

This drawing is the property of Matrix Engineering, Inc., and is not to be reproduced or copied in whole or in part. It is only to be used for the project and site specifically identified herein and is not to be used on any other project. It is to be returned upon request.

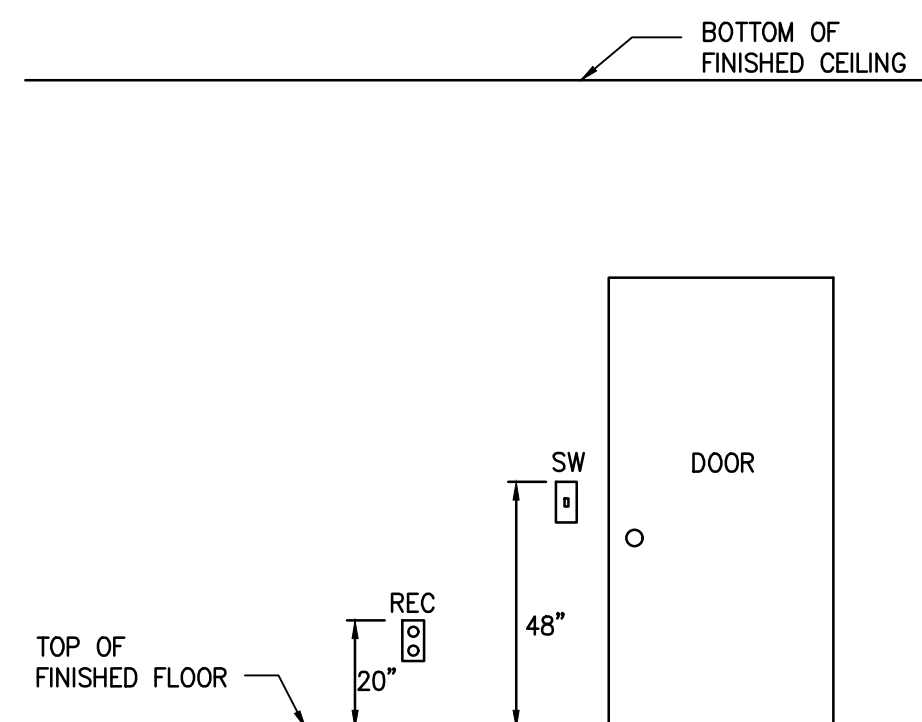
GENERAL NOTES

- ALL ELECTRICAL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE 2020 VERSION OF THE NATIONAL ELECTRICAL CODE AND ALL OTHER LOCAL CODES, LAWS, AND ORDINANCES. WHERE ONE CODE DIFFERS FROM ANOTHER, THE STRICTER OF THE TWO SHALL APPLY.
- IT IS THE DUTY OF THE ELECTRICAL CONTRACTOR TO BE FAMILIAR WITH THE CONSTRUCTION DETAILS OF THE BUILDING. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE ELECTRICAL SYSTEM WITH ALL OTHER TRADES AND SHALL COMPLETE THE ELECTRICAL INSTALLATION AS SOON AS CONDITIONS WILL ALLOW.
- ALL WORK SHALL BE DONE IN A NEAT, QUALITY MANNER WITH ALL WIRING AND RACEWAYS CONCEALED.
- ALL ELECTRICAL DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE. THE ELECTRICAL CONTRACTOR SHALL CLOSELY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES WORKING ON THE PREMISES.
- WHERE CONDUIT AND WIRING HAS NOT BEEN SHOWN ON THE DRAWINGS THE ARRANGEMENT AND ROUTING OF LIGHTING AND RECEPTACLE BRANCH CIRCUITS WILL BE AT THE CONTRACTOR'S DISCRETION IN ACCORDANCE WITH GENERALLY ACCEPTED GOOD PRACTICE, N.E.C. REQUIREMENTS AND THE FOLLOWING LIMITATIONS:
 - SIZE BRANCH CIRCUIT CONDUCTORS WITHIN THE FOLLOWING MAXIMUM LENGTH LIMITS: (MEASURE TO THE CENTER OF THE LOAD FOR LIGHTING CIRCUITS AND THE MOST REMOTE OUTLET FOR RECEPTACLE CIRCUITS)

