## ELECTRICAL ABBREVIATIONS

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|---|---|
| 1PH | SINGLE–PHASE |
| 1P | SINGLE POLE |
| 2/C | TWO–CONDUCTOR |
| 3/C | THREE–CONDUCTOR |
| 3PH | THREE–PHASE |
| 4/C | FOUR–CONDUCTOR |
| 4W | FOUR–WIRE |
| A/C UNIT | AIR CONDITIONING UNIT |
| A/E | ARCHITECT/ENGINEER |
| AAP | ALARM ANNUNCIATOR PANEL |
| AC | ALTERNATING CURRENT OR ARMORED CABLE |
| ACC | ACCESSIBLE |
| ADDL | ADDITIONAL |
| ADJ | ADJACENT, ADJOINING |
| ADO | AUTOMATIC DOOR OPENER |
| AF | AMPERE FRAME OR AMP FUSE |
| AFC | ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AH | AMPERE HOUR |
| AHJ | AUTHORITY HAVING JURISDICTION |
| AIC | AMPERE INTERRUPTING CAPACITY |
| ALT | ALTERNATE |
| AMB OR A | AMBIENT |
| AMP | AMPERE |
| ARCH | ARCHITECT |
| ASC | AMPS SHORT CIRCUIT |
| AT | AMPERE TRIP |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AUTO | AUTOMATIC |
| AV | AUDIO VISUAL |
| BAT | BATTERY |
| BC | BARE COPPER |
| BD | BOARD |
| BFF | BELOW FINISH FLOOR |
| BIL | BASIC INSULATION LEVEL |
| BLDG | BUILDING |
| BPIP | BOILER PLANT INSTRUMENTATION PANEL |
| BRKR | BREAKER |
| BYP | BY PASS |
| C | CONDUIT |
| CAB | CABINET |
| CALC | CALCULATE |
| CAP | CAPACITY |
| CAT | CATALOG |
| CATV | COMMUNITY ANTENNA TELEVISION |
| CCR | CONTROL CONTACTOR |
| CCTV | CLOSED CIRCUIT TELEVISION |
| cd | CANDELA |
| CD | CONSTRUCTION DOCUMENTS |
| CF | CONTRACTOR FURNISHED |
| CF/CI | CONTRACTOR FURNISHED/CONTRACTOR INSTALLED |
| CF/OI | CONTRACTOR FURNISHED/OWNER INSTALLED |
| CFE | CONTRACTOR FURNISHED EQUIPMENT |
| CHW | CHILLED WATER |
| CHWP | CHILLED WATER PUMP |
| CKT | CIRCUIT |
| CKT BRKR | CIRCUIT BREAKER |
| CLF | CURRENT LIMITING FUSE |
| CLG | CEILING |
| CMU | CONCRETE MASONRY UNIT |
| COAX | COAX CABLE |
| COMM | COMMUNICATION |
| COMPT | COMPARTMENT |
| CONC | CONCRETE |
| CONT | CONTINUE |
| CONTR | CONTRACTOR |
| COORD | COORDINATE |
| CPT | CONTROL POWER TRANSFORMER |
| CRI | COLOR RENDERING INDEX |
| CT | CURRENT TRANSFORMER |
| CTV | CABLE TELEVISION |
| CU | COPPER |
| CU FT | CUBIC FEET |
| CUR | CURRENT |
| DB | DECIBEL OR DIRECT BURIAL |
| DC | DIRECT CURRENT |
| DCP | DIMMER CONTROL PANEL |
| DEG C | DEGREES CELSIUS |
| DEG F | DEGREES FAHRENHEIT |
| DEMO | DEMOLITION |
| DIAG | DIAGRAM |
| DISC | DISCONNECT |
| DISTR | DISTRIBUTION |
| DISTR PNL | DISTRIBUTION PANEL |
| DMR SW | DIMMER SWITCH |
| DN | DOWN |
| DPDT | DOUBLE POLE, DOUBLE THROW |
| DPST | DOUBLE POLE, SINGLE THROW |
| DRSW | DOOR SWITCH |
| DS | DISCONNECT SWITCH |
| DWG | DRAWING |
| EC | EMPTY CONDUIT |
| EG | EQUIPMENT GROUND |
| EL | ELEVATION |
| ELEC | ELECTRIC OR ELECTRICAL |
| ELEV | ELEVATOR |
| EMCP | EMERGENCY MONITORING CONTROL PANEL |
| EMER | EMERGENCY |
| EMI | ELECTROMAGNETIC INTERFERENCE |
| EMT | ELECTRICAL METALLIC TUBING |
| ENCL | ENCLOSURE |
| EPO | EMERGENCY POWER OFF |
| EPRF | EXPLOSION PROOF |
| ESMT | EASEMENT |
| EWC | ELECTRIC WATER COOLER |
| EWH | ELECTRIC WATER HEATER |
| EXIST | EXISTING |
| FA | FIRE ALARM |
| FAAP | FIRE ALARM ANNUNCIATOR PANEL |
| FABL | FIRE ALARM BELL |
| FABX | FIRE ALARM BOX |
| FACP | FIRE ALARM CONTROL PANEL |
| FC | FOOTCANDLE |
| FI | FILM ILLUMINATOR |
| FIXT | FIXTURE |
| FLA | FULL LOAD AMPS |
| FLEX | FLEXIBLE METALLIC CONDUIT |
| FLT | FLOODLIGHT |
| FLUOR | FLUORESCENT |
| FLUOR FIX | FLUORESCENT FIXTURE |
| FOUTT | TELEPHONE FLOOR OUTLET |
| FP | FIRE PROTECTION |
| FT | FEET OR FOOT |
| FU SW | FUSED SWITCH |
