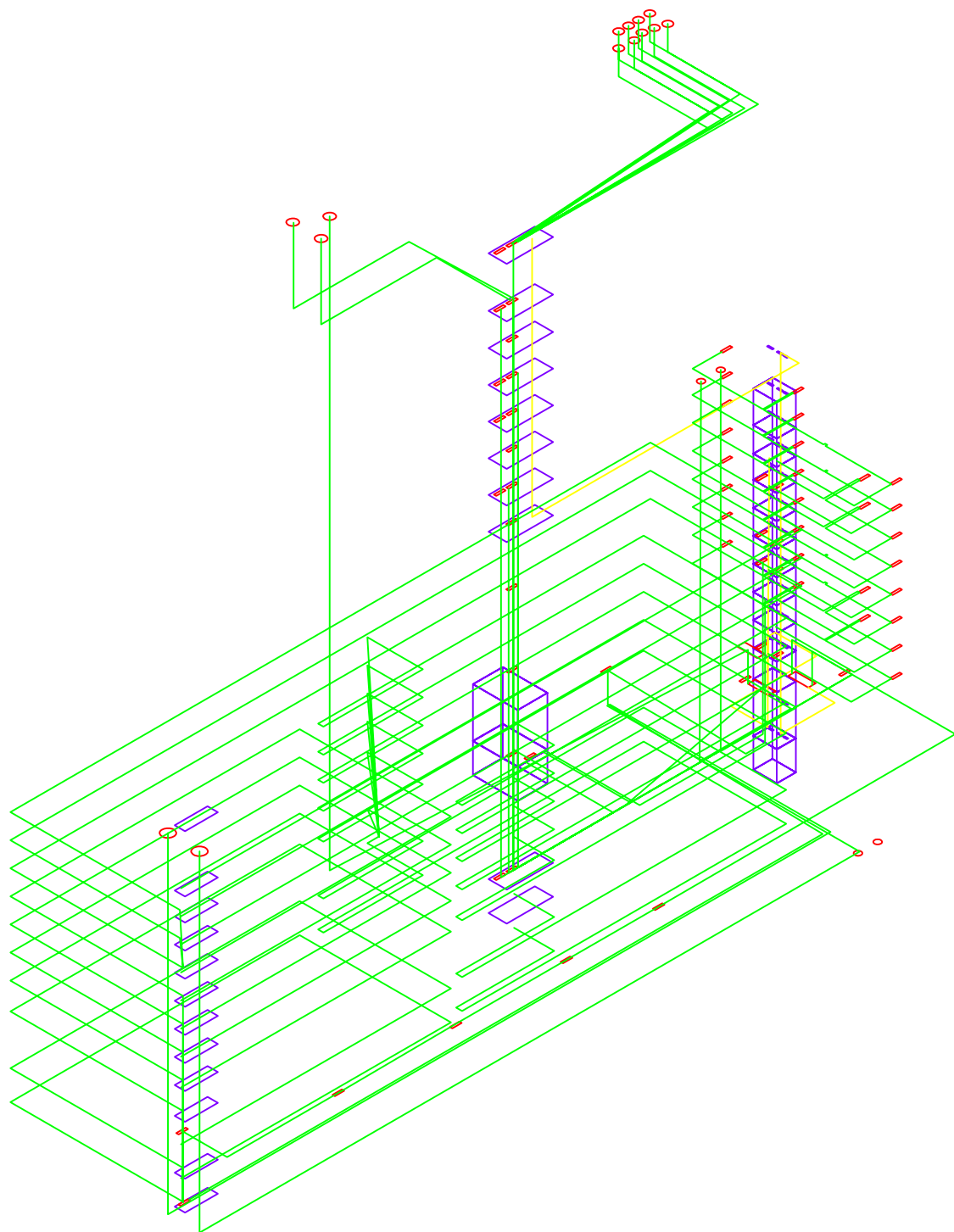
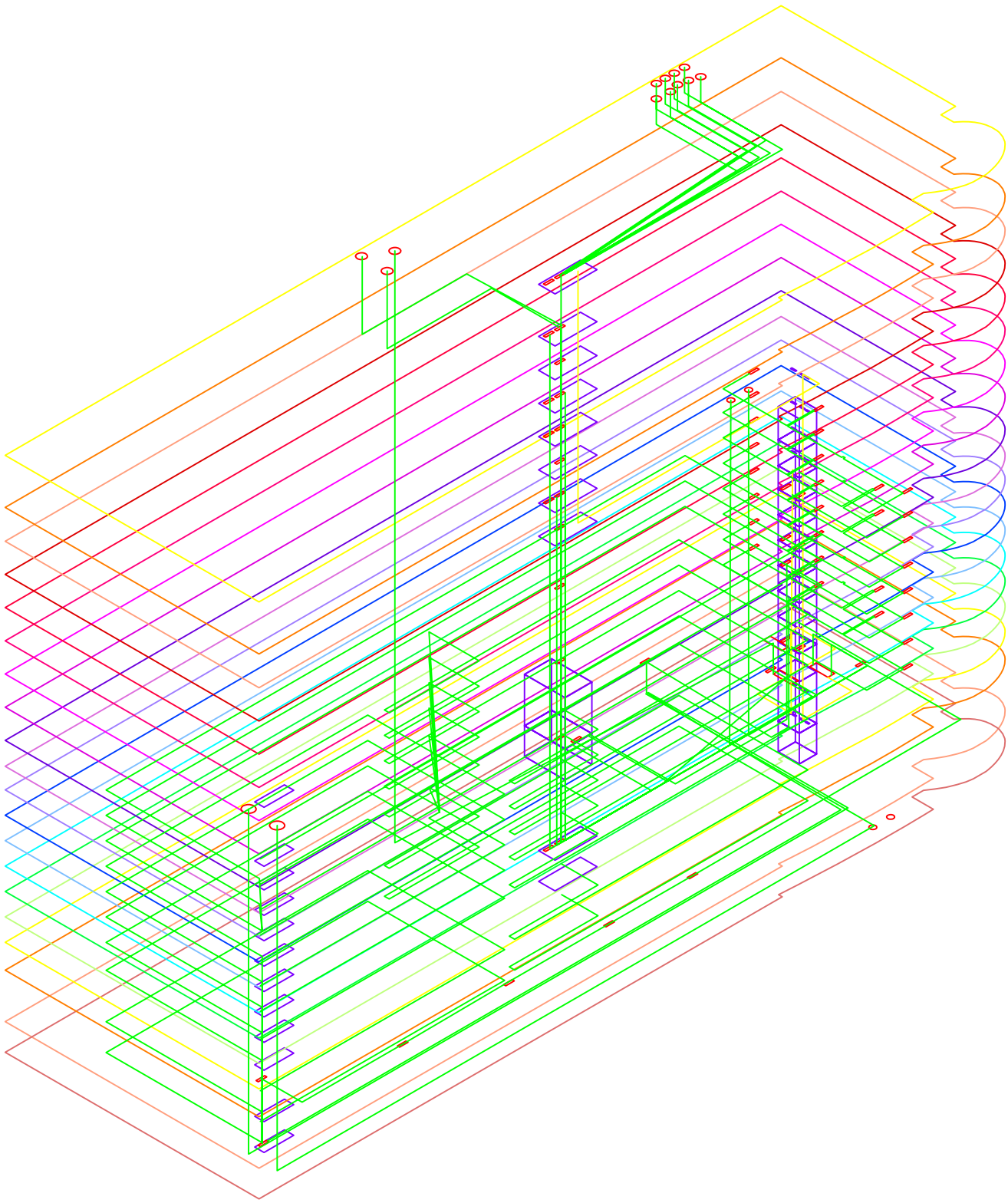


