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COVER

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M1.2 MECHANICAL SCHEDULES, DETAILS AND PIPING DIAGRAMS

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E1.1 1st FLOOR POWER PART PLAN



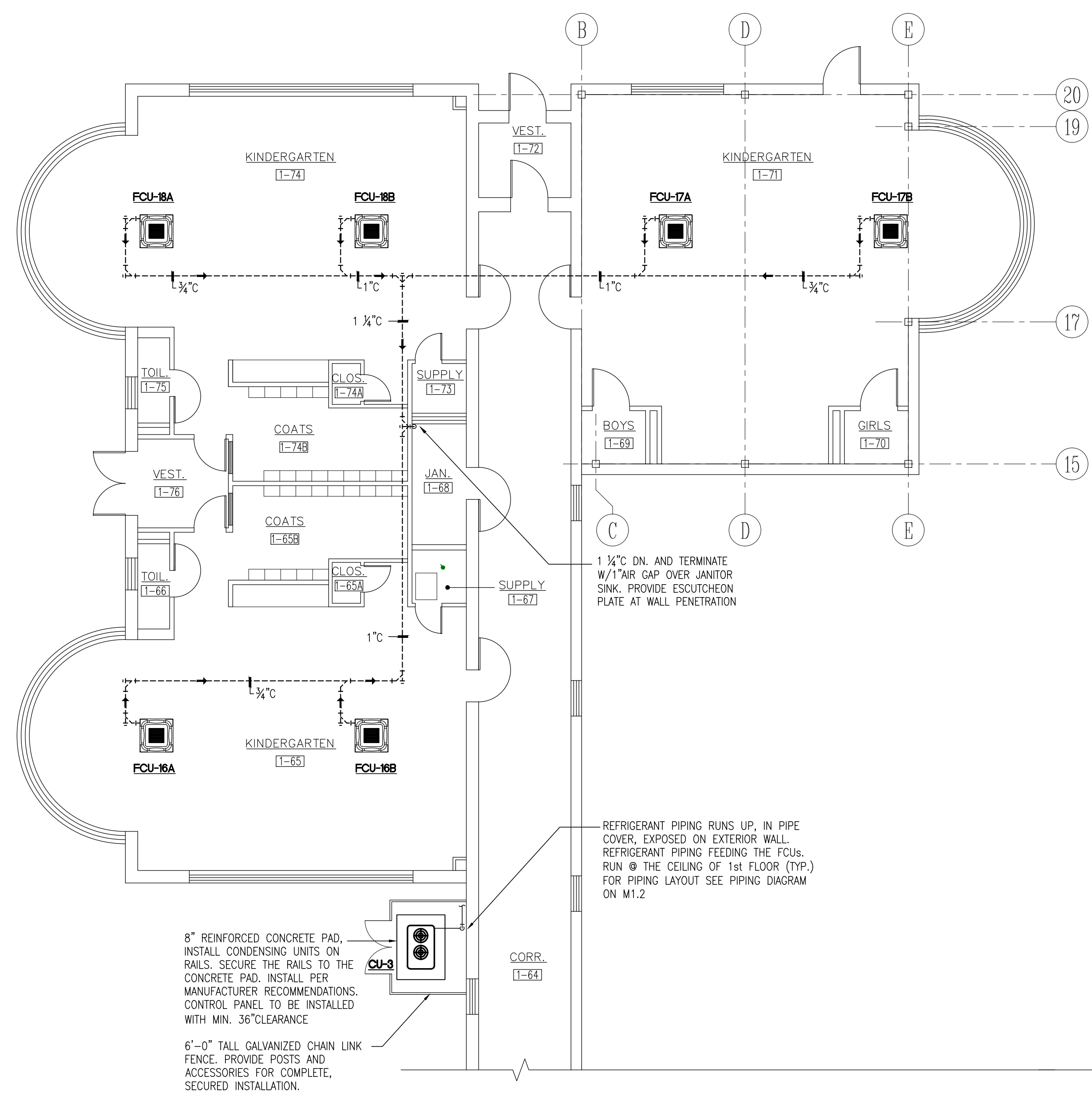
ROGER SHERMAN ELEMENTARY SCHOOL



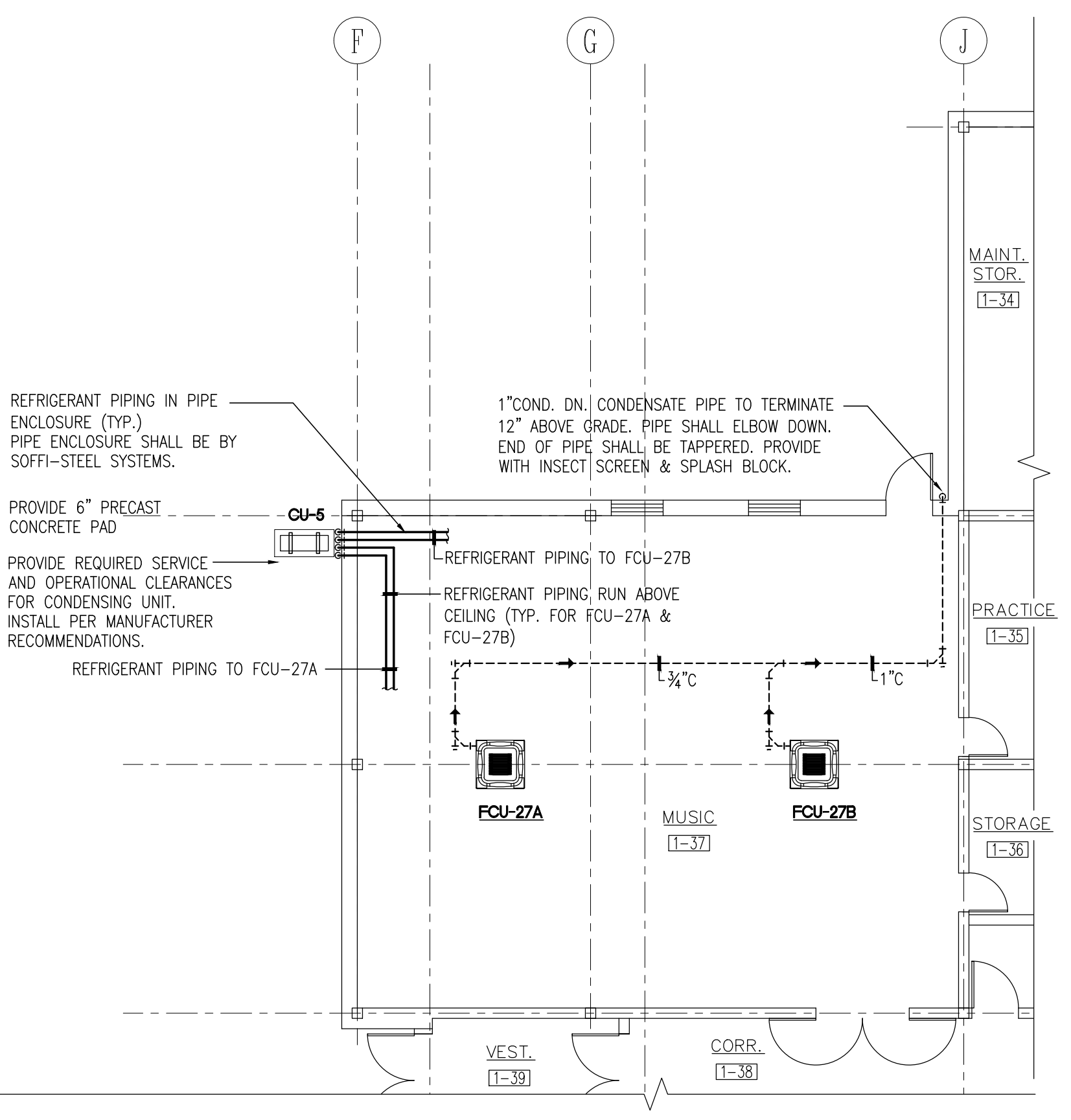
FIRST FLOOR NEW AIR CONDITIONING SYSTEM

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MERIDEN, CONNECTICUT 06450

M/E/P ENGINEER
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NORTHWEST FIRST FLOOR PART PLAN - MECHANICAL
SCALE 1/8"=1'-0"