| FVNR | FULL VOLTAGE NON–REVERSING |
| FVR | FULL VOLTAGE REVERSING |
| G OR GND | GROUND OR GENERATOR |
| GEN | GENERATOR |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| GTB | GROUND TERMINAL BOX |
| HID | HIGH INTENSITY DISCHARGE |
| HOA | HAND–OFF–AUTOMATIC |
| HP | HORSEPOWER |
| HT | HEIGHT |
| HZ | HERTZ |
| IESNA | ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA |
| IMC | INTERMEDIATE METAL CONDUIT |
| INCAND | INCANDESCENT |
| IR | INFRARED |
| IWH | INSTANTANEOUS WATER HEATER |
| J–BOX | JUNCTION BOX |
| kV | KILOVOLT |
| kVA | KILOVOLT AMPERE |
| kVAH | KILOVOLT AMPERE PER HOUR |
| kVAR | KILOVOLT AMPERE REACTIVE |
| kW | KILOWATT |
| kWH | KILOWATT HOUR |
| kWHM | KILOWATT HOUR METER |
| LED | LIGHT EMITTING DIODE |
| LF | LINEAR FEET (FOOT) |
| LM | LUMEN |
| LP | LIGHT POLE |
| LPS | LOW PRESSURE SODIUM |
| LRA | LOCKED ROTOR AMPS |
| LTCP | LOCAL TEMPERATURE CONTROL PANEL |
| LT | LIGHT |
| LTG | LIGHTING |
| LTG PNL | LIGHTING PANEL |
| LTNG | LIGHTNING |
| LV | LOW VOLTAGE |
| MATV | MASTER ANTENNA TELEVISION SYSTEM |
| MAX | MAXIMUM |
| MC | METAL–CLAD |
| MCA | MINIMUM CIRCUIT AMPS |
| MCB | MAIN CIRCUIT BREAKER |
| MCC | MOTOR CONTROL CENTER |
| MDP | MAIN DISTRIBUTION PANEL |
| MECH | MECHANICAL |
| MG | MOTOR GENERATOR |
| MH | MANHOLE |
| MIN | MINIMUM |
| MOCP | MAXIMUM OVERCURRENT PROTECTION |
| MLO | MAIN LUGS ONLY |
| MT | MOUNT |
| MTD | MOUNTED |
| MTG | MOUNTING |
| MTS | MANUAL TRANSFER SWITCH |
| MV | MEDIUM VOLTAGE |
| MVA | MEGAVOLT–AMPERE |
| MW | MEGAWATT MICROWAVE |
| NA | NOT APPLICABLE |
| NEC | NATIONAL ELECTRICAL CODE |
| NEMA | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION |
| NEUT OR N | NEUTRAL |
| NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| NIC | NOT IN CONTRACT |
| NL | NIGHT LIGHT |
| NO | NORMALLY OPEN |
| NS | NO SCALE |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OL | OVERLOAD |
| P | POLE |
| PA | PUBLIC ADDRESS |
| PB | PANELBOARD, PULL BOX, OR PUSHBUTTON |
| PBPU | PREFABRICATED BEDSIDE PATIENT UNIT |
| PCB | POLYCHLORINATED BIPHENYL |
| PEC | PHOTOELECTRIC CELL |
| PED | PEDESTAL |
| PEND | PENDANT |
| PF | POWER FACTOR |
| PH | PHASE |
| PNL | PANEL |
| POD | POWER OPERATED DAMPER |
| PT | POTENTIAL TRANSFORMER |
| PTRV | POWER TYPE ROOF VENTILATION |
| PVC | POLYVINYL CHLORIDE (PLASTIC) |
| PWR | POWERRCP REFLECTED CEILING PLAN |
| REC | RECESSED |
| RECPT | RECEPTACLE |
| RGS | RIGID GALVANIZED STEEL |
| RM | ROOM |
| RMS | ROOT MEAN SQUARE |
| REQD | REQUIRED |
| RGA | REMOTE GENERATOR ANNUNICATOR |
| SCC | SHORT CIRCUIT CAPACITY |
| SES | SERVICE ENTRANCE SECTION |
| SD | SMOKE DETECTOR |
| SF | SQUARE FOOT (FEET) |
| SHT | SHEET |
| SI | INTERNATIONAL SYSTEM OF UNITS |
| SPEC | SPECIFICATION |
| SPST | SINGLE POLE, SINGLE THROW |
| SURF | SURFACE |
| SW | SWITCH |
| SWBD | SWITCHBOARD |
| SWGR | SWITCHGEAR |
| TC | TIME CLOCK |
| TEL | TELEPHONE |
| TP | TWISTED PAIR |
| TPS | TWISTED PAIR SHIELDED |
| TTB | TELEPHONE TERMINAL BOARD |
| TV | TELEVISION |
| TYP | TYPICAL |
| UFD | UNDERFLOOR DUCT |
| UGND | UNDERGROUND |
| UL | UNDERWRITERS LABORATORY |
| UON | UNLESS OTHERWISE NOTED |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| UTIL | UTILITY |
| V | VOLT |
| VA | VOLT AMPERE |
| VAR | VOLT AMPERE REACTIVE |
| VFD | VARIABLE FREQUENCY DRIVE |
| VOLT | VOLTAGE |
| W | WATT |
| WH | WATER HEATER |
| WP | WEATHERPROOF |
| XFER | TRANSFER |
| XFMR | TRANSFORMER |

