FEEDER SCHEDULE ALUMINUM	
4000/W	11[W-700kcmil, 750kcmil]G, 4"C]
3000/W	8[W-700kcmil, 600kcmil]G, 4"C]
2500/W	7[W-700kcmil, 600kcmil]G, 4"C]
2000/W	6[W-600kcmil, 400kcmil]G, 4"C]
1600/W	5[W-600kcmil, 350kcmil]G, 4"C]
1200/W	4[W-500kcmil, 250kcmil]G, 3-1/2"C]
1000/W	4[W-350kcmil, 4/0]G, 3"C]
800/W	3[W-400kcmil, 3/0]G, 3"C]
750/W	3[W-350kcmil, 3/0]G, 3"C]
600/W	2[W-500kcmil, 2/0]G, 3-1/2"C]
500/W	2[W-350kcmil, 1/0]G, 3"C]
400/W	2[W-250kcmil, #1]G, 3"C]
350/W	2[W-4/0, #1]G, 2-1/2"C]
300/W	W-500kcmil, #2G, 3-1/2"C
250/W	W-350kcmil, #2G, 3"C
225/W	W-300kcmil, #2G, 3"C
200/W	W-250kcmil, #4G, 3"C
175/W	W- 4/0, #4G, 2-1/2"C
150/W	W- 3/0, #4G, 2"C
125/W	W- 2/0, #4G, 2"C
100/W	W-1/0, #6G, 2"C
90/W	W-1/0, #6G, 2"C
80/W	W#1, #6G, 1-1/2"C
70/W	W#2, #6G, 1-1/4"C
60/W	W#2, #8G, 1-1/4"C
50/W	W#4, #8G, 1-1/4"C
40/W	W#6, #8G, 1"C

THIS TABLE INDICATES MINIMUM CONDUCTOR SIZE FOR FEEDERS OF THE AMPACITY INDICATED WHERE #/W INDICATES THE #-AMPACITY AND W-NUMBERS OF WIRE. #S/W INDICATES NO GROUND. ALL CONDUCTORS SHALL BE ALUMINUM UNLESS NOTED OTHERWISE.

"CONDUCTOR AMPACITIES" SHALL BE BASED ON TABLE 310.15(B)(16) 60 DEGREE COLUMN UP TO 100 AMPS AND 75 DEGREE COLUMN ABOVE 100 AMPS UNLESS OTHERWISE PERMITTED BY NEC. AMPACITY RATING SHALL BE SELECTED IN ACCORDANCE WITH NEC 110.14 (C).

THE MASTER ELECTRICIAN SHALL BE RESPONSIBLE FOR ENSURING THAT NO FEEDERS OR BRANCH CIRCUITS ARE INSTALLED IN A MANNER OR SIZED IN SUCH A WAY AS TO VIOLATE NEC

SERVICE	EQUIPMENT
GROUND	GROUND
TABLE	TABLE
150G/CU #6	20EG #10
200G/CU #4	60EG #8
300G/CU 2	100EG #6
500G/CU 1/0	200-1200A PER ABOVE
1000G/CU 2/0	1600EG 350KCMIL
>1000G/CU 3/0	2000EG 400KCMIL

SERVICE GROUND CONDUCTORS SIZED PER NEC TABLE 250.66 EQUIPMENT GROUND CONDUCTORS SIZED PER NEC TABLE 250.122 ALL CONDUCTORS SHALL BE ALUMINUM UNLESS NOTED OTHERWISE

THE SERVICE GROUND CHART INDICATES THE MINIMUM SERVICE GROUND CONDUCTOR BASED ON #G WHERE # IS THE AMPACITY FROM THE CHART ABOVE, AND THE EQUIPMENT GROUND CHART INDICATES THE MINIMUM EQUIPMENT GROUNDING CONDUCTOR SIZE #EG WHERE # IS THE RATING/SETTING OF THE OVERCURRENT DEVICE PROTECTING THE CONDUCTORS AND EQUIPMENT

WHERE DISCREPANCIES OCCUR BETWEEN THE FEEDER SCHEDULE SCHEDULE AND THE GROUNDING TABLES, THE LARGER CONDUCTOR SHALL BE USED UNLESS OTHERWISE PERMITTED BY THE NEC.

THE INSTALLATION SHALL MEET ALL NEC 250 GROUNDING AND BONDING REQUIREMENTS INCLUDING 250.4 PATH FOR FAULT CURRENT. PROVIDE COMPLETE RACEWAY SYSTEMS METALLICALLY JOINED, CONNECTED, AND FITTINGS AS REQUIRED FOR ELECTRICAL CONTINUITY PER NEC 300.10

City of Aurora Building Division
Project: *Revisions*
Address: *1400 S POTOMAC ST UNIT 200*
Occupancy Group:
Construction Type:
RSN: *1672664*
Permit: *2022 2243617*

Code violations that are found during inspection are required to be corrected. Permit issuance does not grant approval of a code violation.

Provide a full size set of legible approved construction documents **PRINTED IN COLOR** for review by the Field Inspector..

Only highlighted or clouded revisions are approved on this review. All previous comments apply.

Revisions only, call for inspections under original permit

SHORT CIRCUIT CALCULATIONS BASED ON BUSSMAN POINT TO POINT METHOD.

