

TRANSFORMER LOAD SUMMARY						
DESCRIPTION	ACTUAL CONNECTED (KW/KVA)	POWER FACTOR	ACTUAL DEMAND (KVA)	NEC CONNECTED (KW/KVA)	NEC DEMAND FACTOR	NEC DEMAND (KVA)
LIGHTING	10.706	1.0	10.706	10.706	1.25	13.383
RECEPTACLES	9.780	1.0	9.780	9.780	1.0	9.780
MOTORS	1.420	1.0	1.420	1.420	1.25	1.775
AIR CONDITIONING	0.000	1.0	0.000	0.000	1.0	0.000
WATER HEATER	7.200	1.0	7.200	7.200	1.0	7.200
MISCELLANEOUS	4.160	1.0	4.160	4.160	1.0	4.160
TOTAL	33.266		33.266	33.266		36.298
USE	45		KVA 480-120/208V, 3 PHASE TRANSFORMER			

ELECTRICAL LOAD SUMMARY						
DESCRIPTION	ACTUAL CONNECTED (KW/KVA)	POWER FACTOR	ACTUAL DEMAND (KVA)	NEC CONNECTED (KW/KVA)	NEC DEMAND FACTOR	NEC DEMAND (KVA)
LIGHTING	5.696	1.0	5.696	5.696	1.25	7.120
TRACK LIGHTING	5.010	1.0	5.010	5.010	299 FT 150VA/2FT ***	22.425
SHOW WINDOW	0.000	1.0	0.000	0.000	0 FT 200VA/FT **	0.000
RECEPTACLES	9.780	1.0	9.780	9.780	100-100W 0.5 REMAINING	9.780
MOTORS	7.736	1.0	7.736	7.736	1.25	9.670
AIR CONDITIONING *	30.373	1.0	30.373	30.373	1.0 ****	30.373
ELECTRIC HEATING *	6.997	1.0	0.000	6.997	1.0	0.000
WATER HEATER	7.200	1.0	7.200	7.200	1.0	7.200
MISCELLANEOUS	4.160	1.0	4.160	4.160	1.0	4.160
TOTAL	76.952		69.955	76.952		90.728
NOTES:						
* USE GREATER LOAD OF THE TWO CATEGORIES						
** NEC ARTICLE 220-43 REQUIREMENT (200VA PER FOOT OR ACTUAL CONNECTED)						
*** NEC ARTICLE 220-43 REQUIREMENT (150VA/2FT OR ACTUAL CONNECTED)						
**** 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM						
NEC DEMAND KW *1000 = MINIMUM FEEDER AMPERAGE						
SYSTEM VOLTAGE * 1.732						
90.728 *1000 = 109 A						
480 *1.732 NEW 200A SERVICE						

CURRENT LIMITING BREAKERS		
CIRCUIT NUMBER	BREAKER SIZE	
A-10	1	10A
A-12	2	10A
NOTE: PROVIDE EATON PRC LIMITER PANEL WITH BREAKERS SHOWN. ROUTE CIRCUITS THROUGH CURRENT LIMITING BREAKER PRIOR TO LANDING ON BRANCH CIRCUIT BREAKER.		