	#12	#10	#8	#6
120V, 20A,	85'	110'	165'	270'
277V, 20A,	160'	250'	390'	600'
- THIS PROJECT TO MEET NFPA 72 AND ADA REQUIREMENTS REGARDING MOUNTING HEIGHTS OF ELECTRICAL DEVICES.
- RECESSED LIGHTING FIXTURES MUST HAVE 1/2" CLEARANCE FROM COMBUSTIBLE MATERIALS AND 3" CLEARANCE FROM INSTALLATION OR BE IC RATED PER ARTICLE 410.116 (A) 1 AND 2 AND 410.66 (B) OF THE 2020 NEC.
- IN ACCORDANCE WITH SPECIFICATIONS, DURING CONSTRUCTION OPERATIONS, THE ELECTRICAL CONTRACTOR SHALL MAKE A RECORD OF ALL APPROVED CHANGES FROM THE CONTRACT DRAWINGS, INCLUDING ACCURATE DIMENSIONS WHERE APPLICABLE, AND SHALL ALSO RECORD ACCURATE DIMENSIONS LOCATING ALL BELOW-GRADE OUTSIDE ELECTRICAL UTILITIES (WHETHER CHANGED OR NOT) WITH REFERENCE TO PERMANENT ABOVE-GRADE OBJECTS. AT THE COMPLETION OF THE WORK ALL SUCH CHANGES SHALL BE RECORDED NEATLY IN RED INK BY THE ELECTRICAL CONTRACTOR ON AN UNUSED SET OF THE ELECTRICAL CONTRACT DRAWINGS SUPPLIED BY THE ARCHITECT. THE RED LINE CHANGES SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND THE COMPLETED RECORD PRINTS RETURNED TO THE ARCHITECT.
- MINIMUM SIZE CONDUIT FOR 20A CIRCUITS IS 3/4". HOME RUNS FROM AREA JUNCTION BOX TO BE ROUTED IN EMT CONDUIT. MC CABLE IS NOT ALLOWED IN OPEN CEILING AREAS.
- ALL PRE-WIRED EQUIPMENT MUST BE LISTED AND LABELED BY AN APPROVED TESTING AGENCY PER ARTICLE 110.3 (A AND B) OF THE 2020 NEC.
- THE TERMINATION PROVISIONS OF EQUIPMENT MUST BE USED IN DETERMINING THE AMPACITIES OF CONDUCTORS BASED ON TABLE 310.16 REGARDLESS OF THE INSTALLATION RATING OF THE CONDUCTORS PER ARTICLE 110.14 (C) 1 AND 2 OF THE 2020 NEC.
- FLASH PROTECTION WARNING LABELS REQUIRED ON SWITCHBOARDS, PANEL BOARDS, AND MOTOR CONTROL CENTERS PER ARTICLE 110.16 OF THE 2020 NEC.
- SPACES ABOUT ELECTRICAL EQUIPMENT MUST MEET 110.26 (A THROUGH F) ARTICLE 2020 NEC.
- RACEWAYS AND CABLES INSTALLED ABOVE SUSPENDED CEILING REQUIRED TO HAVE INDEPENDENT SUPPORT WIRES CEILING GRID WIRES CANNOT BE USED TO SUPPORT RACEWAY AND CABLES UNLESS CEILING GRID IS RATED FOR SUPPORT PER ARTICLE 300.11 OF THE 2020 NEC.
- TYPE NM, NMC, AND NMS CABLES CANNOT BE USED ABOVE SUSPENDED CEILING PER ARTICLE 334.12 IF THE 2020 NEC.
- FLEXIBLE CORDS CANNOT BE USED AS A SUBSTITUTE FOR FIXED WIRE OR CONCEALED ABOVE SUSPENDED CEILING PER ARTICLE 400.8 (1) AND (5) PER 2020 NEC.
- INDIVIDUAL UNIT EQUIPMENT USED FOR EXIT SIGNS AND EMERGENCY LIGHTS THAT USES A RECHARGEABLE BATTERY MUST BE SUPPLIED BY THE CIRCUIT THAT SUPPLIES THE NORMAL LIGHTING FOR THAT AREA PER ARTICLE 700.12 (F) AND 700.17 OF THE 2020 NEC.

POWER LEGEND

- 20A, 125V, 2P, NEMA 5-20R DUPLEX RECEPTACLE
- POWER OUTLET, 208V, SIZED AS NOTED.
- QUADRAPLEX OUTLET, (2 DUPLEX OUTLETS IN 2 GANG BOX WITH 2 GANG COVER PLATE)
- 20A, 125V, 2P, 3W, NEMA 5-20R DUPLEX RECEPTACLE MOUNT 6" ABOVE COUNTER TO BOTTOM OF OUTLET BOX.
- FED-SPEC GRADE USB CHARGER WITH TAMPER-RESISTANT DUPLEX RECEPTACLE WIREMOLD #1RS262USB-IVORY OR APPROVED EQUAL.
- ADJACENT TO RECEPTACLE DENOTES GROUND FAULT INTERRUPTER OUTLET, (FEED THRU TYPE).
- ADJACENT TO RECEPTACLE INDICATES WEATHERPROOF IN-USE TYPE COVER.
- ADJACENT TO RECEPTACLE INDICATES WEATHER RESISTANT TYPE RECEPTACLE.
- TYPICAL DATA/COMM OUTLET DOUBLE GANG OUTLET BOX WITH SINGLE GANG MUD RING ROUTE 3/4 INCH CONDUIT TO ABOVE CEILING SPACE. PROVIDE PULL STRING. COMMUNICATIONS CONTRACTOR TO PROVIDE FACE PLATE, WIRING, AND FINAL CONNECTIONS.
- JUNCTION BOX
- LIGHTING OR RECEPTACLE PANEL BOARD.
- DISCONNECT SWITCH.
- FUSED DISCONNECT SWITCH.
- DISCONNECT FURNISHED WITH EQUIPMENT
- MOTOR RATED SWITCH, CONTINUOUS CURRENT RATED, QUANTITY OF POLES AS REQUIRED
- EXHAUST FAN.
- SEE MECHANICAL DWGS. FOR FAN SPECIFICATIONS. MOTOR, HORSEPOWER AS SHOWN.
- "HOME-RUN" TO PANEL BOARD.



