GENERAL NOTES

1. CONDUIT LAYOUTS SHOWN ON THE PLANS ARE DIAGRAMMATIC, NOT INDICATING THE EXACT ROUTING REQUIRED. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF INSTALLATION.
2. ALL EQUIPMENT PROVIDED BY THE ELECTRICAL CONTRACTOR SHALL BE NEW, LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. NO "RE-FURBISHED" EQUIPMENT IS ACCEPTABLE WITHOUT WRITTEN CONSENT BY ENGINEER OF RECORD.
3. DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL PLANS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL PLANS OR DIMENSIONED ON THE ELECTRICAL PLANS, VERIFY EXACT LOCATION WITH THE ARCHITECT PRIOR TO ROUGH-IN.
4. ALL WIRE COUNTS ARE TYPICALLY NOT SHOWN BETWEEN LIGHT FIXTURES OR RECEPTACLES. PROVIDE ALL REQUIRED EVEN WHERE NOT SHOWN.
5. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, CIRCUITS SHALL CONSIST OF #12 PHASE AND GROUNDED (NEUTRAL CONDUCTORS) AND A #12 CU GROUND IN 3/4" CONDUIT. MC CABLE SHALL BE ACCEPTABLE IN WALLS. ALL BRANCH CIRCUIT HOME-RUNS SHALL BE IN CONDUIT. ALL WIRE SHALL BE COPPER.
6. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL UTILIZATION EQUIPMENT SHOWN ON THE DRAWINGS. VERIFY THE TYPE OF FINAL CONNECTION AND PROVIDE APPROPRIATE WIRING METHOD.
7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, MECHANICAL AND PLUMBING EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. THE CONTRACTOR WILL NOT BE COMPENSATED FOR COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEMS TO MATCH UTILIZATION EQUIPMENT, EVEN IF THE ELECTRICAL WORK IS INSTALLED PER THE ELECTRICAL DRAWINGS.
8. INSULATION & WIRE TYPES SHALL BE AS FOLLOWS : (UNLESS NOTED OTHERWISE)
   A. SERVICE ENTRANCE – XHHW, CU/AL, IN RACEWAY
   B. FEEDERS –
      1. ABOVE GRADE – THW/THWN, CU/AL, IN RACEWAY
      2. BELOW GRADE – XHHW, CU/AL, IN RACEWAY
   C. BRANCH CIRCUITS – THHN/THWN, CU/AL, IN RACEWAY
9. SOME CONDUCTOR SIZES ARE BASED ON THE USE OF 75 DEGREE C CONDUCTOR RATINGS. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THAT ALL ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.
10. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE PROJECT.
11. THE CONTRACTOR SHALL PERFORM ALL ACCEPTANCE TESTS REQUIRED OR RECOMMENDED BY EQUIPMENT MANUFACTURERS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER SEVEN (7) DAYS PRIOR TO TESTING AND SHALL ALLOW OBSERVATION OF THE TESTING BY THE ENGINEER.
12. ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS INSTALLED IN BATHROOMS AND WITHIN 6 FT. OF THE OUTSIDE EDGE OF THE SINK SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. THE GROUND-FAULT CIRCUIT-INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION. ARTICLES 210.8(B)(5), NEC 2017.
13. UNLESS OTHERWISE NOTED, ALL EQUIPMENT DISCONNECTS SHALL BE NEMA TYPE 3R, FUSIBLE, 30A, 3 POLE. FUSE PER EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
14. DEVICE BOXES SHOWN BACK-TO-BACK SHALL BE OFFSET A MINIMUM OF TWELVE (12) INCHES TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
