GENERAL NOTES

1. PROVIDE TRANSFORMER PAD IN ACCORDANCE WITH UTILITY REQUIREMENTS. COORDINATE THE EXACT LOCATION OF THE PADMOUNTED TRANSFORMER AND UTILITY SERVICE POINT IN THE FIELD WITH THE UTILITY COMPANY. EXTEND 5" CONDUIT FROM TRANSFORMER TO UTILITY SERVICE POINT. ALL ELBOWS SHALL BE RGS. COORDINATE WITH UTILITY COMPANY TO PROVIDE METER ON SERVICE. LOCATE METER AS PER UTILITY COMPANY REQUIREMENTS. ALL COSTS ASSOCIATED WITH THE PAD, PRIMARY CONDUIT, METER AND PERMITTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FOR BIDDING PURPOSES, IF A SERVICE POINT IS NOT SHOWN ON PLANS ASSUME RUN SHALL BE 100' AND PROVIDE A DOLLAR/FOOT ADDER/DEDUCT FOR VARIANCES.
2. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES.
3. ALL MATERIAL, EQUIPMENT AND APPLIANCES SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC., AND THE NATIONAL MANUFACTURERS ASSOCIATION.
4. ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL CONTRACTOR.
5. SEE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS. DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE ONLY THE GENERAL ARRANGEMENT.
6. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REGARDLESS OF WHO SUPPLIES THE EQUIPMENT. THIS INCLUDES ALL HVAC, PLUMBING AND OWNER FURNISHED EQUIPMENT CONNECTIONS OF 120V OR HIGHER.
7. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR EFFECTIVE FROM THE DAY THE PROJECT IS ACCEPTED BY THE OWNER.
8. A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
9. ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
10. ALL WIRING SHALL BE INSTALLED IN PVC, GRS, EMT OR TYPE AC FLEXIBLE CABLE. MINIMUM SIZE CONDUIT SHALL BE 1/2". AC FLEX SHALL BE USED ONLY IN AREAS PERMITTED BY CODE.
11. CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE NO. 12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED, #10 THRU #12 AWG CONDUCTORS SHALL BE SOLID. ALL INSULATION TYPES SHALL BE THWN OR THHN. PROVIDE A PULLWIRE OR FISH TAPE IN ALL EMPTY CONDUITS.
12. PROVIDE A TYPED DIRECTORY IN ALL PANELBOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS.
13. ALL TERMINALS/LUGS SHALL BE 60/75' RATED.
14. ALL FLEX SHALL BE LIQUID TIGHT FLEXIBLE METAL.
15. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL PANELBOARDS AND DISCONNECT SWITCHES, WHITE LETTERS ON BLACK BACKGROUND.
16. ALL EXPOSED RACEWAY SHALL BE RUN PARALLEL OR PERPENDICULAR TO THE BUILDING SURFACES AND SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT. NO EXPOSED CONDUIT SHALL BE ALLOWED IN FINISHED SPACES EXCEPT AS PERMITTED BY OWNER OR ARCHITECT. EXPOSED RACEWAY IN FINISHED SPACES SHALL BE WIREMOLD TYPE.
17. ALL DEVICE PLATES SHALL BE WHITE UON.
18. ALL WATER HEATERS SHALL HAVE DISCONNECT AS PER NEC 422.31(B).
19. LIGHT SWITCHES SHALL BE NO MORE THAN 6" FROM EDGE OF DOOR FRAME.
20. WALL RECEPTACLES SHOWN BACK TO BACK MAY BE OFFSET BUT SHALL BE INSTALLED DIRECTLY ADJACENT TO ONE ANOTHER.
21. TWO OR MORE ADJACENT POWER OR COMMUNICATION RECEPTACLES SHALL BE GANGED WITH A COMMON FACEPLATE – IF THEY CANNOT BE GANGED THEY SHALL BE INSTALLED WITH A MINIMUM DISTANCE BETWEEN UNITS.
22. 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 APPROVED ASSEMBLIES SUCH AS THE FOLLOWING:

   *CONDUIT PENETRATIONS OF 1,2,3 & 4 HOUR GYPBOARD WALLS – U.L.#WL1001 *CONDUIT
   PENETRATIONS OF 2,3 & 4 HOUR CONCRETE OR BLOCK WALLS – U.L.#CAJ1001 *CONDUIT
   PENETRATIONS OF 2,3 & 4 HOUR CONCRETE FLOORS – U.L.#CAJ1001 *CONDUIT
   PENETRATIONS OF 1 HOUR GYPBOARD CEILING ASSEMBLY – L526 *MULT. CONDUIT
   PENETRATIONS OF 2,3 & 4 HOUR CONCRETE OR BLOCK WALL OR FLOOR – CAJ1042