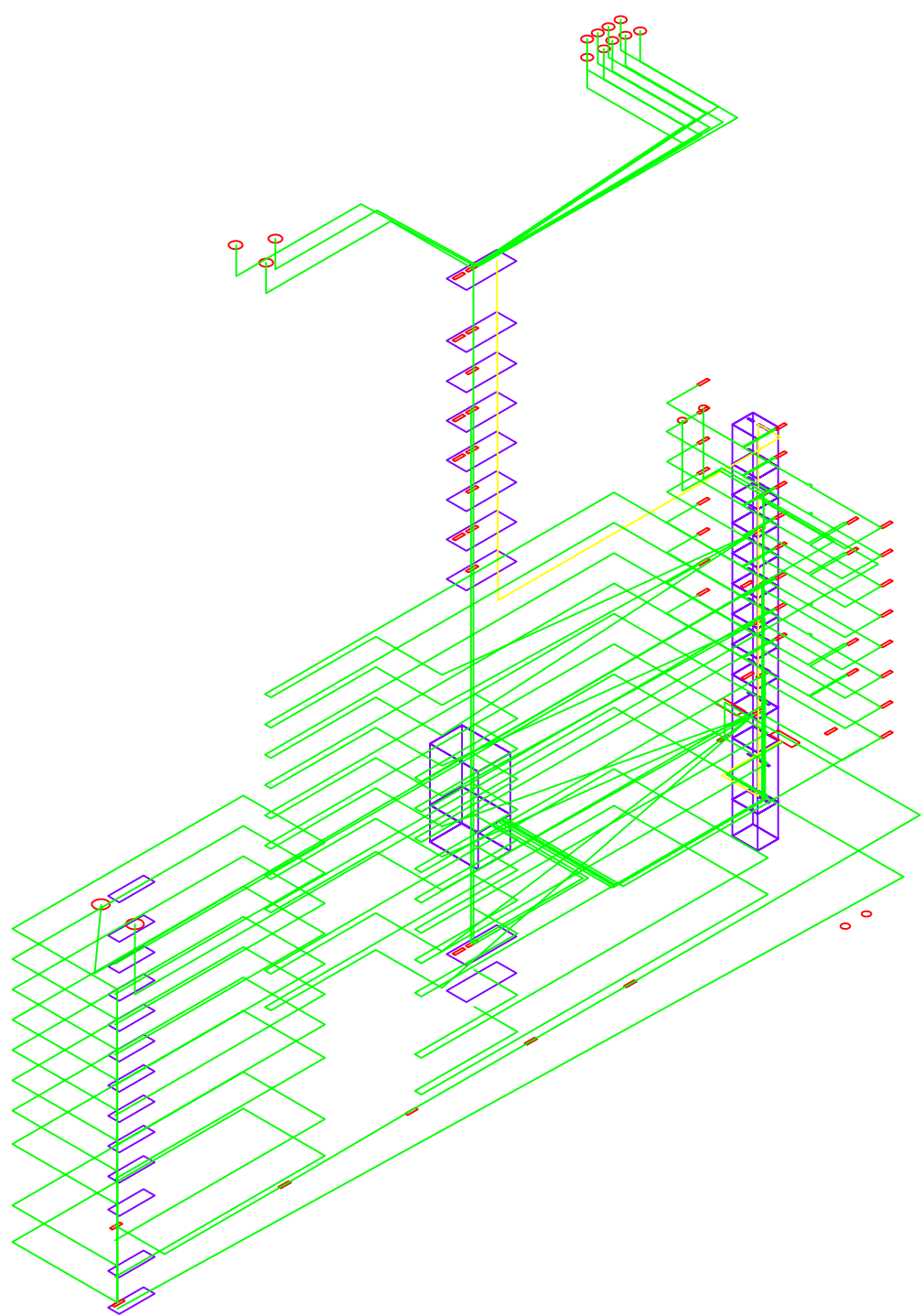
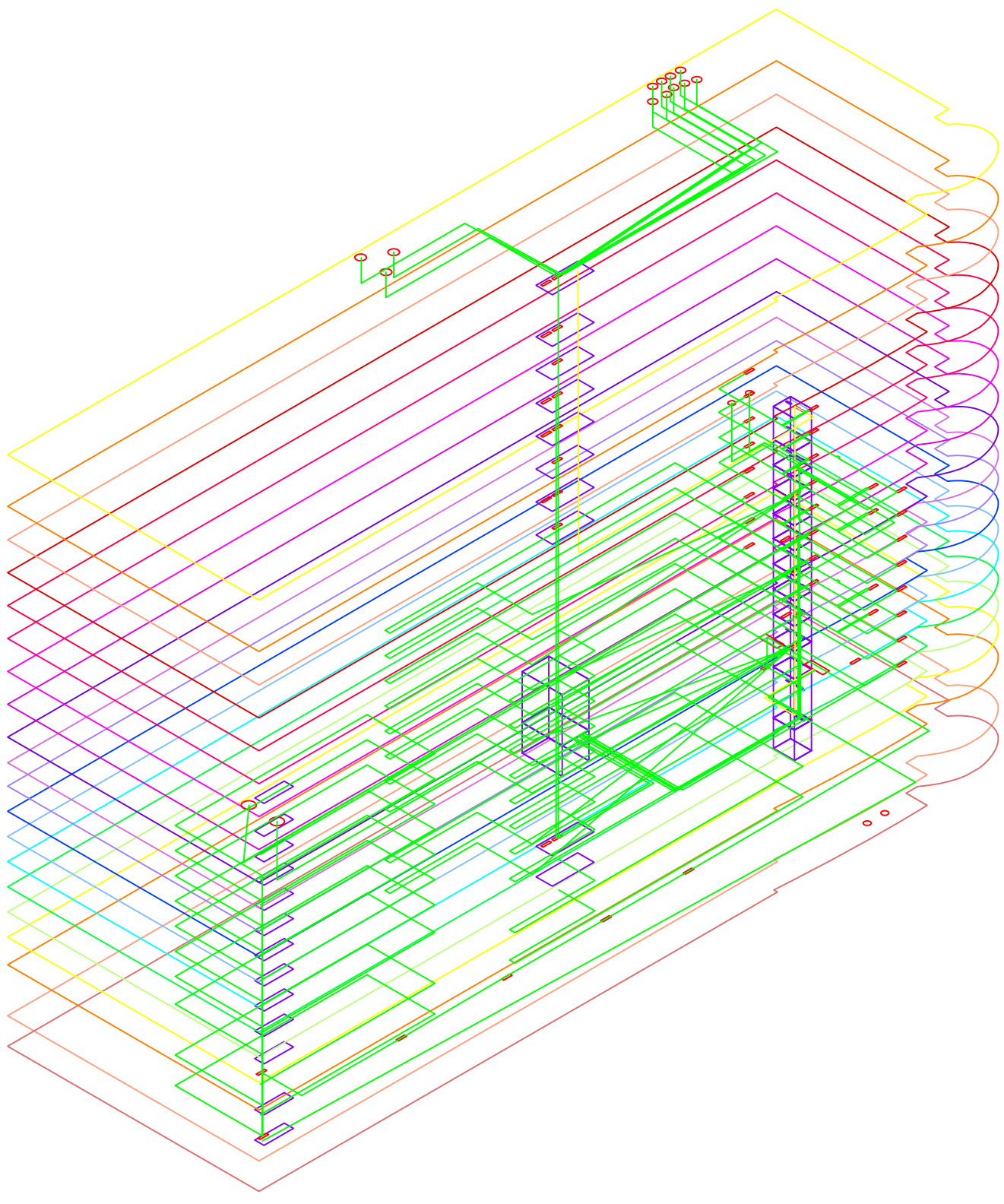