PANELBOARD B

VOLTAGE 120/208V, 3PH, 4W MOUNTING SURFACE BUS RATING 100A														
LCL	LTG ZONE	CCT NO	LOAD DESCRIPTION	CB		LOAD			CB		LOAD DESCRIPTION	CCT NO	LTG ZONE	LCL
				AMP	POLE	A	B	C	AMP	POLE				
		1	SPARE	20	1	0			20	2	DEMO WATER HEATER	2		
		3	MANAGERS RCPT	20	1		540	2,100					4	
		5	MANAGERS IG RCPT	20	1			180	540	20	1	SALES AREA RCPT.	6	
		7	BACKWRAP RCPT	20	1	1,080	540			20	1	SALES AREA RCPT.	8	
		9	WALKIE TALKIE	20	1		360	0		20	1	SPARE	10	
		11	MUSIC/SOUND SYSTEM	20	1			500	500	20	1	IP CAMERA POWER	12	
		13 (WR) TEMP. CONTROLS	20	1	900	500				20	1	SECURITY PNL/MONITOR	14	
		15	CASHWRAP IG	20	1		900	500		20	1	BURGLAR ALARM	16	
		17	CASHWRAP RCPT	20	1			720	1,500	20	2	WATER HEATER	18	
		19	NON SALES RCPT	20	1	540	1,500						20	
		21	SPARE	20	1	0		600		20	1	DRINKING FOUNTAIN	22	
		23	SPARE	20	1			0	0	20	1	SPARE	24	
		25	SPARE	20	1	0	180			20	1	RTU RCPT.	26	
		27 (WR) TELEPHONE BRD.	20	1		360	200	180		20	1	FACP	28	
		29	A.L.L SYSTEM	20	1			0		20	2	SPARE	30	
		31	SPARE	20	1	0	0			20	1	SPARE	32	
		33	SPARE	20	1	0	1,600			20	1	ROLLING GRILLE	34	
		35	SPARE	20	1		0	0		20	1	SPARE	36	
		37	SPARE	20	1	0	0			20	1	SPARE	38	
		39	SPARE	20	1		660	0		20	1	FPVAV-1	40	
		41	SPARE	20	1		0	660		20	1	FPVAV-2	42	
LOAD/PH: (NEC CONNECTED)				7,340	7,820	4,780	TOTAL VA: 19,940 VA							
LCL @ 25% PER PHASE				0	0	0	TOTAL AMPS: 55 A							
TOTAL LOAD/PH: (NEC DEMAND)				7,340	7,820	4,780								
NOTES: ALL CIRCUITS BREAKERS TO BE 20 AMP, 1-POLE UNLESS OTHERWISE NOTED.														
BREAKER OPTIONS: BABR - SOLENOID OPERATED BABR LO - HANDLE LOCK-OFF DEVICE ST - SHUNT TRIP AUX - AUXILIARY CONTACTS PA - HANDLE PADLOCK ATTACHMENT GFCI - GROUND FAULT INTERRUPT HACR - HEATING, A/C & REFRIGERATION LCL - CONTINUOUS LOAD														
ACTUAL LOAD				A 7,340 kW	NEC CONNECTED TOTALS				A 7,340 kW	BABR - SOLENOID OPERATED BABR				
				B 7,820 kW					B 7,820 kW	LO - HANDLE LOCK-OFF DEVICE				
				C 4,780 kW					C 4,780 kW	ST - SHUNT TRIP				
				TOTAL 19,940 kW					TOTAL 19,940 kW	AUX - AUXILIARY CONTACTS				
										PA - HANDLE PADLOCK ATTACHMENT				
										GFCI - GROUND FAULT INTERRUPT				
										HACR - HEATING, A/C & REFRIGERATION				
										LCL - CONTINUOUS LOAD				
(ALL PHASES SHALL BE BALANCED WITH 7% USING ACTUAL LOAD TOTALS)														