15. ALL PENETRATIONS IN WALLS SHALL BE SEALED WITH FLEXIBLE ACOUSTIC CAULKING. CAULKING SHALL BE APPLIED AROUND OUTLET BOXES TO PROVIDE A COMPLETE SEAL BETWEEN THE BOX AND THE WALL.
16. PRIOR TO CORE DRILLING IN ANY FLOOR, ELECTRICAL CONTRACTOR SHALL COORDINATE WITH STRUCTURAL ENGINEER. PROVIDE ANY AND ALL TESTING REQUIRED PER STRUCTURAL ENGINEER.
17. PRIOR TO TRENCHING IN ANY AREA, THE CONTRACTOR SHALL CONTACT ELECTRICAL, COMMUNICATIONS/DATA, CABLE TV, GAS, AND WATER UTILITY PROVIDERS (BLUE STAKE) AND HAVE ALL UTILITIES IN THE AREA IDENTIFIED. IN ADDITION, THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A SUBCONTRACTOR SPECIALIZING IN THE LOCATION OF UNDERGROUND STRUCTURES TO IDENTIFY ANY OBSTACLES IN THE PATH OF TRENCHING (PRIOR TO COMMENCING WORK). DAMAGE TO ANY UNDERGROUND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
18. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH LOCAL AND STATE CODES INCLUDING THE NEC
19. ALL CABLE EXPOSED IN MECHANICAL AIR HANDLING PLENUM AREAS SHALL BE PLENUM RATED.
20. OVER CURRENT DEVICES SHALL BE LOCATED WHERE THEY WILL NOT BE EXPOSED TO PHYSICAL DAMAGE.
21. CONTRACTOR SHALL INSTALL CITY APPROVED HANDLE TIES FOR ALL SHARED NEUTRAL CIRCUITS.
22. CONTRACTOR SHALL CONTACT ENGINEER IN WRITING (RFI) PRIOR TO PROCEEDING WITH ANY WORK NOT CLEARLY SHOWN ON THESE CONTRACT DOCUMENTS. ENGINEER WILL NOT ACCEPT ANY RESPONSIBILITY FOR WORK HE HAS NOT EXPLICITLY AUTHORIZED.
23. PROVIDE IDENTIFICATION AT THE DISTRIBUTION PANEL FOR BRANCH CIRCUITS THAT FEED EMERGENCY LIGHTING UNIT EQUIPMENT.
24. ELECTRICAL EQUIPMENT THAT IS LIKELY TO REQUIRE MAINTENANCE WHILE ENERGIZED SHALL BE PROPERLY MARKED TO WARN PERSONNEL OF ARC FLASH HAZARD.
25. IN EVENT OF A DISCREPANCY BETWEEN THE SPECIFICATIONS AND A NOTE ON THE DRAWINGS, THE DRAWING NOTES SHALL SUPERSEDE THE SPECIFICATIONS.
26. COORDINATION OF OVERCURRENT PROTECTIVE DEVICES SHALL BE BY ELECTRICAL CONTRACTOR INCLUDING SETTINGS OF CIRCUIT BREAKERS.
27. WHERE A MANUAL MOTOR STARTER IS SHOWN ON THE PLANS, THE CONTRACTOR SHALL VERIFY THE DEVICE PROVIDED IS LABELED "SUITABLE AS MOTOR DISCONNECT".
28. WHERE A COMBINATION CONTROLLER IS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL VERIFY THE DEVICE PROVIDED IS LABELED "SUITABLE AS MOTOR DISCONNECT" AND IS LISTED AS A BRANCH CIRCUIT OVERLOAD AND SHORT-CIRCUIT PROTECTIVE DEVICE.
29. PROVIDE A #18 OR LARGER COPPER TRACER WIRE SECURELY ATTACHED TO THE NON-METALLIC CABLE, PIPE OR CONDUIT AT 8'-0" ON CENTER. IT SHALL HAVE A 12" OF TRACER WIRE ACCESSIBLE ABOVE GRADE AT ANY ABOVE GRADE TERMINATION.
30. LIGHT FIXTURES IN SUSPENDED CEILINGS SHALL BE INSTALLED IN COMPLIANCE WITH BUILDING CODE. REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
    a. LIGHT FIXTURES SHALL BE POSITIVELY ATTACHED TO THE SUSPENDED CEILING SYSTEM.
    b. INSTALL (OR VERIFY THE EXISTENCE OF) A #12 GAGE HANGER WIRE WITHIN 3" OF EACHCORNER OF THE LIGHT FIXTURE.