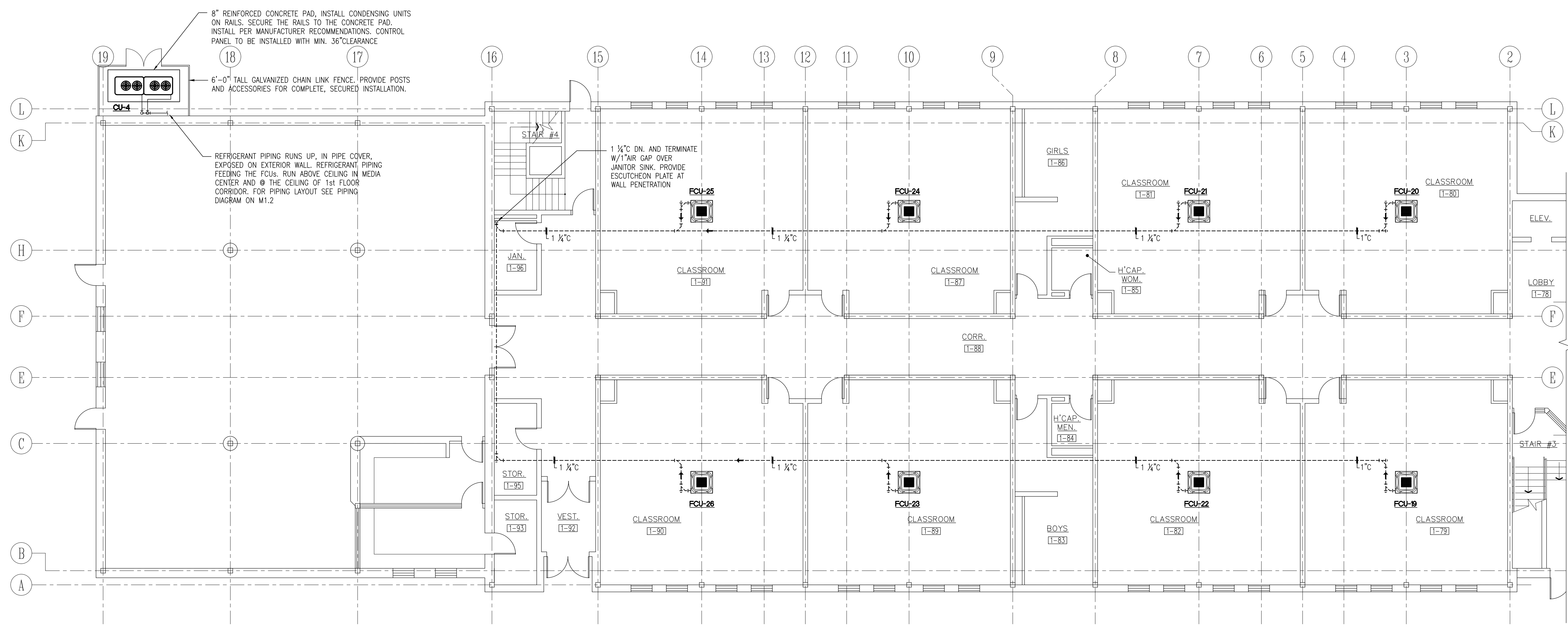


- MECHANICAL GENERAL NOTES**
- INSTALL UNITS WITH CLEARANCE FOR SERVICE.
 - REFRIGERANT PIPING SHALL BE DEOXYDIZED PHOSPHOROUS SEAMLESS COPPER PIPE OR EQUIVALENT.
 - BOTH GAS AND LIQUID PIPING MUST BE INSULATED WITH GLASS FIBER OR HEAT RESISTANCE POLYETHYLENE FOAM, 3/8 INCH OR MORE, MIN. 255°F HEAT RESISTANCE FOR THE GAS PIPE AND MIN. 160°F HEAT RESISTANCE FOR THE LIQUID PIPE.
 - BRANCH PIPES SHALL BE INSULATED IN ACCORDANCE WITH THE INSTRUCTIONS OF THE MANUFACTURER.
 - THE LIQUID PIPE AND GAS PIPE SHALL HAVE THE SAME LENGTH AND BE LAID IN THE SAME ROUTE.
 - THE CONDENSATE PIPE CANNOT BE TIED WITH THE REFRIGERANT PIPE.
 - EXPANSION JOINT SHALL BE ADDED EVERY 40 FT OF STRAIGHT PIPING RUN.
 - DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, NOT EXACT EQUIPMENT LOCATION. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES BEFORE WORK BEGINS.
 - THERE SHALL BE NO EXPOSED PIPING. PIPES SHALL RUN CONCEALED ABOVE CEILING OR IN WALLS. WHERE NOT POSSIBLE, THE CONTRACTOR SHALL PROVIDE PIPE CHASES. ON EXTERIOR WALLS, PIPES SHALL RUN ON WARM SIDE OF THE INSULATION AND HAVE 2" INSULATION.
 - CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING LAYOUT WITH PIPE SIZES FOR ALL THE REFRIGERANT SYSTEMS, CONFIRMED BY THE MANUFACTURER PRIOR TO INSTALLATION.

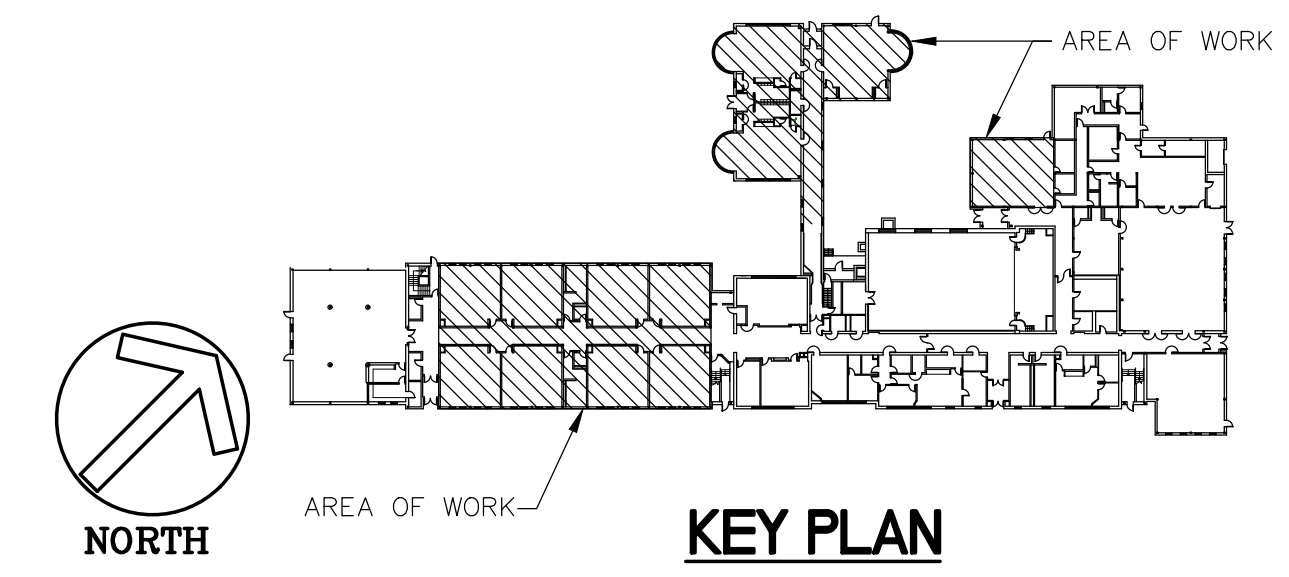
- CONDENSATE DRAIN - GENERAL NOTES**
- DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, NOT EXACT EQUIPMENT LOCATIONS. CONTRACTOR MUST COORDINATE EQUIPMENT LOCATION BEFORE PROCEEDING WITH ANY WORK.
 - ALL CONDENSATE DRAIN SHALL HAVE A PITCH OF 1/8" PER FT UNLESS NOTED OTHERWISE.
 - CONDENSATE PIPING SHALL BE COPPER. PIPE SHALL BE INSULATED.
 - THERE SHALL BE NO EXPOSED PIPING. PIPES SHALL RUN CONCEALED ABOVE CEILING. WHERE NOT POSSIBLE, THE CONTRACTOR SHALL PROVIDE PIPE CHASES.
 - A VISIT TO THE SITE AND EXAMINATION OF THE OTHER MECHANICAL TRADES SHOWING ALL DETAILS OF CONSTRUCTION IS A REQUIREMENT BEFORE SUBMITTING A PROPOSAL.
 - THE CONTRACTOR SHALL VISIT THE JOB SITE TO VERIFY ALL DIMENSIONS AND JOB CONDITIONS.
 - THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ALL OFFSETS, FITTINGS, TRANSITIONS, CLEANOUTS, VALVES AND ACCESSORIES ARE NOT NECESSARILY SHOWN.
 - IT IS THE INTENT THAT ALL WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT THE MATERIAL OR WORK SPECIFICALLY NOT INDICATED ON THE DRAWINGS, BUT NECESSARY TO COMPLETE THE WORK, SHALL BE PROVIDED.