TYPICAL DEVICE MOUNTING HEIGHT
SCALE: NONE

EXISTING PANEL EP3

208/120 VOLT, 100 AMP MAIN LUGS ONLY, 3 PHASE, 4 WIRE
GENERAL ELECTRIC CATALOG #NLAB

CONN LOAD	CIRCUIT USE	S N	100A M. L. O.	S N	CIRCUIT USE	CONN LOAD	PHASE A	PHASE B	PHASE C
1320	EXISTING VENTILATOR & DEHUMIDIFIER (A15)	1		2	DEHUMIDIFIER (A1)	1080	2400		
1680	EXISTING VENTILATORS	3		4	EXISTING VENTILATORS	960		2640	
500	EXISTING VENTILATORS	5		6	EXISTING VENTILATORS	1200			1700
1080	DEHUMIDIFIER (A55)	7		8	EXISTING VENTILATOR & DEHUMIDIFIER (A7)	1320	2400		
1080	DEHUMIDIFIER (A5)	9		10	DEHUMIDIFIER (A4)	1080		2160	
1080	DEHUMIDIFIER (A6)	11		12	DEHUMIDIFIER (A8)	1080			2160
1080	DEHUMIDIFIER (A10)	13		14	DEHUMIDIFIER (A9)	1080		2160	
1080	DEHUMIDIFIER (A12)	15		16	DEHUMIDIFIER (A13)	1080		2160	
1080	DEHUMIDIFIER (A13)	17		18	DEHUMIDIFIER (A17)	1080			2160

NOTES:

- ALL CIRCUIT BREAKERS 20 AMPERE, SINGLE POLE, UNLESS NOTED OTHERWISE.
- PROVIDE UPDATED TYPED PANEL SCHEDULE REFLECTING ANY ADDITIONS OR CHANGES TO PANEL.
- DENOTES NEW CIRCUIT BREAKER TO BE PURCHASED AND INSTALLED BY ELECTRICAL CONTRACTOR. AIC RATING TO MATCH EXISTING.

PHASE A	PHASE B	PHASE C	TOTAL VA	CONNECTED AMPERAGE
6960	6960	6020	19940	56 AMPERES

ELECTRICAL SPECIFICATIONS

General Provisions

- All Electrical work shall be executed in accordance with the 2020 version of the National Electrical Code and all other local codes, laws, and ordinances. Where one code differs from another, the stricter of the two shall apply.
- It is the duty of the Electrical contractor to be familiar with the construction details of the building. The contractor shall coordinate the installation of the electrical system with all other trades and shall complete the electrical installation as soon as conditions will allow.
- Payment of all fees, permits, and licenses required to complete the electrical installation shall be the responsibility of the electrical contractor.
- All work shall be done in a neat, quality manner with all wiring and raceways concealed.
- All electrical work shall be warranted by the electrical contractor for one (1) year from the date of acceptance by the owner or his designated representative.
- All electrical drawings are generally diagrammatic in nature. The electrical contractor shall closely coordinate all electrical work with all other trades working on the premises.
- Electrical contractor shall submit five (5) sets of catalog cuts, brochures, or other technical data for all equipment furnished under this contract to the engineer for his review.
- All requests for prior approval shall be submitted to the engineer no later than ten (10) days prior to the bid date unless noted as "approved equal" in a written addendum. All manufacturers shall be specified herein or as shown on the contract documents.
- See general notes, schedules, and legends on the electrical drawing set for any additional requirements to the contract.
- Electrical contractor is to contact the engineer after installation of all switch, receptacle, telephone, television, and lighting boxes for an on-site review before any wiring is installed or wall surfaces are complete. The architect may, at this point, make adjustments to the box locations as desired.
- All electrical panelboards and lighting equipment shall be restrained per seismic requirements of the appropriate building code in effect.