PARKING ACCESS CONTROL PANELS PROVIDED BY OTHERS

- ① 4-#1 HV CABLES IN 4" CONDUIT & 1-4" SPARE CONDUIT (EACH)
- ② 200A FUSIBLE BUS DUCT SWITCH SIZE FUSE AND FEEDER AS REQUIRED BY NAMEPLATE DATA (TYPICAL OF 8)
- ③ BUS DUCT SWITCH, FUSE, AND FEEDER SIZING BY TENANT AS REQUIRED

①





Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details	
P / LC	1	Façade Lattice Lighting	0.60	1.25	0.75	6.25	20	1	0.75						Voltage 208 Breaker 125 Bus 225 A.I.C 65k	/120V, 3P
	2	Façade Curve Lighting 5	0.50	1.25	0.63	5.20	20	1		0.63						
	3	Façade Curve Lighting 6	0.50	1.25	0.63	5.20	20	1			0.63					
	4	Façade Curve Lighting 7	0.50	1.25	0.63	5.20	20	1	0.63							
	5	T-C / LB	31.30	1.00	31.30	37.65	0	3			10.43					
	6	T-C / LB	31.30	1.00	31.30	37.65	0	3				10.43				
	7	T-C / LB	31.30	1.00	31.30	37.65	0	3	10.43							
	8	SPARE	0.00	1.00	0.00	0.00	20	1			0.00					
	9	SPARE	0.00	1.00	0.00	0.00	20	1				0.00				
	10	SPARE	0.00	1.00	0.00	0.00	20	1	0.00							
	11	COLLATERAL	0.50	1.00	0.50	4.16	20	1			0.50					
12-42	SPACE	0.00	1.00	0.00	0.00	-	1				0.00					
									11.81	11.56	11.06		Board			
												kVA	Size	Breaker		
T-P / LC												34.429	95.56468	125		

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details	
P / HD	1	ACU-9.1	12.90	2.50	32.25	38.79	50	2	16.13					Voltage 480 Breaker 200 Bus 225 A.I.C 65k	/277V, 3P	
	2	ACU-9.1	12.90	2.50	32.25	38.79	50	2		16.13						
	3	ACU-9.1	12.90	2.50	32.25	38.79	50	2			16.13					
	4	ECUH-9.2	4.00	1.00	4.00	4.81	15	3	1.33							
	4	ECUH-9.2	4.00	1.00	4.00	4.81	15	3		1.33						
	4	ECUH-9.2	4.00	1.00	4.00	4.81	15	3				1.33				
	5	ECUH-9.3	4.00	1.00	4.00	4.81	15	3	1.33							
	5	ECUH-9.3	4.00	1.00	4.00	4.81	15	3		1.33						
	5	ECUH-9.3	4.00	1.00	4.00	4.81	15	3				1.33				
	6	ECUH-7.2	4.00	1.00	4.00	4.81	20	3	1.33							
	6	ECUH-7.2	4.00	1.00	4.00	4.81	20	3		1.33						
	6	ECUH-7.2	4.00	1.00	4.00	4.81	20	3				1.33				
	7	ECUH-8.2	4.00	1.00	4.00	4.81	20	3	1.33							
	7	ECUH-8.2	4.00	1.00	4.00	4.81	20	3		1.33						
	8	ECUH-8.2	4.00	1.00	4.00	4.81	20	3				1.33				
	8	ECUH-8.2	4.00	1.00	4.00	4.81	20	3	1.33							
	9	ECUH-9.4	4.00	1.00	4.00	4.81	20	3		1.33						
	9	ECUH-9.4	4.00	1.00	4.00	4.81	20	3				1.33				
10	T-P / LD	62.14	1.00	62.14	74.74	0	3	20.71								
11	T-P / LD	62.14	1.00	62.14	74.74	0	3		20.71							
12	T-P / LD	62.14	1.00	62.14	74.74	0	3				20.71					
13	Garage Lighting N-8	3.82	1.25	4.78	17.23	30	1	4.78								
14	Garage Lighting N-9	3.82	1.25	4.78	17.23	30	1		4.78							
15	SPARE	0.00	1.00	0.00	0.00	20	1				0.00					
16	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
17	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
18	COLLATERAL	0.50	1.00	0.50	1.80	20	1				0.50					
19-42	SPACE	0.00	1.00	0.00	0.00	-	1	0.00								
									48.28	48.28	44.00		Board			
												kVA	Size	Breaker		
T-P / HD												140.56	169.0709	200		