PANELBOARD A

VOLTAGE 120/208V, 3PH, 4W MOUNTING SURFACE BUS RATING 225A													
LCL	LTG ZONE	CCT NO	LOAD DESCRIPTION	CB			LOAD			CB			LCL
				AMP	POLE		A	B	C	AMP	POLE		
X		1	STORE N/LEM LTS/FAN	20	1	1,304	416			20	1		
X	A	3	SHOW WINDOW LTS	20	1		140	500		20	1		
X	A1	5	STORE SIGN	20	1			1,200	969	20	1		
X	C	7	TRANSITION LTS	20	1	476	816			20	1		
X	C	9	CABINET LTS	20	1		120	774		20	1		
X	C	11	CABINET LTS	20	1			120	774	20	1		
X	C	13	CABINET LTS	20	1	120	0			20	1		
X	C	15	CABINET LTS	20	1		160	954		20	1		
X	C	17	CABINET LTS	20	1			120	723	20	1		
D		19	FLOORBOX	20	1	540	0			20	1		
D		21	FLOORBOX	20	1		180	1,000		20	1		
D		23	FLOORBOX	20	1			180	0	20	1		
D		25	FLOORBOX	20	1	180	0			20	1		
X	C	27	CABINET LTS	20	1		120	0					
		29	SPARE	20	1		0	0					
		31	VIDEO WALL	20	1	720	0						
		33	VIDEO WALL	20	1		720	0					
		35	SPARE	20	1		0	0					
		37	SPARE	20	1	0	0						
		39	SPACE ONLY				0	0					
		41	SPACE ONLY				0	0					
LOAD/PH: (NEC CONNECTED)				4,572	4,668	4,086	TOTAL VA: 16,028 VA						
LCL @ 25% PER PHASE				783	942	977	TOTAL AMPS: 45 A						
TOTAL LOAD/PH: (NEC DEMAND)				5,355	5,610	5,063							
NOTES: ALL CIRCUITS BREAKERS TO BE 20 AMP, 1-POLE UNLESS OTHERWISE NOTED.													
BREAKER OPTIONS: BABR - SOLENOID OPERATED BABR LO - HANDLE LOCK-OFF DEVICE ST - SHUNT TRIP AUX - AUXILIARY CONTACTS PA - HANDLE PADLOCK ATTACHMENT GFCI - GROUND FAULT INTERRUPT HACR - HEATING, A/C & REFRIGERATION LCL - CONTINUOUS LOAD													
ACTUAL LOAD				A 4,572 kW	NEC CONNECTED TOTALS				A 5,355 kW	BABR - SOLENOID OPERATED BABR			
				B 4,668 kW					B 5,610 kW	LO - HANDLE LOCK-OFF DEVICE			
				C 4,086 kW					C 5,063 kW	ST - SHUNT TRIP			
TOTAL 13,326 kW								TOTAL 16,028 kW	AUX - AUXILIARY CONTACTS				
									PA - HANDLE PADLOCK ATTACHMENT				
									GFCI - GROUND FAULT INTERRUPT				
									HACR - HEATING, A/C & REFRIGERATION				
									LCL - CONTINUOUS LOAD				
(ALL PHASES SHALL BE BALANCED WITH 7% USING ACTUAL LOAD TOTALS)													

ELECTRICAL EQUIPMENT DATA												
SYM.	ITEM	VOLTAGE	HP.	KW.	F.L.A.	FEEDERS		TYPE OF CONN.	BRANCH BREAKER	DISC. SW.	BUS/ FUSES	REMARKS
						WIRE	COND.					
①	WATER HEATER	208V, 1ø	--	4.16	--	2ø12 THHN 1ø12 G	1/2"	"AC" TOGGLE SWITCH	20A-2P	---	---	SEE NOTE NO. 1 BELOW
②	WATER HEATER	208V, 1ø	--	3.0	--	2ø12 THHN 1ø12 G	1/2"	"AC" TOGGLE SWITCH	20A-2P	---	---	SEE NOTE NO. 1 BELOW
③	FPVAV-1	120V, 3ø	--	--	5.5	2ø12 THHN 1ø12 G	1/2"	THRU UNIT DISC. SW.	20A-1P	---	---	SEE NOTE NO. 2 BELOW
④	FPVAV-2 (ELECTRIC HEAT)	480V, 3ø	--	7.00 ELEC. HEAT	--	3ø10 THHN 1ø10 G	3/4"	THRU UNIT DISC. SW.	25A-3P	---	---	SEE NOTE NO. 2 BELOW
⑤	FPVAV-2 (MOTOR)	120V, 1ø	--	--	5.5	2ø12 THHN 1ø12 G	1/2"	THRU UNIT DISC. SW.	20A-1P	---	---	SEE NOTE NO. 2 BELOW
⑥	RTU-1	480V, 3ø	--	--	46.6	3ø4 THHN 1ø8 G	1-1/4"	THRU UNIT DISC. SW.	70A-3P	---	---	SEE NOTE NO. 2 BELOW
NOTE: 1. "AC" TOGGLE SWITCH TO BE FURNISHED BY L&S&C AND INSTALLED BY ELECTRICAL CONTRACTOR. 2. DISCONNECT SWITCH TO BE FURNISHED AND INSTALLED BY MECHANICAL SUPPLIER.												