    c. PENDANT-HUNG FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE WITH (2) #9 GAGE WIRES OR OTHER APPROVED SUPPORT METHOD WHICH DOES NOT DEPEND ON THE CEILING SUPPORT SYSTEM.
33. LIGHT FIXTURES MOUNTED IN CEILINGS WHICH FORM AN AIR-HANDLING SPACE (PLENUM) SHALL BE SPECIFICALLY LISTED FOR SUCH INSTALLATION.
34. LIGHT FIXTURES MOUNTED IN FIRE-RATED CEILINGS SHALL BE SPECIFICALLY LISTED TO MAINTAIN THE FIRE RATING.
35. WHERE THE PLANS INDICATE A LIGHT FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, EMERGENCY, THREE-LEVEL, ETC) THE CONTRACTOR SHALL PROVIDE THESE FIXTURES WITH THE APPROPRIATE BALLASTING TO ACCOMMODATE THE SPECIAL FEATURE. THE CONTRACTOR SHALL PROVIDE THE FIXTURES AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE, WITH MODIFICATIONS AS REQUIRED BY PLAN NOTES.
37. UTILITY COORDINATION (WHEN THE SECONDARIES ARE PROVIDED BY THE ELECTRICAL CONTRACTOR)
    a. THE CONTRACTOR SHALL SUBMIT A COMPLETE SET OF DRAWINGS TO ELECTRICAL AND TELCO UTILITIES AS REQUIRED FOR COORDINATION.
    b. THE CONTRACTOR SHALL NOT TRENCH OR INSTALL CONDUITS (ON THE UTILITY OR LOAD SIDE) TO THE SES OR TO THE UTILITY TRANSFORMER (PRIMARY OR SECONDARY), OR TO THE UTILITY CONNECTION POINT BEFORE RECEIVING FINAL COORDINATION FROM THE UTILITY.
    c. THE CONTRACTOR SHALL NOT INSTALL EQUIPMENT PADS FOR THE SES OR ANY UTILITY EQUIPMENT (TRANSFORMERS, SWITCHING CABINETS, ETC) PRIOR TO RECEIPT OF FINAL COORDINATION FROM THE UTILITY.
    d. THE CONTRACTOR SHALL NOT BE COMPENSATED FOR ADDITIONAL WORK REQUIRED TO MEET THE REQUIREMENTS OF THE UTILITY WHICH IS THE RESULT OF PROCEEDING PRIOR TO RECEIPT OF FINAL UTILITY COORDINATION.
38. THE ELECTRICAL CONTRACTOR SHALL REVIEW THE MECHANICAL PLANS, PRIOR TO BID, AND DETERMINE THE LOCATION OF SMOKE OR FIRE/SMOKE DAMPERS, IF ANY. UNLESS OTHERWISE NOTED ON THE ELECTRICAL PLANS, EACH SMOKE OR FIRE/SMOKE DAMPER SHALL BE CONNECTED TO THE NEAREST RECEPTACLE CIRCUIT, NOT TO EXCEED THREE (3) DAMPERS ADDED TO ANY CIRCUIT. INCLUDE IN THE BASE BID BID ONE (1) DUCT SMOKE DETECTOR PER SMOKE OR FIRE/SMOKE DAMPER SHOWN ON THE MECHANICAL PLANS.
39. UNLESS NOTED OTHERWISE, EACH DAMPER DUCT SMOKE DETECTOR SHALL BE RATED 24VAC AND SHALL BE CONNECTED TO THE FIRE ALARM PANEL (IF ANY) ON A SEPARATE ZONE.
40. SMOKE OR FIRE/SMOKE DAMPERS SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM (IF ANY) AND SHALL BE CONTROLLED BY THE FIRE ALARM CONTROL PANEL (IF ANY).
41. THE ELECTRICAL CONTRACTOR SHALL REVIEW THE MECHANICAL PLANS, PRIOR TO BID, TO DETERMINE THE NUMBER AND LOCATION OF HVAC SYSTEMS RATED 2000 CFM OR HIGHER. THE ELECTRICAL CONTRACTOR SHALL INCLUDE, IN THE BASE BID, A DUCT SMOKE DETECTOR ON EACH UNIT FOR ALL SYSTEMS RATED 2000 CFM OR HIGHER. THE DETECTORS SHALL BE RATED 120VAC. PROVIDE THE DETECTORS TO THE MECHANICAL CONTRACTOR OR INSTALLATION IN THE DUCT. MECHANICAL CONTRACTOR SHALL CONNECT EACH DETECTOR TO SHUT DOWN IT'S ASSOCIATED UNIT. ELECTRICAL CONTRACTOR SHALL MAKE CONNECTION TO THE FIRE ALARM CONTROL PANEL (IF ANY) ON A SEPARATE ZONE. NOTE THAT CERTAIN MUNICIPALITIES REQUIRE SMOKE DETECTORS ON BOTH THE SUPPLY AND RETURN DUCTS. SEE THE DRAWINGS TO DETERMINE IF THIS PROJECT REQUIRES THE EXTRA DETECTOR.