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details	
P / LD	1	RTU-10.1	9.90	2.50	24.75	68.70	35	3	8.25					Voltage 208 Breaker 225 Bus 225 A.I.C 65k	/120V, 3P	
	2	RTU-10.1	9.90	2.50	24.75	68.70	35	3		8.25						
	3	RTU-10.1	9.90	2.50	24.75	68.70	35	3			8.25					
	4	UH-9.1	0.04	1.00	0.04	0.31	20	1	0.04							
	4	UH-9.2	0.04	1.00	0.04	0.31	20	1		0.04						
	4	UH-9.3	0.04	1.00	0.04	0.31	20	1			0.04					
	4	UH-9.4	0.04	1.00	0.04	0.31	20	1	0.04							
	4	UH-9.5	0.04	1.00	0.04	0.31	20	1		0.04						
	4	UH-9.6	0.04	1.00	0.04	0.31	20	1				0.04				
	4	UH-9.8	0.04	1.00	0.04	0.31	20	1	0.04							
	4	UH-9.9	0.04	1.00	0.04	0.31	20	1		0.04						
	4	UH-9.10	0.04	1.00	0.04	0.31	20	1				0.04				
	5	T-C / LC	32.55	1.00	32.55	39.15	0	3			10.85					
	6	T-C / LC	32.55	1.00	32.55	39.15	0	3				10.85				
	7	T-C / LC	32.55	1.00	32.55	39.15	0	3	10.85							
	8	Façade Lattice Lighting	0.60	1.25	0.75	6.25	20	1			0.75					
	9	Façade Crown Lighting	0.60	1.25	0.75	6.25	20	1				0.75				
	10	Façade Curve Lighting 8	0.50	1.25	0.63	5.20	20	1	0.63							
11	Façade Curve Lighting 9	0.50	1.25	0.63	5.20	20	1			0.63						
12	Façade Curve Lighting 9M	0.50	1.25	0.63	5.20	20	1				0.63					
13	Façade Curve Lighting 10	0.50	1.25	0.63	5.20	20	1	0.63								
14	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
15	SPARE	0.00	1.00	0.00	0.00	20	1				0.00					
16	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
17	COLLATERAL	0.50	1.00	0.50	4.16	20	1			0.50						
18-42	SPACE	0.00	1.00	0.00	0.00	-	1				0.00					
									20.46	21.09	20.59		Board			
												kVA	Size	Breaker		
T-P / LD												62.138	172.4776	225		

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
C / LC	1	AC-10.1	0.56	2.50	1.40	3.88	15	3	0.47						Voltage 208/120V, 3P Breaker 125 Bus 225 A.I.C 65k		
	2	AC-10.1	0.56	2.50	1.40	3.88	15	3		0.47							
	3	AC-10.1	0.56	2.50	1.40	3.88	15	3			0.47						
	4	F-7.1	0.13	1.00	0.13	1.06	20	1	0.13								
	4	F-8.1	0.13	1.00	0.13	1.06	20	1		0.13							
	4	F-9.1	0.13	1.00	0.13	1.06	20	1			0.13						
	5	Condos Level 7	25.35	0.34	8.62	23.93	30	3		2.87							
	6	Condos Level 7	25.35	0.34	8.62	23.93	30	3			2.87						
	7	Condos Level 7	25.35	0.34	8.62	23.93	30	3	2.87								
	8	Condos Level 8	25.35	0.34	8.62	23.93	30	3		2.87							
	9	Condos Level 8	25.35	0.34	8.62	23.93	30	3			2.87						
	10	Condos Level 8	25.35	0.34	8.62	23.93	30	3	2.87								
	11	Condos Level 9	26.80	0.34	9.11	25.29	40	3		3.04							
	12	Condos Level 9	26.80	0.34	9.11	25.29	40	3			3.04						
	13	Condos Level 9	26.80	0.34	9.11	25.29	40	3	3.04								
	14	Condo Recept Level 7	0.65	1.00	0.65	5.45	20	1		0.65							
	15	Condo Recept Level 7	0.65	1.00	0.65	5.45	20	1			0.65						
	16	Condo Recept Level 8	0.65	1.00	0.65	5.45	20	1	0.65								
	17	Condo Recept Level 8	0.65	1.00	0.65	5.45	20	1		0.65							
	18	Condo Recept Level 9	0.65	1.00	0.65	5.45	20	1			0.65						
	19	Condo Recept Level 9	0.65	1.00	0.65	5.45	20	1	0.65								
	20	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	21	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	22	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
	23	COLLATERAL	0.50	1.00	0.50	4.16	20	1		0.50							
	24-42	SPACE	0.00	1.00	0.00	0.00	-	1			0.00						
									10.68	11.18	10.68				Board		
														kVA	Size	Breaker	
T-C / LC														32.552	90.3559	125	

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
H / HA	1	F-0.2	1.49	1.00	1.49	1.79	15	3	0.50						Voltage 480/277V, 3P Breaker 300 Bus 400 A.I.C 65k		
	2	F-0.2	1.49	1.00	1.49	1.79	15	3		0.50							
	3	F-0.2	1.49	1.00	1.49	1.79	15	3			0.50						
	4	AHU-1.1	2.24	1.00	2.24	2.69	15	3	0.75								
	5	AHU-1.1	2.24	1.00	2.24	2.69	15	3		0.75							
	6	AHU-1.1	2.24	1.00	2.24	2.69	15	3			0.75						
	7	ACCU-1.1	18.40	1.00	18.40	22.13	30	3	6.13								
	8	ACCU-1.1	18.40	1.00	18.40	22.13	30	3		6.13							
	9	ACCU-1.1	18.40	1.00	18.40	22.13	30	3			6.13						
	10	ACCU-1.2	18.40	1.00	18.40	22.13	30	3	6.13								
	11	ACCU-1.2	18.40	1.00	18.40	22.13	30	3		6.13							
	12	ACCU-1.2	18.40	1.00	18.40	22.13	30	3			6.13						
	13	WSHP-1.1	11.50	1.00	11.50	13.83	20	3	3.83								
	14	WSHP-1.1	11.50	1.00	11.50	13.83	20	3		3.83							
	15	WSHP-1.1	11.50	1.00	11.50	13.83	20	3			3.83						
	16	WSHP-1.9	11.50	1.00	11.50	13.83	20	3	3.83								
	17	WSHP-1.9	11.50	1.00	11.50	13.83	20	3		3.83							
	18	WSHP-1.9	11.50	1.00	11.50	13.83	20	3			3.83						
	19	Trash Compactor	2.24	1.00	2.24	2.69	20	3	0.75								
	20	Trash Compactor	2.24	1.00	2.24	2.69	20	3		0.75							
	21	Trash Compactor	2.24	1.00	2.24	2.69	20	3			0.75						
	22	Elevator 8	26.11	2.50	65.28	78.51	90	3	21.76								
	23	Elevator 8	26.11	2.50	65.28	78.51	90	3		21.76							
	24	Elevator 8	26.11	2.50	65.28	78.51	90	3			21.76						
	25	Elevator 9	26.11	1.00	26.11	31.41	90	3	8.70								
	26	Elevator 9	26.11	1.00	26.11	31.41	90	3		8.70							
	27	Elevator 9	26.11	1.00	26.11	31.41	90	3			8.70						
	28	T-H / LA	33.10	1.00	33.10	39.82	0	3	11.03								
	29	T-H / LA	33.10	1.00	33.10	39.82	0	3		11.03							
	30	T-H / LA	33.10	1.00	33.10	39.82	0	3			11.03						
	31	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
	32	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	33	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	34	COLLATERAL	0.50	1.00	0.50	1.80	20	1	0.50								
	35-42	SPACE	0.00	1.00	0.00	0.00	-	1			0.00						
									63.92	63.42	63.42				Board		
														kVA	Size	Breaker	
T-H / HA														190.76	229.4442	300	