23. IN REQUIRED FIRE RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES THAT ARE GREATER THAN 16 SQUARE INCHES SHALL BE PROTECTED AS REQ'D BY U.L. COORDINATE CLOSELY WITH THE GENERAL CONTRACTOR TO INSURE THAT THE INTEGRITY OF THE U.L. RATING IS MAINTAINED.
24. WHERE A HOMERUN 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 AND IN ACCORDANCE WITH THE NEC: A MAXIMUM OF THREE 20A, 1 POLE BRANCH CIRCUITS MAY BE COMBINED IN A COMMON HOMERUN SHARING A COMMON NEUTRAL OR WITH SEPARATE NEUTRALS, FOR A TOTAL OF SIX CURRENT CARRYING CONDUCTORS. ALL BRANCH CIRCUITS LARGER THAN 20A SHALL BE SEPARATELY HOMERUN TO PANEL.
25. MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A DISCONNECTING MEANS WHICH SIMULTANEOUSLY DISCONNECTS ALL UNGROUNDED CONDUCTORS AT THE BRANCH CIRCUIT POINT OF ORIGIN.
26. FUSES 0-600 AMPS SHALL BE UL CLASS "RK-5" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTERED BY BUSSMAN UNLESS NOTED OTHERWISE.
27. VERIFY ALL REQUIREMENTS AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START. NOTIFY ENGINEER OF ANY CHANGES.
28. PROVIDE "FLASH HAZARD" WARNING SIGNS ON ALL SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL CENTERS AND MOTOR CONTROL CENTERS.
29. THE ELECTRICAL CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING SEISMIC SUPPORT AND BRACING OF ELECTRICAL COMPONENTS TO RESIST THE EFFECTS OF EARTHQUAKES ON THE ELECTRICAL SYSTEM AS WELL AS ANY REQUIRED SPECIAL INSPECTIONS BASED ON THE SPECIFIC GEOGRAPHIC LOCATION AS REQUIRED.
30. ALL 120V, SINGLE PHASE, 15A AND 20A BRANCH CIRCUITS SERVING OUTLETS AND DEVICES IN DWELLINGS AREAS SUCH AS: BEDROOMS, DINING ROOMS, KITCHENS, LIBRARIES, RECREATION ROOMS, DENS, FAMILY ROOMS, LIVING ROOMS, SUNROOMS, CLOSETS, HALLWAYS PARLORS, LAUNDRY AREAS AND SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.
31. ALL INDOOR BRANCH CIRCUIT WIRING SHALL BE TYPE NM, NMC, OR NMS FOR DWELLING UNITS LOCATED IN BUILDINGS OF TYPE III, IV AND V CONSTRUCTION. TYPE SE OR USE CABLES SHALL BE PERMITTED TO BE USED AS SERVICE-ENTRANCE CONDUCTORS AND SHALL BE INSTALLED IN ACCORDANCE WITH NEC. 230.6, 230.7, AND PARTS II, III, AND IV OF ARTICLE 230. TYPE SE SERVICE-ENTRANCE CABLE USED FOR INTERIOR WIRING SHALL COMPLY WITH THE INSTALLATION REQUIREMENTS OF PART II OF ARTICLE 334, EXCLUDING 334.80. ALL OTHER WIRING EXCEEDING 50 AMPERES SHALL BE INSTALLED IN EMT INDOORS OR PVC OUTDOORS, WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
32. ELECTRICAL COORDINATION WITH OTHER TRADES:
   A. THE ELECTRICAL CONTRACTOR SHALL CONNECT AND/OR PROVIDE FINAL CONNECTIONS TO ALL EQUIPMENT SUPPLIED BY OTHERS APPLICABLE TO THE PROJECT, INCLUDING BUT NOT LIMITED TO, MECHANICAL, PLUMBING, FIRE PROTECTION AND SUPPRESSION, OWNER FURNISHED, KITCHEN, LABORATORY, ETC. UNLESS OTHERWISE NOTED.
   B. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONNECTIONS PRIOR TO ROUGH-IN USING APPROVED CATALOG SHEETS AND SHOP DRAWINGS.
   C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANUAL MOTOR STARTER SWITCHES, DISCONNECT SWITCHES, RECEPTACLES, ETC. TO MECHANICAL AND PLUMBING EQUIPMENT. ALL STARTERS, OTHER THAN MANUAL STARTER SWITCHES, SHALL BE PROVIDED BY OTHERS, BUT INSTALLED BY THE ELECTRICAL CONTRACTOR.
   D. ALL DISCONNECT SWITCHES AND FUSE SIZES SHALL BE COORDINATED WITH SHOP DRAWINGS PRIOR TO ORDERING OR INSTALLING. ANY EQUIPMENT INSTALLED INCORRECTLY BECAUSE OF LACK OF COORDINATION WILL BE REMOVED AND INSTALLED CORRECTLY AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
   E. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT RUNS AND LIGHT FIXTURE LOCATIONS ABOVE THE CEILING WITH OTHER TRADES PRIOR TO INSTALLATION.
   F. ALL DUCT SMOKE DETECTORS SHALL BE PROVIDED AND CONNECTED BY THE ELECTRICAL CONTRACTOR, BUT INSTALLED BY THE MECHANICAL CONTRACTOR.
   G. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY OUTLETS FOR HEAT TAPE CONNECTIONS FOR MECHANICAL SYSTEMS. PROVIDE CLASS B (30mA) GFCI PROTECTION ON THE BREAKER SUPPLYING THE HEAT TAPE.
   H. THE ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AT EACH HVAC UNIT HAVING A CONTROLS POWER SUPPLY. CIRCUIT(S) SHALL BE DEDICATED 20A SERVING A MAXIMUM OF 10 HVAC UNITS PER CIRCUIT. COORDINATE ALL LOCATIONS WITH THE MECHANICAL CONTRACTOR.

