Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 01/06/14

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	2 X 4 FLUORESCENT FIXTURE
	2 X 4 FLUORESCENT FIXTURE WITH BATTERY BACKUP
	1 X 4 FLUORESCENT FIXTURE
	1 X 4 FLUORESCENT FIXTURE WITH BATTERY BACKUP
	4' FLUORESCENT STRIP FIXTURE
	4' FLUORESCENT STRIP FIXTURE WITH BATTERY BACKUP
	SURFACE MOUNTED TRACK AND TRACK HEAD
	PENDANT MOUNTED LIGHT FIXTURE
	RECESSED DOWNLIGHT FIXTURE
	RECESSED WALLWASH LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	HOOD LIGHT
	CEILING MOUNTED EXIT SIGN, SHADE INDICATES FACE
	WALL/CEILING MOUNTED EMERGENCY BUGEYE FIXTURE
	COMBINATION EXIT SIGN/EMERGENCY BUGEYE
	EMERGENCY REMOTE HEAD LIGHT FIXTURE
	JUNCTION BOX
	WALL MOUNTED DUPLEX RECEPTACLE
	FLOOR MOUNTED DUPLEX RECEPTACLE
	WALL MOUNTED SINGLE RECEPTACLE
	FLOOR MOUNTED SINGLE RECEPTACLE
	SPECIAL RECEPTACLE
	WALL MOUNTED QUADRUPLEX RECEPTACLE
$	SINGLE POLE SWITCH
$3	THREE POLE LIGHT SWITCH
$P	PILOT LIGHT SWITCH
$T	SINGLE THROW THERMAL SWITCH
$M	MOTOR RATED SWITCH
MS	MOTION SENSOR
	BUZZER
	BELL
	PUSHBUTTON (MOMENTARY)
	MOTOR
	TELEPHONE BACKBOARD
	TELEPHONE OUTLET
	FLOOR MOUNTED TELEPHONE OUTLET
	POS CONNECTION
	FLOOR MOUNTED POS CONNECTION
	COMBINATION DATA AND PHONE JACK
	FLOOR MOUNTED COMBINATION DATA AND PHONE JACK
	DISCONNECT SWITCH
P	PAGER OUTLET
S	SECURITY JUNCTION BOX
	TELEVISION JACK
K	KEYED SWITCH
	PANELBOARD
T	TRANSFORMER
LT	LOW VOLTAGE DOORBELL TRANSFORMER
	SWITCHED CIRCUITRY BURIED OR IN SLAB
	CIRCUITRY IN WALL OR CEILING
	HOMERUN BACK TO PANEL
	POINT OF CONNECTION
IG	ISOLATED GROUND
WP	WEATHERPROOF
GFI	GROUND FAULT CIRCUIT INTERRUPTER
MCT	MOTOR CONTROL TERMINAL
PTR	PRIOR TO ROUGH-IN
IFS	INTEGRATED FACILITY STRUCTURE (SWITCHGEAR)
IPC	INTEGRATED POWER CENTER (SWITCHGEAR)
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
F	FIRE ALARM PULL STATION
	FIRE ALARM HORN/STROBE DEVICE
	FIRE ALARM STROBE DEVICE
	FIRE ALARM SMOKE DETECTOR
	FIRE ALARM HEAT DETECTOR
	FIRE ALARM DUCT SMOKE DETECTOR
RT	REMOTE TEST SWITCH
TS	TAMPER SWITCH
FS	FLOW SWITCH

NOTE: NOT ALL SYMBOLS MAY APPEAR ON DRAWINGS.