Electrical Raceways

- All cutting and patching required for and resulting from the electrical installation work shall be patched and repaired to restore the original surface finish. This repair work is the responsibility of the electrical contractor.
- Contractor shall install sleeves for conduits that pass through grade beams, foundations, walls, and slabs before concrete is poured. Contractor shall do all necessary cutting and sealing afterwards in an approved manner.
- All penetrations through fire-rated walls shall be patched with a UL approved fire sealant equal to at least the rating of the wall.
- Wiring system is to be concealed above the suspended ceiling or in walls where possible. Conduit is to be installed parallel to building lines and clear of all openings, depressions, pipes, ducts, structure, etc.
- Conduit is to be installed between cabinets and boxes with no more than four (4) 90 degree bends. Conduit is to be securely fastened in place with straps, hangers and steel supports as required. Conduit is not to be fastened or supported from the ceiling grid or supporting wires. Conduit ends shall be reamed and conduit shall be thoroughly cleaned before installation. Openings in conduit shall be plugged or properly covered.
- Terminals on switches and outlets shall not be used to "feed through" to the next switch or outlet. The removal of a receptacle or fixture or any other device fed from a box shall not interfere with conductor continuity.
- Conduit shall be furnished as shown on the electrical drawings. Approved types are heavy wall rigid steel hot dipped galvanized or EMT with compression type fittings and connections. All runs shall be continuous with all joints and connections pulled tight. Conduit shall be required in and under all slabs and in masonry walls. PVC conduit may be used underground or under slabs. Minimum conduit size shall be 3/4".
- Contractor shall install a nylon pull wire in each empty conduit.
- Contractor to include an equipment grounding conductor in each conduit. Conductor size to be determined by National Electrical Code requirements.

Conductors

- Conductors shall be soft-annealed 98% copper. All conductors larger than #8 AWG shall be stranded. Minimum size conductor shall be #12 AWG unless otherwise specified. No aluminum conductors will be permitted. Type THHN shall not be used underground, outside, at service entrances or in wet locations. All insulation shall be rated at 600 volts.

The following insulation types are permitted:

- #10 AWG and smaller THW, THWN, THW
- #8 AWG to #4/0 AWG THW, THHN
- Over 4/0 AWG THW
- Service Entrance USE, RHW
- Wire through fluorescent fixture or within 3' of heating equipment THHN

Conductors shall be color coded as follows:

	208/120 Volt Y	480/277 Volt Y
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	White/Grey
Ground	Green	Green

Distribution

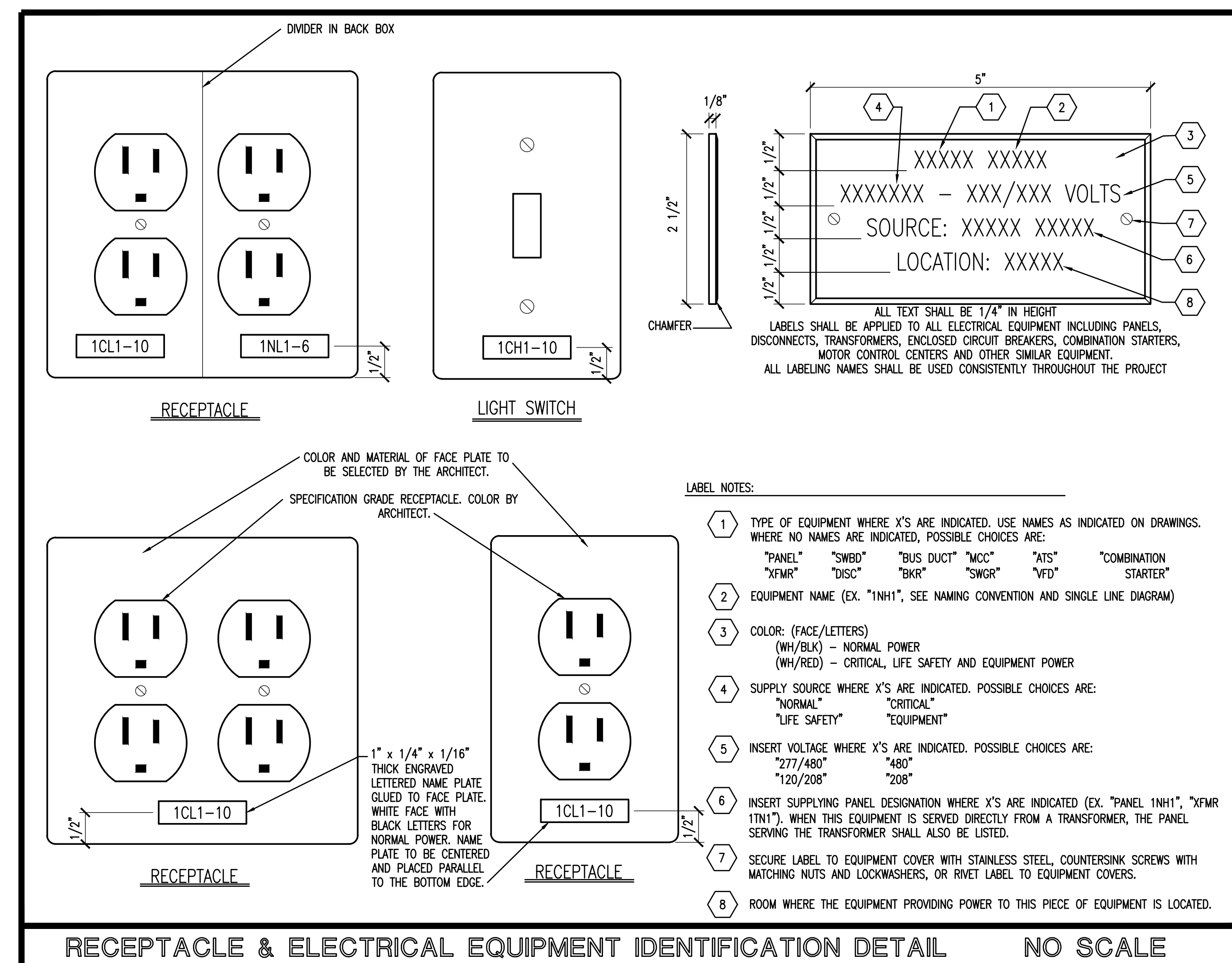
- Electrical power service voltage shall be as noted on the drawings. Size of the electrical service conductors shall be as shown on the riser diagram. All service connections and grounding detail shall be per the National Electrical Code article 250 and shall be inspected before covering.
- Contractor shall comply with the 2020 National Electrical Code and all laws that apply to electrical installations.
- All material used on the project shall be new and conform to Underwriters Laboratories (UL) standards.
- Contractor to verify voltage drops and A.I.C. ratings for all equipment connected and verify the size of all electrical system breakers, conduit, wire size, etc.

