

**DAMMON ENGINEERING, INC.**

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ARCHITECTURE

ENGINEERING

STUDIES

PLANNING

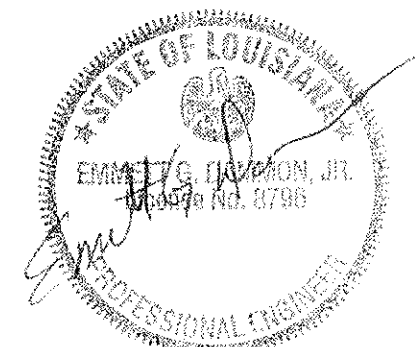
INVESTIGATION

EXPERT WITNESS

**MARCO'S PIZZA TENANT BUILDOUT**

2349 E. GAUSE BLVD  
SUITE 1  
SLIDELL, LA  
70461

**ELECTRICAL PANELS**



SCALE: AS NOTED

JOB#: 2082

DATE: 11-1-10

SHEET 8

**E-2**

OF 10

NOTE: ELECTRICAL SERVICE AND SYSTEM DETAILED IS DESIGNED BASED ON 120 / 208 VOLT THREE PHASE SERVICE. ELECTRICAL CONTRACTOR TO VERIFY AVAILABLE SERVICE. MAKE NECESSARY MODIFICATIONS AS REQUIRED.

ELECTRICAL DESIGN BASED UPON 2008 NATIONAL ELECTRICAL CODE.

