

national
restaurant
designers

ARCHITECTS & ENGINEERS

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A Division of LMHT Associates

GENERAL NOTE:

LIGHTING CIRCUITS INSIDE THE BUILDING SHALL BE WIRED THRU LIGHTING CONTACTORS. REFER TO DETAILS ON SHEET E6.0.

NOTE TO CONTRACTORS

ALL CONTRACTORS PRIOR TO BID SUBMISSION PROCESS SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS. ANY CONDITION THAT DIFFERS FROM THAT SHOWN ON THESE PLANS SHALL BE REPORTED TO THE TENANTS ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO THE SCOPE OF WORK WHICH RESULTS FROM THE CONTRACTORS NEGLIGENCE TO VISIT THE SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.

CKT. #	DESCRIPTION	NOTE	BREAKER POLE	AMP.	LOAD (KVA)	A	B	C	LOAD (KVA)	BREAKER AMP.	POLE	NOTE	DESCRIPTION	CKT. #
1	BEVERAGE DISP D/T (S-285)	1	1	20	1.30	1.7			0.36	20	1	3	OFFICE DEDICATED QUAD	2
3	BEVERAGE DISP S/S (S-284)	1	1	20	1.12		2.3		1.20	20	1	1,3	POS(U-100)/PRIN(U-070)/KIOSK	4
5	FREEZER (R-009)	1	1	20	0.69			1.1	0.86	20	1	1,3	SAFE (F-174)	6
7	OFFICE DEDICATED QUAD	3	1	20	0.36	1.2			0.86	20	1	1	CARBONATOR (S-570)	8
9	HOT WATER DISP (P-452)	4	2	30	2.04		3.2		1.20	20	1	3	PRINTER(U-070),C.C.READER(U-061)	10
11	2#10, #10 G. in (1) 3/4" C. EA				2.04			3.2	1.20	20	1	1,3	KITCHEN MONITOR (U-238)	12
13	WATER FILTER SYSTEM (S-286)	1	1	20	0.24	0.8			0.60	20	1	3	CCTV DVR/MONITOR (U-035)	14
15	OFFICE COMPUTER (F-060)	3	1	20	0.30		1.0		0.72	20	1	1,3	POS (U-100)/UPS (F-090)	16
17	SECURITY SYSTEM (U-063)	2	1	20	0.30			1.2	0.86	20	1	1	CARBONATOR (S-570)	18
19	RECEPTACLES OFFICE		1	20	0.18	1.6			1.43	20	1	1	BUNN POD BREWER (S-547)	20
21	OFFICE IG RECEPTACLE	3	1	20	0.18		0.4		0.24	20	1	7	REETHERMALIZER (C-107)	22
23	OFFICE DEDICATED QUAD	3	1	20	0.36			0.4	0.24	20	1	1	SHUNT TRIP SPACE	24
25	CO2 MONITOR (B-381)	1	1	20	0.04	2.0			1.92	20	1	1	HEATED CABINET (S-027)	26
27	D/T TIMING SYSTEM (S-204)	1,3	1	20	0.86		0.9			20	1	1	SPARE	28
29	HEATED CABINET (S-026)	1	1	20	1.92			3.4	1.50	20	1	4	HAND DRYER (B-292)	30
31	8-CHANNEL TIMER (C-400)(P-417)	7	1	20	0.61	2.1			1.50	20	1	4	HAND DRYER (B-292)	32
33	SHUNT TRIP SPACE		1				1.0		0.96	20	1	1	OFFICE RECE (F-080)	34
35	HOT WATER DISP (P-452)	4	2	30	2.04			2.6	0.54	20	1	1	PEPSI BOOSTER (S-540)	36
37	2#10, #10 G. in (1) 3/4" C. EA				2.04	3.8			1.78	20	1	1	ICE TEA BREWER (S-546)	38
39	D/T COMM SYS BASE (U-011)	1,3	1	20	0.24		1.2		0.98	20	1	7	DUAL VAT FRYER (C-026)	40
41	WATER HEATER IGNITION (B-215)	1	1	20	0.75			0.8		20	1	1	SHUNT TRIP SPACE	42
MODEL SQ D NQ LOCATION SEE PLAN MOUNTING FLUSH FEEDER SEE RISER MIN AIC SEE FC CALC VOLTAGE 208Y/120V PHASE 3 WIRE 4 MAINS MLO RATING 225 (AMPS) WITH I.G. BAR YES														
ITEMS CON. % DEM. RECEPTACLES 0.2 code 0.2 KITCHEN 14.1 65% 9.2 HVAC 0.0 100% 0.0 LIGHTS (INT. 0.0 125% 0.0 LIGHTS (EXT. 0.0 125% 0.0 MISC. 21.5 100% 21.5 TOTAL KVA 35.8 30.9 TOTAL AMPS 99 86														
NOTES: 1) PROVIDE GFCI BREAKER 2) PROVIDE LOCK-ON BREAKER 3) PROVIDE IG CIRCUIT 4) PROVIDE LOCKABLE BREAKER PER NEC 422.31. 5) PROVIDE LOCKABLE BREAKER PER NEC 600.6 6) (2) #10,#10 G. IN (1) 3/4"C. EACH 7) WIRING VIA GFCI DEAD FRONT FOR GFCI PROTECTION.														
13.2 10.0 12.6 TOTAL KVA PER PHASE 37 28 35 AMPS PER PHASE														