Grounding

- All metallic conduit, supports, cabinets, panelboards, and other electrical system components shall be permanently grounded per the National Electrical Code. All grounding devices and clamps shall be of the type approved specifically for grounding use. All circuits shall include a grounding conductor sized per National Electrical Code requirements.

Panelboards

- All circuit breakers must show positive indication of tripped breaker.
- All electrical equipment, panels, switches, etc., shall be tagged with white plastic nameplates with 1/4"H black letters. Nameplate shall show equipment designation and operating voltage.



DATE	ISSUE FOR BID	DATE	REV	DESCRIPTION
07-07-2023	0			

SPARTANBURG COMMUNITY COLLEGE
SCC POWERS BUILDING
'A' WING DEHUMIDIFICATION
107 COMMUNITY COLLEGE DRIVE
SPARTANBURG, SC 29303

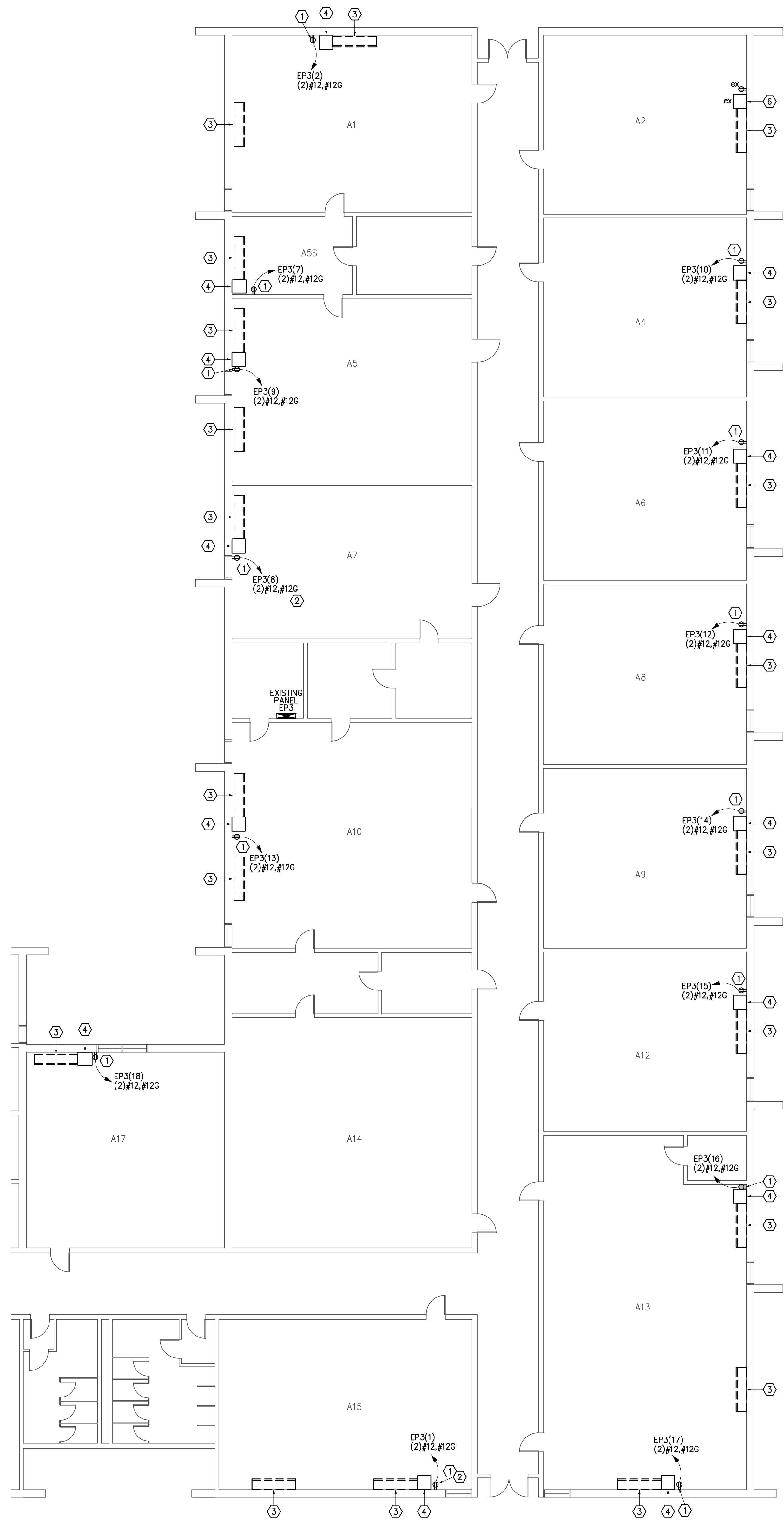
MATRIX ENGINEERING, INC.
29302
105 SOUTH PINE STREET
SPARTANBURG, SOUTH CAROLINA
(864)952-6274
www.matrixinc.com