42. SERIES RATING NOTES:
    A. WHERE A CIRCUIT BREAKER IS USED ON A CIRCUIT HAVING AN AVAILABLE FAULT CURRENT HIGHER THAN THE MARKED INTERRUPTING RATING BY BEING CONNECTED ON THE LOAD SIDE OF AN ACCEPTABLE OVERCURRENT PROTECTIVE DEVICE HAVING A HIGHER RATING, THE CIRCUIT BREAKER SHALL MEET THE REQUIREMENTS SPECIFIED IN (1) AND (2).
       (1). TESTED COMBINATIONS. THE COMBINATION OF LINE-SIDE OVERCURRENT DEVICE AND LOAD-SIDE CIRCUIT BREAKER(S) IS TESTED AND MARKED ON THE END USE EQUIPMENT, SUCH AS SWITCHBOARDS AND PANELBOARDS.
       (2). MOTOR CONTRIBUTION. SERIES RATINGS SHALL NOT BE USED WHERE
          a. MOTORS ARE CONNECTED ON THE LOAD SIDE OF THE HIGHER-RATED OVERCURRENT DEVICE AND ON THE LINE SIDE OF THE LOWER-RATED OVERCURRENT DEVICE, AND
          b. THE SUM OF THE MOTOR FULL-LOAD CURRENTS EXCEEDS 1 PERCENT OF THE INTERRUPTING RATING OF THE LOWER-RATED CIRCUIT BREAKER.
    B. WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION RATING. THE MARKING SHALL BE READILY VISIBLE AND STATE THE FOLLOWING: CAUTION – SERIES COMBINATION SYSTEM RATED ______ AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED
    C. TESTED COMBINATIONS. THE COMBINATION OF THE LINE-SIDE OVERCURRENT DEVICE AND LOAD SIDE CIRCUIT BREAKER(S) IS TESTED AND MARKED ON THE END USE EQUIPMENT, SUCH AS SWITCHBOARDS AND PANELBOARDS.
43. NOTES A THRU M BELOW APPLY TO ALL KITCHEN AREAS AND OTHER INDICATED AREAS:
    a. FINAL CONNECTION TO ALL KITCHEN EQUIPMENT SHALL BE MADE WITH "SEAL-TITE" FLEXIBLE CONDUIT.
    b. THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTIONS TO ALL KITCHEN FOOD SERVICE AND RELATED EQUIPMENT.
    c. (EXXX) THIS SYMBOL IDENTIFIES FOOD SERVICE EQUIPMENT AS IT IS SHOWN ON THE FOOD SERVICE ELECTRICAL ROUGH-IN PLANS. SEE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.
    d. THE ELECTRICAL CONTRACTOR SHALL VERIFY ROUGH-IN REQUIREMENTS, LOCATIONS, MOUNTING HEIGHTS, VOLTAGE, PHASE, AMPS, HP, KW, ETC. FOR ALL FOOD SERVICE EQUIPMENT PRIOR TO ROUGH-IN.
    e. PROVIDE SEAL-OFF'S FOR ALL CONDUITS ENTERING OR LEAVING WALK-IN BOXES.
    f. KITCHEN HOOD EXHAUST, MAKE-UP AIR UNIT AND GAS SOLENOID VALVE SHALL BE INTERLOCKED TOGETHER. WHEN MAKE-UP AIR UNIT IS ON, EXHAUST FAN, AND GAS SOLENOID VALVE IS ON. WHEN MAKE-UP AIR UNIT IS OFF, EXHAUST FAN AND GAS SOLENOID VALVE IS OFF. PROVIDE REQUIRED RELAYS.
    g. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE ROUGH-IN REQUIREMENTS, LOCATIONS, ORIENTATION, VOLTAGE PHASE, HP, KW, ETC. FOR ALL HVAC AND PLUMBING EQUIPMENT PRIOR TO ROUGH-IN.