CKT. #	DESCRIPTION	NOTE	BREAKER POLE	AMP.	LOAD (KVA)	A	B	C	LOAD (KVA)	BREAKER AMP.	POLE	NOTE	DESCRIPTION	CKT. #
1	PANEL "A"		3	200	13.22	37.1			23.85	400	3		PANEL "D"	2
3	4#3/0, #6 G. in (1) 2-1/2" C. EA				10.04		33.5		23.42				4#3/0, #3 G. in (2) 2-1/2" C. EA	4
5	#6 ISO. G.				12.56			31.4	18.86					6
7	PANEL "B"		3	200	5.51	5.5						3	SPACE	8
9	4#3/0, #6 G. in (1) 2-1/2" C. EA				7.00		7.0							10
11					5.37			5.4						12
13	PANEL "E"		3	200	17.42	17.4						3	SPACE	14
15	4#3/0, #6 G. in (1) 2-1/2" C. EA				16.90		16.9							16
17	EVO DUAL LINE PANEL (#6 ISO. G.)				17.17			17.2						18
MODEL SQ D 1 LINE LOCATION SEE PLAN MOUNTING SURFACE FEEDER SEE RISER MIN AIC SEE FC CALC VOLTAGE 208Y/120V PHASE 3 WIRE 4 MAINS 600A MCB RATING 600 (AMPS) WITH I.G. BAR NO														
ITEMS CON. % DEM. RECEPTACLES 2.9 code 2.9 KITCHEN 86.8 65% 56.4 HVAC 39.6 100% 39.6 LIGHTS (INT. 2.6 125% 3.3 LIGHTS (EXT. 5.7 125% 7.1 MISC. 33.7 100% 33.7 TOTAL KVA 171.3 143.0 TOTAL AMPS 476 397														
NOTES: 1) _____ 2) _____ 3) _____														
60.0 57.4 54.0 TOTAL KVA PER PHASE 167 159 150 AMPS PER PHASE														