SHORT CIRCUIT SCHEDULE

POINT	DESCRIPTION	Short Circuit ISC SYM RMS	Multiplier M	F factor F	Constant C	Line-Line Voltage V	Length of run L	I available I	Xfmer Rated kVA	Xfmer Imped %Z
X1	PAD MOUNTED TRANSFORMER	16,900								
X2	MAIN SWITCHBOARD	16,472	0.975	0.026	117,255	480	50	16,900	-----	-----
X3	PANEL "H200"	8,119	0.493	1.029	5,777	480	100	16,472	-----	-----
X4	TRANSFORMER PRIMARY	7,811	0.962	0.039	3,713	480	5	8,119	-----	-----
X5	TRANSFORMER SECONDARY	3,209	0.411	4.618	-----	-----	-----	7,811	45	3.2
X6	PANEL "L200"	3,136	0.977	0.023	5,777	208	5	3,209	-----	-----
X7	PANEL "L250"	3,094	0.964	0.037	5,777	208	8	3,209	-----	-----

Three (3) phase Line to Line Short Circuit Calculations:

Is.c = (lavailable)*M

M = 1/(1+F)

F = (1.732 x L x lavailable3Ø)/(C x V)

C = values found in BUSSMANN SPD Handbook for conductors and busway

V = the line to line voltage

L = length of run in feet

The same calculations for single (1) phase Line to Line, F value changes:

F = (2 x L x lavailable1Ø)/(C x V)

The same calculations for the fault current at the secondary side of a transformer, F value changes:

F = (IscPrimary x Vprimary x 1.732 x %Z)/(100,000 x kVAtrans)

For multiple conductors per phase, the single conductor C value from the table is multiplied by the number of conductors per phase.

NOTES:

1. "Length of Run" is shown for calculations only, and should not be used for bidding purposes.

FIRE ALARM SYSTEM NOTES (CONTRACTOR DESIGN)

THE FIRE ALARM SYSTEM SHALL BE DESIGN/BUILD BY THE CONTRACTOR. DOCUMENTS SHALL BE PREPARED AND SUBMITTED TO OBTAIN APPROVAL OF MODIFICATIONS AND ADDITIONS TO THE EXISTING BUILDING FIRE ALARM SYSTEM. ALL FIRE ALARM SHOP DRAWINGS SHALL BE STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR THE CORRESPONDING STATE HAVING JURISDICTION. ALL DEVICES SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM AND SHALL BE SO CERTIFIED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS THAT MEET THE REQUIREMENTS OF LOCAL JURISDICTION.

1. THE FIRE ALARM SYSTEM IS EXISTING TO BE FIELD VERIFIED. ALL DEVICES ADDED TO THE SYSTEM SHALL BE FULLY COMPATIBLE AND VERIFIED THAT EXISTING SYSTEM WILL BE ABLE TO ACCOMODATE ALL NEW DEVICES. PROVIDE ALL NECESSARY CONNECTION TO THE BASE BUILDING FIRE ALARM SYSTEM.
2. THE FIRE ALARM SYSTEM SHALL MEET ALL CODE, LOCAL JURISDICTIONAL REQUIREMENTS AND COMPLY WITH THE LATEST APPLICABLE PROVISIONS OF NFPA 70, NFPA 72, ADA 1990, ANSI 117.1, IBC, AND IFC, EXCEPT AS MODIFIED BY THE LOCAL JURISDICTION
3. THE FIRE ALARM SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: ADDRESSABLE DETECTION (HEAT SMOKE) DEVICES, NOTIFICATION DEVICES, MANUAL PULL-STATIONS, MAGNETIC DOOR HOLDER DEVICES, SMOKE DAMPER CONTROL (PER IBC), ETC.
4. DETECTORS SHALL BE LOCATED AND INSTALLED IN ACCORDANCE WITH NFPA 72 AND LOCAL JURISDICTIONAL REQUIREMENTS DETECTORS INSTALLED IN ANY CONCEALED LOCATIONS SHALL HAVE A REMOTE VISIBLE LED INDICATOR.
5. NOTIFICATION DEVICES SHALL BE LOCATED AS REQUIRED BY LOCAL CODE AT LEAST 80 INCHES FROM FINISHED FLOOR.
6. ALL RATED PENETRATIONS SHALL BE FIRE SEALED.
7. DETECTORS SPACING ON NON-CONTINUOUS PLANE CEILINGS SHALL BE ADJUSTED ACCORDING TO CODE AND LOCAL JURISDICTION.
8. LOCATE CORRIDOR DETECTORS TO LINE UP WITH LIGHT FIXTURES. KEEP DETECTORS 3' AWAY FROM AIR DIFFUSERS.
9. ALL FIRE ALARM WIRING MUST BE RUN IN APPROVED RACEWAY. EXPOSED PLENUM RATED WIRING WILL BE ALLOWED IN CEILING PLENUM WITH PRIOR APPROVAL OF BUILDING OWNER AND AUTHORITY HAVING JURISDICTION. EXPOSED WIRING WILL NOT BE ALLOWED DOWN WALL SURFACES.
10. STROBES SHALL BE SYNCHRONIZED.

LOAD SUMMARY - MAIN SWITCHBOARD

1600A, 277/480V, 3Ø, 4W

LOAD IDENTIFICATION	CONNECTED LOAD (VA)	CONNECTED LOAD (A)
*EXISTING LOAD ON MSB	602,901	725.2
LOAD REMOVED VIA REVISION TO LED LTG	-3,210	-3.9
LOAD REMOVED VIA DEMOED POWER	-7,840	-9.4
LOAD ADDED VIA PANEL L200	13,628	16.4
**LOAD ADDED VIA PANEL L250	18,022	21.7
TOTAL LOAD ON 1600A SERVICE	623,501	750

NOTES:

* EXISTING LOAD FROM PREVIOUS ENGINEERED DRAWINGS.
** PANEL SERVES ADJACENT SUITE DESIGNED AT THE SAME TIME AS THIS SUITE.

ELECTRICAL LEGEND

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT.

