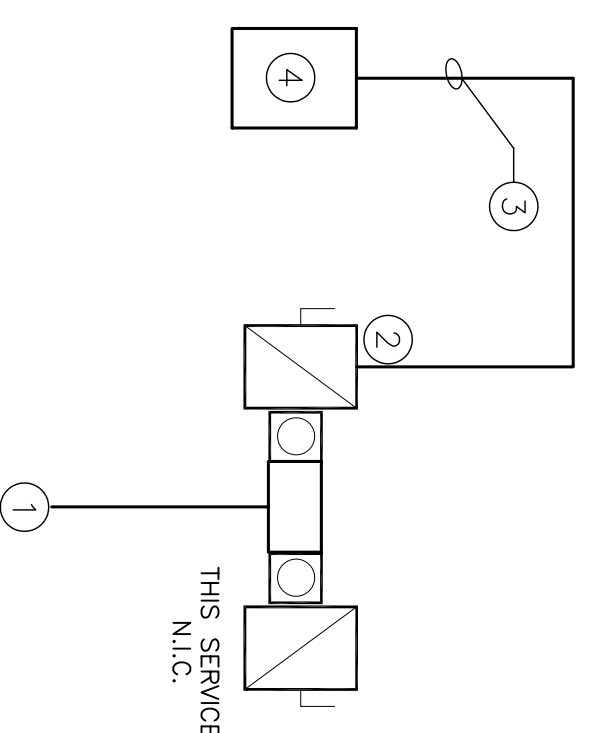


NOTE: ELECTRICAL SERVICE AND SYSTEM DETAILED IS DESIGNED BASED ON 120/208VOLT THREE PHASE SERVICE. ANY CHANGES TO THIS SERVICE WILL BE AT THE CONTRACTOR'S EXPENSE. MAKE NECESSARY MODIFICATIONS AS REQUIRED.

ELECTRICAL DESIGN BASED UPON 2009 NATIONAL ELECTRICAL CODE



SERVICE RISER DIAGRAM
NO SCALE

- ELECTRICAL SERVICE RISER NOTES:
- 120/208V 3Ø UNDERGROUND SERVICE FROM SERVICE PROVIDER.
 - EXISTING 120/208V 3Ø 4W 200A METER AND FUSED DISCONNECT.
 - NEW (3-3/0 THHN; 1-2/0 THHN NEUTRAL; 1-#4 GND; 2" CONDUIT)
 - NEW (1- 120/208V 200 AMP 42 POLE PANEL, 22,000 AIC)

ELECTRICAL LOAD SUMMARY – 200A SERVICE

LOAD SOURCE	1Ø-KVA	3Ø-KVA
BUILDING LIGHTING	7.7K	
ELECTRIC WATER HEATING	9.0K	
AIR CONDITIONING	7.8K	13.8K
ELECTRIC HEATING	10K	11.7K
KITCHEN EQUIPMENT	15.7K	3.0K
REFRIGERATION	4.3K	
RECEPTACLES (STANDARD)	0.5K	
RECEPTACLES (COMPUTER)	3.6K	
OTHER (SPECIFY)		
TOTAL	58.6K	28.5K