CKT. #	DESCRIPTION	NOTE	BREAKER POLE	AMP.	LOAD (KVA)	A	B	C	LOAD (KVA)	BREAKER AMP.	POLE	NOTE	DESCRIPTION	CKT. #
1	KITCHEN LIGHTING	1	1	20	0.60	1.4			0.78	20	1	1	DINING AND SERVICE COUNTER LTG	2
3	REST RMS. LIGHTING	1	1	20	0.06		1.3		1.20	20	1		REMOTE ALARM LT	4
5	COOLER/FREEZER LIGHTS	1	1	20	0.06			1.1	1.00	20	1	1,4,7	PARKING LOT LIGHTS	6
7	EXTERIOR LIGHTS	1	1	20	0.11	1.1			1.00	20	1	1,4,7	PARKING LOT LIGHTS	8
9	EXTERIOR LIGHTS	1	1	20	0.06		1.1		1.00	20	1	1,4,7	PARKING LOT LIGHTS	10
11	HOT BOX HEAT TAPE	5,8	1	20	0.50			1.0	0.50	20	1		LIGHTING CONTROLS	12
13	SPARE		1	20		0.5			0.50	20	1		HOOD CONTROL BOX	14
15	(2)ORDER CANOPY LIGHTING	1,6	1	20	1.00		1.0			20	1		SPARE	16
17	SPARE		1	20				0.6	0.60	20	1		DINING TV	18
19	WINDOW RECEPT		1	20	0.36	0.4				20	1		SPARE	20
21	SPACE		1				0.2		0.18	20	1	1,2	BUILDING SIGN	22
23	WINDOW RECEPT		1	20	0.18			0.2		20	1		SPARE	24
25	WINDOW RECEPT		1	20	0.36	1.3			0.90	20	1	5	BACK DOOR AIR CURTAIN (F-xx1)	26
27	BUILDING SIGN	1,2	1	20	1.20		2.3		1.10	20	1	5,6	DT MENU BOARD	28
29	PLYON SIGN	1,2,6	1	20	1.20			1.3	0.13	20	1	5,6	ORDER CONF. BRD/SPKR	30
31	SPARE		1	20		0.9			0.90	20	1	5	DRIVE THRU AIR CURTAIN (F-xx2)	32
33	BUILDING SIGN	1,2	1	20	1.20		1.2			20	1		SPACE	34
35	SPARE		1	20				0.0		20	1		SPACE	36
37	SPARE-FUTURE DIRECTIONAL SIGN		1	20		0.0				20	1		SPACE	38
39	SPARE FOR FUTURE PREVIEW BOARD		1	20			0.0			20	1		SPACE	40
41	BUILDING SIGN	1,2	1	20	1.20			1.2		20	1		SPACE	42
MODEL SQ D NQ LOCATION SEE PLAN MOUNTING FLUSH FEEDER SEE RISER MIN AIC SEE FC CALC VOLTAGE 208Y/120V PHASE 3 WIRE 4 MAINS MLO RATING 225 (AMPS) WITH I.G. BAR NO														
ITEMS CON. % DEM. RECEPTACLES 1.1 code 1.1 KITCHEN 0.0 65% 0.0 HVAC 0.0 100% 0.0 LIGHTS (INT. 2.6 125% 3.3 LIGHTS (EXT. 5.7 125% 7.1 MISC. 8.4 100% 8.4 TOTAL KVA 17.9 20.0 TOTAL AMPS 50 55														
NOTES: 1) CONNECT THRU LIGHTING CONTACTOR- SEE SHEET E6.0 2) PROVIDE LOCKABLE BREAKER PER NEC 600.6 3) PROVIDE GFCI BREAKER 4) PROVIDE TYPE C BREAKER. 5) PROVIDE LOCKABLE BREAKER PER NEC 422.31. 6) (2)#10, #10 G. IN (1) 3/4"C. EACH 7) (2)#6, #6C. IN (1) 3/4"C. EACH 8) PROVIDE GFEP BREAKER														
5.5 7.0 5.4 TOTAL KVA PER PHASE 15 19 15 AMPS PER PHASE														

"MSB" POWER LOAD SUMMARY (KVA)							
PANEL	RECEPTACLES	KITCHEN	HVAC	LIGHTS (INT.)	LIGHTS (EXT.)	MISC.	TOTAL CONNECTED LOAD
PANEL "MSB"	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PANEL "A"	0.18	14.12	0.00	0.00	0.00	21.52	35.82
PANEL "B"	1.08	0.00	0.00	2.64	5.71	8.45	17.87
PANEL "D"	1.62	21.17	39.58	0.00	0.00	3.76	66.13
PANEL "E"	0.00	51.49	0.00	0.00	0.00	0.00	51.49
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CONNECTED LOAD BY EQUIPMENT TYPE	2.88	86.78	39.58	2.64	5.71	33.73	171.32
SERVICE DEMAND CALCULATION PER NEC 220.88							
TOTAL CONNECTED KVA:				171.32			
A: TOTAL CONNECTED KVA MINUS 200 =				171.32 KVA			
B: 50% OF THE AMOUNT OVER 200KVA =							
TOTAL DEMAND KVA: (B+200 =TOTAL)				171.32 KVA			
TOTAL DEMAND AMPERES:				475.52 Amps			
				TOTAL CONNECTED KVA		171.32	
				TOTAL CONNECTED AMPS		475.54	
PANEL "E" ARE SUPPLIED BY OTHERS. LOADS WERE DERIVED FROM CUTSHEETS FOR THE "EVO LINE" SUPPLIED BY THE EQUIPMENT MANUFACTURER. E.C. SHALL VERIFY AND PROVIDE ALL ELECTRICAL REQUIREMENTS FOR COMPLETE EQUIPMENT INSTALLATION.							