- GROUNDED DUPLEX RECEPTACLE
- COMBO GROUNDED DUPLEX RECEPTACLE AND USB CHARGING PORT
- GROUNDED SWITCHED DUPLEX/QUAD RECEPTACLE
- GROUNDED SPLIT-WIRED RECEPTACLE
- GROUNDED SINGLE RECEPTACLE
- FOUR PLEX RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE SUBSCRIPT = AMPACITY
- FLOOR MOUNTED SPECIAL PURPOSE RECEPTACLE
- CLOCK RECEPTACLE
- FLOOR MOUNTED RECEPTACLE
- FLOOR MOUNTED FOUR PLEX RECEPTACLE
- POWER ONLY POKE-THRU
- POWER/DATA POKE-THRU
- MOTOR
- PLUG MOLD
- POWER/TELEPHONE POLE
- WIRELESS ACCESS POINT
- TELEPHONE OUTLET
- FLOOR MOUNTED TELEPHONE OUTLET
- FLOOR MOUNTED TELEPHONE/DATA OUTLET
- TELEPHONE/DATA OUTLET
- DATA OUTLET
- FLOOR MOUNTED DATA OUTLET
- SWITCH & RECEPTACLE COMBINATION
- 1, 2, OR 3 BUTTON STATION
- TELEVISION OUTLET
- FLOOR MOUNTED TELEVISION OUTLET
- JUNCTION BOX
- FLOOR MOUNTED JUNCTION BOX
- WALL MOUNTED J-BOX
- BUZZER
- CHIME
- COMBINATION STARTER/DISCONNECT SWITCH
- EQUIPMENT NON-FUSED DISCONNECT SWITCH
- EQUIPMENT FUSED DISCONNECT SWITCH
- MAGNETIC CONTROLLER (STARTER)
- ELECTRICAL PANELBOARD SURFACE MOUNTING
- ELECTRICAL PANELBOARD RECESSED MOUNTING
- TELEPHONE TERMINAL BOARD
- RESIDENTIAL COMMUNICATION CENTER
- MAIN DISTRIBUTION PANEL
- PULL BOX
- MOTOR CONTROL CENTER
- METER
- TRANSFORMER
- RELAY
- CONTACTOR
- SOLENOID VALVE
- CARD READER
- SPEAKER - PAGING AND OR SOUND SYSTEM
- THERMOSTAT
- BATTERY
- PHOTOCELL
- CIRCUIT BREAKER
- BREAKER WITH DRAWOUT FEATURE
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- FUSED SWITCH
- POWER TRANSFORMER
- CURRENT TRANSFORMER
- GROUND
- CONDUIT UP
- CONDUIT DOWN
- CONDUIT CAP
- CONDUIT CONTINUATION
- HOMERUN ARROWS
- MECHANICAL EQUIPMENT DESIGNATION
- DETAIL NOTE DESIGNATION
- KITCHEN EQUIPMENT DESIGNATION
- ELECTRICAL WIRE SIZE

- DELTA REVISION NOTE
- TWO WAY COMMUNICATION
- FIRE ALARM ANNUNCIATOR
- FIRE ALARM PANEL
- FIRE ALARM ANNUNCIATOR CONTROL PANEL
- MANUAL PULL STATION
- FIRE STROBE
- FIRE HORN OR SPEAKER WITH STROBE
- FIRE ALARM HORN & LIGHT
- FIRE ALARM HORN
- MAGNETIC DOOR HOLDER
- FIRE ALARM FLOW SWITCH
- TAMPER SWITCH
- FIRE THERMAL DETECTOR
- SMOKE DETECTOR I = IONIZATION SICO_ P = PHOTOELECTRIC
- COMBINATION CO/SMOKE DETECTOR
- DUCT FIRE DETECTOR (RETURN)
- DUCT FIRE DETECTOR (SUPPLY)
- REMOTE INDICATING LIGHT
- FIRE / SMOKE DAMPER
- 120V. MOTORIZED SMOKE DAMPER
- VOLUME CONTROL
- MICROPHONE RECEPTACLE
- WALL MOUNTED FIXTURE
- RECESSED LIGHT FIXTURE
- SURFACE MOUNTED LIGHT FIXTURE
- STRIP LIGHT FIXTURE
- POLE MOUNTED FIXTURE
- CEILING FIXTURE
- PORCELAIN LAMP HOLDER
- WALL WASHER
- TRACK HEAD FIXTURE
- TRACK WITH TRACK HEAD FIXTURE
- EMERGENCY FIXTURE - SHADED
- WALL PACK FIXTURE
- SURFACE CEILING FIXTURE
- 3-WAY SWITCH
- 4-WAY SWITCH
- SWITCH WITH INTEGRATED OCCUPANCY SENSOR
- WALL MOUNTED VACANCY SENSOR SWITCH
- SWITCH & PILOT LAMP
- KEY OPERATED SWITCH
- DIMMER SWITCH
- THERMAL OVERLOAD SWITCH
- ABOVE FINISH FLOOR
- ABOVE COUNTER - VERIFY HEIGHT
- ARC-FAULT CIRCUIT INTERRUPTER
- ABOVE COUNTER/GROUND FAULT INTERRUPTING
- CIRCUIT
- EXISTING TO REMAIN
- ELECTRICAL CONTRACTOR
- EXHAUST FAN
- EXISTING TO BE RELOCATED
- EXISTING TO BE REMOVED
- ELECTRICAL WATER COOLER
- GROUND FAULT INTERRUPTING
- HOUSE PHONE
- INSTA HOT
- PARTIAL CIRCUIT USED IN MULTIPLE LOCATIONS
- SAME AS (P)
- SURFACE MOUNTED DEVICE
- TELEPHONE TERMINAL BOARD
- UNLESS OTHERWISE NOTED
- WEATHER PROOF/GROUND FAULT INTERRUPTING
- WEATHER PROOF

CODES:

DESIGNED UNDER THE FOLLOWING CODES:
2020 NATIONAL ELECTRICAL CODE
2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL EXISTING BUILDING CODE
2015 INTERNATIONAL FIRE CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE

ENERGY CODE NOTES:

1. THE LIGHTING AND ELECTRICAL SYSTEMS FOR THE PROJECT SHALL COMPLY WITH THE APPLICABLE SECTIONS OF 2021 IECC.
2. OCCUPANCY SENSORS SHALL BE PROVIDED AS REQUIRED FOR FULL COVERAGE OF THE AREA SHOWN. SPECIFIC NUMBER OF DEVICES AND MOUNTING LOCATIONS SHALL BE DETERMINED BY THE MANUFACTURER THAT IS SELECTED BY THE ELECTRICAL CONTRACTOR. LOCATIONS AND QUANTITIES OF SENSORS SHOWN ON THESE PLANS ARE FOR CONVEYING SWITCHING/CONTROL INTENT. PROVIDE ALL REQUIRED CONTROL UNITS AND ADD-A-RELAYS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.