GENERAL NOTES, LEGENDS, ELECTRICAL SPECIFICATIONS & PANEL SCHEDULE

SCALE	DATE	PROJECT NO.	REV
NONE	JULY 07, 2023	2023-141	0

E1.0

This drawing is the property of Matrix Engineering, Inc., and is not to be reproduced or copied in whole or in part. It is only to be used for the project and site specifically identified herein and is not to be used on any other project. It is to be returned upon request.



POWER PLAN
SCALE: 1/8"=1'-0"

LGR Dehumidifier Low-Drain Refrigerant 250 Pints Per Day Water Pump Model 246704

IMPORTANT INSTRUCTIONS:

- Operate the unit from a power source of equal voltage, frequency, and rating as indicated on the product specification label. Do not connect to a power source with a higher voltage than indicated. Do not connect to a power source with a lower voltage than indicated.
- Do not operate the unit if the cord is damaged or has been damaged or frayed.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.
- Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.

WARNING: Please read all instructions before using the unit. Do not use the unit if the cord is damaged or has been damaged or frayed. Do not touch the unit or the power cord. Do not touch the unit when it is plugged into the wall outlet.

SETUP INSTRUCTIONS:

OPERATION:

PLUG IN ELECTRICAL CORD:

TURN THE UNIT ON:

TURN THE UNIT OFF:

STORING THE UNIT:

TRUBLE SHOOTING:

OPERATION:

DEFROSTING MODE:

MAINTENANCE:

Cleaning or Replacing Filter:

Cleaning Water Pump:

Calibration Inlet Sensor:

SETUP INSTRUCTIONS:

OPERATION:

PLUG IN ELECTRICAL CORD:

TURN THE UNIT ON:

TURN THE UNIT OFF:

STORING THE UNIT:

TRUBLE SHOOTING:

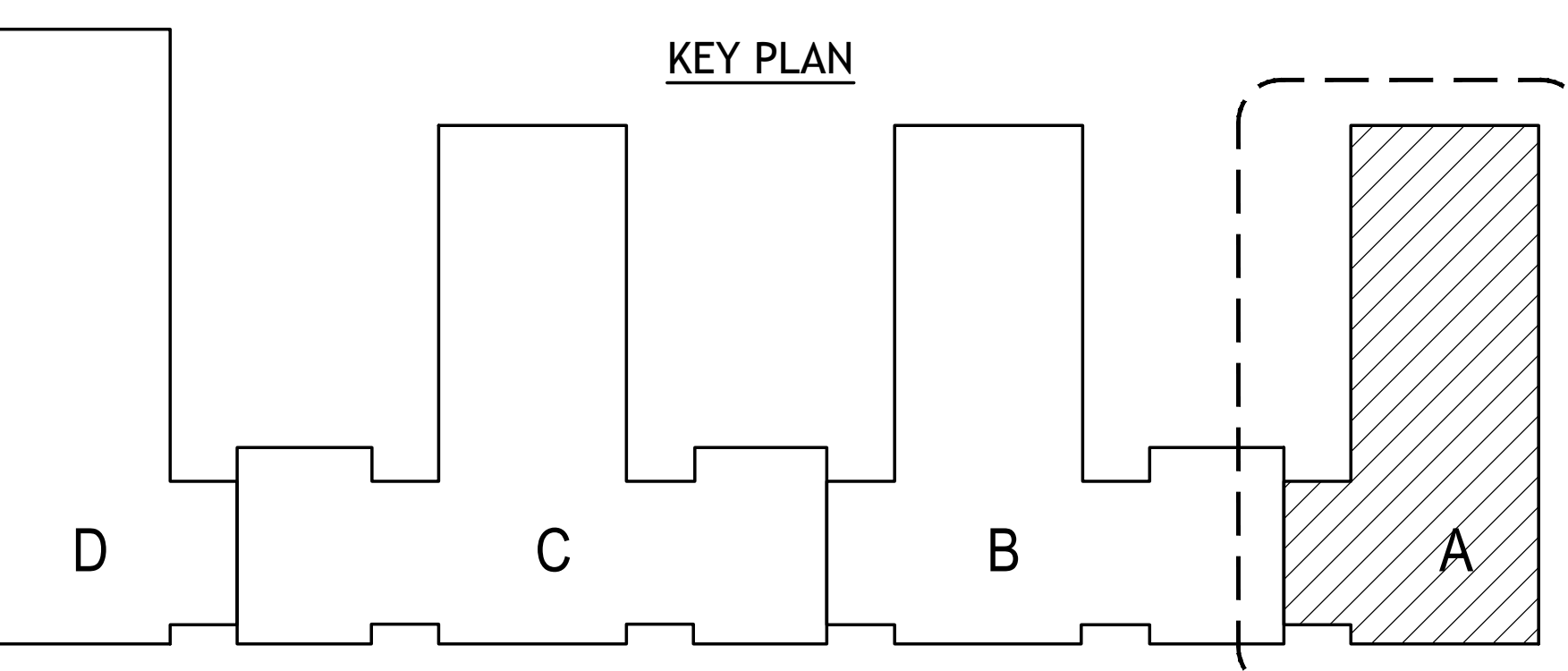
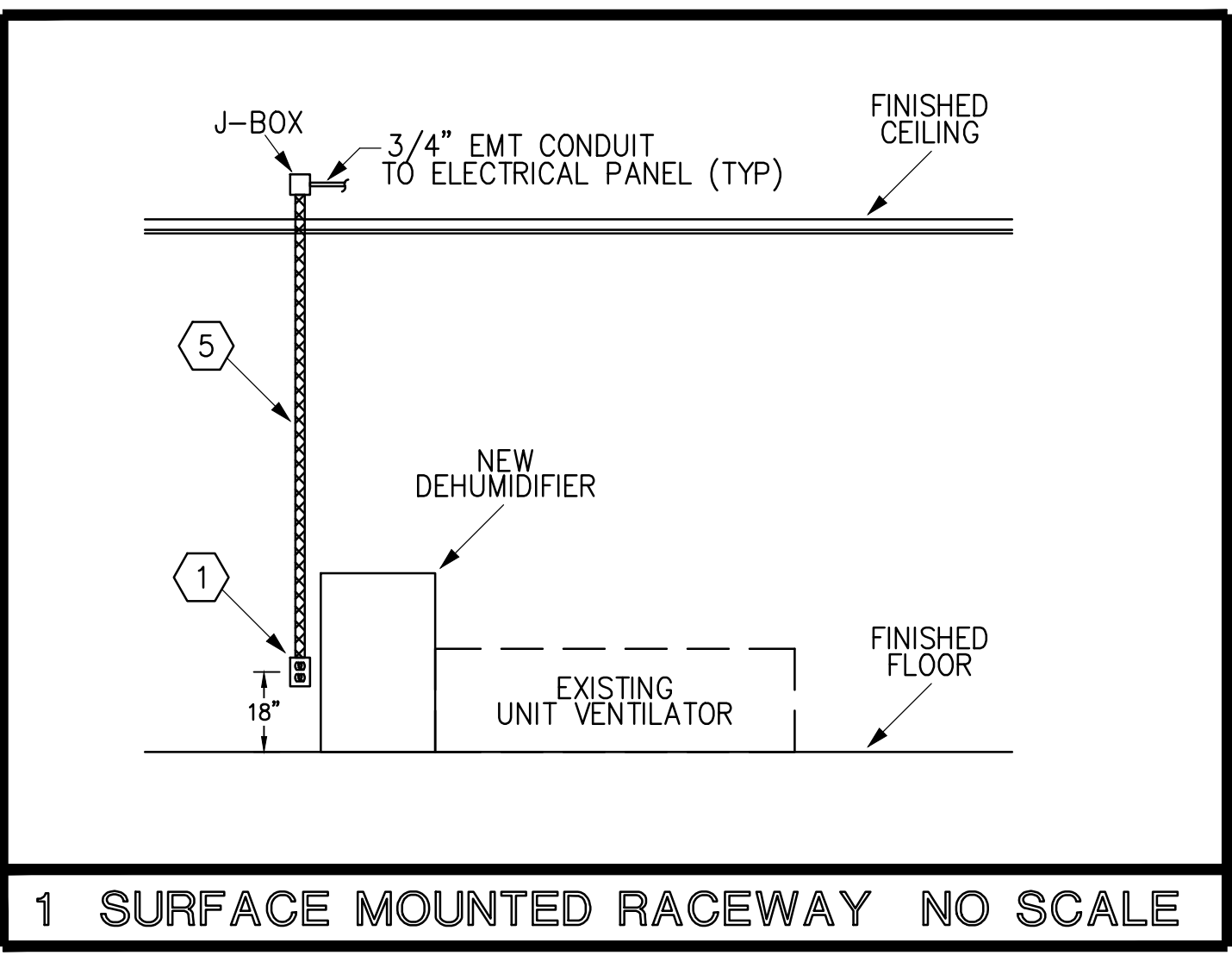
FAULT	CAUSE	SOLUTION	CODE	ERR	ERR	ERR
Unit does not operate	No power to machine	Plug in unit check power or check the unit	D101	Cond sensor error	Humidity sensor error	Water pump fault/lockage
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D102	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D103	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D104	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D105	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D106	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D107	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D108	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D109	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second
Unit does not operate	Unit is not plugged in	Check the power cord and plug it into the wall outlet	D110	Flashes every 1 second	Flashes every 1 second	Flashes every 1 second