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
H / LB	1	SPARE	0.00	1.00	0.00	0.00	20	1	0.00						Voltage	208	/120V, 3P
	2	SPARE	0.00	1.00	0.00	0.00	20	1		0.00					Breaker	50	
	3	SPARE	0.00	1.00	0.00	0.00	20	1			0.00				Bus	60	
	4	COLLATERAL	0.50	1.00	0.50	4.16	20	1	0.50						A.I.C	65k	
	5-42	SPACE	0.00	1.00	0.00	0.00	-	1		0.00							
									0.50	0.00	0.00				Board		
															kVA	Size	Breaker
T-H / LB															0.5	1.387861	50

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
H / HC	1	T-H / LC	0.94	1.00	0.94	1.14	0	3	0.31						Voltage	480	/277V, 3P
	2	T-H / LC	0.94	1.00	0.94	1.14	0	3		0.31					Breaker	50	
	3	T-H / LC	0.94	1.00	0.94	1.14	0	3			0.31				Bus	60	
	4	SPARE	0.00	1.00	0.00	0.00	20	1	0.00						A.I.C	65k	
	5	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	6	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	7	COLLATERAL	0.50	1.00	0.50	1.80	20	1	0.50								
	8-42	SPACE	0.00	1.00	0.00	0.00	-	1		0.00							
									0.81	0.31	0.31				Board		
															kVA	Size	Breaker
T-H / HC															1.4439	1.736706	50

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
H / LC	1	F-10.1	0.13	2.50	0.32	2.64	20	1	0.32						Voltage	208	/120V, 3P
	2	F-11.1	0.13	1.00	0.13	1.06	20	1		0.13					Breaker	50	
	3	SPARE	0.00	1.00	0.00	0.00	20	1			0.00				Bus	60	
	4	SPARE	0.00	1.00	0.00	0.00	20	1	0.00						A.I.C	65k	
	5	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	6	COLLATERAL	0.50	1.00	0.50	4.16	20	1			0.50						
	7-42	SPACE	0.00	1.00	0.00	0.00	-	1	0.00								
									0.32	0.13	0.50				Board		
															kVA	Size	Breaker
T-H / LC															0.9439	2.619921	50

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
H / HD	1	T-H / LD	3.20	1.00	3.20	3.84	0	3	1.07						Voltage	480	/277V, 3P
	2	T-H / LD	3.20	1.00	3.20	3.84	0	3		1.07					Breaker	50	
	3	T-H / LD	3.20	1.00	3.20	3.84	0	3			1.07				Bus	60	
	4	SPARE	0.00	1.00	0.00	0.00	20	1	0.00						A.I.C	65k	
	5	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	6	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	7	COLLATERAL	0.50	1.00	0.50	1.80	20	1	0.50								
	8-42	SPACE	0.00	1.00	0.00	0.00	-	1		0.00							
									1.57	1.07	1.07				Board		
															kVA	Size	Breaker
T-H / HD															3.6957	4.445224	50

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
H / LD	1	F-12.1	0.13	2.50	0.32	2.64	20	1	0.32						Voltage	208	/120V, 3P
	1	F-13.1	0.13	1.00	0.13	1.06	20	1		0.13					Breaker	50	
	1	F-14.1	0.13	1.00	0.13	1.06	20	1			0.13				Bus	60	
															A.I.C	65k	
	2	Façade Curve Lighting 11	0.50	1.25	0.63	5.20	20	1		0.63							
	3	Façade Curve Lighting 12	0.60	1.25	0.75	6.25	20	1			0.75						
	4	Façade Curve Lighting 13	0.60	1.25	0.75	6.25	20	1	0.75								
	5	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	6	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	7	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
	8	COLLATERAL	0.50	1.00	0.50	4.16	20	1		0.50							
	9-42	SPACE	0.00	1.00	0.00	0.00	-	1			0.00						
									1.07	1.25	0.88				Board		
															kVA	Size	Breaker
T-H / LD															3.1957	8.870348	50

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details	
HE / HB	1	FIRE EQUIPMENT	0.00	1.00	0.00	0.00	20	1	0.00						Voltage	480/277V, 3P
	2	FIRE EQUIPMENT	0.00	1.00	0.00	0.00	20	1		0.00					Breaker	50
	3	EMERG LIGHTS	0.00	1.00	0.00	0.00	20	1			0.00				Bus	60
	4	EMERG LIGHTS	0.00	1.00	0.00	0.00	20	1	0.00						A.I.C	65k
	5	SPARE	0.00	1.00	0.00	0.00	20	1		0.00						
	6	SPARE	0.00	1.00	0.00	0.00	20	1				0.00				
	7	SPARE	0.00	1.00	0.00	0.00	20	1	0.00							
	8	COLLATERAL	0.50	1.00	0.50	1.80	20	1			0.50					
	9-42	SPACE	0.00	1.00	0.00	0.00	-	1			0.00		0.00			
									0.00	0.50	0.00					
														kVA	Board	
														0.5	Size	0.601407
T-HE / HB															Breaker	50

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details	
HE / HC	1	EMERG LIGHTS	0.00	1.00	0.00	0.00	20	1	0.00						Voltage	480/277V, 3P
	2	EMERG LIGHTS	0.00	1.00	0.00	0.00	20	3		0.00					Breaker	50
	3	FIRE EQUIPMENT	0.00	1.00	0.00	0.00	20	3			0.00				Bus	60
	4	FIRE EQUIPMENT	0.00	1.00	0.00	0.00	20	1	0.00						A.I.C	65k
	5	SPARE	0.00	1.00	0.00	0.00	20	1			0.00					
	6	SPARE	0.00	1.00	0.00	0.00	20	1				0.00				
	7	SPARE	0.00	1.00	0.00	0.00	20	1	0.00							
	8	COLLATERAL	0.50	1.00	0.50	1.80	20	1			0.50					
	9-42	SPACE	0.00	1.00	0.00	0.00	-	1					0.00			
									0.00	0.50	0.00					
														kVA	Board	
														0.5	Size	0.601407
T-HE / HC															Breaker	50