## ELECTRICAL SYMBOLS – DIAGRAM

- EARTH GROUND
- PB — PULL BOX
- FUSE WITH RATING
- MOLDED CASE CIRCUIT BREAKER
- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- VFD — VARIABLE FREQUENCY DRIVE
- TC — TIME CLOCK
- LC — LIGHTING CONTACTOR
- G — GENERATOR, POWER
- M — METER
- WYE CONNECTION
- MOTOR, SINGLE–PHASE
- MOTOR, THREE–PHASE
- S E — WATT–HOUR DIGITAL METER WITH KYZ HARDWARE AND INTERFACED WITH DDC PANEL VIA CAT–5e CABLING.

## ELECTRICAL SYMBOLS – LIGHTING PLAN

$S_2$ SWITCH
BLANK = SINGLE POLE
3 = THREE–WAY
D = DIMMER
LV= LOW VOLTAGE
LM= LOW VOLTAGE MASTER
PB= PUSH BUTTON STATION
T = TIMER OPERATED
X = EXPLOSION PROOF
M=MANUAL MOTOR SWITCH
2 = DOUBLE POLE
4 = FOUR–WAY
K = KEY OPERATED
L = LOCK
P = WITH PILOT LIGHT
RC= REMOTE CONTROL
WP= WEATHER PROOF
Mo= OCCUPANCY SENSOR

