

**GENERAL ELECTRICAL NOTES**

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES.
- ALL MATERIAL, EQUIPMENT & APPLIANCES SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITERS LABORATORIES, INC. AND THE NATIONAL MANUFACTURERS ASSOCIATION.
- ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL CONTRACTOR.
- DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE ONLY THE GENERAL ARRANGEMENT. SEE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS (EXCEPT AS NOTED).
- ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A MINIMUM OF ONE YEAR. THE ONE YEAR WARRANTY IS TO CORRESPOND WITH THE GENERAL CONTRACTOR'S ONE YEAR WARRANTY WITH THE OWNER & BUYERS.
- ELECTRICAL CONTRACTOR SHALL MAKE ALL ELECTRICAL POWER CONNECTIONS TO HVAC, PLUMBING AND OTHER EQUIPMENT AS REQUIRED.
- A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
- ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- ALL WIRING REQUIRED BY CODE TO BE IN CONDUIT SHALL BE INSTALLED IN RC, IMC, EMT OR PVC CONDUIT (AS ALLOWED BY CODE).
- CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID, UNLESS OTHERWISE NOTED.
- BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE THHN OR THWN AS REQUIRED.
- PROVIDE A PULL WIRE IN ALL EMPTY CONDUITS.
- PROVIDE A TYPED DIRECTORY IN ALL PANEL BOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS.
- PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL PANEL BOARDS AND DISCONNECT SWITCHES, WHITE LETTERS ON BLACK BACKGROUND.
- FUSES 0 - 600 AMPS SHALL BE UL CLASS "RK-1" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTURED BY BUSS. UNLESS NOTED OTHERWISE.
- VERIFY ALL REQUIREMENTS AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START UP. NOTIFY ENGINEER OF ANY CHANGES.
- PROVIDE SCHEDULE 40 PVC CONDUIT UNDERGROUND FROM TELEPHONE EQUIPMENT ROOM TO CONNECTION POINT AS DIRECTED BY LOCAL TELEPHONE COMPANY.
- ALL TERMINALS, SPlicing CONNECTORS, LUGS, ETC. SHALL BE IDENTIFIED FOR USE WITH THE MATERIAL (CU/AL) OF THE CONDUCTOR AND SHALL BE PROPERLY INSTALLED. ALL TERMINALS, SPlicing CONNECTORS, LUGS, ETC. SHALL BE IDENTIFIED FOR USE WITH 75°C RATED CONDUCTORS.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL ELECTRICAL EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.).
- PENETRATIONS OF REQUIRED SMOKE PARTITIONS SHALL BE SEALED USING METHODS APPROVED UNDER THE STATE BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO INSURE THAT THIS SMOKE STOPPING IS ACCOMPLISHED.
- WHERE PENETRATIONS ARE MADE THROUGH A REQUIRED FIRE-RESISTIVE WALL, FLOOR, OR PARTITION FOR THE PURPOSE OF RUNNING RACEWAY CARRYING ELECTRICAL, TELEPHONE, TELEVISION, OR LOCAL COMMUNICATION AND/OR SIGNALING CIRCUITS, THE OPENING AROUND THE RACEWAY SHALL BE FIRE STOPPED PER THE STATE BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO INSURE THAT THIS FIRE STOPPING IS ACCOMPLISHED. USE U.L. APPROVED ASSEMBLIES OF APPROPRIATE TYPE AND RATING ONLY (SEE A2.0 FOR ASSEMBLIES).
- IN REQUIRED FIRE RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES THAT ARE GREATER THAN 16 SQUARE INCHES SHALL BE PROTECTED AS REQUIRED BY U.L. COORDINATE CLOSELY WITH THE GENERAL CONTRACTOR TO INSURE THE INTEGRITY OF THE U.L. RATING IS MAINTAINED.
- WHERE A HOME RUN IS SHOWN THE CIRCUIT SHALL BE INSTALLED IN A DEDICATED CONDUIT, DO NOT COMBINE WITH OTHER CIRCUITS. WHERE A CIRCUIT HOMERUN IS NOT SHOWN THE CONTRACTOR SHALL COMBINE CIRCUITS AS FOLLOWS:  
A MAXIMUM OF THREE 20A BRANCH CIRCUITS OF DIFFERENT PHASES MAY BE COMBINED IN A COMMON HOMERUN SHARING A COMMON NEUTRAL OR WITH SEPARATE NEUTRALS, A TOTAL OF SIX CURRENT CARRYING CONDUCTORS MAXIMUM.  
ALL BRANCH CIRCUITS LARGER THAN 20A SHALL BE SEPARATELY HOMERUN TO THE PANEL. ALL HOME RUNS IN EXCESS OF 100' SHALL BE INCREASED ONE WIRE SIZE FROM THAT SHOWN FOR THE CIRCUIT, #10 AWG MINIMUM.
- ALL EXIT SIGNS SHALL BE CIRCUITED TO AN UNSWITCHED LEG OF THE LOCAL LIGHTING CIRCUIT.
- LOWER CASE LETTER(S) INDICATES SWITCHING DESIGNATION. UPPER CASE LETTER(S) INDICATES FIXTURE TYPE. NUMBER INDICATES CIRCUIT. WHERE DUAL SWITCHING IS DESIGNATED CONTROL ONE LAMP OF TWO LAMP FIXTURES AND THE CENTER LAMP(S) OF THREE AND FOUR LAMP FIXTURES TO ONE SWITCH, AND THE REMAINING LAMPS TO THE SECOND SWITCH. CIRCUIT NUMBERS, FIXTURE DESIGNATION AND SWITCHING ARE DESIGNATED AS FOLLOWS, FIXTURE SWITCHING AND CIRCUITING ARE TYPICAL FOR ALL LIGHT FIXTURES.
- PROVIDE FLASH HAZARD SIGNAGE ON ALL NON-DWELLING ELECTRICAL PANELS.
- SPACING AND LOCATION OF RECEPTACLES, SHALL AT A MINIMUM, BE IN ACCORDANCE WITH THE NEC REQUIREMENTS FOR DWELLING UNITS. PLANS ARE FOR GENERAL ARRANGEMENT ONLY.