LIGHTING FIXTURE NOTES

L1: LIGHTING FIXTURE CATALOG NUMBERS ARE INDICATIVE OF THE STYLE OF FIXTURE REQUIRED. CONTRACTOR SHALL COORDINATE WITH FIELD CONDITIONS & ARCHITECT'S FINISH SCHEDULE TO PROVIDE FIXTURES WITH THE PROPER TRIM, VOLTAGE AND OPTIONS NECESSARY FOR A COMPLETE INSTALLATION.

L2: DOUBLE-FACED EXIT FIXTURES SHALL BE OF THE SAME MANUFACTURER AND SERIES AS THE CORRESPONDING SINGLE FACED FIXTURES SCHEDULED.

L3: EXIT & EMERGENCY LIGHTS SHALL BE CONNECTED TO AN UNSWITCHED LEG OF THE LOCAL LIGHTING BRANCH CIRCUIT. ASSOCIATED BOXES & CONDUIT (EVERY FIVE FEET MINIMUM) SHALL BE PAINTED RED.

L4: FLUORESCENT BATTERY PACKS SHALL BE CAPABLE OF PROVIDING AT LEAST 1100 LUMENS OUTPUT FROM ONE LAMP FOR A DURATION OF 1.5 HOURS. REGARDLESS OF CATALOG NUMBER INDICATED IN SCHEDULE, PROVIDE BATTERY PACKS FOR ALL FIXTURES INDICATED ON THE DRAWINGS TO BE EMERGENCY TYPE. BOTH LAMPS OF A (2) LAMP FIXTURE SHALL BE SERVED BY THE EMERGENCY BALLAST, OUTBOARD LAMPS OF (3) AND (4) LAMP FIXTURES SHALL BE SERVED BY THE EMERGENCY BALLAST. ALL BATTERY PACKS SHALL BE FACTORY INSTALLED.

L5: ALL FLUORESCENT FOUR FOOT LIGHT FIXTURES SHALL BE EQUIPPED WITH INSTANT START ELECTRONIC BALLASTS AND 3500K, INSTANT-START T-8 LAMPS.

L6: ALL COMPACT FLUORESCENT LIGHT FIXTURES SHALL BE EQUIPPED WITH ELECTRONIC BALLASTS AND 3500K, 82 CRI LAMPS.

L7: PRIOR TO PERMIT, SUBMITTALS FOR EQUAL MANUFACTURERS WILL BE CONSIDERED. PROVIDED SUBMITTAL DATA TO INCLUDED COMPLETE PHOTOMETRIC DATA AS WELL AS DATA ON MATERIAL, FINISHES, SUPPORTS, REFLECTORS, LENSES, ETC. AFTER PERMIT IS ISSUED, SUBSTITUTIONS ARE NOT ACCEPTABLE. REVIEW OF ANY SUBSTITUTIONS WILL BE BILLABLE AT $150/HOUR.