- MECHANICAL - CONTROL - GENERAL NOTES**
- ALL ELECTRIC WIRING, CONNECTIONS, DEVICES, RACEWAY AND HARDWARE REQUIRED FOR THE INSTALLATION OF THE TEMPERATURE CONTROL SYSTEM AS SPECIFIED AND SHOWN ON THE DRAWINGS SHALL BE PROVIDED BY THE TEMPERATURE CONTROLS CONTRACTOR (TCC).
 - ALL CONTROL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE CONTROL SYSTEM MANUFACTURER'S REQUIREMENTS AND CURRENT CODE.
 - ALL LOW VOLTAGE CONTROL WIRING SHALL BE PLENUM RATED CABLE OF TYPES AND SIZES REQUIRED BY THE CONTROL SYSTEM MANUFACTURER.
 - PROVIDE MINIMUM OF 3/4" EMT CONDUIT FOR ALL WIRING EXPOSED TO VIEW AND FOR WIRING DROPS AND RUNS WITHIN NEW WALLS. ALL CONDUITS SHALL TERMINATE WITH JUNCTION BOXES OR OUTLET BOXES. PROVIDE BUSHINGS FOR ALL WIRING ENTERIES INTO THE CONDUIT SYSTEM.
 - ALL TEMPERATURE CONTROL WIRING SHALL BE NEATLY INSTALLED WITH CABLE RUNS INSTALLED PARALLEL TO OR AT RIGHT ANGLES TO THE LINES OF THE BUILDING. ALL WIRING IN NORMALLY OCCUPIED AREAS OF THE BUILDING SHALL BE CONCEALED FROM VIEW. OPEN CABLE RUNS ABOVE CEILINGS SHALL BE BUNDLE TIED WITH PLASTIC CABLE TIES AND SHALL BE SUPPORTED FREE FROM THE CEILING AND MECHANICAL/ELECTRICAL EQUIPMENT USING APPROVED CABLE HANGERS AND CABLE CLIPS.
 - THE TEMPERATURE CONTROL CONTRACTOR SHALL COORDINATE POWER SUPPLY REQUIREMENTS OF THE CONTROL SYSTEM WITH DIVISION 26.
 - REFER TO SPECIFICATION FOR ADDITIONAL CONTROLS REQUIREMENTS AND THE EQUIPMENT SEQUENCE OF OPERATIONS.
 - ALL CONTROLS DEVICES AND ELECTRONICS SHALL BE INSTALLED WITHIN A NEMA-1 ENCLOSURE LOCATED WITHIN PROXIMITY TO THE EQUIPMENT SERVED.
 - REFER TO MECHANICAL SPECIFICATIONS FOR SEQUENCE OF OPERATIONS AND ADDITIONAL DDC SENSOR REQUIREMENTS.

- NEW WORK DRAWING KEYED NOTES**
- CONNECT REFRIGERANT PIPING PER MANUFACTURER RECOMMENDATIONS, REFER TO DRAWING M1.2 (VARIABLE REFRIGERANT VOLUME SYSTEM PIPING DIAGRAM) FOR PIPES SIZING. PROVIDE 1" TRAPPED CONDENSATE PIPING, INSTALL PIPING PER MANUFACTURER RECOMMENDATIONS. SEAL AIR AND WATER TIGHT ALL PIPING PENETRATIONS.
 - PROVIDE SECONDARY DRAIN PAN WITH OVERFLOW SWITCH TO SHUT DOWN UNIT.
 - PROVIDE TRAPPED CONDENSATE DRAIN, PIPE TO JANITOR SINK, REFER TO TYPICAL DETAIL.



SOUTHWEST FIRST FLOOR PART PLAN - MECHANICAL
SCALE 1/8"=1'-0"



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TITLE
1st FLOOR MECHANICAL PART PLANS
DATE 05/30/2023
DWG. NO.
M1.1

VARIABLE REFRIGERANT VOLUME - AIR-COOLED CONDENSING UNIT SCHEDULE (DAIKIN BASIS OF DESIGN)

Table with columns: TAG, ROOM, BASIS OF DESIGN (DAIKIN), DESCRIPTION, COOLING CAPACITY, HEATING CAPACITY, REFRIGERANT CHARGE, CONNECTION RATIO (%), ELECTRICAL (MIN CIRCUIT AMPS, MAX OVERCURRENT PROTECTION, RUNNING CURRENT), DIMENSIONS (WxHxD), EFFICIENCY (NonDucted), and NOTES.

Schedule Notes: Manufacturer must be certified, listed, and labeled per AHRI 1230. System rating data based on design ambient conditions for cooling and for heating. Submitted performance data must be fully de-rated for all components and accessories, including but not limited to, line length, vertical separation, connection ratio, design conditions, condenser coil coating. ECU actuators must be removable from valve body without disturbing the refrigerant system. FCU thermostats must provide +/- 1 degree dead-band set-point and control capability. Systems shall be provided with i-Touch Manager controller with BACnet-based software for displaying up to 8 DIII-Net systems with 128 indoor units per system. PC by others. Manufacturer submittal must include refrigerant piping diagram with pipe diameters, lengths, and refrigerant volume. Substitute manufacturer shall be responsible for additional piping and refrigerant.

Substitute manufacturer that use electric panel or base pan heaters shall not be acceptable. Contractor to verify piping dimensions. Installing contractor must have successfully completed manufacturers certified installation class within past 36 months. Contractor to furnish and install insulation on refrigerant piping. Manufacturers Representative must have local stock of parts and factory certified technician on staff. Manufacturers Representative shall provide proof of ongoing installation training at their local facility for at least the past 5 years. Mechanical contractor shall be responsible for all direct costs and operating costs increases for 20 years associated with any deviations resulting from changes in design. 3-phase Air cooled condensing units must have published performance data with 200% indoor connected capacity. Condensing units must be furnished with protective coil coating to withstand ASTM B117 salt spray test for a minimum of 1000 hours. Performance of system must be de-rated for coil coating. Manufacturer must certify and submit system performance at extreme conditions of 122 degrees FDB ambient in cooling mode and -22 degrees FWB in heating mode. Manufacturer must provide 10 years parts warranty on all Condensing Units. Warranty conditions must be clarified during submittal phase.

NOTES: 1. UNIT MANUFACTURER SHALL PROVIDE WIRED CONTROLLER INDOOR UNIT. 2. PROVIDE REFRIGERATION LINE SETS FOR AIR CONDITIONING UNIT WITH CONNECTIONS TO CONDENSING UNIT. 3. POWER WIRING AND RACEWAY BY DIVISION 26. 4. DISCONNECTS AND STARTING RELAYS FURNISHED BY DIVISION 23. 5. REFER TO DIVISION 23 SPECIFICATION FOR ADDITIONAL REQUIREMENTS. 6. UNITS USING CFC BASED REFRIGERANTS WILL NOT BE ACCEPTABLE. 7. CASSETTE UNITS SHALL HAVE MULTIFUNCTION CASSEMENT/MERV 10 FILTER. 8. OUTDOOR UNITS SHALL HAVE WIND Baffle. 9. SYSTEM SHALL BE BACNET READY. COORDINATE WITH TEMPORARY CONTROL CONTRACTOR.