    h. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECT SWITCHES, INTERLOCKS, CONDUIT, WIRING AND INSTALLATION AS SPECIFICALLY OUTLINED WITHIN THE KITCHEN EQUIPMENT DRAWINGS.
    i. FURNISH AND INSTALL FIRE FUEL SHUT-OFF SERVICES INCLUDING GAS SUPPLY VALVE.
    j. FURNISH AND INSTALL ALL CONNECTIONS INCLUDING POWER AND CONTROL WIRING TO ALL WALK-IN BOXES AND TO THE REMOTE COMPRESSORS. REFER TO KITCHEN CONSULTANT DRAWINGS FOR SPECIFIC REQUIREMENTS.
    k. ALL 125-VOLT, SINGLE PHASE, 15 AND 20 AMPERE RECEPTACLES INSTALLED IN KITCHENS, BATHROOMS, ROOFTOPS AND OUTDOORS SHALL BE GFI TYPE.
    l. ALL EXTERIOR DEVICES SHALL BE WEATHERPROOF.
    m. FOR EACH EQUIPMENT ITEM NOT PROVIDED WITH CORD AND PLUG CONNECTION, THE CONTRACTOR SHALL VERIFY THE EQUIPMENT CONTAINS AN INTEGRAL UNIT SWITCH COMPLYING WITH THE NEC, ARTICLE 422-25. IF THE EQUIPMENT HAS NO UNIT SWITCH, PROVIDE A LOCK-OFF DEVICE AT THE BRANCH CIRCUIT BREAKER FEEDING THE EQUIPMENT.
45. TO ORDERING ANY MATERIALS THE CONTRACTOR SHALL BE REQUIRED TO COMPARE THE ONE-LINE DIAGRAM WITH THE PANEL SCHEDULES TO ENSURE EVERYTHING IS COORDINATED. REPORT ANY DISCREPENCIES TO THE ENGINEER OF RECORD. IF THESE ARE FOUND AND NOT REPORTED THEN THE CONTRACTOR PROCEEDS AT HIS OWN COST/RISK.
46. E.C. SHALL COORDINATE THE EXACT EXIT SIGN LOCATION/PLACEMENT WITH THE FIELD BUILDING INSPECTOR PRIOR TO ROUGH INSPECTION APPROVAL.
47. PROVIDE CONCRETE/STEEL BOLLARD PROTECTION FOR ALL ELECTRICAL EQUIPMENT SUBJECT TO DAMAGE IN TRAFFIC AREAS. COORDINATE WITH ARCHITECT FOR DETAIL AND LOCATION.
48. COORDINATION OF OVERCURRENT PROTECTIVE DEVICES SHALL BE BY ELECTRICAL CONTRACTOR INCLUDING SETTINGS OF CIRCUIT BREAKERS, FUSES AND GROUND FAULT DEVICES. CONTRACTOR SHALL PROVIDE COORDINATION STUDY AND SET ALL CIRCUIT PROTECTIVE DEVICE SETTINGS AS RECOMMENDED AT THE COMPLETION OF THE PROJECT.
49. EMERGENCY SYSTEMS OVERCURRENT DEVICES SHALL BE SELECTIVELY COORDINATED WITH ALL SUPPLY SIDE OVERCURRENT PROTECTIVE DEVICES, IN ACCORDANCE WITH NEC 700, 701 AND 620 REQUIREMENTS.
50. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL LOW VOLTAGE WIRING BETWEEN LIGHT FIXTURES AND DIMMING/SWITCHING MODULES AND/OR LIGHTING CONTROL PANELS FOR A FULLY FUNCTIONING SYSTEM. REFER TO MANUFACTURERS INSTALLATION DETAILS FOR REQUIREMENTS.
51. ALL 15 AND 20 AMPERES, 125-VOLT AND 250 VOLT NON-LOCKING-TYPE RECEPTACLES IN THE AREAS SPECIFIED IN 406.12(1) THROUGH (7) SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES. (1) DWELLING UNITS IN ALL AREAS SPECIFIED IN NEC 210.52 AND NEC 550.13. (2) GUEST ROOMS AND GUEST SUITES OF HOTELS AND MOTELS. (3) CHILD CARE FACILITIES. (4) PRESCHOOLS AND ELEMENTARY EDUCATION FACILITIES. (5) BUSINESS OFFICES, CORRIDORS, WAITING ROOMS, AND THE LIKE IN CLINICS, MEDICAL AND DENTAL OFFICES AND OUTPATIENT FACILITIES. (6) SUBSET OF ASSEMBLY OCCUPANCIES DESCRIBED IN NEC 518.2 TO INCLUDE PLACES OF WAITING TRANSPORTATION, GYMNASIUMS, SKATING RINKS, AND AUDITORIUMS. (7) DORMITORIES. NEC 406.12