NEW PANEL: A 300A MCB 120/ 208 V, 3PH, 4W,+GRND. FAULT AT PANEL= 31653 42,000 AIC FULLY RATED

CCT	SERVES	VA	OCP	WIRE	PHASE	WIRE	OCP	VA	SERVES	CCT
1	RTU-1	3900	50/3	3#6,#10G.,3/4"C.	A	3#12,#12G.,3/4"C.	15/3	288	KEF-1	2
3	-	3900	HACR	-	B	-	HACR	288	-	4
5	-	3900		-	C	-		288	-	6
7	RTU-2	3360	40/3	3#8,#10G.,3/4"C.	A	3#12,#12G.,3/4"C.	15/3	692	KEF-2	8
9	-	3360	HACR	-	B	-	HACR	692	-	10
11		3360		-	C	-		692		12
13	AH-1	4249	45/2	2#6,#10G.,3/4"C.	A	3#12,#12G.,3/4"C.	15/3	700	MAU-1	14
15	-	4249	HACR	-	B	-	HACR	700	-	16
17	AC-1	104	15/2	2#12,#12G.,3/4"C.	C	-		700	-	18
19	-	104	HACR	-	A	2#12,#12G.,3/4"C.	20/2	1219	CU-1	20
21	MIXER GRINDER (20)	2800	35/3	3#8,#10G.,3/4"C.	B	-	HACR	1219	-	22
23	-	2800	-	-	C	2#10,#10G.,3/4"C.	30/2	1572	HP-1	24
25	-	2800	-	-	A	-	HACR	1572	-	26
27	REMOTE ICE MACHINE CONDENSER (209C)	1516	30/2	2#10,#10G.,3/4"C.	B	2#12,#12G.,3/4"C.	15/2	900	WALK-IN COOLER	28
29	-	1516		-	C	-	HACR	900	-	30
31	GRIDDLE (12)	4120	50/3	3#6,#10G.,1"C.	A	2#12,#12G.,3/4"C.	20/1	540	GI-1	32
33	SHUNT TRIP	4120	-	-	B	3#6,#10G.,1"C.	50/3	4120	GRIDDLE (12)	34
35	-	4120	-	-	C	-	-	4120	SHUNT TRIP	36
37	PANEL 'LB'	13887	125/3	4#1,#6G.,1 1/2"C.	A	-	-	4120	-	38
39	-	13168	-	-	B	-	20/1		SPARE	40
41	-	13308	-	-	C	-	20/1		SPARE	42

NOTES:
1 NEMA 1 ENCLOSURE
2 PROVIDE BOLT ON BREAKERS

LOAD SUMMARY	CONN	NEC	DEM	LOAD BALANCE PER PHASE	
1.LIGHTING	10115	1.25	12643.75	PHASE A	41551
2.RECEPTACLES	5900	NEC	5900	PHASE B	41032
3.KITCHEN	67668	0.65	43984.2	PHASE C	37380
4.HVAC	33630	1	33630	LOWEST PHASE PLUS 10%	
5.NON-CONT	4712	1	4712	37380	[+10%] 41118
LARGEST MOTOR	0	0.25	0	REBALANCE LOADS	
TOTAL VA	122025		100870		
TOTAL AMPS	338.7		280.0		