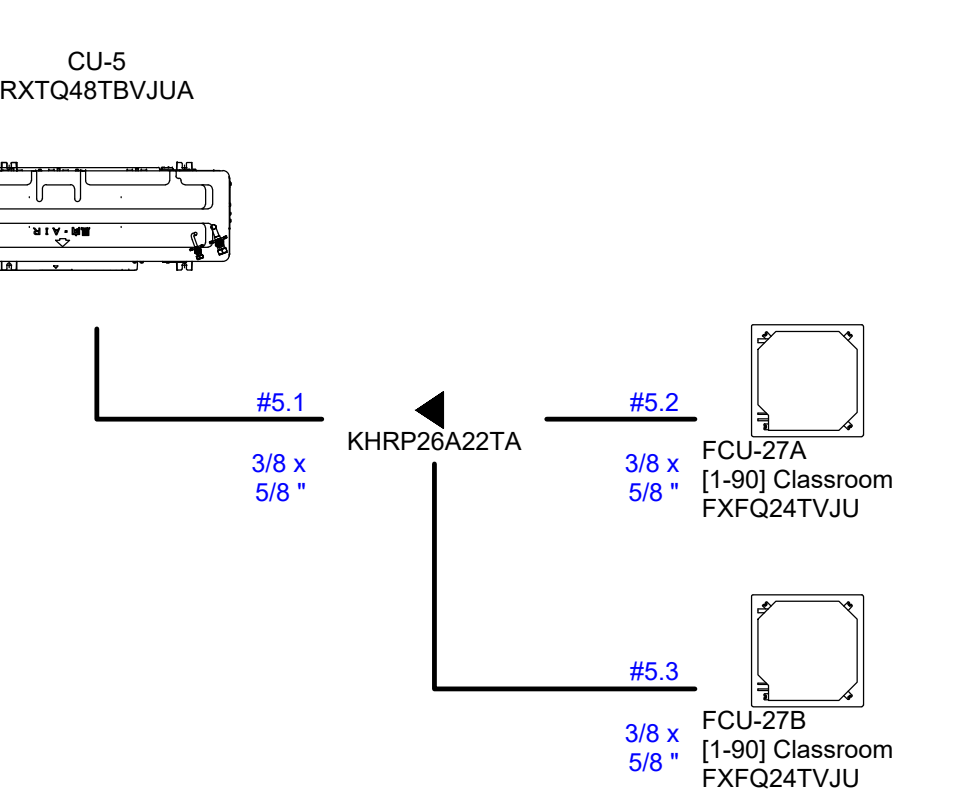
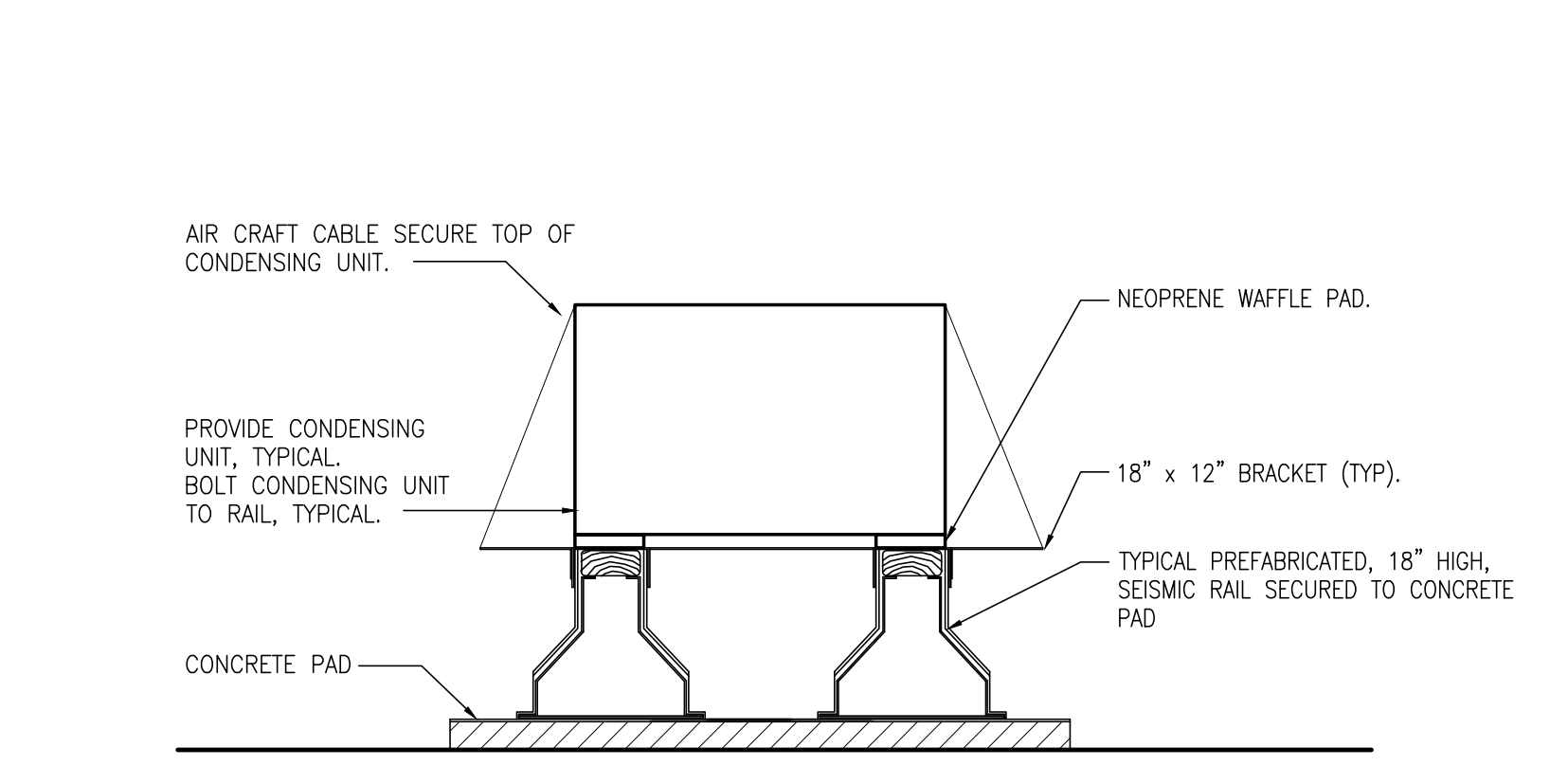
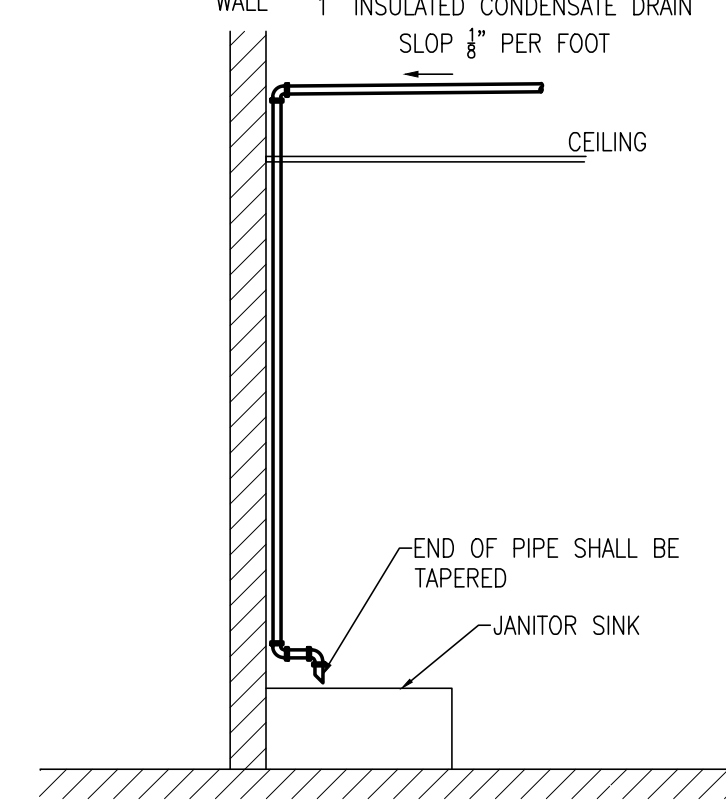
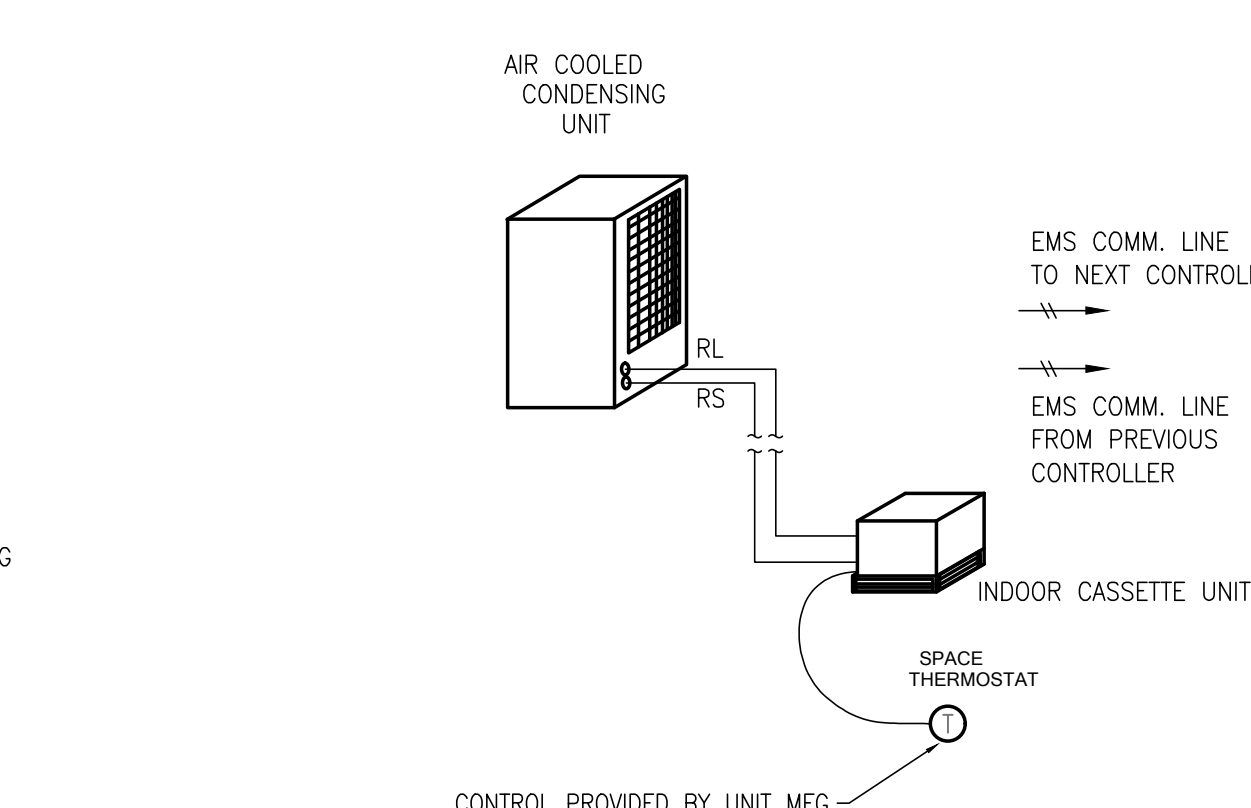
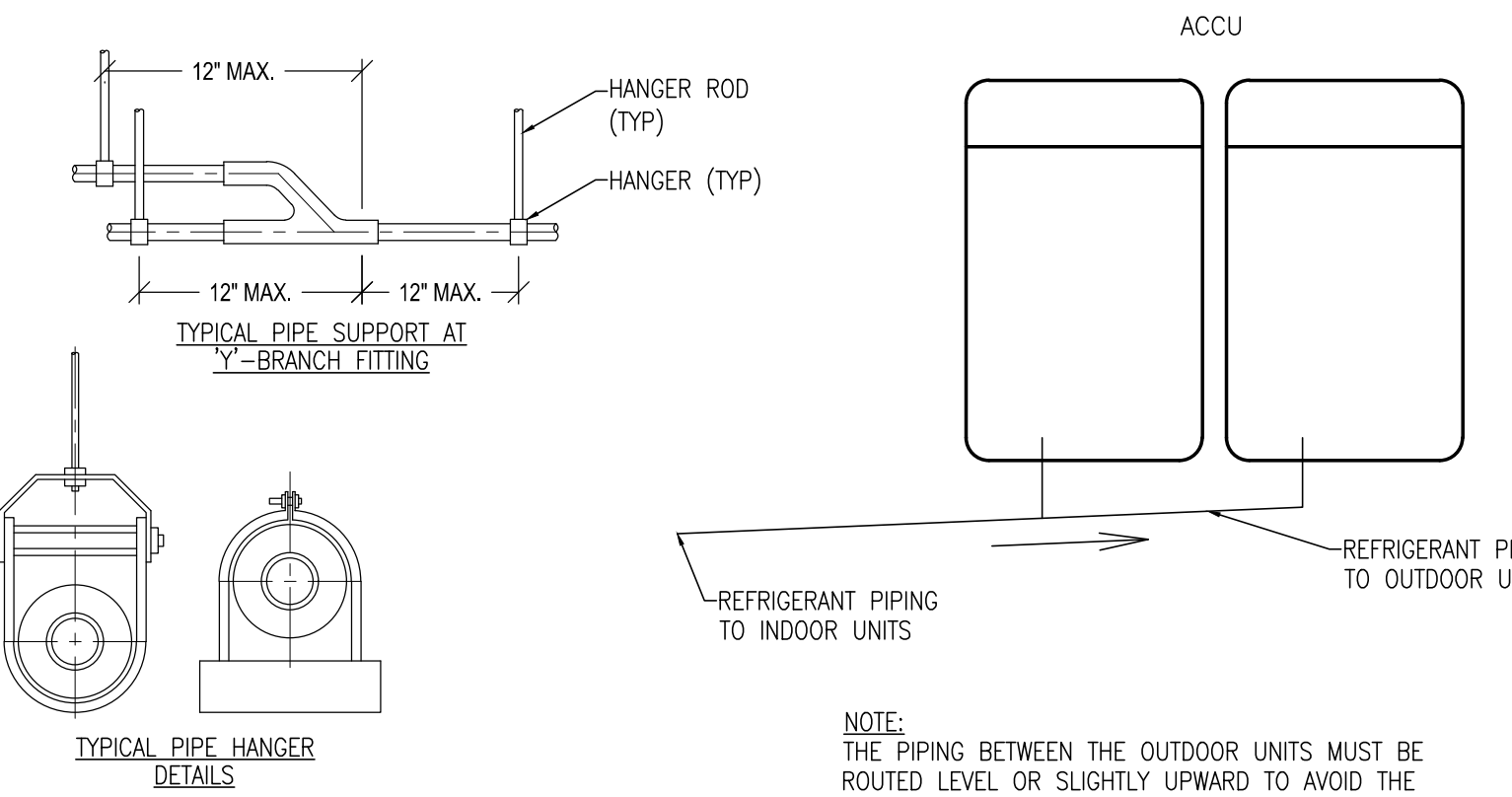
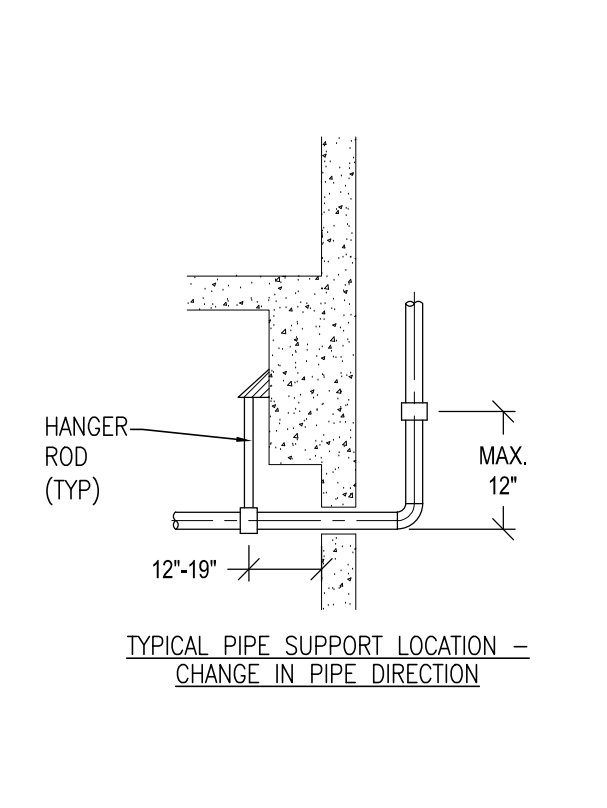
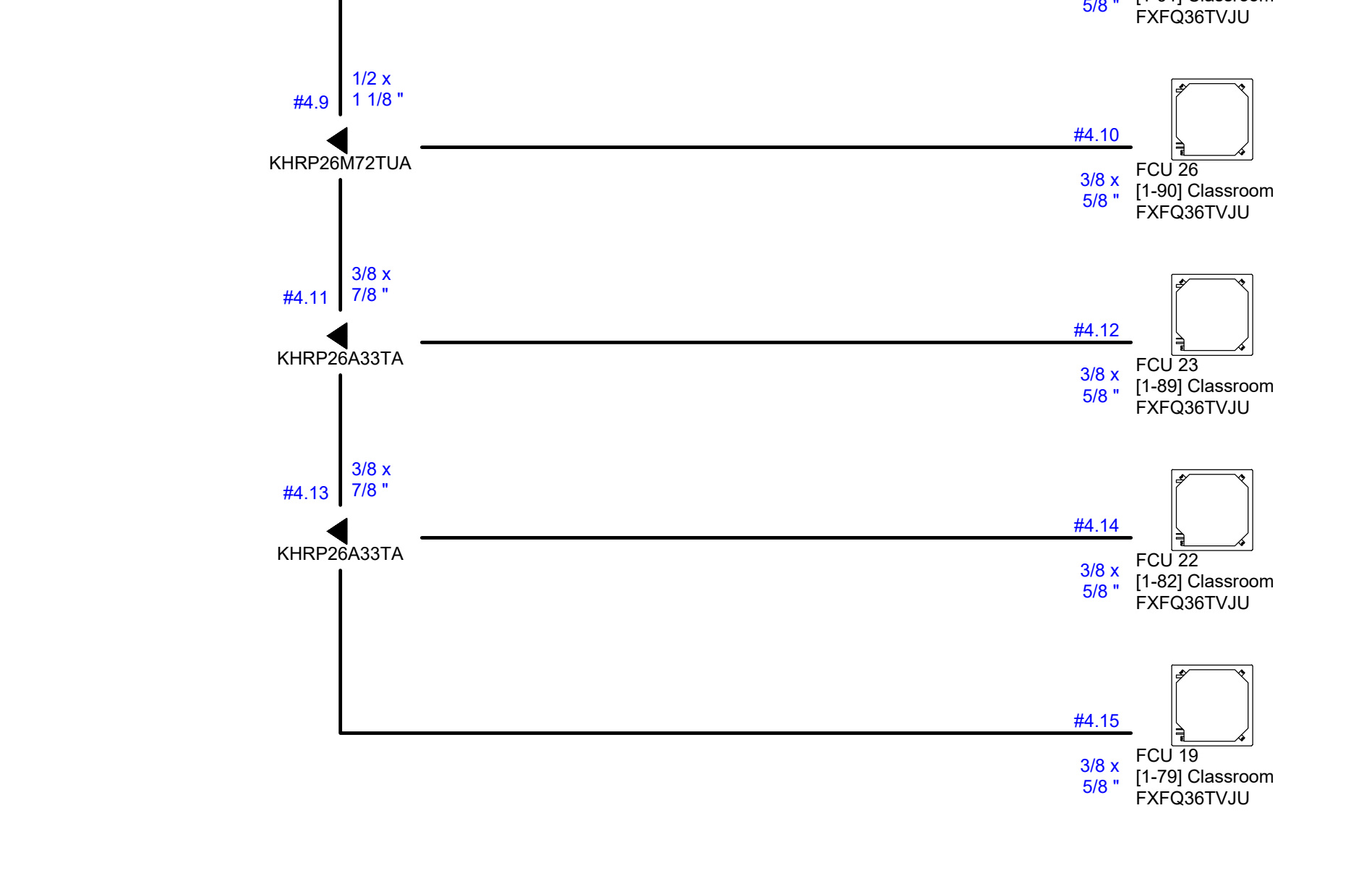
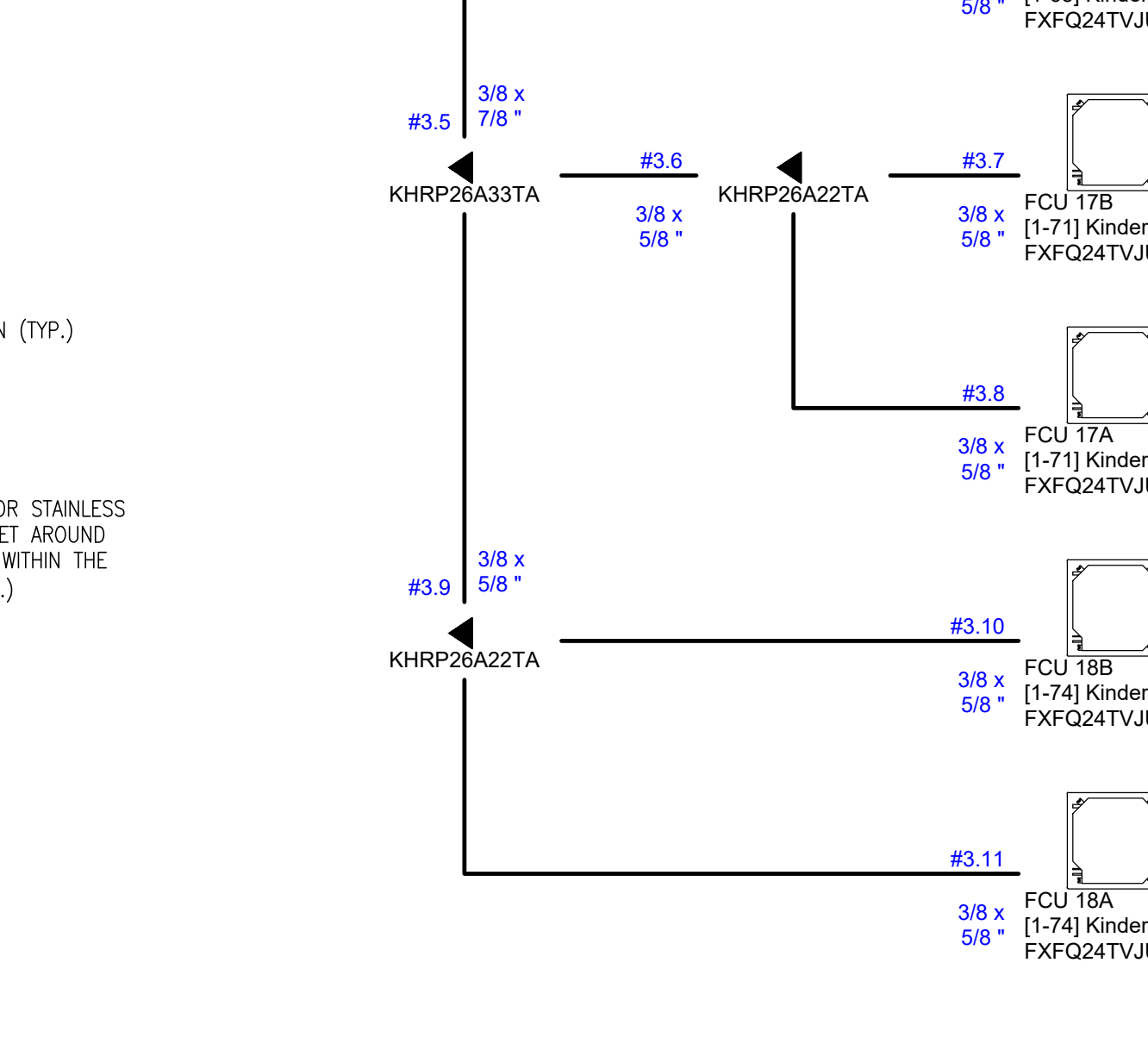
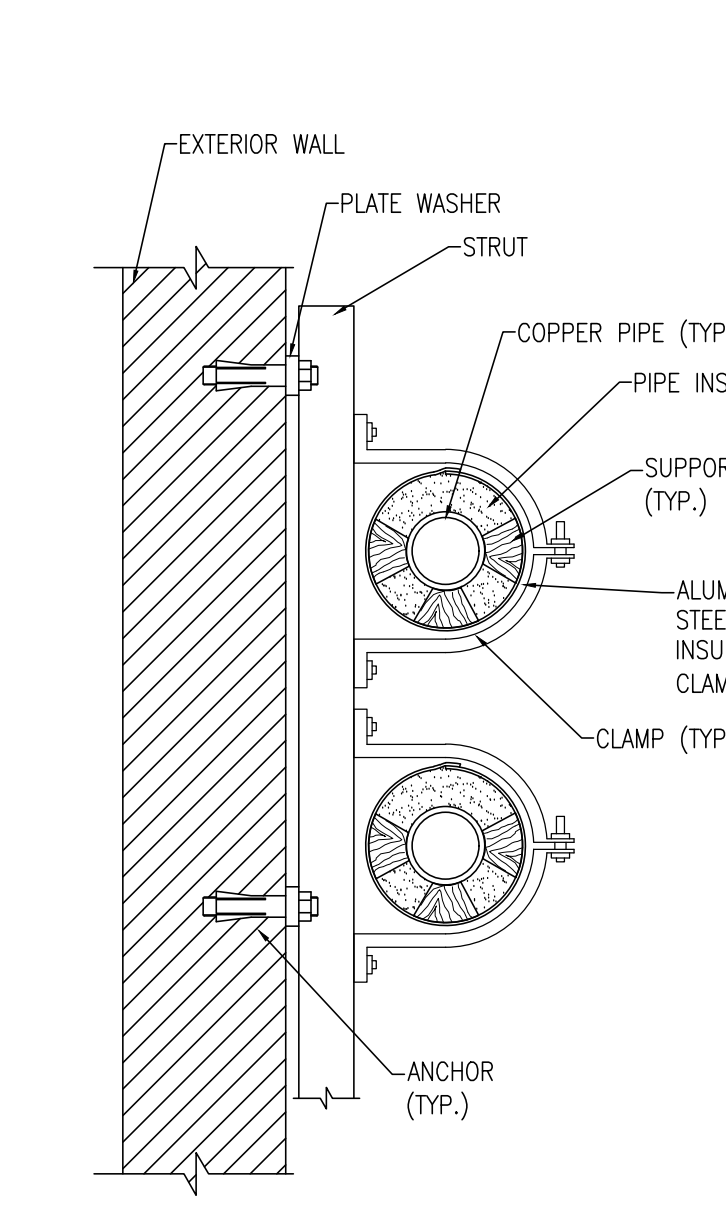
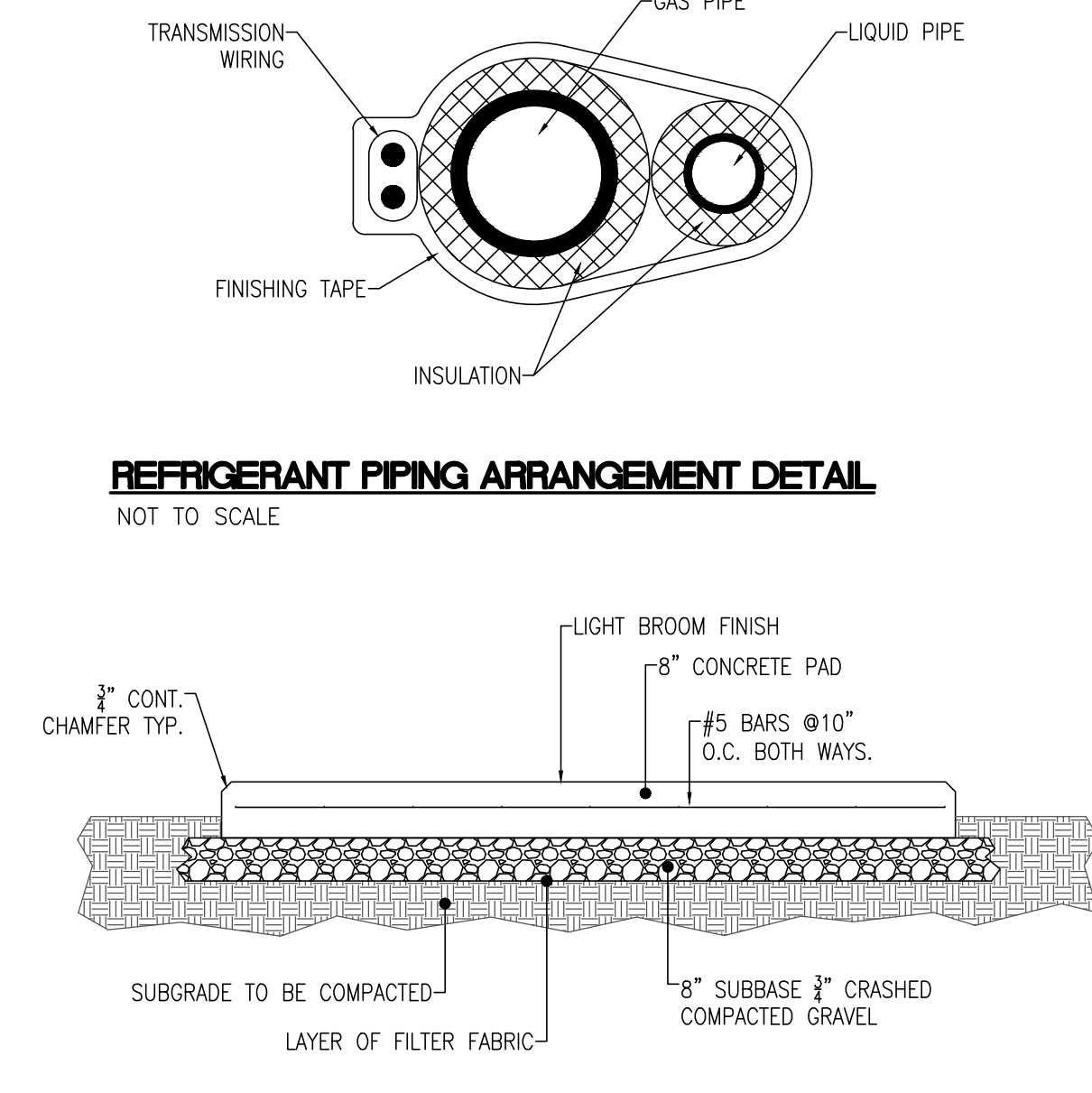