**GENERAL NOTES:**

- GENERAL REQUIREMENTS**
- ELECTRICAL CONTRACTOR SHALL COORDINATE FULLY WITH OTHER CONTRACTORS ASSOCIATED WITH THIS PROJECT TO VERIFY ALL EQUIPMENT LOCATIONS, CONNECTION REQUIREMENTS, ELEVATIONS AND LOCATIONS OF PIPES, CONDUITS AND DUCTS TO PREVENT CONFLICTS DURING CONSTRUCTION. ANY RELOCATION OR ROUTING OF EQUIPMENT, PIPES, CONDUITS, DUCTS OR MATERIALS RESULTING FROM A LACK OF COORDINATION BETWEEN CONTRACTORS WILL BE AT THE CONTRACTORS EXPENSE.
  - EQUIPMENT ROUGH-INS SHOWN ARE ACCURATE TO THE BEST OF DESIGNER'S KNOWLEDGE. HOWEVER, IN SOME INSTANCES, THE OWNER OR SUPPLIER MAY SUBSTITUTE, OR THE EQUIPMENT ITEM MAY VARY FROM WHAT IS SHOWN. THEREFORE, 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 UPON THE CONTRACTOR.
  - ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED DISCONNECT SWITCHES AND MOTOR STARTERS TO ALL EQUIPMENT.
  - ELECTRICAL CONTRACTOR SHALL REVIEW WITH OWNER AND SIGNAGE MANUFACTURER, REQUIREMENTS AND LOCATION OF BUILDING SIGNAGE PRIOR TO CONSTRUCTION AND PROVIDE 120VAC CONNECTION 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 OVEN PLUGS, HUBBELL PLUGS (TWIST LOCKS)/ 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 (SF-1 AND EF-2) AND START-STOP SWITCH. BOTH SF-1 AND EF-2 SHALL RUN AND STOP TOGETHER AND ARE TO BE CONTROLLED FROM THE SAME SWITCH.
  - 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 FROM DEVICE LOCATION.
  - ALL ISOLATED GROUND RECEPTACLE CIRCUITS SHALL BE EQUIPPED WITH INSULATED GROUND CONDUIT 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. PROVIDE SEPARATE CONDUIT FOR SERVICE TO ISOLATED GROUND CIRCUITS.
  - ISOLATED GROUND RECEPTACLES SHALL UNDER NO CIRCUMSTANCE BE INSTALLED IN COMMON JUNCTION BOX WITH NON-ISOLATED GROUND TYPE RECEPTACLE.
  - ELECTRICAL CONTRACTOR SHALL USE THE PORCELAIN WIRE NUTS PROVIDED WITH THE HEAT STRIP UNITS. THE USE OF PLASTIC WIRE NUTS WILL VOID THE MANUFACTURERS' WARRANTY. ELECTRICAL CONTRACTOR SHALL USE 90C WIRE FOR CONNECTION TO HEAT STRIP UNITS PER MANUFACTURER'S RECOMMENDATION.
  - USE CIRCUIT BREAKERS U.L. LISTED AS HACR TYPE FOR USE WITH HVAC 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, WALK-IN COOLER REFRIGERATION UNIT AND CUT TABLE HEAT STRIP UNITS.
  - FLUORESCENT LAMPS IN FOOD PREP, COOK AND FOOD STORAGE AREAS SHALL BE PROVIDED WITH SHATTER PROTECTIVE COVERS. GENERAL ELECTRIC "COVERGUARD" LAMPS OR APPROVED EQUAL.
  - ALL EXIT SIGNS, EMERGENCY EGRESS LIGHTS AND NIGHT LIGHT FIXTURES SHALL BE CONNECTED TO THE BRANCH CIRCUITS INDICATED AHEAD OF RESPECTIVE CONTROL SWITCH, IN ORDER TO PROVIDE UNSWITCHED SOURCE TO FIXTURES.
  - ALL 125 VOLT, SINGLE PHASE, 15 OR 20 AMP RECEPTACLES LOCATED IN THE KITCHEN AREA SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION AS REQUIRED BY SECTION 210.8.B.3 OF THE 2002 NEC.
- RACEWAY SYSTEMS**
- ALL BRANCH CIRCUIT WIRING SHALL BE ROUTED IN EMT, ELECTRICAL METALLIC TUBING, USE SET SCEL 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.
- WIRING, WIRING DEVICES, PLATES AND GROUNDING**
- 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 DRIVE LOCATIONS.
  - MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG FOR ALL POWER CIRCUITS (I.E. RECEPTACLES, LIGHTING, EQUIPMENT POWER, ETC.). NUMBER 14 AWG SHALL BE MINIMUM SIZE PERMITTED FOR EQUIPMENT CONTROL CIRCUIT WIRING.
  - ALL SPLICES AND CONNECTIONS SHALL BE MADE IN OUTLET BOXES, JUNCTION BOXES OR EQUIPMENT WHERE ACCESSIBLE.
  - CONDUCTORS SHALL BE PULLED WITHOUT THE USE OF OIL OR GREASE. WIRE PULLING LUBRICANTS WHICH ARE APPROVED FOR USE WITH CONDUCTOR INSULATION MAY BE USED. CARE SHALL BE TAKEN IN PULLING WIRE TO ASSURE THAT 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 GROUNDED TYPE. A GROUNDING JUMPER FROM RECEPTACLE TO OUTLET BOX SHALL BE INSTALLED WHERE CONDUIT SYSTEM IS USED FOR GROUND.
  - INSTALL INSULATED GREEN GROUNDING CONDUCTOR (NO. 12 AWG MINIMUM) IN RACEWAYS AS INDICATED ON DRAWINGS AND IN ALL NON-METALLIC RACEWAYS PER NEC.
  - SWITCHES FOR LIGHTING CONTROL SHALL BE INDUSTRIAL GRADE, IVORY COLOR, SIDE WIRED ONLY, TWENTY (20) AMP, ONE HUNDRED TWENTY-TWO HUNDRED SEVENTY-SEVEN (120/277) VOLT.
  - DUPLEX RECEPTACLES SHALL BE INDUSTRIAL GRADE, THREE (3) WIRE GROUNDING, IVORY COLOR, FINDER GROOVE, TWENTY (20) AMP, NEMA 5-20R, 125 VAC.
  - PLATES SHALL BE FURNISHED AND INSTALLED FOR ALL WIRING DEVICES, TELEPHONE OUTLETS, JUNCTION BOXES, ETC.
  - PLATES FOR FLUSH MOUNTED DEVICES SHALL BE STAINLESS STEEL. PLATES FOR SURFACE MOUNTED BOXES 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. SHIP FIXTURES FACTORY-ASSEMBLED, WITH THOSE COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION. DESIGN FIXTURES WITH CONCEALED HINGES AND CATCHES, WITH METAL PARTS GROUNDED AS COMMON UNIT, AND SO CONSTRUCTED AS TO DAMPEN BALLAST GENERATED NOISE.
  - FLUORESCENT BALLASTS PROVIDED FOR FOUR (4) FOOT T-8 FLUORESCENT LAMPS SHALL BE TWO-LAMP ENERGY SAVING, ELECTRONIC TYPE.
  - INSTALL INTERIOR LIGHTING FIXTURES AT LOCATIONS AS INDICATED, IN ACCORDANCE WITH FIXTURE MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC, NEMA'S "STANDARD OF INSTALLATION", NEMA STANDARDS, AND WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT LIGHTING FIXTURES FULLY MEET REQUIREMENTS.
  - PROVIDE AND INSTALL ALL LIGHT FIXTURES INDICATED COMPLETE WITH SPECIFIED LAMPS. FLUORESCENT LAMPS SHALL BE 48" 32W, T-8, RAPID START WITH NOMINAL OPERATING TEMPERATURES OF 3,500 K - MINIMUM INITIAL LIGHT OUTPUT OF 2850 LUMENS. COMPACT FLUORESCENT LAMPS SHALL BE 26 WATT COMPACT FLUORESCENT LAMPS 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.
  - PROVIDE LIGHTING FIXTURES INSTALLED IN LAY-IN CEILINGS SHALL BE SUPPORTED BY ADDITIONAL WIRE SUPPORT AT TWO CORNERS, ATTACHED TO CEILING GRID, AND ANCHORED TO STRUCTURAL MEMBER. THIS ADDITIONAL WIRE SUPPORT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR AND IS NOT CONSIDERED PART OF GENERAL GRID LAYOUT.
  - PROVIDE EQUIPMENT GROUNDING CONNECTIONS FOR INTERIOR LIGHTING FIXTURES AS INDICATED. TIGHTEN CONNECTION TO COMPLY WITH TIGHTENING TORQUES SPECIFIED IN UL STD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDS.
  - ALL LIGHT FIXTURES SHALL BE U.L. 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 BEAR AN APPROVED U.L. PENETRATION SYSTEM NUMBER AND BE INSTALLED IN ACCORDANCE WITH THE SELECTED SYSTEM TAKING INTO ACCOUNT THE CONSTRUCTION AND THE RATING OF THE RATED ASSEMBLY BEING PENETRATED AND THE TYPE OF PENETRATION BEING MADE.
  - THE ELECTRICAL CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM NUMBER AND EXTENT OF ALL FIRE RATED PARTITIONS IN THE FACILITY.
- APPROVED PRODUCTS:**
- HILTI CS240
  - TERMCO FYPRESHIELD
  - 3M CP-25