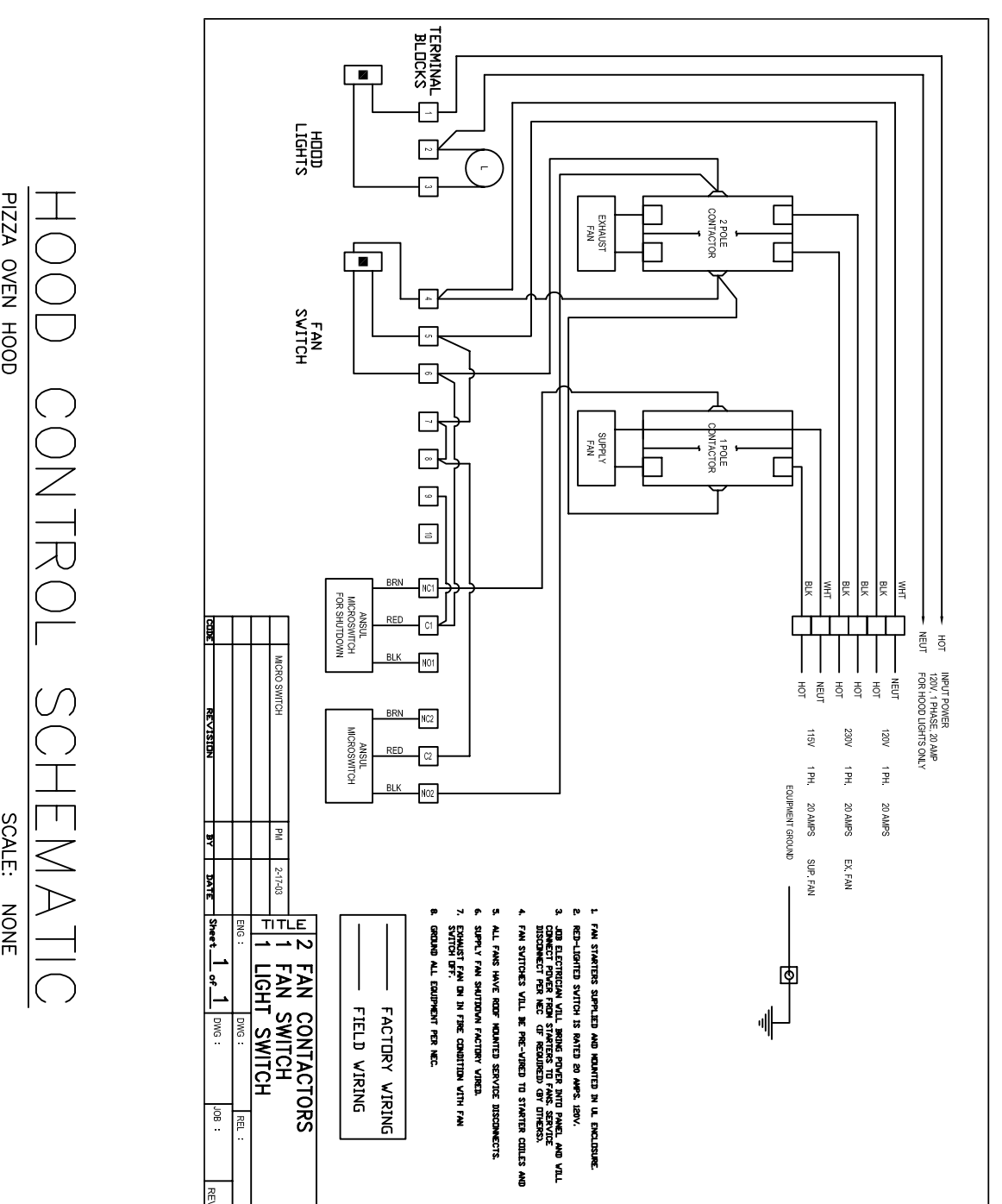
NEW PANEL A
LOCATION: BACK ROOM

VOLTAGE: 120/208V, 200A 3Ø 4W
ENCLOSURE: SURFACE MOUNTED W/EQUIPMENT GRID BAR
200A, NLD, 22,000 AIC

NO.	THHN SIZE	LOCATION	BREAKER AMP	LOAD (KW)	A @ 90 C (KW)	B @ 75 C (KW)	LOAD (KW)	BREAKER AMP	LOAD (KW)	THHN SIZE	NO.
1	#4	DOOR RECEPTER	20	1.1	1.2	1.1	20	#0 - PWS #1		12	2
3	#4	DOOR RECEPTER	20	1.4	1.4	1.4	20	#1-A - PWS #2		12	4
5	#15	FOOD WARMER	20	1.8	1.8	1.8	20	#1-B - PWS #3		12	6
7	#15	FOOD WARMER	20	1.8	1.8	1.8	20	#1-A - PWS #2		12	4
9	#7	COMPRESSOR #1 & #2	30	2.4	2.4	2.4	20	#1-A - REZA HBR BTRNG.		12	8
11	#12	WATER	15	3.0	3.0	3.0	20	#1-B - REZA HBR BTRNG.		12	10
13	#12	WATER	15	3.0	3.0	3.0	20	#1-B - REZA HBR BTRNG.		12	10
15	#12	WATER	15	3.0	3.0	3.0	20	#1-B - REZA HBR BTRNG.		12	10
17	#12	COOLER COMPRESSOR	20	1.2	1.2	1.2	20	WINDON SIGNS		12	18
19	#12	FRONT COUNTER LIGHTS	20	1.2	1.2	1.2	4.5	50 HOT WATER HEATER		8	20
21	#12	FRONT COUNTER LIGHTS	20	1.2	1.2	1.2	4.5	50 HOT WATER HEATER		8	20
23	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
25	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
27	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
29	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
31	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
33	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
35	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
37	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
39	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24
41	#12	OUTLETS	20	1.8	1.8	1.8	1	20 LIGHTS & OUTLETS		12	24