DETAIL NOTES

1 PANEL "L250" IS SHOWN FOR REFERENCE AS IT IS BEING DESIGNED CONCURRENTLY WITH THIS TENANT.

ELECTRICAL CONSTRUCTION SPECIFICATION

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY FOR A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM.
2. MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, LAWS AND ORDINANCES OF FEDERAL, STATE AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
3. MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY U.L., ETL, CSA OR ANOTHER RECOGNIZED TESTING LAB.
4. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES, TAXES AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE ELECTRICAL WORK.
5. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO GOVERNMENTAL AGENCIES AND UTILITY COMPANIES SHOP DRAWINGS, WHICH ARE REQUIRED BY THESE AGENCIES, FOR THEIR APPROVAL.
6. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER/OWNER OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE FIRE PREVENTION BUREAU THE DOCUMENTS, INCLUDING DRAWINGS, REQUIRED TO OBTAIN APPROVAL OF EMERGENCY LIGHTING AND EXIT SIGN TYPES AND LOCATIONS. A COPY OF THE APPROVED DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT BEFORE THE START OF CONSTRUCTION.
8. THE CONTRACTOR SHALL PREPARE THE DOCUMENTS, INCLUDING DRAWINGS, REQUIRED TO OBTAIN APPROVAL OF THE EQUIPMENT AND LOCATIONS OF THE DEVICES THAT COMPRISE THE BUILDING FIRE ALARM LIFE SAFETY SYSTEM. A COPY OF THE DRAWINGS AND CUT SHEETS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE APPROVED DRAWINGS WILL BE STAMPED, SIGNED AND RETURNED TO E.C. TO SUBMIT TO THE BUILDING DEPARTMENT.
9. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE BUILDING STANDARDS AND LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
10. THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER, LIGHTING, AND WIRING FOR THE PERFORMANCE OF ALL TRADES, FOR THE ENTIRE PERIOD OF CONSTRUCTION AND SHALL REMOVE ALL TEMPORARY LIGHTING AND WIRING AT THE COMPLETION OF CONSTRUCTION.
11. THE EXISTING POWER, SIGNAL AND COMMUNICATION SYSTEMS ARE TO REMAIN IN SERVICE. TO PROVIDE FOR THE OWNER'S FUNCTION. SHOULD IT BECOME NECESSARY TO SHUT-DOWN ANY SYSTEM OR PORTION OF A SYSTEM, APPROVAL IN WRITING MUST BE OBTAINED FROM THE OWNER AND SHALL ONLY FOR THE PERIOD AND TIME AGREED UPON. THE BID IS TO INCLUDE THE COST OF ANY TEMPORARY WIRING AND PREMIUM TIME REQUIRED FOR THE SHUTDOWN.
12. ALL MATERIALS, AND EQUIPMENT SHALL BE ERECTED, INSTALLED, CONNECTED, CLEANED, ADJUSTED, TESTED, CONDITIONED, AND PLACED IN SERVICE IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS. THIS INCLUDES ANY EXISTING MATERIALS OR EQUIPMENT THAT IS USED.
13. ALL CUTTING, DRILLING AND PATCHING OF MASONRY, STEEL OR IRON WORK BELONGING TO THE BUILDING MUST BE DONE BY THIS CONTRACTOR IN ORDER THAT HIS WORK MAY BE PROPERLY INSTALLED, BUT UNDER NO CONDITIONS MAY STRUCTURAL WORK BE CUT, EXCEPT AT THE DIRECTION OF THE ARCHITECT-DESIGNER OR THEIR REPRESENTATIVE.
14. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT.
15. THE CONTRACTOR SHALL VERIFY THE CEILING TYPE BEFORE ORDERING LIGHTING FIXTURES.
16. ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC. SHALL BE NEW, UNLESS SPECIFICALLY INDICATED AS EXISTING TO BE REUSED.
17. EXCEPT AS NOTED OTHERWISE, ALL WORK REQUIRED FOR THE INSTALLATION AS SHOWN ON DRAWINGS INCLUDING LABOR, EQUIPMENT AND MATERIALS SHALL BE IN STRICT COMPLIANCE WITH THE BUILDING STANDARDS.
18. PROVIDE COMPLETE METAL RACEWAY SYSTEMS AND ENCLOSURES FOR ALL WIRING THROUGHOUT THE EXTENT OF THE REQUIRED SYSTEM.
19. ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED FOR ALL WALL OUTLETS & TELEPHONE OUTLETS RUNNING IN PARTITIONS, BELOW RAISED FLOOR OR ABOVE CEILINGS. EMT FITTINGS SHALL BE OF THE STEEL COMPRESSION TYPE, EXCEPT THAT SET SCREW FITTINGS MAY BE USED IN WALL PARTITIONS. CONDUITS LARGER THAN 2" DIAMETER OR CONDUITS OF ANY SIZE ROUTED OUTDOORS SHALL BE INTERMEDIATE METAL CONDUIT (IMC). CAST OR INDENTOR TYPE FITTINGS ARE NOT ALLOWED. PLENUM RATED TELEPHONE AND LOW VOLTAGE CONDUCTORS MAY RUN EXPOSED ABOVE GRID CEILING IN A CABLE SUPPORT SYSTEM, UNLESS NOTED OTHERWISE INDICATED ON PLANS.