L8: PROVIDE BALLASTS AS REQUIRED FOR "INBOARD/OUTBOARD" SWITCHING WHERE INDICATED ON LIGHTING SCHEDULE SHEET.

L9: ALL FIXTURES WIRED "INBOARD/OUTBOARD" SHALL BE TANDEM WIRED. 8. FIXTURES SHALL BE INDEPENDENTLY SUPPORTED DIRECTLY FROM THE STRUCTURE WITH CODE GUAGE WIRE AT A MINIMUM OF TWO OPPOSITE CORNERS.

L10: ALL RECESSED FIXTURES INSTALLED IN CEILINGS, INDICATED BY ARCH. AS HAVING INSULATION INSTALLED OVER CEILING AND FIXTURES, SHALL BE U.L. RATED FOR DIRECT CONTACT WITH INSULATION. VERIFY WITH ARCHITECTURAL PLANS.

L11: ALL RECESSED FIXTURES RECESSED IN FIRE RATED CEILINGS, SHALL BE INSTALLED WITH AN APPROVED TENT ENCLOSURE BY G.C. OR BE U.L. RATED FOR USE IN FIRE RATED CEILINGS. VERIFY WITH ARCHITECTURAL PLANS.

POWER NOTES

P1: ELECTRICAL CONTRACTOR SHALL FOLLOW AND APPLY THE TABLE BELOW, REGARDLESS WHAT THE PANEL SCHEDULE INDICATES, FOR SIZING ALL 120V & 277V, 20 AMP BRANCH CIRCUITS (COPPER CONDUCTORS) TO ALLOW A MAXIMUM OF 3% VOLTAGE DROP FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE ON THE BRANCH CIRCUIT AND ACHIEVE A MAXIMUM OF 5% VOLTAGE DROP ACROSS THE ENTIRE BRANCH CIRCUIT:

VOLTAGE	CONDUCTOR LENGTH *	BRANCH CIRCUIT
120	0' – 50'	#12
120	51' – 90'	#10
120	91' – 140'	#8
120	141' – 225'	#6

* – THE LENGTH IS MEASURED FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE WHICH THE BRANCH CIRCUIT SERVES. WHERE THE DISTANCE EXCEEDS ABOVE, CONSULT WITH THE ENGINEER.

P2: ALL FEEDERS/BRANCH CIRCUIT WIRING SHALL BE NO. 12 AWG UNLESS NOTED OTHERWISE. WHERE CONDUCTOR AND RACEWAY SIZE ARE SHOWN AT HOMERUN, SIZE INDICATED SHALL BE USED FOR THE ENTIRE LENGTH OF CIRCUIT. EXCEPTION: FINAL CONNECTION TO DEVICES IN OUTLET BOXES SHALL NOT BE REQUIRED TO BE LARGER THAN NO. 12 AWG.

P3: OUTLET BOXES FOR DEVICES MOUNTED ON OPPOSITE SIDES OF FIRE RATED PARTITIONS SHALL NOT BE MOUNTED IN THE SAME WALL CAVITY. SEPARATE WALL PENETRATIONS BY MOUNTING ON OPPOSITE SIDES OF WALL STUDS OR OTHER VERTICAL STRUCTURAL MEMBER IN THE WALL.

P4: EXACT LOCATION OF ALL FLOOR-MOUNTED OUTLETS SHALL BE COORDINATED THE WITH THE ARCHITECT BEFORE ROUGH-IN.

P5: BEFORE COMMENCING WITH ANY ROUGH-IN, COORDINATE THE EXACT LOCATION AND MOUNTING HEIGHT OF ALL WALL MOUNTED DEVICES WITH THE ARCHITECTURAL INTERIOR ELEVATIONS, CASEWORK SHOP DRAWINGS, AND EXISTING CONDITIONS. IF ANY DISCREPANCIES AR DISCOVERED, NOTIFY THE ARCHITECT FOR FURTHER DIRECTION. MINOR ADJUSTMENTS IN DEVICE LOCATION, I.E. 5'-0" IN ANY DIRECTION SHALL BE DONE AT NO ADDITIONAL COST TO THE CONTRACT.

P6: WHERE DEVICES ARE REQUIRED TO BE IDENTIFIED EITHER BY THE PLANS OR THE SPECIFICATIONS, PROVIDE ENGRAVED PLATE WITH 1/8" HIGH BLACK LETTERS.