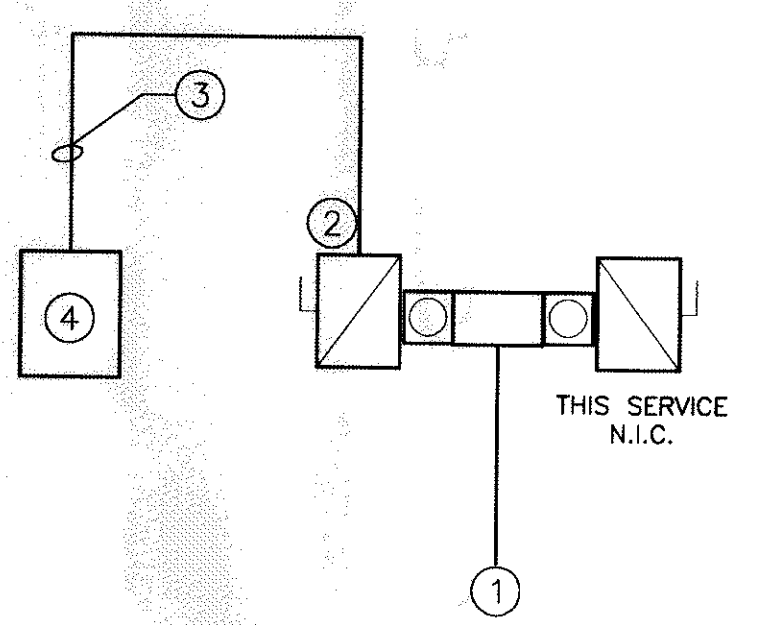
**ELECTRICAL LOAD SUMMARY - 200A SERVICE**

| 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)        |              |              |
| <b>TOTAL</b>           | <b>58.6k</b> | <b>28.5k</b> |