20. MC CABLE SHALL BE PERMITTED ONLY IF BUILDING STANDARDS AND AUTHORITY HAVING JURISDICTION ALLOW. USE OF MC CABLE SHALL COMPLY WITH REQUIREMENTS AND LIMITATIONS DESCRIBED BY THE MOST CURRENT APPLICABLE N.E.C.
21. MINIMUM CONDUIT SIZE SHALL BE 1/2 INCH UNLESS OTHERWISE INDICATED.
22. FLEXIBLE CONDUIT CONNECTIONS TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH FLEXIBLE STEEL CONDUIT, 3/8 INCH MINIMUM.
23. WIRE NO. 8 AND SMALLER FOR USE IN INTERIOR DRY LOCATIONS SHALL BE TYPE THWN/THNN THERMOPLASTIC 600 VOLT INSULATED COPPER CONDUCTORS. FEEDERS AND POWER WIRING NO. 6 OR LARGER SHALL BE TYPE THWN 600 VOLT INSULATED COPPER. WIRE WHICH IS INSTALLED IN RACEWAYS IN MOIST OR DAMP LOCATIONS SHALL BE TYPE XHHW, 600 VOLT INSULATED COPPER CONDUCTORS. NO WIRE SMALLER THAN NO. 12 AWG SHALL BE USED FOR LIGHTING OR POWER WIRING. WIRE NO. 10 AND SMALLER MAY BE SOLID OR STRANDED, WIRE NO. 8 AND LARGER SHALL BE STRANDED.
24. ALL NEW CIRCUIT BREAKERS FOR NEW OR EXISTING PANELBOARDS SHALL MATCH EXISTING BUILDING PANELBOARD MANUFACTURER AND BREAKER TYPE. THE CONTRACTOR SHALL PROVIDE NEW TYPE WRITTEN PANEL DIRECTORIES FOR ALL NEW PANELS CHANGED.
25. EACH SWITCH, LIGHT, RECEPTACLE AND OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR SHEARDIZED PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OF NOT LESS THAN NO. 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCKNUTS AND BUSHINGS AND ALL UNUSED KNOCKOUTS MUST BE LEFT SEALED. THERE MUST BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS AND DEEP BOXES SHALL BE INSTALLED WHERE REQUIRED. BOXES SHALL BE SECURELY AND ADEQUATELY SUPPORTED.
26. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SPECIAL OUTLET BOXES THAT MAY BE REQUIRED TO ENCLOSE RECEPTACLES.
27. IN SUSPENDED CEILINGS SUPPORT CONDUIT AND JUNCTION BOXES DIRECT FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PURPOSE. LIGHTING BRANCH CIRCUIT CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLINE UNLESS THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE.
28. ALL OCCUPANCY/VACANCY CEILING SENSORS AND WALL SWITCHES SHALL BE DUAL TECHNOLOGY TYPE.
29. WHERE FLOOR FITTINGS REQUIRE PENETRATION OF THE FLOOR SLAB, THEY SHALL BE STANDARD DEVICE LISTED BY UL FOR THE PURPOSE AND HAVE A UL FIRE RATING EQUAL TO THE FLOOR RATING.
30. CONTRACTOR SHALL WIRE TO, SET AND CONNECT ALL MOTORS, CONTROLS AND EQUIPMENT. FINAL CONNECTIONS TO MOTORS SHALL BE MADE WITH LIQUID TIGHT FLEXIBLE STEEL CONDUIT, 1/2 INCH MINIMUM.
31. PROVIDE LOCAL DISCONNECT SWITCHES FOR ALL MOTORS (PLENUM APPROVED AS REQUIRED), PROVIDE ENCLOSED, HEAVY-DUTY, FUSIBLE OR NON-FUSIBLE SAFETY SWITCHES WHERE REQUIRED BY CODE AND AS SPECIFIED. PROVIDE FUSE REJECTION KITS FOR ALL FUSIBLE SWITCHES RATED 600 AMPERES AND BELOW.
32. NUMBERED CIRCUITS AND RACEWAY ROUTINGS ARE FOR CONVENIENCE OF DESIGN ONLY. ACTUAL FIELD CONDITIONS WILL VARY. INDICATE THE CIRCUIT NUMBER USED ON THE "AS-BUILT" DRAWINGS.
33. G.C. SHALL INCLUDE IN HIS COST THE REMOVAL OF ALL EXISTING ELECTRICAL DEVICES, CONDUITS, FIXTURES AND EQUIPMENT. DISCARD ALL EQUIPMENT AS REQUIRED. E.C. SHALL BE RESPONSIBLE FOR DISCONNECTING PRIMARY SERVICE AND TEMPORARY POWER.
34. CONTRACTOR SHALL COORDINATE WITH MECHANICAL AND PLUMBING DRAWINGS, AND INFORM ARCHITECT/ENGINEER OF ANY CONFLICTS.
35. PROVIDE "AS-BUILT" DRAWINGS AND SUBMIT TO OWNER.
36. ALL ELECTRICAL DEVICES SHALL MEET ADA REQUIREMENTS.
37. CONTRACTOR SHALL ENSURE ORIGINAL CIRCUIT INTEGRITY IS MAINTAINED WHEREVER A DEVICE IS REMOVED, RELOCATED OR RECIRCUITED. ORIGINAL CIRCUIT INTEGRITY SHALL BE MAINTAINED BOTH UP AND DOWN STREAM OF THE DEVICE.
38. CONTRACTOR SHALL REMOVE ALL DEENERGIZED OR UNUSED CIRCUIT WIRING UNLESS INDICATED OTHERWISE ON PLANS.
39. SUBMIT ELECTRONIC COPIES OF THE FOLLOWING SHOP DRAWINGS FOR REVIEW.
    A. LIGHTING FIXTURES AND LAMPS.
    B. DIMMING EQUIPMENT.
    C. WIRING DEVICES, SWITCHES, DIMMERS, AND DEVICE PLATES.
    E. PROVIDE "AS-BUILT" DRAWINGS AND SUBMIT TO ARCHITECT/DESIGNER.
40. SHOP DRAWINGS SHALL INCLUDE MANUFACTURER'S NAMES, CATALOG NUMBERS, CUTS, DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND REVIEW THE EQUIPMENT. SUBMITTALS SHALL BE IN LOGICAL GROUPS, FOR EXAMPLE, ALL LIGHTING FIXTURES, PARTIAL SUBMITTALS WILL NOT BE REVIEWED.