GENERAL POWER PLAN NOTES:

- ELECTRICAL CONTRACTOR TO PROVIDE UL LISTED FIRE STOP ASSEMBLY FOR ALL DEVICES INSTALLED IN FIRE WALLS.
- DO NOT SHARE NEUTRALS.
- ELECTRICAL CONTRACTOR TO COORDINATE ALL WORK WITH FACILITIES DIRECTOR & COLLEGE HVAC DEPARTMENT PRIOR TO ANY WORK BEING PERFORMED. ELECTRICAL CONTRACTOR MAY ACT AS A GENERAL CONTRACTOR FOR THIS PROJECT.
- "ex" ADJACENT TO EQUIPMENT DENOTES EXISTING EQUIPMENT TO REMAIN.
- ELECTRICAL CONTRACTOR TO PERFORM A SITE VISIT DURING BIDDING PHASE PRIOR TO SUBMITTING PRICING. COORDINATE TIME AND DATE WITH SPARTANBURG COMMUNITY COLLEGE.
- ALL SURFACE MOUNTED RACEWAY SHALL BE INSTALLED IN A NEAT AND ORDERLY FASHION AND ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES.

KEYED POWER PLAN NOTES:

- DENOTES NEW SURFACE MOUNTED DUPLEX 20AMP RECEPTACLE TO BE PURCHASED AND INSTALLED BY ELECTRICAL CONTRACTOR FOR DEHUMIDIFIER. ELECTRICAL CONTRACTOR TO UTILIZE SURFACE MOUNTED RACEWAY LEGRAND WIREMOLD CATALOG #2400-FINISH (OR EQUAL) TO FACILITATE WIRING. COORDINATE WITH SPARTANBURG COMMUNITY COLLEGE HVAC DEPARTMENT FOR EXACT LOCATION AND MOUNTING HEIGHT PRIOR TO INSTALLATION. SEE DETAIL BELOW FOR MORE INFORMATION.
- ELECTRICAL CONTRACTOR TO WIRE NEW DEHUMIDIFIER TO CIRCUIT CURRENTLY SERVING EXISTING VENTILATOR IN ROOM.
- DENOTES EXISTING UNIT VENTILATOR TO REMAIN IN USE.
- ELECTRICAL CONTRACTOR TO PURCHASE AND INSTALL DEHUMIDIFIER. DEHUMIDIFIER TO BE GLOBAL INDUSTRIAL LGR TYPE DEHUMIDIFIER. SEE SAME SHEET FOR MORE INFORMATION.
- ELECTRICAL CONTRACTOR TO UTILIZE SURFACE MOUNTED RACEWAY AS SHOWN. COORDINATE EXACT MOUNTING LOCATION WITH FACILITIES DIRECTOR PRIOR TO INSTALLATION.
- DENOTES PRIOR INSTALLATION OF DEHUMIDIFICATION UNIT TO TEST FUNCTIONALITY OF EQUIPMENT (NO WORK).
- ELECTRICAL CONTRACTOR TO PURCHASE AND INSTALL DE-HUMIDIFICATION UNIT AND ADHERE TO ALL INSTALLATION REQUIREMENTS AS STATED BY MANUFACTURER ON SHEETS AT LEFT.



REV	DATE	DESCRIPTION
0	07-07-2023	ISSUE FOR BID

REGISTERED PROFESSIONAL ENGINEER

MATRIX ENGINEERING, INC.

No. 5801

STATE OF SOUTH CAROLINA

07-07-2023

SPARTANBURG COMMUNITY COLLEGE
 SCC POWERS BUILDING
 'A' WING DEHUMIDIFICATION
 107 COMMUNITY COLLEGE DRIVE
 SPARTANBURG, SC 29303

MATRIX ENGINEERING, INC.

105 EAST PINE STREET
 SPARTANBURG, SOUTH CAROLINA
 (864) 585-6274
 www.matrixinc.com

29302

POWER PLAN

SCALE	AS NOTED	FIG NO
DATE	JULY 07, 2023	E2.0
FILE NAME	E2.0.dwg	PROJECT NO
		2023-141
		REV
		0