FAULT CURRENT CALCULATIONS

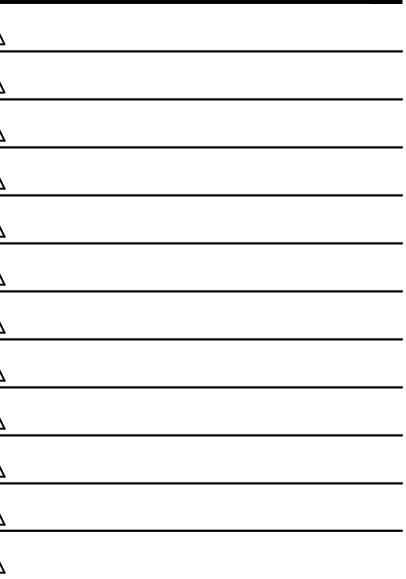
Basic Assumptions:		Transformer	Utility Xfmr
		Rating	225 KVA
		Secondary	208 V
		Impedance	3.0%
		SCA-end	20,819 A

Short circuit current through each cable segment:

From	To	Parallel	Length	Voltage	Wire Size	Wire Type	Conduit Type	C*	SCA-beg	SCA-end
Utility Xfmr	CT CABINET	2 Sets	35 ft	208 V	#350	Cu	NonMetallic	22737	20,819 A	18,368 A
CT CABINET	MSB	2 Sets	4 ft	208 V	#350	Cu	NonMetallic	22737	18,368 A	18,124 A
MSB	Panel A	1 Sets	10 ft	208 V	#3/0	Cu	Metallic	12844	18,124 A	16,218 A
MSB	Panel B	1 Sets	20 ft	208 V	#3/0	Cu	Metallic	12844	18,124 A	14,675 A
MSB	Panel D	2 Sets	10 ft	208 V	#3/0	Cu	Metallic	12844	18,124 A	17,118 A
MSB	Panel E	1 Sets	35 ft	208 V	#3/0	Cu	Metallic	12844	18,124 A	12,842 A

* Constant is calculated as: 1 divided by square root of impedance times 1,000 (Impedance values from IEEE Std 241-1990 page 420)

FAULT CURRENT CALCULATION NOTES:										
E.C. SHALL PROVIDE A SERIES RATED DISTRIBUTION SYSTEM CAPABLE OF WITHSTANDING THE ACTUAL AVAILABLE FAULT CURRENT. THESE CALCULATIONS REPRESENT A WORST CASE ESTIMATE BASED ON AN INFINITE BUS DESIGN. E.C. SHALL ONLY USE THESE CALCULATIONS AS A GUIDELINE FOR THE PROPER SELECTION AND COORDINATION OF BREAKERS. ACTUAL VALUES WILL VARY ACCORDING TO NUMEROUS VARIABLES. VALUES ARE VALID ONLY FOR A 225KVA TRANSFORMER WITH AN IMPEDANCE OF 3.0% OR GREATER AND SERVICE LATERALS NOT LESS THAN 39 FEET IN TOTAL LENGTH. E.C. SHALL FIELD VERIFY TRANSFORMER RATINGS AND LOCATION AND ALL CONDUCTOR VARIABLES PRIOR TO PURCHASING BREAKERS. ADJUST AS REQUIRED. CONSULT DESIGN ENGINEER AS NEEDED.										



CONTRACT DATE: XXXXX
BUILDING TYPE: XXXXX
PLAN VERSION: XXXXX
SITE NUMBER: 315669
STORE NUMBER: XXXXX