NEW PANEL "H200"

11/2/2022 277 / 480 VOLT 3 PHASE 4 WIRE SERVICE 14,000
BUS RATING: 100A MAIN: MLO MOUNTING: SURFACE
LOCATION: SUITE 200 ELEC ROOM PROJECT: SUITE 200
COMMENTS: JOB NO.: 2022-055-00

TYPE	NOTE	DESCRIPTION	BRKR	CCT	LOAD	Ø	LOAD	CCT	BRKR	DESCRIPTION	NOTE	TYPE
RME		45KVA TRANSFORMER	70/3	1	13076	A	0	2	---	BUSSED SPACE		
RME		---	---	3	9554	B	0	4	---	BUSSED SPACE		
RKE		---	---	5	10230	C	0	6	---	BUSSED SPACE		
		BUSSED SPACE	---	7	0	A	0	8	---	BUSSED SPACE		
		BUSSED SPACE	---	9	0	B	0	10	---	BUSSED SPACE		
		BUSSED SPACE	---	11	0	C	0	12	---	BUSSED SPACE		
		BUSSED SPACE	---	13	0	A	0	14	---	BUSSED SPACE		
		BUSSED SPACE	---	15	0	B	0	16	---	BUSSED SPACE		
		BUSSED SPACE	---	17	0	C	0	18	---	BUSSED SPACE		
		BUSSED SPACE	---	19	0	A	0	20	---	BUSSED SPACE		
		BUSSED SPACE	---	21	0	B	0	22	---	BUSSED SPACE		
		BUSSED SPACE	---	23	0	C	0	24	---	BUSSED SPACE		
		BUSSED SPACE	---	25	0	A	0	26	---	BUSSED SPACE		
		BUSSED SPACE	---	27	0	B	0	28	---	BUSSED SPACE		
		BUSSED SPACE	---	29	0	C	0	30	---	BUSSED SPACE		

	CONNECTED VA A	B	C	D.F.	DEMAND VA A	B	C
CONTINUOUS / LIGHTING	0	0	0	1.25	0	0	0
RECEPT. (FIRST 10 KW)	8,100	1,900	0	1.00	8,100	1,900	0
RECEPT. (REMAINDER)	0	5,300	5,580	0.50	0	2,650	2,790
MOTORS	1,176	354	0	1.00	1,176	354	0
LARGEST MOTOR				1.25	0	0	0
KITCHEN	0	0	850	1.00	0	0	850
MISCELLANEOUS	3,800	2,000	3,800	1.00	3,800	2,000	3,800
TOTAL	13,076	9,554	10,230		13,076	6,904	7,440

THIS PANELS TOTAL LOAD INCLUDES THE FOLLOWING LOADS:
SUBFEED BRKR 1: 0 VA, 0.0 AMPS
SUBFEED BRKR 2: 0 VA, 0.0 AMPS
FEED THRU PANEL DESIGNATION: 0 VA, 0.0 AMPS

TOTAL DEMAND VA: 27,420 VA
TOTAL DEMAND AMPS: 33.0 AMPS

C = CONTINUOUS/LIGHTING R = RECEPTACLE M = MOTOR K = KITCHEN E = MISCELLANEOUS

NOTES:

NEW PANEL "L250" (SEE NOTE 1)

11/2/2022 120 / 208 VOLT 3 PHASE 4 WIRE SERVICE 10,000
BUS RATING: 100A MAIN: 100A MCB MOUNTING: SURFACE
LOCATION: SUITE 250 HALLWAY PROJECT: SUITE 200 / 250
COMMENTS: JOB NO.: 2022-056-00

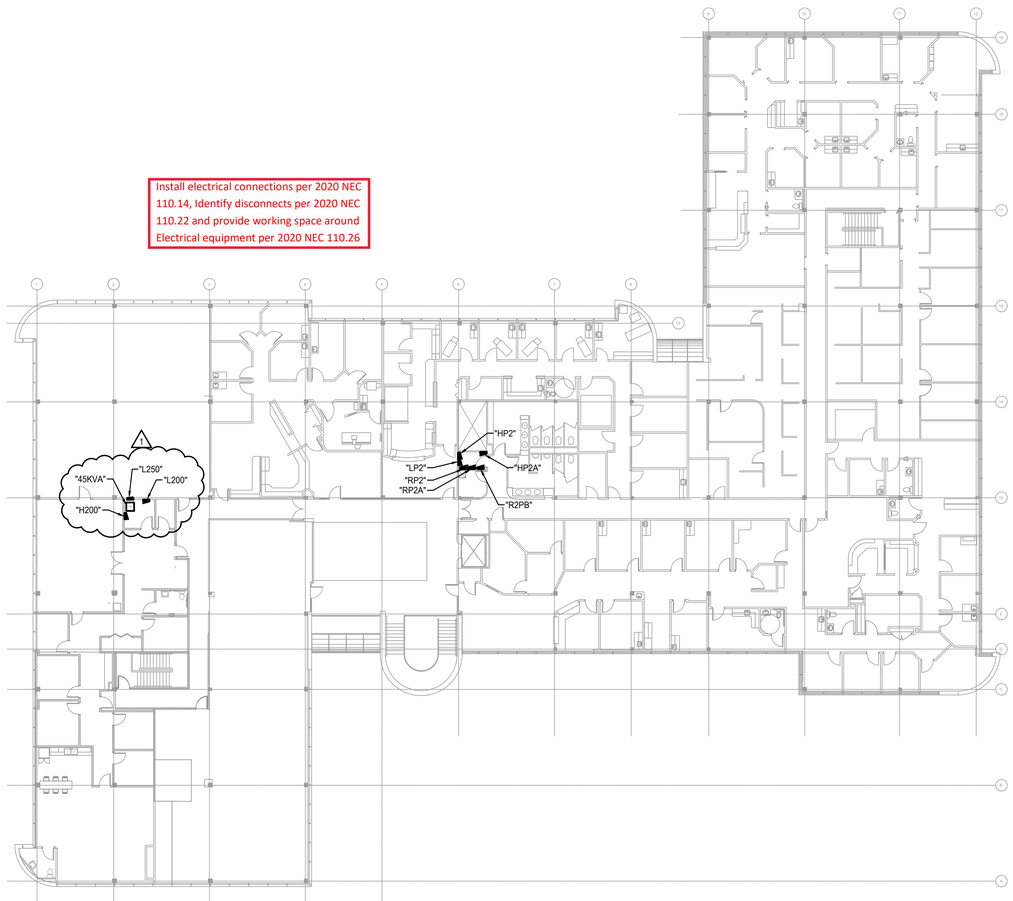
TYPE	NOTE	DESCRIPTION	BRKR	CCT	LOAD	Ø	LOAD	CCT	BRKR	DESCRIPTION	NOTE	TYPE
R		OMM REC	20/1	1	1080	A	900	2	20/1	EXAM/HALL REC		R
R		SHARED OFFICE	20/1	3	360	B	720	4	20/1	EXAM REC		R
R		SHARED OFFICE	20/1	5	360	C	540	6	20/1	NURSE STATION REC		R
R