- WALL MOUNTED, OCCUPANCY SENSOR
- PE — PHOTOELECTRIC CELL, LIGHTING CONTROLS
- FIXTURE, DOWNLIGHT, RECESSED
- FIXTURE, DOWNLIGHT, RECESSED, EMERGENCY BATTERY BACKUP
- FIXTURE, WALL MOUNTED
- FIXTURE, 2'x4' LAY–IN, RECESSED
- FIXTURE, 2'x4' LAY–IN, RECESSED, EMERGENCY BATTERY BACKUP, NIGHT LIGHT ENABLED
- FIXTURE, 4' STRIP, PENDANT; /E INCLUDE WITH EMERGENCY BATTERY BACKUP
- FIXTURE, 4' LINEAR, PENDANT; /E INCLUDE WITH EMERGENCY BATTERY BACKUP
- FIXTURE, 4' LINEAR, WALL MOUNTED
- FIXTURE, 2'x4'
- FIXTURE,
- FIXTURE, 1'x2' SURFACE MOUNTED
- EXIT SIGN, WALL MOUNTED WITH DIRECTIONAL ARROWS AND FACES AS SHOWN
- EXIT SIGN, CEILING MOUNTED WITH DIRECTIONAL ARROWS AND FACES AS SHOWN

GENERAL NOTES

A. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

B. LIGHTING FIXTURES WITH MORE THAN TWO LAMPS SHALL HAVE TWO OUTER LAMPS CONTROLLED WITH ONE SWITCH AND INNER LAMP(S) CONTROLLED BY A SECOND SWITCH.

C. EACH HOMERUN CONDUIT SHALL CONTAIN NO MORE THAN THREE CIRCUITS. PROVIDE A NEUTRAL AND GROUND FOR EACH HOMERUN CIRCUIT. IF THE HOMERUN EXCEEDS 100 FEET, USE #10 THHN Cu WIRE.

D. MULTI–GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

## ELECTRICAL SYMBOLS – POWER PLAN

- RECEPTACLE, DUPLEX, 120VAC, 20A, 18" A.F.F.
- RECEPTACLE, DUPLEX, 120VAC, 20A, COORD. WITH COUNTER
- GF — RECEPTACLE, DUPLEX, 120VAC, 20A, GFCI, COORD. WITH COUNTER
- WP — RECEPTACLE, DUPLEX, 120VAC, 20A, GFCI, WEATHERPROOF WHILE IN USE.
- RD — RECEPTACLE, DUPLEX, 120VAC, 20A, EMERGENCY POWER
- TR — RECEPTACLE, DUPLEX, 120VAC, 20A, TAMPER RESISTANT
- IG — RECEPTACLE, DUPLEX, 120VAC, 20A, ISOLATED GROUND
- RECEPTACLE, SIMPLEX, 120VAC, 20A, COORD. WITH EQUIPMENT
- RECEPTACLE, QUADPLEX, 120VAC, 20A, 18" A.F.F. U.N.O.
- RECEPTACLE, DUPLEX, 120VAC, 20A, SPLIT WIRED
- RECEPTACLE, SPECIAL PURPOSE
  A = 120V, 20A, 1 PHASE, 2–POLE, 3W, NEMA 5–20R.
  B = 208V, 20A, 1 PHASE, 2–POLE, 3W, NEMA 6–20R.
  C = 120V, 30A, 1 PHASE, 2–POLE, 3W, NEMA 5–30R.
  D = 208V, 30A, 1 PHASE, 2–POLE, 3W, NEMA 6–30R.
  E = 208V, 60A, 1 PHASE, 3–POLE, 4W, NEMA 14–60R.
  F = 208V, 30A, 3 PHASE, 3–POLE 4W, NEMA 15–30R.
  G = 208V, 50A, 3 PHASE, 3 POLE, 4W, NEMA 15–50R.
  H = 208V, 60A, 3 PHASE, 3 POLE, 4W, NEMA 15–60R.
- J — JUNCTION BOX
- PANELBOARD, SURFACE MOUNTED
- PANELBOARD, RECESSED MOUNTED
- TA — TRANSFORMER – "TA"
- DISCONNECT SWITCH
- MAIN GROUNDING BUSBAR
- CONDUIT TERMINATED 6" [152mm] AFF IN STANDARD BOX FOR EXTENSION TO EQUIPMENT AS DIRECTED.
- CONDUIT TERMINATED W/COUPLING (FLUSH W/FINISHED FLOOR) FOR EXTENSION TO EQUIPMENT AS DIRECTED.
- #, # — BRANCH CIRCUIT HOMERUN. LINES INDICATE NUMBER OF CIRCUITS AND NEUTRAL. ONE SEPARATE GREEN GROUNDING CONDUCTOR SHALL BE PROVIDED; NOT SHOWN
- LIGHT POLE, ONE LUMINAIRE
- LIGHTING, EXTERIOR BUILDING