**ELECTRICAL SYMBOL SCHEDULE**

	ELECTRICAL CONNECTION TO APPLIANCE OR EQUIPMENT.
	ELECTRICAL CONDUIT HOMERUN TO BRANCH PANELBOARD.
	ELECTRICAL CONDUIT RUN IN OR BELOW FLOOR SLAB.
	JUNCTION BOX CEILING OR FLOOR MOUNTED
	JUNCTION BOX WALL MOUNTED AT HEIGHT INDICATED ON DRAWINGS.
	THERMOSTAT WALL MOUNTED AT 48" AFF.
	SINGLE POLE SWITCH, 20A, 120/277 VOLT, +48" A.F.F. TO CENTER.
	3-WAY SWITCH, 20A, 120/277 VOLT, +48" A.F.F. TO CENTER.
	4-WAY SWITCH, 20A, 120/277 VOLT, +48" A.F.F. TO CENTER.
	PADDLE FAN SPEED CONTROL SWITCH, 120V, 1HP RATED.
	125V, 20A SINGLE PHASE MANUAL MOTOR STARTER WITH OVERLOADS
	WALL SWITCH OCCUPANCY SENSOR, +48" AFF.
	CEILING MOUNTED OCCUPANCY SENSOR
	DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, +18" A.F.F. TO CENTER. "GFI" INDICATES GROUND FAULT CIRCUIT INTERRUPTING. "WP" INDICATES WEATHERPROOF.
	DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, +18" A.F.F. TO CENTER. "GFI" INDICATES GROUND FAULT CIRCUIT INTERRUPTING. "WP" INDICATES WEATHERPROOF.
	ABOVE COUNTERTOP DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 6" ABOVE COUNTERTOP BACKSPASH UNLESS NOTED OTHERWISE. "GFI" INDICATES GROUND FAULT CIRCUIT INTERRUPTING.
	COMBINATION FLOOR MOUNTED RECEPTACLE AND TELE/DATA OUTLET. SUBSCRIPT "Q" DENOTES QUAD OUTLET. SUBSCRIPT "PT" DENOTES POKE THRU DEVICE. SUBSCRIPT "F" DENOTES NUMBER OF TELE/DATA OUTLETS.
	DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, FLUSH FLOOR MOUNTED WITH CHROME COVERPLATE. 208V-1A, 30A OUTLET.
	DUPLEX GFI RECEPTACLE MOUNTED ABOVE COUNTER BACKSPASH OR AT HEIGHT INDICATED.
	POWER POLE FROM FLOOR TO CEILING. PROVIDE (2) DUPLEX AND (4) DATA OUTLETS AT 18" AFF FOR EACH POWER POLE.
	CONDUIT TURNED UP, AS VIEWED FROM LOAD.
	CONDUIT TURNED DOWN, AS VIEWED FROM LOAD.
	INDICATES EQUIPMENT CONNECTION. SEE EQUIPMENT CONNECTION SCHEDULE SHEET FOR ELECTRICAL CONNECTION INFORMATION.
	CABLE TELEVISION OUTLET, COORDINATE HEIGHT WITH OWNER. PROVIDE RG-58 CABLE TO CATV CABINET. PROVIDE DUPLEX RECEPTACLE ADJACENT TO TELEVISION. COORDINATE HEIGHT WITH OWNER.