P7: RACEWAYS SHALL BE INSTALLED CONCEALED IN NEW WALL CONSTRUCTION, ABOVE CEILINGS, BELOW FLOOR, AND IN OTHER CAVITIES TO THE GREATEST EXTENT POSSIBLE. WHERE EXPOSED RACEWAYS MUST BE USED, LAYOUT RACEWAYS TO MINIMIZE THE NUMBER OF VERTICAL RUNS.

P8: THE GROUND ROD CLUSTER FOR THE SERVICE GROUND SHALL CONSIST OF (3) 3/4" X 10'-0" CONCRETE ENCASED, COPPER CLAD STEEL GROUND RODS DRIVEN IN A DELTA CONFIGURATION AT 10' ON CENTER BONDED TOGETHER WITH NO. 2/0 BARE COPPER. TOPS OF THE RODS SHALL BE 12" BFG. CONNECTION TO THE RODS SHALL BE WITH EXOTHERMIC WELDS. SEE GROUNDING DETAIL.

P9: WHEN A RECEPTACLE IS INDICATED TO BE MOUNTED ADJACENT TO A COMM/DATA/CATV OUTLET, THE DEVICE(S) SHALL BE MOUNTED WITHIN 6" CENTER-TO-CENTER.

P10: WHERE LIGHT SWITCH AND ABOVE-COUNTER RECEPTACLES ARE INDICATED TO BE MOUNTED ADJACENT TO EACH OTHER, THE DEVICES SHALL BE MOUNTED AT THE SAME HEIGHT UNDER A COMMON DEVICE PLATE.

P11. PROVIDE AND INSTALL AN ENGRAVED LAMINATED PLASTIC NAMEPLATE ON EACH DISCONNECT SWITCH TO INDICATE THE DESIGNATION OF THE EQUIPMENT SERVED & THE BRANCH CIRCUIT SERVING THE EQUIPMENT.

P12. EXTEND [illegible] CONDUIT FROM MAIN ELECTRICAL ROOM TO 5'-0" BEYOND BUILDING SLAB OR INTO THE CLOSEST LANDSCAPED AREA FOR IRRIGATION CONTROLLER.

PANEL BOARDS

A. PANELBOARDS SHALL BE PROVIDED AS MANUFACTURED BY EATON, SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL.
B. ALL NEW EQUIPMENT FOR THE PROJECT SHALL BE BY THE SAME MANUFACTURER.
C. ALL BUSSING, INCLUDING NEUTRAL AND GROUND, SHALL BE COPPER/ALUMINUM.
D. ALL BREAKERS SHALL BE AUTOMATIC THERMAL-MAGNETIC TYPE MOLDED CASE BOLT-ON TYPE, CALIBRATED FOR 40 DEGREE C, OR AMBIENT COMPENSATION, UNLESS OTHERWISE NOTED.
E. PANELS SHALL BE FULLY RATED (AIC). PANELS SHALL HAVE FULL SIZE EQUIPMENT GROUNDING BARS AND NEUTRAL BARS, EXCEPT WHERE INDICATED TO BE 200%.
F. ALL PANELBOARD AND BREAKER LUGS SHALL BE SIZED AND RATED PER THE CONDUCTOR SIZE AND MATERIAL.
G. LIGHTING AND APPLIANCE PANELS (100A-600A) SHALL HAVE FRONT ACCESSIBLE HINGED DOOR-IN-DOOR COVERS WITH DEAD FRONT, SHALL BE 20" WIDE MINIMUM WITH MINIMUM 4" WIDE WIRING GUTTERS.
H. DISTRIBUTION PANELS (600A-1200A) SHALL HAVE FRONT ACCESSIBLE DEAD FRONT COVERS.
I. PROVIDE HANDLE LOCK-ON DEVICES FOR ALL CIRCUIT BREAKERS CONNECTED TO EMERGENCY, EXIT, NIGHT LIGHTING, FIRE ALARM, TELEPHONE BOARDS, AND SECURITY SYSTEMS.
J. BREAKERS USED FOR SWITCHING SHALL BE SWITCHING DUTY (SWD) RATED.
K. BREAKERS USED FOR HEATING, AIR-CONDITIONING AND/OR REFRIGERATION SHALL BE HACR RATED.
L. GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL SHALL BE PROVIDED IN ALL LOCATIONS PER NEC 210.8. WHERE A DEVICE LOCATION IS NOT ACCESSIBLE, THE GFCI PROTECTION SHALL BE PROVIDED WITH THE BREAKER SERVING THE DEVICE.
M. BREAKERS WITH ARC-FAULT CIRCUIT-INTERRUPTER (AFCI) PROTECTION SHALL BE INSTALLED FOR ALL 120V, 15A AND 20A BRANCH CIRCUITS IN DWELLING UNITS AS DEFINED BY THE NEC (EXCLUDES BATHROOMS, UNFINISHED BASEMENTS, GARAGES, AND OUTDOOR LOCATIONS). GUEST ROOMS/SUITES WITH PERMANENT PROVISIONS FOR COOKING SHALL BE CONSIDERED A DWELLING UNIT. STUDENT HOUSING UNITS SHALL BE CONSIDERED A DWELLING UNIT.
N. ALL OVERCURRENT DEVICES WHICH COMPRISE THE EMERGENCY SYSTEM OR LEGALLY REQUIRED STANDBY SYSTEM SHALL BE SELECTIVELY COORDINATED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE MANUFACTURER DOCUMENTATION INDICATING COMPLIANCE WITH THE SELECTIVE COORDINATION REQUIREMENTS PER THE NEC.
O. ELECTRICAL PANELS IN DWELLING UNITS SHALL BE LOAD CENTERS WITH A DEPTH THAT WILL ALLOW TO BE FLUSH MOUNTED BETWEEN STANDARD 2X4 WALL STUDS.
P. ARC ENERGY REDUCTION SHALL BE PROVIDED FOR CIRCUIT BREAKER 1200A OR HIGHER PER NEC. 240.87