TOTAL CONNECTED LOAD (KW) 58.6
AM 30.0KVA BR 20.1KVA ICL 27.2KVA

GROUND BUS (Ø) 20
#1B EXHAUST FAN 12
40



GENERAL NOTES:

- ELECTRICAL CONTRACTOR SHALL COORDINATE FULLY WITH OTHER CONTRACTORS ASSOCIATED WITH THIS PROJECT TO PREVENT CONFLICTS DURING CONSTRUCTION. ANY DELAY OR REWORK OF EQUIPMENT, PIPES, CONDUITS, DUCTS OR MATERIALS RESULTING FROM A LACK OF COORDINATION BETWEEN CONTRACTORS WILL BE AT THE CONTRACTOR'S EXPENSE.
- EQUIPMENT ROOMS SHOWN ARE ACCURATE TO THE BEST OF DESIGNER'S KNOWLEDGE. HOWEVER, IN SOME INSTANCES, THE CONTRACTOR SHALL VERIFY ALL CRITICAL DIMENSIONS WITH THE OWNER PRIOR TO CONSTRUCTION. FAILURE OF THE ELECTRICAL CONTRACTOR TO VERIFY THESE DIMENSIONS SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT RELOCATION DIRECTLY ON THE CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED DISCONNECT SWITCHES AND MOTOR STARTERS TO LOCATION OF BUILDING SERVICE PRIOR TO CONSTRUCTION AND PROVIDE 120VAC CONNECTIONS AS REQUIRED.
- ELECTRICAL CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS AT JOB COMPLETION TO ARCHITECT.
- ALL WORK SHALL BE INSTALLED PER ALL GOVERNING CODES.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL OPEN PULGS, HUBBELL PULGS (TWIST LOOKS)/ RECEPTACLES COMPLETE. REFER TO INSTRUCTION MANUAL FOR DETAILS.
- ALL LIGHTING AND SIGN CIRCUIT BREAKERS TO BE SWITCH GRADE.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL STARTERS FOR ROOF MOUNTED SUPPLY AND EXHAUST FANS. ALL JUNCTION BOXES INSTALLED ABOVE OR DIRECTLY BELOW THE SUSPENDED CEILING SHALL BE SUPPORTED IN ACCORDANCE WITH ARTICLE 314-23 OF THE 2002 NEC.
- COMPUTER AND PHONE WIRING SHALL BE Routed IN 3/4" CONDUIT TO PHONE BOARD LOCATION.
- ALL ISOLATED GROUND RECEPTACLE CIRCUITS SHALL BE EQUIPPED WITH INSULATED GROUND CONDUCTORS AND SEPARATE NEUTRAL WIRE.
- NEUTRAL WIRES FOR ISOLATED GROUND CIRCUITS SHALL NOT BE SHARED WITH OTHER BRANCH CIRCUITS. PROVIDE SEPARATE NEUTRAL WIRE FOR EACH ISOLATED GROUND CIRCUIT.
- ISOLATED GROUND CIRCUITS SHALL NOT BE Routed WITHIN SAME CONDUIT AS GENERAL BRANCH CIRCUIT WIRING.
- NON-ISOLATED GROUND TYPE RECEPTACLE CIRCUITS SHALL BE INSTALLED IN COMMON JUNCTION BOX WITH SEPARATE GROUND CONDUIT FOR SERVICE TO ISOLATED GROUND CIRCUITS.
- ELECTRICAL CONTRACTOR SHALL USE THE PARALEL WIRE UNITS PROVIDED WITH THE HEAT STRIP UNITS. THE USE OF PLASTIC WIRE NUTS WILL VOID THE MANUFACTURERS' WARRANTY. ELECTRICAL CONTRACTOR SHALL USE 90°C WIRE FOR CONNECTION TO HEAT STRIP UNITS PER MANUFACTURERS' RECOMMENDATION.