GENERAL NOTES

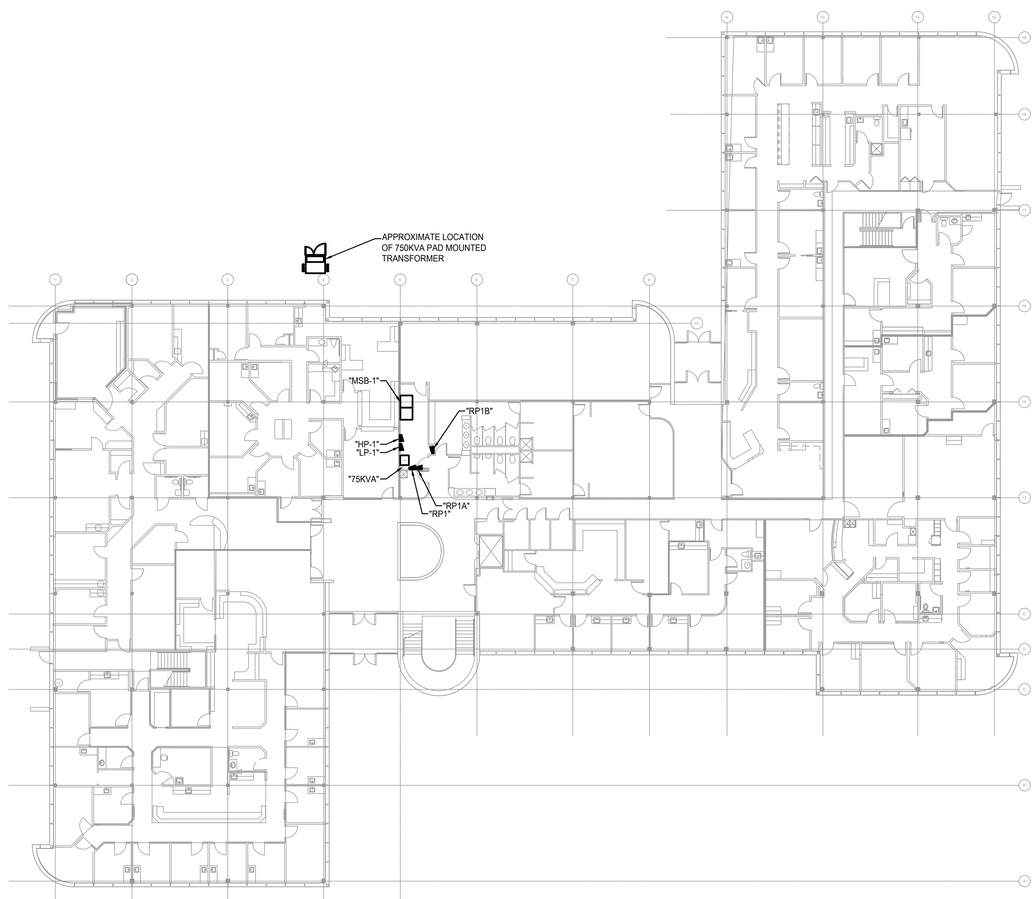
1. DEVICES SHOWN ON THIS PLAN ARE EXISTING AND SHOWN FOR REFERENCE.

Only highlighted or clouded revisions are approved on this review. All previous comments apply.

Install electrical connections per 2020 NEC 110.14, Identify disconnects per 2020 NEC 110.22 and provide working space around Electrical equipment per 2020 NEC 110.26



E2 **LEVEL 2 - OVERALL POWER PLAN**
1/8" = 1'-0"



E1 **LEVEL 1 - OVERALL POWER PLAN**
1/8" = 1'-0"

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Chris Dodson*
Date: *Nov 14, 2022*
2015 INTERNATIONAL CODES & 2020 NEC

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COLORADO LICENSED
MARCUS T. VANLIER
41304
PROFESSIONAL ENGINEER
11/02/2022

Issuance	Date
CONSTRUCTION DOCUMENTS	08.10.2022

Revisions	Date	No.
FIELD REVISIONS	11/02/22	1

Project Information

HCA Academic Residency Offices
1400 S. Potomac, Suite 200
Aurora, CO 80012

Sheet Information

Sheet Title:
LEVELS ONE AND TWO - OVERALL POWER PLANS

Sheet Number:
E-100

MVC Project: 2022-055-00

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RSN: *1672664*
Permit #: *2022 2243617*

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EQUIPMENT SCHEDULE									
KEY	EQUIPMENT	LOAD HP,KW,FLA	VOLTS	Ø	BRANCH CKT. CONDUCTORS	COND.	DISCONNECT SWITCH	DISCONNECT FUSE	PANEL	NOTES
EF-1	EXHAUST FAN	69.5 W	120	1	2#12,1#12G	1/2"	Sto	---	SEE PLANS	
TF-1	EXHAUST FAN	72.5 W	120	1	2#12,1#12G	1/2"	Sto	---	SEE PLANS	
NOTES:										