NEW PANEL: B 125A MLO 120/ 208 V, 3PH, 4W,+GRND. FAULT AT PANEL= 18373 22,000 AIC SERIES RATED

CCT	SERVES	VA	OCP	WIRE	PHASE	WIRE	OCP	VA	SERVES	CCT
1	1ST FLOOR LIGHTING	1115	20/1	2#12,#12G.,3/4"C.	A	2#12,#12G.,3/4"C.	20/1	500	TIMER (40)	2
3	1ST FLOOR LIGHTING	1500	20/1	2#12,#12G.,3/4"C.	B	-			SHUNT TRIP	4
5	1ST FLOOR LIGHTING	1200	20/1	2#12,#12G.,3/4"C.	C	2#12,#12G.,3/4"C.	20/1	1200	SIGNAGE	6
7	1ST FLOOR LIGHTING	1500	20/1	2#12,#12G.,3/4"C.	A	2#12,#12G.,3/4"C.	20/1	1200	SIGNAGE	8
9	2ND FLOOR LIGHTING	1500	20/1	2#12,#12G.,3/4"C.	B	2#12,#12G.,3/4"C.	20/1	400	1ST FLOOR RECEPTACLES	10
11	EXTERIOR LIGHTING	500	20/1	2#12,#12G.,3/4"C.	C	2#12,#12G.,3/4"C.	20/1	1228	SANDWICH TOP REFRIGERATOR (14)	12
13	FRYER UNIT (2)	120	20/1	2#12,#12G.,3/4"C.	A	2#12,#12G.,3/4"C.	20/1	500	BAG-IN-BOX (207)	14
15	SHUNT TRIP		-	-	B	2#12,#12G.,3/4"C.	20/1	1338	FREE STANDING SODA MACHINE (209A)	16
17	FRYER UNIT (2)	120	20/1	2#12,#12G.,3/4"C.	C	2#12,#12G.,3/4"C.	20/1	1125	FREE STANDING SODA ICE MACH. (209B)	18
19	SHUNT TRIP		-	-	A	2#12,#12G.,3/4"C.	20/1	500	WH-1	20
21	FRYER UNIT (2)	120	20/1	2#12,#12G.,3/4"C.	B	2#12,#12G.,3/4"C.	20/1	200	HOOD LIGHTS	22
23	SHUNT TRIP				C	-			SHUNT TRIP	24
25	REFRIGERATED MECHANDISER (4)	864	20/1	2#12,#12G.,3/4"C.	A	2#12,#12G.,3/4"C.	20/1	200	SAFE (43)	26
27	DRINK MIXER (5)	755	20/1	2#12,#12G.,3/4"C.	B	2#12,#12G.,#12G.,3/4"C.	20/1	200	COUNTER POS (211)	28
29	DIPPER WELL (7)	1200	20/1	2#12,#12G.,3/4"C.	C	2#12,#12G.,#12G.,3/4"C.	20/1	200	COUNTER POS (211)	30
31	ICE CREAM DISPLAY CASE (8)	552	20/1	2#12,#12G.,3/4"C.	A	2#12,#12G.,#12G.,3/4"C.	20/1	200	COUNTER POS (211)	32
33	TOPPING DISPENSER W/REFRG. BASE (9)	552	20/1	2#12,#12G.,3/4"C.	B	2#12,#12G.,#12G.,3/4"C.	20/1	200	COUNTER PRINTER (212)	34
35	HOOD CONTROLS (200A)	200	20/1	2#12,#12G.,3/4"C.	C	2#12,#12G.,#12G.,3/4"C.	20/1	200	COUNTER PRINTER (212)	36
37	SPARE		20/1	-	A	2#12,#12G.,#12G.,3/4"C.	20/1	200	COUNTER PRINTER (212)	38
39	SPARE		20/1	-	B	2#12,#12G.,3/4"C.	20/1	200	KITCHEN PRINTER (214)	40
41	REFRIGERATED CHEF BASE (13)	1500	20/1	2#12,#12G.,3/4"C.	C	2#12,#12G.,3/4"C.	20/1	200	TELEPHONE/MARK	42
43	SHUNT TRIP		-	-	A	2#12,#12G.,#12G.,3/4"C.	20/1	400	FACP/SECURITY PANELS	44
45	SANDWICH TOP REFRIGERATOR (14)	900	20/1	2#12,#12G.,3/4"C.	B	2#12,#12G.,#12G.,3/4"C.	20/1	200	OFFICE COMPUTER	46
47	CONVEYOR TOASTER (15)	1404	20/2	2#12,#12G.,3/4"C.	C	2#12,#12G.,#12G.,3/4"C.	20/1	200	OFFICE MONITOR	48
49	-	1404	-	-	A	2#12,#12G.,3/4"C.	20/1	400	2ND FLOOR RECEPTACLES	50
51	CONVEYOR TOASTER (15)	1404	20/2	2#12,#12G.,3/4"C.	B	2#12,#12G.,3/4"C.	20/1	375	REACH-IN FREEZER (22)	52
53	-	1404	-	-	C	-	20/1		SPARE	54
55	PANININI GRILL (15A)	1052	20/2	2#12,#12G.,3/4"C.	A	-	20/1		SPARE	56
57	SHUNT TRIP	1052	-	-	B	-	20/1		SPARE	58
59	PANININI GRILL (15A)	1052	20/2	2#12,#12G.,3/4"C.	C	-	20/1		SPARE	60
61	SHUNT TRIP	1052			A	-	20/1		SPARE	62
63	CONVECTION OVEN (21)	1200	20/1	2#12,#12G.,3/4"C.	B	-	20/1		SPARE	64
65	REACH-IN FREEZER (22)	375	20/1	2#12,#12G.,3/4"C.	C	-	20/1		SPARE	66
67	TEA BREWER (36	1528	20/1	2#12,#12G.,3/4"C.	A	-	-		SPACE	68
69	REFRIGERATED CHEF BASE (13)	972	20/1	2#12,#12G.,3/4"C.	B	-	-		SPACE	70
71	SHUNT TRIP		-	-	C	-	-		SPACE	72
73	SPARE		20/1	-	A	-	-		SPACE	74
75	SPARE		20/1	-	B	-	-		SPACE	76
77	SPARE		20/1	-	C	-	-		SPACE	78
79	MAINTENANCE RECEPTACLE	600	20/1	2#12,#12G.,3/4"C.	A	-	-		SPACE	80
81	BUZZER	100	20/1	2#12,#12G.,3/4"C.	B	-	-		SPACE	82
83	SPARE		20/1	-	C	-	-		SPACE	84