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details	
HE / LC3	1	Cond WSHP 1	5.70	1.00	5.70	20.57	20	1	5.70						Voltage	208/120V, 3P
	2	Cond WSHP 2	5.70	1.00	5.70	20.57	20	1		5.70					Breaker	250
	7	Cond WSHP 3	5.70	1.00	5.70	20.57	20	1			5.70				Bus	400
	8	Cond WSHP 4	5.70	1.00	5.70	20.57	20	1	5.70						A.I.C	65k
	13	Cond WSHP 5	5.70	1.00	5.70	20.57	20	1		5.70						
	14	Cond WSHP 6	5.70	1.00	5.70	20.57	20	1				5.70				
	19	Cond WSHP 7	5.70	1.00	5.70	20.57	20	1	5.70							
	20	Cond WSHP 8	5.70	1.00	5.70	20.57	20	1		5.70						
	25	Cond WSHP 9	5.70	1.00	5.70	20.57	20	1				5.70				
	26	Cond WSHP 10	5.70	1.00	5.70	20.57	20	1	5.70							
	31	Cond WSHP 11	5.70	1.00	5.70	20.57	20	1		5.70						
	32	Cond WSHP 12	5.70	1.00	5.70	20.57	20	1				5.70				
	37	Cond WSHP 13	5.70	1.00	5.70	20.57	20	1	5.70							
	38	Cond WSHP 14	5.70	1.00	5.70	20.57	20	1		5.70						
									28.50	28.50	22.80					
														kVA	Board	
														79.8	Size	221.5027
T-HE / LC3															Breaker	250

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details	
HE / LC2	1	Cond WSHP 15	5.70	1.00	5.70	20.57	20	1	5.70						Voltage	208/120V, 3P
	2	Cond WSHP 16	5.70	1.00	5.70	20.57	20	1		5.70					Breaker	250
	7	Cond WSHP 17	5.70	1.00	5.70	20.57	20	1			5.70				Bus	400
	8	Cond WSHP 18	5.70	1.00	5.70	20.57	20	1	5.70						A.I.C	65k
	13	Cond WSHP 19	5.70	1.00	5.70	20.57	20	1		5.70						
	14	Cond WSHP 20	5.70	1.00	5.70	20.57	20	1				5.70				
	19	Cond WSHP 21	5.70	1.00	5.70	20.57	20	1	5.70							
	20	Cond WSHP 22	5.70	1.00	5.70	20.57	20	1		5.70						
	25	Cond WSHP 23	5.70	1.00	5.70	20.57	20	1				5.70				
	26	Cond WSHP 24	5.70	1.00	5.70	20.57	20	1	5.70							
	31	Cond WSHP 25	5.70	1.00	5.70	20.57	20	1		5.70						
	32	Cond WSHP 26	5.70	1.00	5.70	20.57	20	1				5.70				
	37	Cond WSHP 27	5.70	1.00	5.70	20.57	20	1	5.70							
	38	Cond WSHP 28	5.70	1.00	5.70	20.57	20	1		5.70						
									28.50	28.50	22.80					
														kVA	Board	
														79.8	Size	221.5027
T-HE / LC2															Breaker	250

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
HS / HA	1	Elevator 6	26.11	2.50	65.28	78.51	90	3	21.76						Voltage	480	277V, 3P
	2	Elevator 6	26.11	2.50	65.28	78.51	90	3		21.76					Breaker	225	
	3	Elevator 6	26.11	2.50	65.28	78.51	90	3			21.76				Bus	400	
	4	Elevator 7	26.11	1.00	26.11	31.41	90	3	8.70						A.I.C	65k	
	5	Elevator 7	26.11	1.00	26.11	31.41	90	3		8.70							
	6	Elevator 7	26.11	1.00	26.11	31.41	90	3			8.70						
	7	AHU-9.1	10.44	1.00	10.44	12.56	30	3	3.48								
	8	AHU-9.1	10.44	1.00	10.44	12.56	30	3		3.48							
	9	AHU-9.1	10.44	1.00	10.44	12.56	30	3			3.48						
	10	F-9.3	5.97	1.00	5.97	7.18	20	3	1.99								
	11	F-9.3	5.97	1.00	5.97	7.18	20	3		1.99							
	12	F-9.3	5.97	1.00	5.97	7.18	20	3			1.99						
	13	Elevator 10	26.11	1.00	26.11	31.41	90	3	8.70								
	14	Elevator 10	26.11	1.00	26.11	31.41	90	3		8.70							
	15	Elevator 10	26.11	1.00	26.11	31.41	90	3			8.70						
	16	Elevator 11	26.11	1.00	26.11	31.41	90	3	8.70								
	17	Elevator 11	26.11	1.00	26.11	31.41	90	3		8.70							
	18	Elevator 11	26.11	1.00	26.11	31.41	90	3			8.70						
	19	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
	20	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	21	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	22	COLLATERAL	0.50	1.00	0.50	1.80	20	1	0.50								
23-42	SPACE	0.00	1.00	0.00	0.00	-	1			0.00							
									53.84	53.34	53.34				Board		
														kVA		Breaker	
T-HS / HA														160.52	193.0719		225

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details			
HS / HB	1	Elevator 1	37.30	2.50	93.25	112.16	125	3	31.08						Voltage	480	277V, 3P	
	2	Elevator 1	37.30	2.50	93.25	112.16	125	3		31.08					Breaker	400		
	3	Elevator 1	37.30	2.50	93.25	112.16	125	3			31.08				Bus	400		
	4	Elevator 2	37.30	1.00	37.30	44.86	125	3	12.43						A.I.C	65k		
	5	Elevator 2	37.30	1.00	37.30	44.86	125	3		12.43								
	6	Elevator 2	37.30	1.00	37.30	44.86	125	3			12.43							
	7	Elevator 3	37.30	1.00	37.30	44.86	125	3	12.43									
	8	Elevator 3	37.30	1.00	37.30	44.86	125	3		12.43								
	9	Elevator 3	37.30	1.00	37.30	44.86	125	3			12.43							
	10	Elevator 4	37.30	1.00	37.30	44.86	125	3	12.43									
	11	Elevator 4	37.30	1.00	37.30	44.86	125	3		12.43								
	12	Elevator 4	37.30	1.00	37.30	44.86	125	3			12.43							
	13	Elevator 5	37.30	1.00	37.30	44.86	125	3	12.43									
	14	Elevator 5	37.30	1.00	37.30	44.86	125	3		12.43								
	15	Elevator 5	37.30	1.00	37.30	44.86	125	3			12.43							
	16	F-R.1	1.12	1.00	1.12	1.35	15	3	0.37									
	17	F-R.1	1.12	1.00	1.12	1.35	15	3		0.37								
	18	F-R.1	1.12	1.00	1.12	1.35	15	3			0.37							
	19	F-R.2	2.24	1.00	2.24	2.69	15	3	0.75									
	20	F-R.2	2.24	1.00	2.24	2.69	15	3		0.75								
	21	F-R.2	2.24	1.00	2.24	2.69	15	3			0.75							
	22	F-R.3	5.60	1.00	5.60	6.73	20	3	1.87									
	23	F-R.3	5.60	1.00	5.60	6.73	20	3		1.87								
	24	F-R.3	5.60	1.00	5.60	6.73	20	3			1.87							
	25	F-R.4	14.92	1.00	14.92	17.95	60	3	4.97									
	26	F-R.4	14.92	1.00	14.92	17.95	60	3		4.97								
	27	F-R.4	14.92	1.00	14.92	17.95	60	3			4.97							
	28	F-R.5	1.12	1.00	1.12	1.35	15	3	0.37									
	29	F-R.5	1.12	1.00	1.12	1.35	15	3		0.37								
	30	F-R.5	1.12	1.00	1.12	1.35	15	3			0.37							
	31	EFC-R.1	22.38	1.00	22.38	26.92	125	3	7.46									
	32	EFC-R.1	22.38	1.00	22.38	26.92	125	3		7.46								
	33	EFC-R.1	22.38	1.00	22.38	26.92	125	3			7.46							
	34	T-HS / LB	0.50	1.00	0.50	0.60	0	3	0.17									
	35	T-HS / LB	0.50	1.00	0.50	0.60	0	3		0.17								
	36	T-HS / LB	0.50	1.00	0.50	0.60	0	3			0.17							
	37	SPARE	0.00	1.00	0.00	0.00	20	3	0.00									
	38	SPARE	0.00	1.00	0.00	0.00	20	3		0.00								
	39	SPARE	0.00	1.00	0.00	0.00	20	3			0.00							
	40-42	SPACE	0.00	1.00	0.00	0.00	-	3		0.00								
										96.77	96.77	96.77				Board		
															kVA		Breaker	
T-HS / HB														290.32	349.2019		400	