GENERAL DWELLING UNIT NOTES (TYPICAL OF ALL UNITS)

1: ALL BRANCH CIRCUIT WIRING SHALL BE NO. 12 AWG UNLESS NOTED OTHERWISE. WHERE CONDUCTOR AND RACEWAY SIZE ARE SHOWN AT HOMERUN, SIZE INDICATED SHALL BE USED FOR THE ENTIRE LENGTH OF CIRCUIT. EXCEPTION: FINAL CONNECTION TO DEVICES IN OUTLET BOXES SHALL NOT BE REQUIRED TO BE LARGER THAN NO. 12 AWG.

2: WHEN A RECEPTACLE IS INDICATED TO BE MOUNTED ADJACENT TO A COMM/DATA/CATV OUTLET, THE DEVICE(S) SHALL BE MOUNTED WITHIN 6" CENTER-TO-CENTER.

3: WHERE LIGHT SWITCH AND ABOVE-COUNTER RECEPTACLES ARE INDICATED TO BE MOUNTED ADJACENT TO EACH OTHER, THE DEVICES SHALL BE MOUNTED AT THE SAME HEIGHT UNDER A COMMON DEVICE PLATE.

4: OUTLET BOXES FOR SWITCHES, RECEPTACLES, ETC MOUNTED ON OPPOSITE SIDES OF FIRE RATED PARTITIONS SHALL NOT BE MOUNTED IN THE SAME WALL CAVITY. SEPARATE WALL PENETRATIONS BY MOUNTING ON OPPOSITE SIDES OF WALL STUDS OR OTHER VERTICAL STRUCTURAL MEMBER IN THE WALL.

5: MOUNT SURFACE MOUNTED FIXTURES & UNDER CABINET FIXTURES TO UNDERSIDE OF SURFACE USING SPACERS TO PROVIDE 1/4"AIR GAP. HOLD FIXTURE 1/8" OFF WALL. FOR FIXTURES BELOW CABINETS, MAKE FLEXIBLE FINAL CONNECTIONS FROM JUNCTION BOX IN CEILING CAVITY ABOVE FIXTURES. DO NOT INSTALL OUTLET AT FIXTURE. ALL WIRING SHALL BE CONCEALED.

6: INTERWIRE ALL SMOKE DETECTORS TO ALARM WHEN ANY ONE DETECTOR ACTIVATES. PLACE DETECTORS ON NEAREST ADJACENT AFCI PROTECTED CIRCUIT (ALL DETECTORS MUST BE ON THE SAME CIRCUIT), AHEAD OF ANY SWITCHING.