NOTES:
1 NEMA 1 ENCLOSURE
2 PROVIDE BOLT ON BREAKERS

LOAD SUMMARY	CONN	NEC	DEM	LOAD BALANCE PER PHASE	
1.LIGHTING	10115	1.25	12643.75	PHASE A	13887
2.RECEPTACLES	5900	NEC	5900	PHASE B	13168
3.KITCHEN	24676	0.65	16039.4	PHASE C	13308
4.HVAC	0	1	0	LOWEST PHASE PLUS 10%	
5.NON-CONT	4172	1	4172	13168	[+10%] 14484.8
LARGEST MOTOR	0	0.25	0	PHASES ARE BALANCED	
TOTAL VA	44863		38755.15		
TOTAL AMPS	124.5		107.6		

FAULT CURRENT CALCULATION - 208V

SERVICE VOLTAGE 120/ 208
UTILITY FAULT CURRENT 65,000 AMPHERES

KVA = E = 360.256
TRANS. FLA = 0

I = VA x 1000 / E L-L X 1.732 =

Isca = TRANS. FLA x 100 / TRANSFORMER Z = 0 %
Isca = AMPERE SHORT-CIRCUIT CURRENT RMS SYMMETRICAL. Isca = 65,000 AMPERES (A)

FAULT AT:		A	B	RTU-1	RTU-2
LENGTH (DISTANCE)	L=	50	20	60	70
AVAILABLE SHORT CIRCUIT	Isca=	65,000	31,653	31,653	31,653
NO. CONDUCTORS PER PHASE	N=	2	1	1	1
PHASE CONDUCTOR		3/0	1	6	6
PHASE CONDUCTOR CONSTANT	C=	12844	7293	2425	2425
VOLT - LINE TO LINE	EL-L=	208	208	208	208
F FACTOR=1.732xLxI / NxCxE L-L	F=	1.054	0.723	6.521	7.607
MUTILPLIER = 1 / 1+F	M=	0.487	0.580	0.133	0.116
Isca x M = FAULT CURRENT AT TERMINALS OF THE PANEL LINE-LINE =		31653	18373	4209	3677
DESIGN POINT:		(B)	(C)	(D)	(E)

NOTES: 1 CONTRACTOR SHALL VERIFY ALL GROUND FAULT INFORMATION PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER PRIOR TO ORDERING ANY EQUIPMENT.