ELECTRICAL SYMBOLS

(NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT).

LIGHTING

- 2' X 4' LUMINAIRE. UPPER CASE LETTER INDICATES TYPE AS INDICATED ON THE LUMINAIRE SCHEDULE, NUMBER INDICATES THE CIRCUIT FEEDING THE FIXTURE, LOWER CASE LETTER INDICATES THE SWITCH CONTROLLING THE FIXTURE (NOTATION IS TYPICAL FOR ALL LIGHT FIXTURES).
- LINEAR STRIP LUMINAIRE, LENGTH PER PLAN.
- NOMINAL 1' X 4' RECESSED CEILING-MOUNTED LUMINAIRE.
- SURFACE WALL-MOUNTED LIGHT FIXTURE.
- RECESSED WALL-MOUNTED LIGHT FIXTURE.
- RECESSED CEILING-MOUNTED FIXTURE
- SURFACE CEILING MOUNTED FIXTURE
- SOLID 'JBOX' ON ANY FIXTURE INDICATES A FIXTURE WITH AN INTEGRAL EMERGENCY POWER SUPPLY, PER THE SPECIFICATIONS.
- RECESSED WALL WASH CEILING-MOUNTED FIXTURE
- DUAL HEAD EMERGENCY LIGHT FIXTURE WITH BATTERY PACK. SEE LIGHT FIXTURE SCHEDULE FOR SPECIFICATION.
- CEILING MOUNTED LED EMERGENCY EXIT SIGN. ARROWS INDICATE PATH OF EGRESS (TYPICAL FOR ALL EXIT SIGNS).
- WALL MOUNTED LED EMERGENCY EXIT SIGN.
- POLE-MOUNTED LIGHT FIXTURE.

SWITCHES

- $ SINGLE POLE TOGGLE SWITCH
- $2 TWO-POLE TOGGLE SWITCH
- $3 THREE-WAY TOGGLE SWITCH
- $D DIMMER SWITCH
- $OS OCCUPANCY SENSOR
- PROGRAMMABLE TIMESWITCH
- PC PHOTOCELL, ON ROOF FACING NORTH UNLESS NOTED OTHERWISE.

DEVICES

- DUPLEX CONVENIENCE RECEPTACLE, +18" U.N.O.
- "CROSS SLASH" ON ANY RECEPTACLE INDICATES INTEGRAL GROUND FAULT PROTECTION. (GFCI)
- DOUBLE DUPLEX (FOURPLEX) CONVENIENCE RECEPTACLE, +18" U.N.O.
- SINGLE CONVENIENCE RECEPTACLE, +18" U.N.O.
- DUPLEX CONVENIENCE RECEPTACLE MOUNTED ABOVE COUNTER AT +44" OR AS SPECIFIED ON ARCHITECT'S ELEVATIONS.
- INTEGRAL GROUND FAULT PROTECTION DUPLEX CONVENIENCE RECEPTACLE MOUNTED ABOVE COUNTER AT +44" OR AS SPECIFIED ON ARCHITECT'S ELEVATIONS.
- DOUBLE DUPLEX (FOURPLEX) CONVENIENCE RECEPTACLE MOUNTED ABOVE COUNTER AT +44" OR AS SPECIFIED BY ARCHITECTS ELEVATIONS.
- SPLIT WIRED DUPLEX CONVENIENCE RECEPTACLE, +18" U.N.O.
- DUPLEX CONVENIENCE RECEPTACLE WITH AN ISOLATED GROUND CONNECTION.
- SPECIAL PURPOSE RECEPTACLE AS NOTED ON DRAWINGS (250 VOLT). NEMA CONFIGURATION AS INDICATED ON THE PLANS OR AS REQUIRED BY THE EQUIPMENT.
- SPECIAL PURPOSE RECEPTACLE AS NOTED ON DRAWINGS (600 VOLT). NEMA CONFIGURATION AS INDICATED ON THE PLANS OR AS REQUIRED BY THE EQUIPMENT.
- JUNCTION BOX. 'C' INDICATES CEILING MOUNTED. 'F' INDICATES FLOOR MOUNTED (SUBSCRIPTS ARE TYPICAL FOR ALL DEVICES)