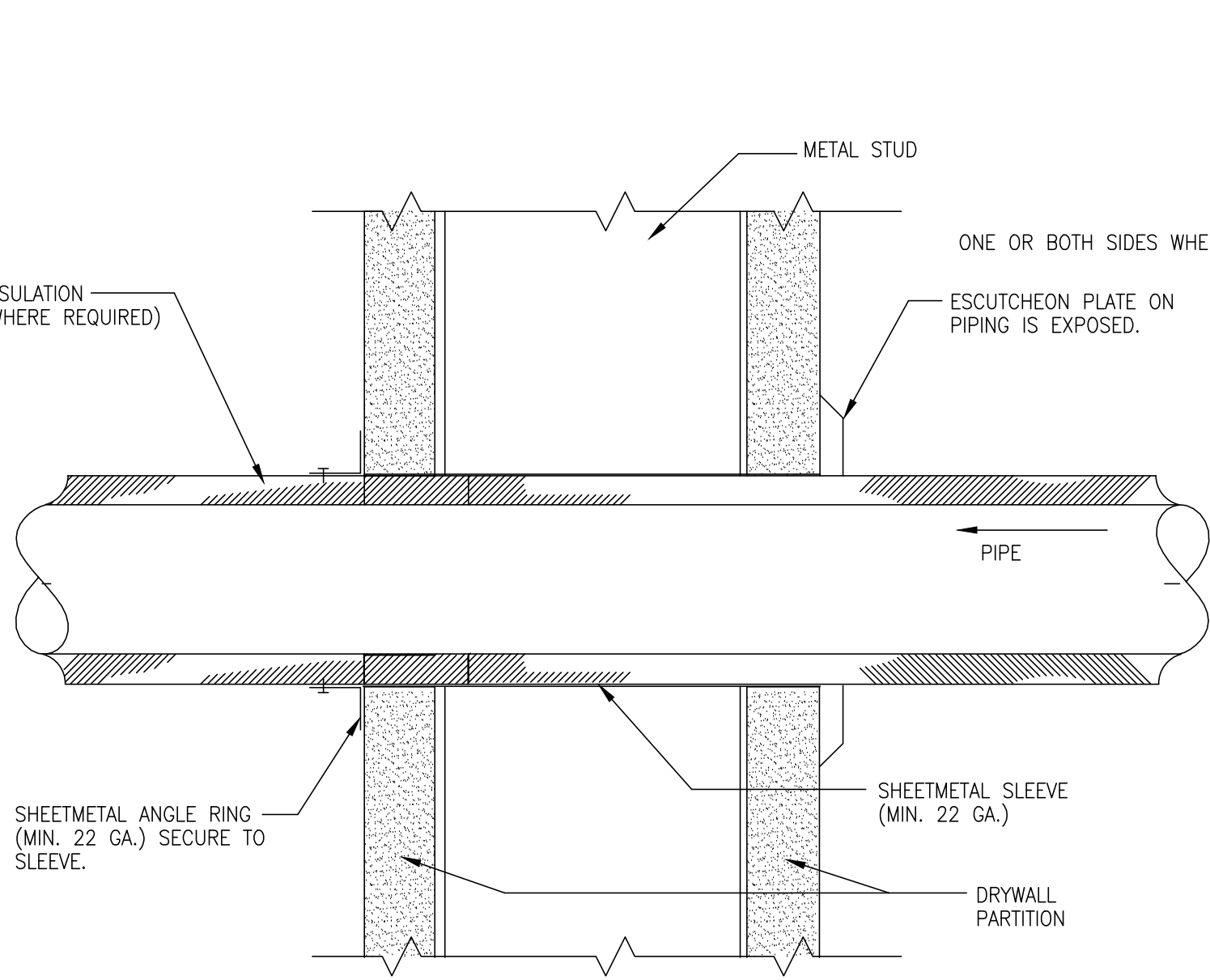
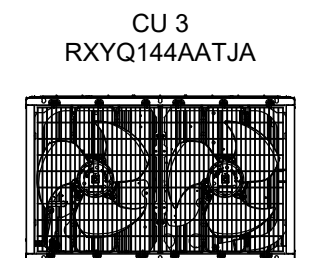
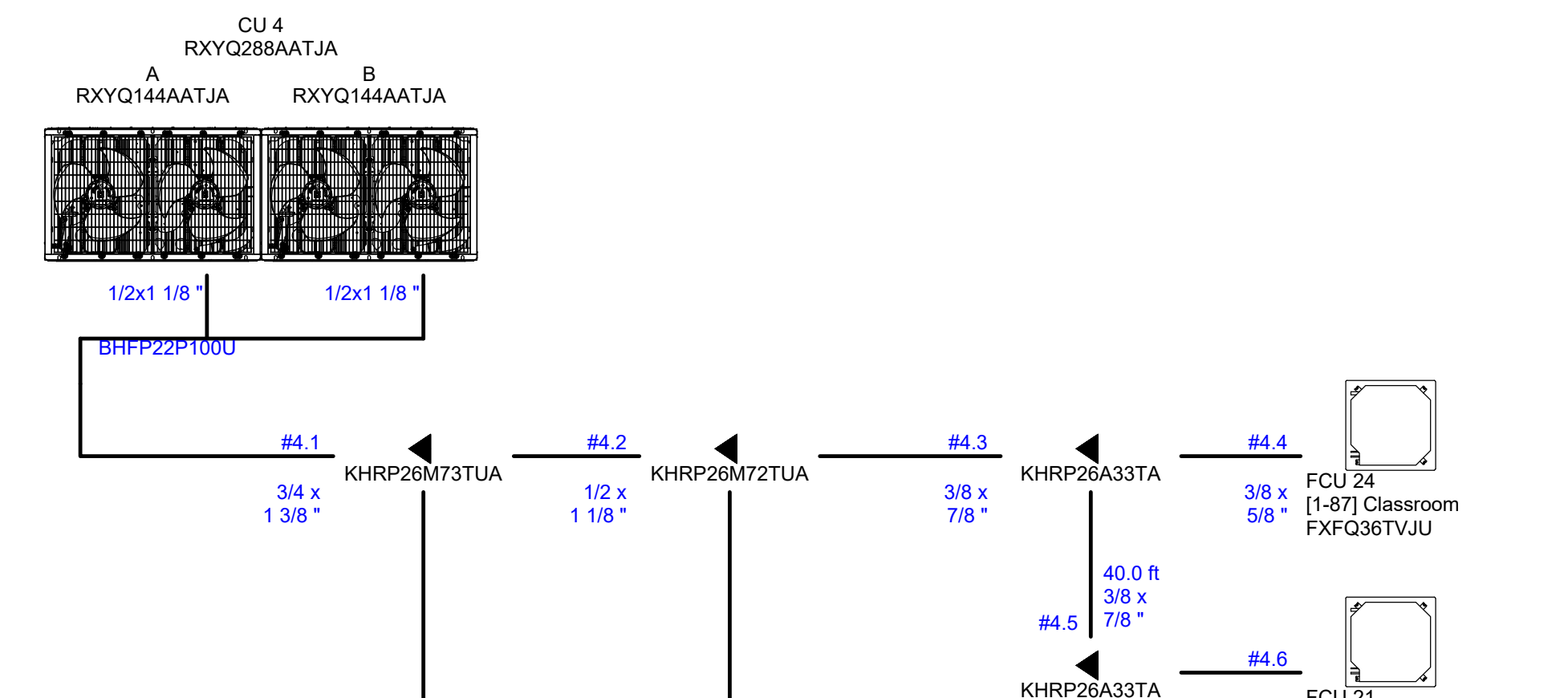
MECHANICAL - GENERAL NOTES: 1. INSTALL UNITS WITH CLEARANCE FOR SERVICE. 2. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, NOT EXACT EQUIPMENT LOCATION. 3. ALL CONTRACTORS MUST COORDINATE EQUIPMENT LOCATIONS WITH OTHER TRADES BEFORE WORK BEGINS. 