EQUIPMENT SCHEDULE

TAG	QTY	DESCRIPTION	AMPS	HP	VOLTS	PHASE	ELECTRICAL AFF (IN)	REMARKS	CIRCUIT
1	1	WALK-IN COOLER	9.3	7/8	208	1	–		A-28/29
2	3	FRYER UNIT	1.0		120	1	18		B-13; B-17; B-21
4	1	REFRIGERATED MECHANDISER	7.2		120	1	48	NEMA5-15R	B-25
5	1	DRINK MIXER	7.5		120	1	48		B-27
7	1	DIPPER WELL	12.5		120	1	50		B-29
8	1	ICE CREAM DISPLAY CASE	7.4	1/3	115	1	18	NEMA5-15R	B-31
9	1	TOPPING DISPENSER W/REFRIGERATED BASE	4.6	1/8	115	1	18	NEMA5-15R	B-33
12	2	ELECTRIC GRIDDLE	39.5		208	3	48	NEMA15-50R	A-31/33/35; A-34/36/38
13	2	REFRIGERATED CHEF BASE	8.1	1/3	115	1	48	NEMA5-15R	B-41; B-69
14	2	SANDWICH TOP REFRIGERATOR	8.6	1/3	115	1	18	NEMA5-15R	B-45; B-12
15	2	ELECTRIC CONVEYOR TOASTER	13.5		208	1	48	NEMA6-20R	B-47/49; B-51/53
15A	2	PANININI GRILL	13.0		208		48		B-55/57; B-59/61
20	1	MIXER/GRINDER	25.0		208	3	48		A-21/23/25
21	1	ELECTRIC CONVECTION OVEN	12.0		120	1	48	NEMA5-15R	B-63
22	2	REACH-IN FREEZER	6.1		115	1	48		B-65; B-52
36	1	TEA BREWER	14.4		120	1	48	NEMA5-15R	B-67
40	1	TIMER	5.0		120	1	–		B-2
43	1	SAFE	5.0		120	1	18		B-26
200A	1	ANSUL SYSTEM	4.2		115	1	–		B-15
204	1	TANKLESS WATER HEATER	5.0		120	1	–		B-20
207	1	BAG-IN-BOX	5.0		120	1	48		B-14
209A	1	FREESTYLE SODA DISPENSER	15.0		120	1	48		B-16
209B	1	FREESTYLE SODA/ICE DISPENSER	14.9		120	1	72	REFER TO ROOF PLAN	B-18
209C	1	FREESTYLE SODA/ICE DISPENSER CONDENSER	16.5		208	1	–	REFER TO ROOF PLAN	A-27/29
211	3	POS SYSTEM	10.0		120	1	48		B-28; B-30; B-32
212	3	POS PRINTER	10.0		120	1	48		B-34; B-36; B-38
214	1	KITCHEN PRINTER	10.0		120	1	48		B-40

NOTE:

ALL RECEPTACLES LOCATED IN THE KITCHEN/PREP. AREA SHALL BE GFCI. IF RECEPTACLES IS NOT LOCATED IN AN ACCESSIBLE LOCATION, CONTRACTOR SHALL PROVIDE A GFCI CIRCUIT BREAKER ALONG WITH THE CORRECT NUMBER OF RELAYS AND CONTACTORS TO TO DEACTIVATE THE POWER VIA THE SHUNT TRIP FROM THE HOOD CONTROLS.

COORDINATE ALL MOUNTING HEIGHTS OF KITCHEN EQUIPMENT RECEPTACLES WITH KITCHEN EQUIPMENT PROVIDER PRIOR TO ROUGH-IN.

COORDINATE NEMA CONFIGURATION OF RECEPTACLES OF ALL KITCHEN EQUIPMENT WITH KITCHEN EQUIPMENT PROVIDER AND PROVIDE AS NECESSARY PRIOR TO ROUGH-IN.

GC SHALL VERIFY WITH LOCAL AUTHORITY HAVING JURISDICTION IF ELECTRICAL DISCONNECT IS REQUIRED.

PROVIDE #1/0 CU. – 3/4" C. TO BOND GAS, WATER AND SPRINKLER PIPING PER N.E.C. ARTICLE 250-104

REMOVE MAIN BONDING JUMPER BETWEEN NEUTRAL BUS AND GROUND LUG IF EXISTING SERVICE EQUIPMENT NEUTRAL IS ALREADY BONDED PER N.E.C.

CONTRACTOR SHALL COORDINATE THE LOCATION OF THE NEW 300 AMP METER/CT WITH THE AVAILABLE WALL SPACE AND MAKE ADJUSTMENTS AS NECESSARY.

ELECTRICAL RISER DIAGRAM
NOT TO SCALE

1

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STATE OF MAINE
BRIAN E. CHANDLER
No. 12879
PROFESSIONAL ENGINEER
11/18/2013

ELEVATION BURGER

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CLIENT: BETTER BURGER OLD PORT, LLC
ONE LONG WHARF
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DATE	DESCRIPTION
11/18/13	PERMIT ISSUE

	DATE	DESCRIPTION

SHEET TITLE:
ELECTRICAL RISER DIAGRAM AND SCHEDULES

SHEET NUMBER:
E2.0

PROJECT NUMBER:
EVB130001