SPECIAL SYSTEMS

- VOICE OUTLET
- DATA OUTLET
- COMBINATION TELEPHONE AND DATA OUTLET IN THE SAME BOX
- TELEVISION OUTLET
- CLOCK OUTLET.
- CEILING MOUNTED SPEAKER.
- WALL MOUNTED SPEAKER.
- MICROPHONE OUTLET.
- BELL/BUZZER. SEE DRAWINGS FOR SPECIFICATION.
- CHIME, SEE DRAWINGS FOR SPECIFICATION.
- PUSHBUTTON. SEE DRAWINGS FOR SPECIFICATION.
- CR CARD READER WITH BACK BOX FOR CONDUIT/WIRE ACCESS ROUTING
- SEC CAMERA WITH BACK BOX FOR CONDUIT/WIRE ACCESS ROUTING

POWER

- $M HORSEPOWER RATED MANUAL MOTOR SWITCH
- $MO\L HORSEPOWER RATED MANUAL MOTOR STARTER WITH THERMAL OVERLOAD(S).
- LIGHTING CONTACTOR IN SURFACE-MOUNTED ENCLOSURE
- LIGHTING CONTACTOR IN FLUSH-MOUNTED ENCLOSURE
- COMBINATION MOTOR CONTROLLER PROVIDED BY EQUIPMENT VENDOR, INSTALLED BY ELECTRICAL CONTRACTOR.
- COMBINATION MOTOR CONTROLLER PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- FUSIBLE DISCONNECT SWITCH FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE. SIZE AND FUSES AS PER RECOMMENDATIONS OF EQUIPMENT'S MANUFACTURER OR AS NOTED. 30A, 3P, 250V, NEMA 3R UNLESS NOTED OTHERWISE. (N. INDICATES NON-FUSED).
- ELECTRICAL MOTOR. SEE DRAWINGS FOR SIZE.
- DISTRIBUTION PANELBOARD, MOTOR CONTROL CENTER OR SERVICE ENTRANCE SECTION. SEE DRAWINGS FOR EXACT TYPE.
- T DISTRIBUTION TRANSFORMER
- SURFACE MOUNTED PANEL BOARD.
- FLUSH MOUNTED PANEL BOARD.
- CABINET.
- TMB TELEPHONE MOUNTING BOARD.

WIRE/CONDUIT

- FLEXIBLE CONDUIT
- CONDUIT CONCEALED IN WALLS OR ABOVE CEILING W/ 2 #12, #12 GND, 3/4" C., UNLESS NOTED OTHERWISE.
- CONDUIT ROUTED UNDER FLOOR OR BELOW GRADE W/ 2 #12, #12 GRD., 3/4" C., UNLESS NOTED OTHERWISE.
- CONDUIT TURNING UP.
- CONDUIT TURNING DOWN.
- INDICATES A 'HOME-RUN' TO THE PANELBOARD
- INDICATES A PHASE CONDUCTOR
- INDICATES A GROUNDED (NEUTRAL) CONDUCTOR
- INDICATES AN EQUIPMENT GROUNDING CONDUCTOR
- INDICATES AN ISOLATED GROUND CONDUCTOR (SAME SIZE AS EQUIPMENT GROUNDING CONDUCTOR

SINGLE-LINE DIAGRAM

- CIRCUIT BREAKER, FIXED MOUNTED.
- CIRCUIT BREAKER, DRAWOUT MOUNTING.
- FUSIBLE SWITCH. SIZE AS INDICATED ON DRAWINGS.
- TRANSFORMER. SEE ONE-LINE FOR TYPE AND SPECIFICATION.
- CURRENT TRANSFORMER
- M METERING DEVICE
- PANELBOARD, MAIN LUG ONLY, CU BUSS
- PANELBOARD, MAIN CIRCUIT BREAKER, CU BUSS