**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)



NEW PANEL: A  
LOCATION: BACK ROOM  
MAIN PANEL

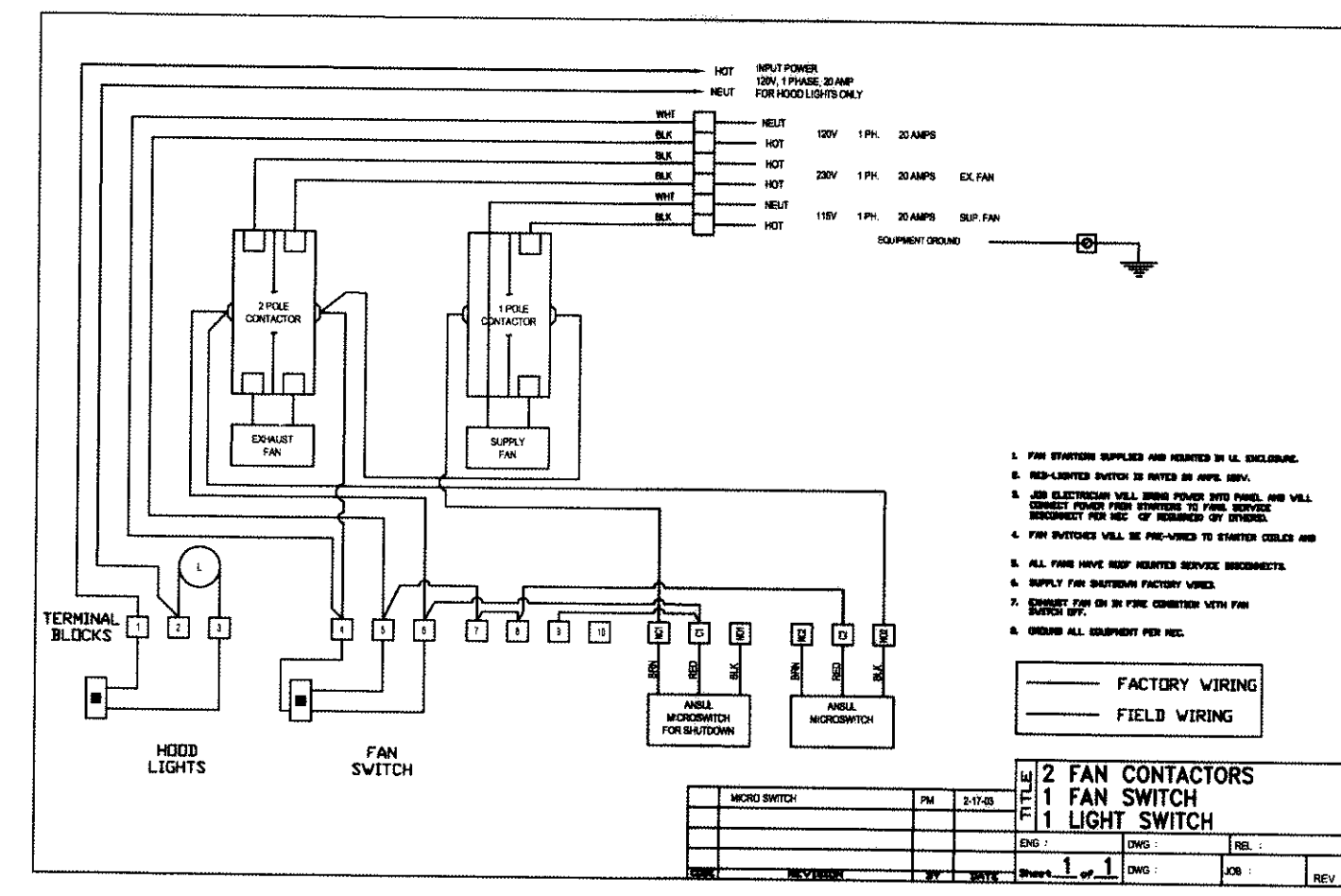
VOLTAGE: 120/208V, 200A 3Ø, 4W  
ENCLOSURE: SURFACE MOUNTED W/EQUIPMENT GRND BAR  
200A, MLO, 22,000 AIC