Panel	Switch	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C	Details		
BUS	1	PTAC-10.1	74.60	2.50	186.50	224.32	0	3	62.17				Voltage	480/277V, 3P
	2	PTAC-10.1	74.60	2.50	186.50	224.32	0	3		62.17			Breaker	3200
	3	PTAC-10.1	74.60	2.50	186.50	224.32	0	3			62.17		Bus	3200
	4	PTAC-11.1	74.60	1.00	74.60	89.73	0	3	24.87				A.I.C	65k
	5	PTAC-11.1	74.60	1.00	74.60	89.73	0	3		24.87				
	6	PTAC-11.1	74.60	1.00	74.60	89.73	0	3			24.87			
	7	PTAC-12.1	74.60	1.00	74.60	89.73	0	3	24.87					
	8	PTAC-12.1	74.60	1.00	74.60	89.73	0	3		24.87				
	9	PTAC-12.1	74.60	1.00	74.60	89.73	0	3			24.87			
	10	PTAC-13.1	74.60	1.00	74.60	89.73	0	3	24.87					
	11	PTAC-13.1	74.60	1.00	74.60	89.73	0	3		24.87				
	12	PTAC-13.1	74.60	1.00	74.60	89.73	0	3			24.87			
	13	PTAC-14.1	74.60	1.00	74.60	89.73	0	3	24.87					
	14	PTAC-14.1	74.60	1.00	74.60	89.73	0	3		24.87				
	15	PTAC-14.1	74.60	1.00	74.60	89.73	0	3			24.87			
	16	PTAC-15.1	74.60	1.00	74.60	89.73	0	3	24.87					
	17	PTAC-15.1	74.60	1.00	74.60	89.73	0	3		24.87				
	18	PTAC-15.1	74.60	1.00	74.60	89.73	0	3			24.87			
	19	PTAC-16.1	74.60	1.00	74.60	89.73	0	3	24.87					
	20	PTAC-16.1	74.60	1.00	74.60	89.73	0	3		24.87				
	21	PTAC-16.1	74.60	1.00	74.60	89.73	0	3			24.87			
	22	PTAC-17.1	74.60	1.00	74.60	89.73	0	3	24.87					
	23	PTAC-17.1	74.60	1.00	74.60	89.73	0	3		24.87				
	24	PTAC-17.1	74.60	1.00	74.60	89.73	0	3			24.87			
	25	Office Tenant Floor10	47.44	0.85	40.33	48.50	60	3	13.44					
	26	Office Tenant Floor10	47.44	0.85	40.33	48.50	60	3		13.44				
	27	Office Tenant Floor10	47.44	0.85	40.33	48.50	60	3			13.44			
	28	Office Tenant Floor 11	47.44	0.85	40.33	48.50	60	3	13.44					
	29	Office Tenant Floor 11	47.44	0.85	40.33	48.50	60	3		13.44				
	30	Office Tenant Floor 11	47.44	0.85	40.33	48.50	60	3			13.44			
	31	Office Tenant Floor12	47.44	0.85	40.33	48.50	60	3	13.44					
	32	Office Tenant Floor12	47.44	0.85	40.33	48.50	60	3		13.44				
	33	Office Tenant Floor12	47.44	0.85	40.33	48.50	60	3			13.44			
	34	Office Tenant Floor13	47.44	0.85	40.33	48.50	60	3	13.44					
	35	Office Tenant Floor13	47.44	0.85	40.33	48.50	60	3		13.44				
	36	Office Tenant Floor13	47.44	0.85	40.33	48.50	60	3			13.44			
	37	Office Tenant Floor14	47.44	0.85	40.33	48.50	60	3	13.44					
	38	Office Tenant Floor14	47.44	0.85	40.33	48.50	60	3		13.44				
	39	Office Tenant Floor14	47.44	0.85	40.33	48.50	60	3			13.44			
	40	Office Tenant Floor15	47.44	0.85	40.33	48.50	60	3	13.44					
	41	Office Tenant Floor15	47.44	0.85	40.33	48.50	60	3		13.44				
	42	Office Tenant Floor15	47.44	0.85	40.33	48.50	60	3			13.44			
	43	Office Tenant Floor16	47.44	0.85	40.33	48.50	60	3	13.44					
	44	Office Tenant Floor16	47.44	0.85	40.33	48.50	60	3		13.44				
	45	Office Tenant Floor16	47.44	0.85	40.33	48.50	60	3			13.44			
	46	Office Tenant Floor17	40.91	0.85	34.78	41.83	60	3	11.59					
	47	Office Tenant Floor17	40.91	0.85	34.78	41.83	60	3		11.59				
	48	Office Tenant Floor17	40.91	0.85	34.78	41.83	60	3			11.59			
	49	T-HS / HB	290.32	1.00	290.32	349.20	0	3	96.77					
	50	T-HS / HB	290.32	1.00	290.32	349.20	0	3		96.77				
	51	T-HS / HB	290.32	1.00	290.32	349.20	0	3			96.77			
	52	T-H / HE	132.54	1.00	132.54	159.42	0	3	44.18					
	53	T-H / HE	132.54	1.00	132.54	159.42	0	3		44.18				
	54	T-H / HE	132.54	1.00	132.54	159.42	0	3			44.18			
	55	T-HE / HD	1.00	1.00	1.00	1.20	0	3	0.33					
	56	T-HE / HD	1.00	1.00	1.00	1.20	0	3		0.33				
	57	T-HE / HD	1.00	1.00	1.00	1.20	0	3			0.33			
	58	T-H / HD	3.70	1.00	3.70	4.45	0	3	1.23					
	59	T-H / HD	3.70	1.00	3.70	4.45	0	3		1.23				
	60	T-H / HD	3.70	1.00	3.70	4.45	0	3			1.23			
	61	T-H / HC	1.44	1.00	1.44	1.74	0	3	0.48					
	62	T-H / HC	1.44	1.00	1.44	1.74	0	3		0.48				
	63	T-H / HC	1.44	1.00	1.44	1.74	0	3			0.48			
	64	T-HS / HA	160.52	1.00	160.52	193.07	0	3	53.51					
	65	T-HS / HA	160.52	1.00	160.52	193.07	0	3		53.51				
	66	T-HS / HA	160.52	1.00	160.52	193.07	0	3			53.51			
	67	T-P / HD	140.56	1.00	140.56	169.07	0	3	46.85					
	68	T-P / HD	140.56	1.00	140.56	169.07	0	3		46.85				
	69	T-P / HD	140.56	1.00	140.56	169.07	0	3			46.85			
	70	T-P / HC	61.25	1.00	61.25	73.68	0	3	20.42					
	71	T-P / HC	61.25	1.00	61.25	73.68	0	3		20.42				
	72	T-P / HC	61.25	1.00	61.25	73.68	0	3			20.42			
	73	T-P / HB	114.48	1.00	114.48	137.70	0	3	38.16					
	74	T-P / HB	114.48	1.00	114.48	137.70	0	3		38.16				
	75	T-P / HB	114.48	1.00	114.48	137.70	0	3			38.16			
	76	T-HE / HC	0.50	1.00	0.50	0.60	0	3	0.17					
	77	T-HE / HC	0.50	1.00	0.50	0.60	0	3		0.17				
	78	T-HE / HC	0.50	1.00	0.50	0.60	0	3			0.17			
	79	T-HE / HB	0.50	1.00	0.50	0.60	0	3	0.17					
	80	T-HE / HB	0.50	1.00	0.50	0.60	0	3		0.17				
	81	T-HE / HB	0.50	1.00	0.50	0.60	0	3			0.17			
									644.19	644.19	644.19		Board	3200
												kVA	Size	Breaker
T-BUS									1932.6	2324.527				3200