	DUPLEX RECEPTACLE CONTROLLED BY SWITCH INDICATED. UPPER HALF OF RECEPTACLE IS SWITCHED. LOWER HALF OF RECEPTACLE IS UNSWITCHED.
	TELEPHONE/DATA OUTLET, +18" AFF TO CENTER. "W" INDICATES WALL MOUNTED AT 4"-8", STUB "S" CONDUIT ABOVE ACCESSIBLE CEILING.
	HEAVY DUTY FUSIBLE/NON-FUSIBLE DISCONNECT SWITCH, NUMBERS INDICATE AMP RATING. PROVIDE NEMA 1 ENCLOSURE INSIDE. PROVIDE NEMA 3 ENCLOSURE FOR ALL SWITCHES LOCATED OUTSIDE. FPN = FUSE PER NAMEPLATE, NF = NON FUSED.
	MOTOR STARTER.
	PANELBOARD, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS.
	MOTOR OUTLET. SEE PLANS FOR SIZE.
	2' X 4' LED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	SURFACE MOUNTED LED STRIP. SEE FIXTURE SCHEDULE FOR DETAILS.
	1' X 4' LED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	CEILING MOUNTED TRACK LIGHTING FIXTURE. SEE SCHEDULE FOR DETAILS.
	WALL MOUNTED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE FOR DETAILS.
	CEILING MOUNTED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE FOR DETAILS.
	BEST SMOKE DETECTOR, PROVIDED DIV 16, INSTALLED BY DIV 15, WHERE DIMENSION 16.
	FIRE ALARM CONTROL PANEL, SEMI-FLUSH MOUNTED.
	FIRE ALARM SYSTEM ANNUNCIATOR PANEL, MH = +4"-0".
	FIRE ALARM SYSTEM MANUAL PULL STATION, MH = +4"-0".
	FIRE ALARM SYSTEM ALARM INDICATING DEVICE, HORN/STROBE, MH = +84". HORN SHALL BE 85dBA AT 10"-0" MINIMUM. STROBE SHALL BE 15cd U.O.N.
	FIRE ALARM SYSTEM SMOKE DETECTOR, CEILING MOUNTED, UNLESS OTHERWISE NOTED. SUBSCRIPT "R" INDICATES DEVICE SHALL BE USED FOR ELEVATOR RECALL FUNCTIONS. SUBSCRIPT "TR" INDICATES DEVICE SHALL BE USED FOR ELEVATOR RECALL FUNCTIONS.
	FIRE ALARM SYSTEM DUCT MOUNTED SMOKE DETECTOR. PROVIDED BY E.C., INSTALLED BY M.C. AND WIRED BY E.C.
	FIRE ALARM SYSTEM HEAT DETECTOR, 135° RATE-OF-RISE, UNLESS OTHERWISE NOTED.
	TAMPER SWITCH, CONNECTED INTO FIRE ALARM SYSTEM. SEE FIRE ALARM RISER.
	FLOW SWITCH, CONNECTED INTO FIRE ALARM SYSTEM. SEE FIRE ALARM RISER.