## ELECTRICAL GENERAL NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ROOF PENETRATIONS AND DETAILS.
2. THIS SCHEDULE IS A STANDARD SCHEDULE. CERTAIN SYMBOLS & ABBREVIATIONS INDICATED ON THIS SCHEDULE MAY NOT APPEAR ON THE DRAWINGS.
3. EQUIPMENT SYMBOLS SHOWN DASHED ON THE DRAWINGS INDICATE EXISTING EQUIPMENT.
4. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT A COMPLETE AND WORKABLE ELECTRICAL INSTALLATION BE PROVIDED FOR ALL THE EQUIPMENT DESCRIBED OR SHOWN AS BEING IN THIS CONTRACT.
5. FURNISH ALL LABOR AND TOOLS NECESSARY, AND FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT IN A FASHION COMPLYING WITH ALL APPLICABLE CODES, UFC'S AND AUTHORITY HAVING JURISDICTION REQUIREMENTS, INCLUDING ITEMS REQUIRED BUT NOT NECESSARILY SHOWN SUCH AS LAMPS, COUPLINGS, HANGERS, BRACKETS, CLAMPS, BOXES, CONNECTORS AND HARDWARE.
6. BEFORE SUBMITTING THE BID PROPOSAL, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE JOB CONDITIONS. VERIFY SERVICE REQUIREMENTS, INCLUDING ALL NECESSARY PULLBOXES, SIZE AND NUMBER OF CONDUITS AND CONDUCTORS, PANELS, SWITCHBOARDS, DISCONNECT SWITCHES, CABLES, ETC., WHETHER SHOWN ON DRAWINGS OR NOT, BUT REQUIRED FOR PROVIDING A COMPLETE AND OPERABLE ELECTRICAL SYSTEM WITHOUT ADDITIONAL COST TO THE OWNER.
7. ALL EXTERIOR ENCLOSED DISCONNECT SWITCHES AND CIRCUIT BREAKERS SHALL BE NEMA 4X, UNLESS OTHERWISE NOTED.
8. ALL INTERIOR ENCLOSED DISCONNECT SWITCHES AND CIRCUIT BREAKERS SHALL BE NEMA 1, UNLESS OTHERWISE NOTED.
9. ALL RECEPTACLES DENOTED WITH "GF" GROUND FAULT CIRCUIT INTERRUPTION SHALL BE WIRED TO THE LINE TERMINALS ONLY. DOWNSTREAM "GF" RECEPTACLES SHALL NOT BE FED BY THE LOAD TERMINALS OF UPSTREAM "GF" DEVICES. (TYPICAL)

FINAL SUBMISSION / FULLY SPRINKLERED

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CONSULTANTS:

CIVIL:
KENNETH HORNE & ASSOCIATES
7201 NORTH 9TH AVENUE, STE. 6
PENSACOLA, FLORIDA 32504
PH: (850) 471–9005
FX: (850) 471–0093

LANDSCAPE ARCHITECT:
CSA GROUP, INC.
6300 PICCADILLY SQUARE DRIVE
MOBILE, ALABAMA 36609
PH: (251) 344–4023
FX: (251) 344–4052

COMM/IDS:
SCHMIDT CONSULTING GROUP, INC.
40 S. PALAFOX PLACE, STE. 300
PENSACOLA, FLORIDA 32502
PH: (850) 438–0050
FX: (850) 432–8631

SURVEYORS:
KCI TECHNOLOGIES, INC.
10401 HIGHLAND MANOR DRIVE, SUITE 120
TAMPA, FLORIDA 33610
PH: (813) 740–2300

N.W. BULLOCH CERTIFICATE NO. 56537 STATE OF FLORIDA PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

BES DESIGN/BUILD

BES DESIGN/BUILD, LLC
766 Middle St, Fairhope, AL 36532
Phone: 251.990.5778 Fax: 251.990.3716


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