FIRE ALARM

- F FIRE ALARM SPEAKER/STROBE
- F FIRE ALARM MANUAL PULL STATION
- F FIRE ALARM HORN/STROBE
- F FIRE ALARM STROBE ONLY
- FACP FIRE ALARM CONTROL PANEL.
- FAAP FIRE ALARM ANNUNCIATOR PANEL.
- H # HEAT DETECTOR. # INDICATES FIXED TEMPERATURE SETTING IF DIFFERENT THAN NOTED IN SPECIFICATIONS.
- S SMOKE DETECTOR.
- D DUCT MOUNTED SMOKE DETECTOR. SUPPLIED BY E.C., INSTALLED BY M.C.
- SMOKE/FIRE DAMPER FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. WIRED BY ELECTRICAL CONTRACTOR.
- T FIRE SPRINKLER TAMPER SWITCH.
- F FIRE SPRINKLER FLOW SWITCH.
- MAGNETIC DOOR RELEASE.
- R CONTROL RELAY, 10.0 AMPS, DP/DT IN NEMA 1 ENCLOSURE
- C FIRE ALARM CONTROL MODULE.

LIGHTING SYSTEM FUNCTIONAL TESTING

AN APPROVED PARTY, INDEPENDENT FROM THE CONSTRUCTION OF THE PROJECT SHALL BE RESPONSIBLE FOR THE FUNCTIONAL TESTING AND SHALL PROVIDE DOCUMENTATION TO THE BUILDING OFFICIAL CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET THE PROVISIONS OF THE IECC C405.

WHERE OCCUPANCY SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULE CONTROLS, PHOTO SENSORS OR DAYLIGHTING CONTROLS ARE INSTALLED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:

1. CONFIRM THAT THE PLACEMENT, SENSITIVITY, AND TIME-OUT ADJUSTMENTS FOR OCCUPANT SENSORS YIELD ACCEPTABLE PERFORMANCE.
2. CONFIRM THAT THE TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS ARE PROGRAMMED TO TURN THE LIGHTS OFF.
3. CONFIRM THAT THE PLACEMENT AND SENSITIVITY ADJUSTMENTS FOR PHOTO SENSOR CONTROLS REDUCE ELECTRIC LIGHT BASED ON THE AMOUNT OF USABLE DAYLIGHT IN THE SPACE AS SPECIFIED.

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ABBREVIATIONS

A	AMPS/AMPERES
AFC	AVAILABLE FAULT CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR.
AFG	ABOVE FINAL GRADE.
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CU	COPPER MATERIAL
DED	DEDICATED
EF	EXHAUST FAN
EM	EMERGENCY / 90 MINUTE BATTERY FOR EGRESS
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
ER	EXISTING TO BE RELOCATED AS INDICATED.
EX	EXISTING TO REMAIN.
FMC	FLEXIBLE METAL CONDUIT
GEC	GROUNDING ELECTRODE CONDUCTOR AT THE SES
GFCI	GROUND FAULT CURRENT INTERRUPTER.
GND	GROUND
IMC	INTERMEDIATE METAL CONDUIT
IG	ISOLATED GROUND
KCMIL	1000 CIRCULAR MILS (MCM)
LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
LFNC	LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT
N	NEW
N1	NEMA 1
N3R	NEMA 3R
NL	NIGHT LIGHT. BYPASS LOCAL SWITCHING.
RNC	RIGID NONMETALLIC CONDUIT
UNO	UNLESS NOTED OTHERWISE.
WP	WEATHERPROOF
XP	EXPLOSION PROOF.
XR	EXISTING TO BE REMOVED.

CODE INFORMATION

A. 2017 NEC, 2015 IECC. ALL SYSTEMS SHALL BE IN COMPLIANCE WITH THE ABOVE CODES AS ADOPTED BY FORT BEND COUNTY

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THE MONTESSORIOM AT BELLA TERRA

23421 FM 1093 RD.
RICHMOND, TX 77406

NO.	DESCRIPTION	DATE
1	FINAL SCHEME	02.01.19
2	REV.FINAL SCHEME	02.07.19
3	PERMIT	05.24.19

Radian
ARCHITECTURE
134 Eldridge Road Suite A
Sugar Land, Texas 77478
TEL (713) 933 0507
FAX (713) 933 0512

CHRIS L. SARMIENTO
105835
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

Date Signed: 05/24/19

Project No.	1801.74
Date	02/11/19
Drawn by	JG
Checked by	NL

Sheet No.

E0.1

TEXAS ENGINEER FIRM REGISTRATION #F-15201

ASEIENGINEERING
25329 Budde rd. #402, Spring, TX 77380
aseiengineering.com o 713.300.9579

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JOB NO: 190000

DFT: SAS
DSN: EV
CHK: CS