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
EM / DP	1	T-HS / HB	290.32	1.00	290.32	349.20	0	3	96.77						Voltage	480	277V, 3P
	2	T-HS / HB	290.32	1.00	290.32	349.20	0	3		96.77					Breaker	700	
	3	T-HS / HB	290.32	1.00	290.32	349.20	0	3			96.77				Bus	800	
	4	T-HE / HD	1.00	1.00	1.00	1.20	0	3	0.33						A.I.C	65k	
	5	T-HE / HD	1.00	1.00	1.00	1.20	0	3		0.33							
	6	T-HE / HD	1.00	1.00	1.00	1.20	0	3			0.33						
	7	T-HE / HC	0.50	1.00	0.50	0.60	0	3	0.17								
	8	T-HE / HC	0.50	1.00	0.50	0.60	0	3		0.17							
	9	T-HE / HC	0.50	1.00	0.50	0.60	0	3			0.17						
	10	T-HE / HB	0.50	1.00	0.50	0.60	0	3	0.17								
	11	T-HE / HB	0.50	1.00	0.50	0.60	0	3		0.17							
	12	T-HE / HB	0.50	1.00	0.50	0.60	0	3			0.17						
	13	T-HE / HA	1.00	1.00	1.00	1.20	0	3	0.33								
	14	T-HE / HA	1.00	1.00	1.00	1.20	0	3		0.33							
	15	T-HE / HA	1.00	1.00	1.00	1.20	0	3			0.33						
	13	P-0.1	5.60	1.00	5.60	6.73	50	3	1.87								
	14	P-0.1	5.60	1.00	5.60	6.73	50	3		1.87							
	15	P-0.1	5.60	1.00	5.60	6.73	50	3			1.87						
	13	P-0.2	5.60	1.00	5.60	6.73	50	3	1.87								
	14	P-0.2	5.60	1.00	5.60	6.73	50	3		1.87							
	15	P-0.2	5.60	1.00	5.60	6.73	50	3			1.87						
	16	T-HE / LC	210.50	1.00	210.50	253.19	0	3	70.17								
	17	T-HE / LC	210.50	1.00	210.50	253.19	0	3		70.17							
	18	T-HE / LC	210.50	1.00	210.50	253.19	0	3			70.17						
	16	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
	17	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	18	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	19	COLLATERAL	0.50	1.00	0.50	4.16	20	1	0.50								
	20-42	SPACE	0.00	1.00	0.00	0.00	-	1		0.00							
									172.17	171.67	171.67				kVA	Board Size	Breaker
T-EM / DP															515.51	620.0634	700

Panel	Ckt	Load	kVA	Factor	Demand kVA	Amps	Brkr	Pole	A	B	C				Details		
RT / DP	1	Retail 1	7.93	3.00	23.80	66.07	80	3	7.93						Voltage	208	120V, 3P
	2	Retail 1	7.93	3.00	23.80	66.07	80	3		7.93					Breaker	600	
	3	Retail 1	7.93	3.00	23.80	66.07	80	3			7.93				Bus	600	
	4	Retail 2	10.03	3.00	30.09	83.52	100	3	10.03						A.I.C	65k	
	5	Retail 2	10.03	3.00	30.09	83.52	100	3		10.03							
	6	Retail 2	10.03	3.00	30.09	83.52	100	3			10.03						
	7	Retail 3	8.47	3.00	25.42	70.55	90	3	8.47								
	8	Retail 3	8.47	3.00	25.42	70.55	90	3		8.47							
	9	Retail 3	8.47	3.00	25.42	70.55	90	3			8.47						
	10	Retail 4	14.87	3.00	44.60	123.80	150	3	14.87								
	11	Retail 4	14.87	3.00	44.60	123.80	150	3		14.87							
	12	Retail 4	14.87	3.00	44.60	123.80	150	3			14.87						
	13	Retail 5	19.50	3.00	58.49	162.34	200	3	19.50								
	14	Retail 5	19.50	3.00	58.49	162.34	200	3		19.50							
	15	Retail 5	19.50	3.00	58.49	162.34	200	3			19.50						
	16	SPARE	0.00	1.00	0.00	0.00	20	1	0.00								
	17	SPARE	0.00	1.00	0.00	0.00	20	1		0.00							
	18	SPARE	0.00	1.00	0.00	0.00	20	1			0.00						
	19	COLLATERAL	0.50	1.00	0.50	4.16	20	1	0.50								
	20-42	SPACE	0.00	1.00	0.00	0.00	-	1		0.00							
									61.30	60.80	60.80				kVA	Board Size	Breaker
T-RT / DP															182.9	507.6673	600