- USE CIRCUIT BREAKERS U.L. LISTED AS HACR TYPE FOR USE WITH HACR AND REFRIGERATING EQUIPMENT HAVING MOTOR GROUP COMBINATIONS AND MARKED FOR USE WITH HACR TYPE CIRCUIT BREAKERS.
- ELECTRICAL CONTRACTOR SHALL MAKE ALL REQUIRED ELECTRICAL CONNECTIONS FOR WALK-IN COOLER LIGHTING.
- FLUORESCENT LAMPS IN FOOD PREP, COOK AND FOOD STORAGE AREAS SHALL BE PROVIDED WITH SHATTER PROTECTIVE DEVICES. GENERAL ELECTRIC COMPACTED LAMPS OR APPROVED EQUALS SHALL BE CONNECTED TO THE BRANCH CIRCUITS INSTALLED ABOVE OR DIRECTLY BELOW THE SUSPENDED CEILING. IN ORDER TO PROVIDE UNINTERRUPTED SOURCE TO FIXTURES, ALL 120 VOLT SINGLE PHASE, 15 OR 20 AMP RECEPTACLES LOCATED IN THE KITCHEN AREA SHALL HAVE GROUND-FAULT CIRCUIT-INTERUPTER PROTECTION AS REQUIRED BY SECTION 210.8.3.3 OF THE 2002 NEC.
- RECELVAY SYSTEMS
 - ROUTING WIRING SHALL BE Routed IN EMT, ELECTRICAL METALLIC TUBING, USE STEEL SET SCREW TYPE FITTINGS ON ALL EMT.
 - CONDUIT SHALL BE SUPPORTED AT INTERVALS PER NEC REQUIREMENTS AND SHALL BE SECURELY FASTENED TO BUILDING WITH AN APPROVED FASTENING SYSTEM.
 - ALL WIRING SHALL CONSIST OF COPPER CONDUCTORS WITH THERMOPLASTIC INSULATION RATED FOR SIX HUNDRED (600) VOLTS. ALL WIRING INSULATION SHALL BE HEAT AND MOISTURE RESISTANT TYPES THW, THWN, OR THHN FOR INTERNAL AND DUNE LOCATIONS.
 - MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG FOR ALL POWER CIRCUITS (IE RECEPTACLES, LIGHTING, EQUIPMENT POWER, ETC.). NUMBER 14 AWG SHALL BE MINIMUM SIZE PERMITTED FOR EQUIPMENT CONTROL CIRCUIT WIRING.
 - CONDUCTORS SHALL BE FILLED WITHOUT THE USE OF OIL OR GREASE. WIRE PULLING LUBRICANTS WHICH ARE APPROVED MAXIMUM ALLOWABLE PULLING TENSION OF WIRE IS NOT EXCEEDED. WIRING WITH DAMAGED CONDUCTORS OR INSULATION WILL NOT BE ACCEPTED.
 - ALL PLUG-IN DEVICES SHALL BE GROUNDING TYPE. A GROUNDING JUMPER FROM RECEPTACLE TO OUTLET BOX SHALL BE INSTALLED WHERE CONDUIT SYSTEM IS USED FOR GROUND.
 - ALL PLUG-IN DEVICES SHALL BE INSTALLED IN RECEPTACLES AS INDICATED ON DRAWINGS AND ALL NON-DEFLECTING RECEPTACLES PER NEC.
 - SWITCHES FOR LIGHTING CONTROL SHALL BE INDUSTRIAL GRADE, MOXY COLOR, SIZE WHEDED ONLY, TWENTY (20) AMP, ONE HUNDRED TWENTY/TWO HUNDRED SEVENTY-SEVEN (120/277) VOLT.
 - DUPLEX RECEPTACLES SHALL BE INDUSTRIAL GRADE, THREE (3) WIRE GROUNDING, MOXY COLOR, FINDER GROOVE, TWENTY (20) AMP, NEMA 5-20R 125 VAC.
 - PLATES FOR FLUSH MOUNTED DEVICES SHALL BE STAINLESS STEEL. PLATES FOR SURFACE MOUNTED DEVICES SHALL BE GALVANIZED STEEL.
- LIGHTING FIXTURES