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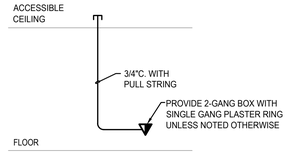
GENERAL NOTES

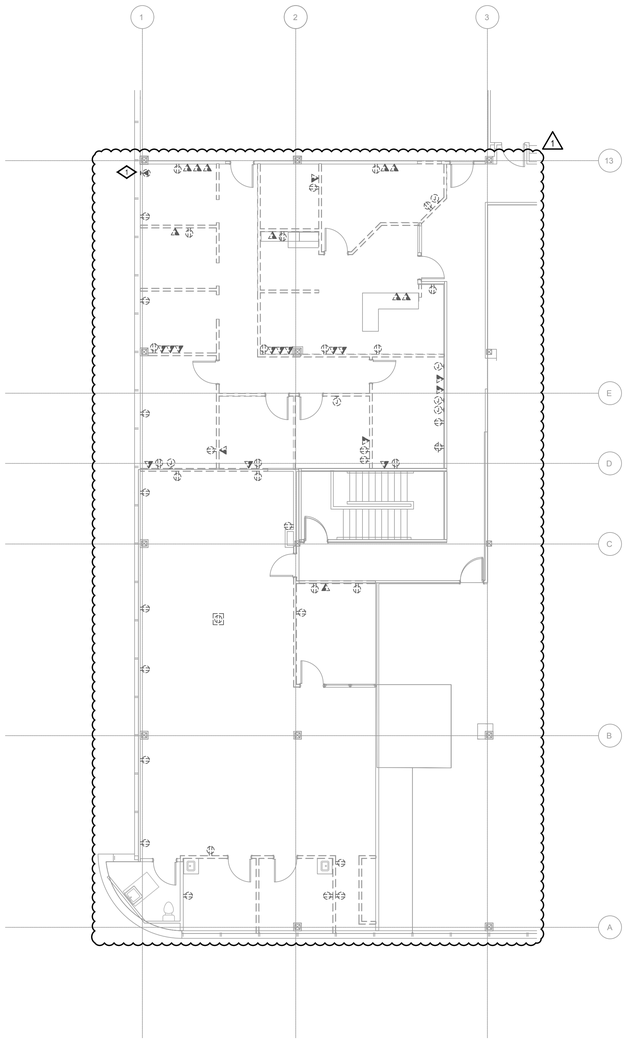
1. DEVICES SHOWN LIGHT LINE WEIGHT ARE EXISTING TO REMAIN, DEVICES SHOWN DASHED TO BE REMOVED, DEVICES SHOWN HEAVY ARE NEW.
2. ALL DEVICES ARE CIRCUITED TO PANEL "L200" UNLESS NOTED OTHERWISE.
3. COORDINATE FINAL LOCATIONS OF OUTLETS WITH THE ARCHITECT/TENANT PRIOR TO ROUGH-IN.
4. COORDINATE FINAL LOCATIONS AND QUANTITIES OF WIRELESS ACCESS POINTS "WAP" WITH TENANTS LOW VOLTAGE CONSULTANT.

DETAIL NOTES

1. PANEL "L250" IS SHOWN FOR REFERENCE AND LOCATED WITHIN SUITE 250.
2. NOT USED.

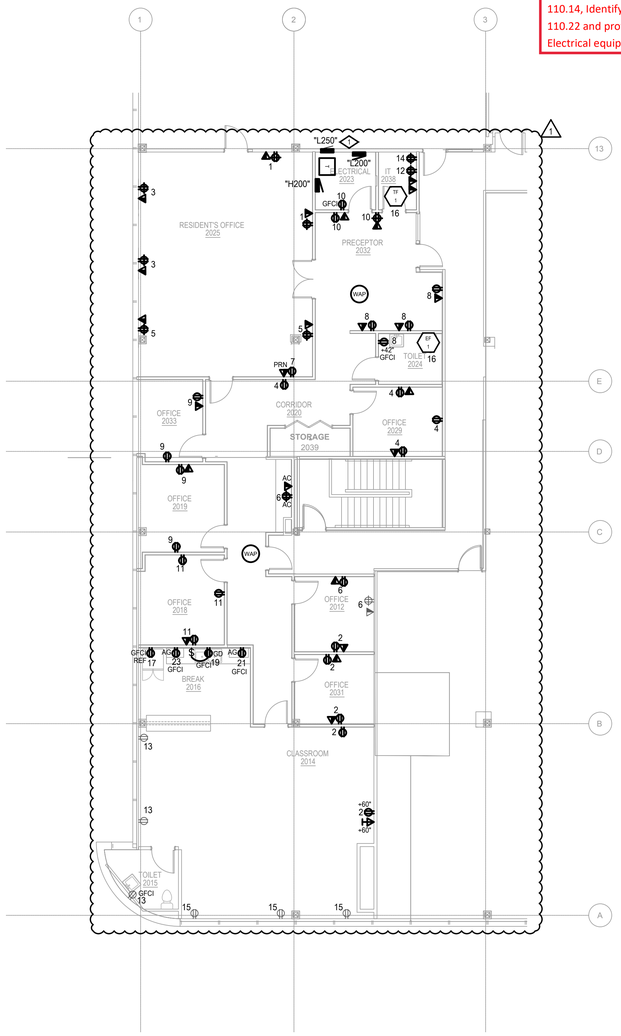


E3 TELE/DATA OUTLET INSTALLATION DETAIL
NO SCALE



E2 LEVEL 2 - DEMO POWER PLAN
1/8" = 1'-0"

Install electrical connections per 2020 NEC 110.14, Identify disconnects per 2020 NEC 110.22 and provide working space around Electrical equipment per 2020 NEC 110.26



E1 LEVEL 2 - POWER PLAN
1/8" = 1'-0"

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FIELD REVISIONS	11/02/22	1

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Sheet Information

Sheet Title:
LEVEL TWO - POWER PLANS - NEW AND DEMO

Sheet Number:
E-102

MVC Project: 2022-055-00

RSN: 1672664
Permit #: 2022 2243617

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