ELECTRICAL POWER GENERAL NOTES		
1. HVAC CIRCUIT BREAKERS SHALL BE "HACK" TYPE WHEN REQUIRED BY EQUIPMENT NAMEPLATE PER N.E.C.	2. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT K.A.I.C. RATING (BUILDING SERVICE AVAILABLE FAULT CURRENT) OF LANDLORDS DISTRIBUTION EQUIPMENT PRIOR TO BID AND WORK COMMENCEMENT. IF FOUND TO BE HIGHER THAN PANEL RATING, NOTIFY YOUR L&D&C PROJECT MANAGER IMMEDIATELY.	3. ELECTRICAL CONTRACTOR SHALL BALANCE ALL PANELS AND ELECTRICAL EQUIPMENT TO 7% (+/-) BETWEEN PHASES: A/B, B/C, A/C, REGARDLESS OF CIRCUITING INDICATED.
4. PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM/AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.	5. ALL PANEL BRANCH CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.	6. ALL PANEL BUS BARS SHALL BE COPPER.
7. MOUNT A TYPEWRITTEN DIRECTORY BEHIND GLASS OR PLASTIC ON THE INSIDE OF EACH PANEL DOOR AND, ON THE DIRECTORY, SHOW THE CIRCUIT NUMBER AND COMPLETE DESCRIPTION OF ALL OUTLETS ON EACH CIRCUIT.	8. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE AND OPERABLE ELECTRICAL DISTRIBUTION SYSTEM.	9. ALL PANELBOARDS, SWITCHBOARDS AND LINE VOLTAGE CONTROL EQUIPMENT SHALL BE FACTORY MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTING, SERVICE OR MAINTENANCE OF EQUIPMENT.
10. ELECTRICAL CONTRACTOR SHALL MAKE SURE ENTIRE INSTALLATION CONFORMS TO N.E.C. 110.5 - EXAMINATION, IDENTIFICATION, INSTALLATION, AND USE OF EQUIPMENT.	11. SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, AND CONTACTORS ARE TO BE "LISTED" AND "IDENTIFIED" AS RATED FOR A MINIMUM OF 75°C CONDUCTOR TERMINATION.	12. IF'S ENCLOSURE LIGHTING CONTROLS: SOLENOID OPERATED BABR BREAKERS ARE PROVIDED WITH IF'S PANELS FOR STORE LIGHTING CONTROLS AND STOREFRONT SIGNS. SEE PANEL SCHEDULES FOR LIGHTING ZONE DESIGNATIONS (per ZONE A, B, C, D)
	13. IF'S ENCLOSURE FURNISHED BY OWNER AND INSTALLED BY ELECTRICAL CONTRACTOR IS HEREIN DESCRIBED: A. UNIT WILL BE SHIPPED TO PROJECT IN MULTIPLE SECTIONS AND THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR OFF-LOADING OF EQUIPMENT, INSPECTION OF EQUIPMENT FOR DAMAGE, VERIFICATION OF EQUIPMENT RECEIVED FOR PROPER STORAGE, SETTING AND MOVING OF EQUIPMENT INTO SPACE AS WELL AS REASSEMBLING OF SECTIONS INTO ONE COMPLETE UNIT PER MANUFACTURER'S DOCUMENTATION. B. ELECTRICAL CONTRACTOR SHALL CONNECT ALL PROVIDED INTERCONNECTING CABLES BETWEEN SECTIONS AND TORQUE CONNECTIONS PER MANUFACTURER'S REQUIREMENTS. C. ALL CONNECTIONS WITHIN THE TELEPHONE/DATA SECTION AND HVAC CONTROL SECTION OF THE IF'S ENCLOSURE WILL BE DONE BY OTHERS. ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLATION OF LOW VOLTAGE CONDUIT SYSTEM (IF REQUIRED BY CODE OR LANDLORD) INTO THESE SECTIONS ONLY. D. SWITCHBOARD WILL BE SHIPPED ON AN ENCLOSED SEMI-TRAILER. ELECTRICAL CONTRACTOR MUST ARRANGE FOR A FORKLIFT TO OFF-LOAD AT JOB SITE. ELECTRICAL CONTRACTOR WILL RECEIVE 24 NOTICE PRIOR TO DELIVERY.	14. ELECTRICAL CONTRACTOR SHALL INCLUDE ALL COSTS TO FURNISH AND INSTALL ALL LOW VOLTAGE WIRING IN CONDUIT, AS PART OF BASE BID.
		15. THE GC SHALL NOT CUT THE MAIN TELEPHONE WIRES LEADING TO THE TERMINATION STRIP (DEMARC BLOCK) OR PHONE SYSTEM.
		16. IF THE DEMARC