 - PROVIDE LIGHTING FIXTURES, OF SIZES, TYPES AND RATINGS INDICATED, COMPLETE WITH, BUT NOT LIMITED TO, HOUSINGS, ENERGY-EFFICIENT LAMPS, LAMP HOLDERS, REFLECTORS, ENERGY EFFICIENT BALLASTS, STARTERS AND WIRING SHIPMENTS WITH CONCEALED HINGES AND CATCHES, WITH METAL PARTS GROUNDING AS COMMON UNIT, AND SO CONSTRUCTED AS TO DAMPEN BALLAST GENERATED NOISE.
 - FLUORESCENT BALLASTS PROVIDED FOR FOUR (4) FOOT 1-Ø FLUORESCENT LAMP SHALL BE TWO-LAMP ENERGY SAING, ELECTRONIC TYPE.
 - INSTALL INTERIOR LIGHTING FIXTURES AT LOCATIONS AS INDICATED, IN ACCORDANCE WITH FIXTURE MANUFACTURERS' WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC, NETA'S STANDARD OF INSTALLATION, NEMA STANDARDS, AND WITH RECOMMENDED INDUSTRY PRACTICES TO ENSURE THAT LIGHTING FIXTURES FULLY MEET REQUIREMENTS.
 - REMOVE AND INSTALL ALL LIGHT FIXTURES INDICATED COMPLETE WITH SPECIFIED LAMPS. FLUORESCENT LAMP SHALL BE 2800 LUMENS, COMPACT FLUORESCENT LAMP SHALL BE 28 WATT COMPACT FLUORESCENT LAMP SHALL BE HIGH COLOR RENDERING, HIGH EFFICIENCY LAMPS WITH NOMINAL OPERATING TEMPERATURE OF 3,500 K.
 - FASTEN LIGHTING FIXTURES SECURELY TO STRUCTURAL SUPPORTS, AND ENSURE THAT FIXTURES ARE PLUMB AND LEVEL.
 - FLUORESCENT FIXTURES INSTALLED IN LAY-IN CEILINGS SHALL BE SUPPORTED BY ADDITIONAL WIRE SUPPORT AT TWO POINTS, ATTACHED TO CEILING GND, AND ANCHORED TO STRUCTURAL MEMBER. THIS ADDITIONAL WIRE SUPPORT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR AND IS NOT CONSIDERED PART OF GENERAL LAYOUT.
 - PROVIDE EQUIPMENT GROUNDING CONNECTIONS FOR INTERIOR LIGHTING FIXTURES AS INDICATED. TIGHTEN CONNECTION TO CORNER WITH TIGHTENING TORQUES SPECIFIED IN UL STD 480A TO ASSURE PERMANENT AND EFFECTIVE GROUNDS.
 - ALL LIGHT FIXTURES SHALL BE UL LISTED.
- FIRE RATED WALL PENETRATIONS
 - PROVIDE U.L. LISTED FIRESTOP SYSTEM SEALANTS AROUND ALL CONDUITS PASSING THROUGH ALL RATED WALLS OR FLOORS IN ACCORDANCE WITH THE U.L. FIRE RESISTANCE DIRECTORY.
 - THE SELECTED SYSTEM MUST BE AN APPROVED U.L. PENETRATION SYSTEM NUMBER AND BE INSTALLED IN ACCORDANCE WITH THE U.L. LISTING AND SYSTEM MANUFACTURERS' INSTRUCTIONS. THE SYSTEM NUMBER AND THE RATED ASSEMBLY BEING PENETRATED AND SYSTEM NUMBER OF PENETRATION BEING MADE MUST BE IDENTIFIED ON THE RATED PARTITIONS IN THE FACILITY.
 - THE ELECTRICAL CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM NUMBER AND EXTENT OF ALL FIRE RATED PARTITIONS IN THE FACILITY.
 - APPROVED PRODUCTS:
 - HULTI CS240
 - TERMO FRESHIELD
 - 3M 09-429

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ELECTRICAL
PANELS

SCALE: AS NOTED
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DATE: 11-1-10
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