**LIGHTING FIXTURE SCHEDULE**

MARK	MANUFACTURER	CATALOG NUMBER	NO.	LAMP TYPE	MOUNTING	BALLAST NO.	BALLAST TYPE	FIXTURE WATTS	NOTES
A	RENOVA	RVN-24-N-L040-UNV-DM-C35-AF	1	LED	RECESSED	1	ELEC	30W	2x4 LED RECESSED TROFFER
AE	RENOVA	RVN-24-4-L040-UNV-DM-C35-AF	1	LED	RECESSED	1	ELEC	30W	2x4 LED RECESSED TROFFER
B	RENOVA	RVN-22-N-L040-UNV-DM-C35-AF	1	LED	RECESSED	1	ELEC	30W	2x2 LED RECESSED TROFFER
BE	RENOVA	RVN-22-N-L040-UNV-DM-C35-AF-EM	1	LED	RECESSED	1	ELEC	30W	2x2 LED RECESSED TROFFER, 90 MIN. EMERGENCY BATTERY
CE	TCO	LWR-4000-135-UNV-EM	1	LED	SURFACE	1	ELEC	40W	4 LED WRAPAROUND, 90 MIN. EM. BATTERY, +7'-6" A.F.F.
D	BY OWNER	EXTERIOR DECOGATIVE WALL SCORICE	1	LED	SURFACE	1	ELEC	30W	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL DWGS
	LITHONIA	LGM-3-W-3-R-120/277-EL-N-S0		LED	SURFACE			3W	EXIT LIGHT, 90 MIN. EMERGENCY BATTERY
	LITHONIA	AFF-0E1-DOBTD4-NOE-I-LTP-SORT-WT		LED	SURFACE			3W	EXTERIOR EMERGENCY LIGHT 90 MIN. BATTERY CAP.

1. CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF FIXTURE DESIRED. SUBMIT CUTSHEETS OF ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY FIXTURES.  
2. COORDINATE FIXTURE TRIM WITH CEILING TYPE (ACOUSTIC OR GYPSUM).

**ELECTRICAL ABBREVIATIONS**

18"	DIMENSION INDICATES HEIGHT ABOVE FINISHED FLOOR AT WHICH CENTER OF DEVICE IS TO BE MOUNTED.
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE.
EC	ELECTRICAL CONTRACTOR
FPN	FUSE PER EQUIPMENT NAMEPLATE REQUIREMENTS.
GC	GENERAL CONTRACTOR
GFI	INDICATES RECEPTACLE TO HAVE GROUND FAULT PROTECTION.
MC	MECHANICAL CONTRACTOR
PC	PLUMBING CONTRACTOR
WP	INDICATES DEVICE TO HAVE WEATHERPOOF COVER.
U.N.O.	UNLESS NOTED OTHERWISE
ETR	NEW TO REMAIN
CH	COUNTER HEIGHT
NL	NIGHT LIGHT

**2018 APPENDIX B  
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS  
ELECTRICAL DESIGN  
ELECTRICAL SUMMARY**

**ELECTRICAL SYSTEM AND EQUIPMENT**  
**METHOD OF COMPLIANCE 2018 NCECC**  
**LIGHTING SCHEDULE (each fixture type)**  
SEE FIXTURE SCHEDULE LAMP TYPE REQUIRED IN FIXTURE  
SEE FIXTURE SCHEDULE NUMBER OF LAMPS IN FIXTURE  
SEE FIXTURE SCHEDULE BALLAST TYPE USED IN THE FIXTURE  
SEE FIXTURE SCHEDULE NUMBER OF BALLAST IN FIXTURE  
SEE FIXTURE SCHEDULE TOTAL WATTAGE PER FIXTURE  
0.5 VS 0.82 W/SF TOTAL INTERIOR WATT SPECIFIED VS. ALLOWED  
NEW TOTAL EXTERIOR WATT SPECIFIED VS. ALLOWED  
**ADDITIONAL EFFICIENCY PACKAGE OPTIONS**  
 C406.2 MORE EFFICIENT MECHANICAL EQUIPMENT  
 C406.3 REDUCED LIGHTING POWER DENSITY  
 C406.4 ENHANCED DIGITAL LIGHTING CONTROLS  
 C406.5 ON-SITE RENEWABLE ENERGY  
 C406.6 DEDICATED OUTDOOR AIR SYSTEM  
 C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING  
**DESIGNER STATEMENT:**  
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE ENERGY CODE.

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**PRIEST ARCHITECTURE**  
PRIEST ARCHITECTURE, PLLC  
1701 W. HARRIS BLVD., SUITE 200  
CHARLOTTE, NC 28205  
PHONE: 704.266.0942 FAX: 704.266.0942  
MOBILE: 803.253.8600  
EMAIL: PRIESTARCHITECT@BELL.SOUTHEAST.NET

**ENGINEERING**  
1401 CENTRAL AVE-200J  
CHARLOTTE, NC 28205  
704.266.0942  
CERTIFICATE P-1340

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NO.	DATE

**BH PECAN, LLC**  
900 PECAN AVENUE  
CHARLOTTE, NORTH CAROLINA 28205

Project No: 1923  
Scale:  
Date Drawn: 10/04/19  
Sheet Title: ELECTRICAL COVER SHEET