7: REFER TO PANEL SCHEDULES FOR SIZES OF DISCONNECTS SHOWN ON PLANS. FUSE EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

8. ALL INCANDESCENT LIGHTING IN CLOTHES CLOSETS SHALL BE SURFACE MOUNTED A MINIMUM OF 12" FROM THE POINT OF STORAGE.

9. ALL CEILING FIXTURE BOXES SHALL BE RATED AND CAPABLE OF SUPPORTING CEILING FANS.

10. THE CONVENIENCE RECEPTACLE SPACING SHOWN IS SCHEMATIC. THE ELECTRICAL CONTRACTOR SHALL INSTALL CONVENIENCE RECEPTACLES SO NO POINT ALONG THE WALL LINE IS MORE THAN 6' FROM A CONVENIENCE OUTLET. WALL SPACES 2' OR MORE IN WIDTH REQUIRE A CONVENIENCE RECEPTACLE.

11. THE KITCHEN CONVENIENCE RECEPTACLE SPACING SHOWN IS SCHEMATIC. THE ELECTRICAL CONTRACTOR SHALL INSTALL KITCHEN CONVENIENCE RECEPTACLES AT EACH WALL COUNTER SPACE THAT IS 12" OR WIDER. RECEPTACLES SHALL BE INSTALLED SO THAT NO POINT ALONG THE WALL IS MORE THAT 24" (MEASURED HORIZONTALLY) FROM A RECEPTACLE OUTLET IN THAT SPACE.

12. ALL 125V 15A AND 20A RECEPTACLES INSTALLED IN DWELLING UNITS SHALL BE TAMPER-RESISTANT.

13. ALL 120V, SINGLE PHASE, 15A AND 20A BRANCH CIRCUITS SERVING OUTLETS AND DEVICES IN DWELLINGS AREAS SUCH AS: BEDROOMS, DINING ROOMS, LIBRARIES, RECREATION ROOMS, DENS, FAMILY ROOMS, LIVING ROOMS, SUNROOMS, CLOSETS, HALLWAYS, PARLORS AND SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT BREAKER.

14. COORDINATE ALL TV AND ADJACENT RECEPTACLE LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.

15. DINING AREA RECEPTACLE TO BE CIRCUITED TO A 20A AFCI CIRCUIT. E.C. TO COORDINATE EXACT DESIGNATED DINING AREA WITH ARCHITECT PRIOR TO ROUGH-IN OF WIRING.

16. 120V SINGLE STATION MULTI-MODE SMOKE DETECTOR WITH BATTERY BACK-UP AND AUXILLARY OUTPUT CONTACTS. CONNECT TO NEAREST 120V CIRCUIT AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE WITH M.C. TO INTERLOCK WITH UNIT AIR HANDLER AS REQUIRED FOR UNIT SHUT DOWN UPON SMOKE DETECTOR ACTIVATION.

17. CENTER ALL BATH VANITY LIGHTS OVER COUNTER. SEE ARCHITECTURAL ELEVATIONS AS REQUIRED.

18. PROVDE DEMARK BOX IN EACH UNIT MASTER BEDROOM CLOSET AND PROVIDE CONDUIT FROM EACH UNIT BACK TO TELEPHONE/DATA/CABLE ROOMS. PROVIDE 120V CONNECTION FOR MEDIA PANEL RECEPTACLE.

19. SPRINKLER HEADS ARE NOT TO BE LOCATED WITHIN 5'-6" OF THE CEILING FAN J-BOX.

20. ALL OUTSIDE RECEPTACLES SHALL BE WEATHER RESISTANT.

21. PER NFPA 72 SEC. 18.4.5.3 AUDIBLE APPLIANCES PROVIDED FOR THE SLEEPING AREAS TO AWAKEN OCCUPANTS SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT COMPLIES WITH THE FOLLOWING:
   1) THE ALARM SIGNAL SHALL BE A SQUARE WAVE OR PROVIDE EQUIVALENT AWAKENING ABILITY.
   2) THE WAVE SHALL HAVE A FUNDAMENTAL FREQUENCY OF 520 HZ ± 10 PERCENT

22. REFER TO ARCHITECTURAL RCP PLAN FOR EXACT LIGHT LOCATIONS AND DIMENSIONS.

TYPE A AND TYPE B UNIT NOTES (TYPICAL OF ALL UNITS)