| CIR. NO. | THHN WIRE SIZE | LOAD DESCRIPTION                    | BREAKER | LOAD | AMP |   |    | LOAD                             | BREAKER | LOAD DESCRIPTION | THHN WIRE SIZE | CIR. NO. |
|----------|----------------|-------------------------------------|---------|------|-----|---|----|----------------------------------|---------|------------------|----------------|----------|
|          |                |                                     |         |      | Ø   | Ø | Ø  |                                  |         |                  |                |          |
| 1        | 12             | #4 - DOUGH RE-PROFFER               | 20 1    | 1.1  | 1.2 | 1 | 20 | #30 - POS #1                     | 12      | 2                | 12             | 2        |
| 3        | 12             | #6 - DOUGH ROLLER                   | 20 1    | 1.4  | 1.2 | 1 | 20 | #41A - POS #2                    | 12      | 4                | 12             | 4        |
| 5        | 12             | #15 - POS MONITOR #1                | 20 1    | 1.8  | 1.2 | 1 | 20 | #41B - POS #3                    | 12      | 6                | 12             | 6        |
| 7        | 12             | #15 - POS MONITOR #2                | 20 1    | 1.8  | 1.0 | 1 | 20 | #1A - PIZZA PREP REFRIG.         | 12      | 8                | 12             | 8        |
| 9        | 12             | #7 - CONVEYOR OVEN #1 & #2          | 30 2    | 2.4  | 1.0 | 1 | 20 | #2B - MERCHANDISER               | 12      | 10               | 12             | 10       |
| 11       | 12             | #7 - CONVEYOR OVEN #1 & #2          | 30 2    | 2.4  | 1.0 | 1 | 20 | #45 & 45B - POS DRIVER POS       | 12      | 12               | 12             | 12       |
| 13       | 12             | #18 - MIXER                         | 15 3    | 1.0  | 1.7 | 1 | 20 | #20 - FREEZER & COOLER LGH       | 12      | 14               | 12             | 14       |
| 15       | 12             | #18 - MIXER                         | 15 3    | 1.0  | 1.8 | 1 | 20 | ZK4 LIGHTS                       | 12      | 16               | 12             | 16       |
| 17       | 12             | #16 - COOLER COMPRESSOR             | 20 2    | 1.2  | 1.5 | 1 | 20 | WINDOW SIGNS                     | 12      | 18               | 12             | 18       |
| 19       | 12             | #16 - COOLER COMPRESSOR             | 20 2    | 1.2  | 4.5 | 2 | 50 | HOT WATER HEATER                 | 8       | 20               | 8              | 20       |
| 21       | 12             | FRONT COUNTER LIGHTS                | 20 1    | 1.2  | 4.5 | 2 | 50 | HOT WATER HEATER                 | 8       | 22               | 8              | 22       |
| 23       | 12             | OUTLETS                             | 20 1    | .5   | 1   | 1 | 20 | LIGHTS & OUTLETS                 | 12      | 24               | 12             | 24       |
| 25       | 12             | #8A SUPPLY FAN                      | 20 1    | 1.2  | 1.6 | 1 | 20 | #34 - BAG WARMER                 | 12      | 26               | 12             | 26       |
| 27       | 12             | SHUNT TRIP CONTROL                  | 20 1    | -    | 1.5 | 1 | 20 | FRONT SIGN                       | 12      | 28               | 12             | 28       |
| 29       | 12             | SPARE                               | 20 1    | -    | 5.0 | 2 | 60 | EXISTING AHU #1 5 TON W/SKW HEAT | 8       | 30               | 8              | 30       |
| 31       | 12             | SPARE                               | 20 1    | -    | 5.0 | 2 | 60 | EXISTING AHU #1 5 TON W/SKW HEAT | 8       | 32               | 8              | 32       |
| 33       | 12             | EXISTING A/C CONDENSER #1 - 5 TON   | 60 2    | 3.9  | 3.9 | 3 | 40 | AHU #2 7.5 TON W/10KW HEAT       | 8       | 36               | 8              | 36       |
| 35       | 12             | EXISTING A/C CONDENSER #1 - 5 TON   | 60 2    | 3.9  | 3.9 | 3 | 40 | AHU #2 7.5 TON W/10KW HEAT       | 8       | 38               | 8              | 38       |
| 37       | 12             | EXISTING A/C CONDENSER #2 - 7.5 TON | 60 3    | 4.6  | 0.8 | 2 | 20 | #6B EXHAUST FAN                  | 12      | 40               | 12             | 40       |
| 38       | 12             | EXISTING A/C CONDENSER #2 - 7.5 TON | 60 3    | 4.6  | 0.8 | 2 | 20 | #6B EXHAUST FAN                  | 12      | 42               | 12             | 42       |
| 41       | 12             | EXISTING A/C CONDENSER #2 - 7.5 TON | 60 3    | 4.6  | 0.8 | 2 | 20 | #6B EXHAUST FAN                  | 12      | 44               | 12             | 44       |

TOTAL CONNECTED LOAD (kVA)  
Ø 30.4kVA Ø 29.1kVA Ø 27.6kVA

SOLID NEUTRAL WIRE (N)  
NEUTRAL WIRE (N)

GROUND BUS  
GROUND WIRE (G)



**HOOD CONTROL SCHEMATIC**  
PIZZA OVEN HOOD

SCALE: NONE