1. PROVIDE TWO SWITCHES FOR RANGE HOOD FAN AND LIGHT CONTROLS AT WALL IN TYPE A UNITS ONLY. COORDINATE CONTROLS WITH RANGE HOOD MANUFACTURER'S INSTALLATION INSTRUCTIONS. FIELD VERIFY MOUNTING HEIGHT AND EXACT LOCATION.
2. PROVIDE EMERGENCY CALL FOR AID DEVICES IN ALL "TYPE A" UNIT MASTER BEDROOMS AND ALL FULL BATHROOMS. CALL FOR AID DEVICES TO BE WIRED TO AN EXTERIOR HORN STROBE. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
3. PROVIDE 177CD HORN STROBES IN BEDROOMS AND LIVING ROOMS FOR ALL TYPE A UNITS. PROVIDE STROBES IN ACCESSIBLE BATHROOMS ONLY. FOR NON-ACCESSIBLE UNITS, PROVIDE MINI HORN/STROBES IN THE LIVING AREA. ALL 120V SINGLE STATION SMOKE DETECTORS SHALL BE PROVIDED WITH ADA STROBES.
4. ALL OPERABLE BREAKERS ARE REQUIRED TO BE LOCATED BETWEEN 15" AFF MIN, 48" AFF MAX. UNIT PANEL TO BE MOUNTED SO THE TIP OF THE BREAKER IS 46"AFF.
5. MOUNT SWITCH FOR DISPOSAL AND DISHWASHER SIDEWAYS UNDER COUNTER TOP IN ACCESSIBLE UNITS.

IN BUILDINGS WITH ELEVATORS, ALL TYPE B UNITS TO BE WIRED AS TYPE A UNITS FOR FUTURE CONVERSION. IN BUILDINGS WITHOUT AN ELEVATOR, ONLY FIRST FLOOR TYPE B UNITS ARE TO BE WIRED FOR TYPE A CONDITIONS.

6. TYPICAL MOUNTING HEIGHTS FOR ACCESSIBLE UNITS:
   LIGHT SWITCHES:
   -48 INCH MAX AFF TO HIGHEST OPERABLE PART IN 'ON' POSITION.
   WALL RECEPTACLES:
   -15 INCH MIN AFF TO CENTERLINE OF LOWEST RECEPTACLE (OR 18 INCHES MIN TO CENTERLINE OF BOX)
   -48 INCH MAX AFF TO CENTERLINE OF HIGHEST RECEPTACLE.
   BATHROOM RECEPTACLES:
   -44 INCH MAX AFF (PREFERRED) TO CENTERLINE OF HIGHEST RECEPTACLE.
   -12 INCH MIN FROM ANY OBSTRUCTION.
   -12 INCH MAX FROM LEADING EDGE OF VANITY COUNTER IF ON SIDE WALL.
   RECEPTACLES BEHIND KITCHEN COUNTERS:
   -46 INCH MAX AFF TO CENTERLINE OF HIGHEST RECEPTACLE.
   -12 INCH MIN FROM ANY OBSTRUCTION. (INCLUDING FRIDGE)
   -36 INCH MIN FROM CORNERS
   -46 INCH MAX AFF TO 'ON' POSITION OF REDUNDANT CONTROLS FOR RANGE HOOD (TYPE A UNITS)
   -24 INCH MAXIMUM DEPTH BETWEEN LEADING EDGE OF COUNTERTOP AND RECEPTACLES/SWITCHES LOCATED ON KITCHEN BACKSPLASH WALL (IN TYPE A AND COMMON AREA KITCHENETTES)

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE

NEW SPACE ONLY

PRESCRIPTIVE ☒ PERFORMANCE ☐ CHECK METERING NOT REQUIRED ☒

LIGHTING SCHEDULE:

LAMP TYPE REQUIRED IN FIXTURE	SEE FIXTURE SCHEUDLE
NUMBER OF LAMPS IN FIXTURE	SEE FIXTURE SCHEUDLE
BALLAST TYPE USED IN THE FIXTURE	SEE FIXTURE SCHEUDLE
NUMBER OF BALLAST IN FIXTURE	SEE FIXTURE SCHEUDLE
TOTAL WATTAGE PER FIXTURE	SEE FIXTURE SCHEUDLE
TOTAL INTERIOR WATTAGE SPEC'D VS. ALLOWED	XXX vs. XXX

MINIMUM EFFICACY OF EXTERIOR LIGHTS IS 45 LUMENS/WATT

EQUIPMENT SCHEDULES WITH NON HVAC MOTORS:

MOTOR HORSEPOWER	–
NUMBER OF PHASES	–
MINIMUM EFFICIENCY	–
MOTOR TYPE	–
# OF POLES	–

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 LATEST ADOPTED NORTH CAROLINA ENERGY CODE.

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PROJECT 1915
DATE 01OCT19
DRAWN BY CME
CHECKED BY CME

ELECTRICAL GENERAL NOTES

E1.01