4. THE LOCATION OF ALL AC CASSETTE UNITS SHALL BE COORDINATED WITH THE EXISTING CEILING. 5. CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING, INSULATE ALL REFRIGERANT PIPES. 6. CONDENSATE PIPING SHALL BE COPPER, PIPE SHALL BE INSULATED. 7. PROVIDE PIPE COVER TO NEW PIPES TO AC UNITS. CONTRACTOR TO FIELD VERIFY PIPE COVER DIMENSIONS. 8. PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH WALLS/PARTITION. THIS CONTRACTOR SHALL OPEN WALLS AS NECESSARY. SEAL PENETRATIONS

VARIABLE REFRIGERANT VOLUME - INDOOR UNIT SCHEDULE (DAIKIN BASIS OF DESIGN)

Table with columns: TAG, ROOM, BASIS OF DESIGN (DAIKIN), TYPE, CONNECTED TO, SUPPLY FAN AIR FLOW RATE, COOLING CAPACITY, HEATING CAPACITY, ELECTRICAL (POWER SUPPLY, Min Circuit Amps, Max Overcurrent Protection), DIMENSIONS (WxHxD), WEIGHT, Options and Accessories, and NOTES.

Schedule Notes: 360 degree air flow distribution and three room sensors enables optimized occupant comfort and efficiency. Built-in condensate pump. Individually controlled supply air louvers for comfortable air supply. Unit to be optimizable with up to 18 possible air flow patterns. Standard Limited Warranty: 10-year warranty on all parts.

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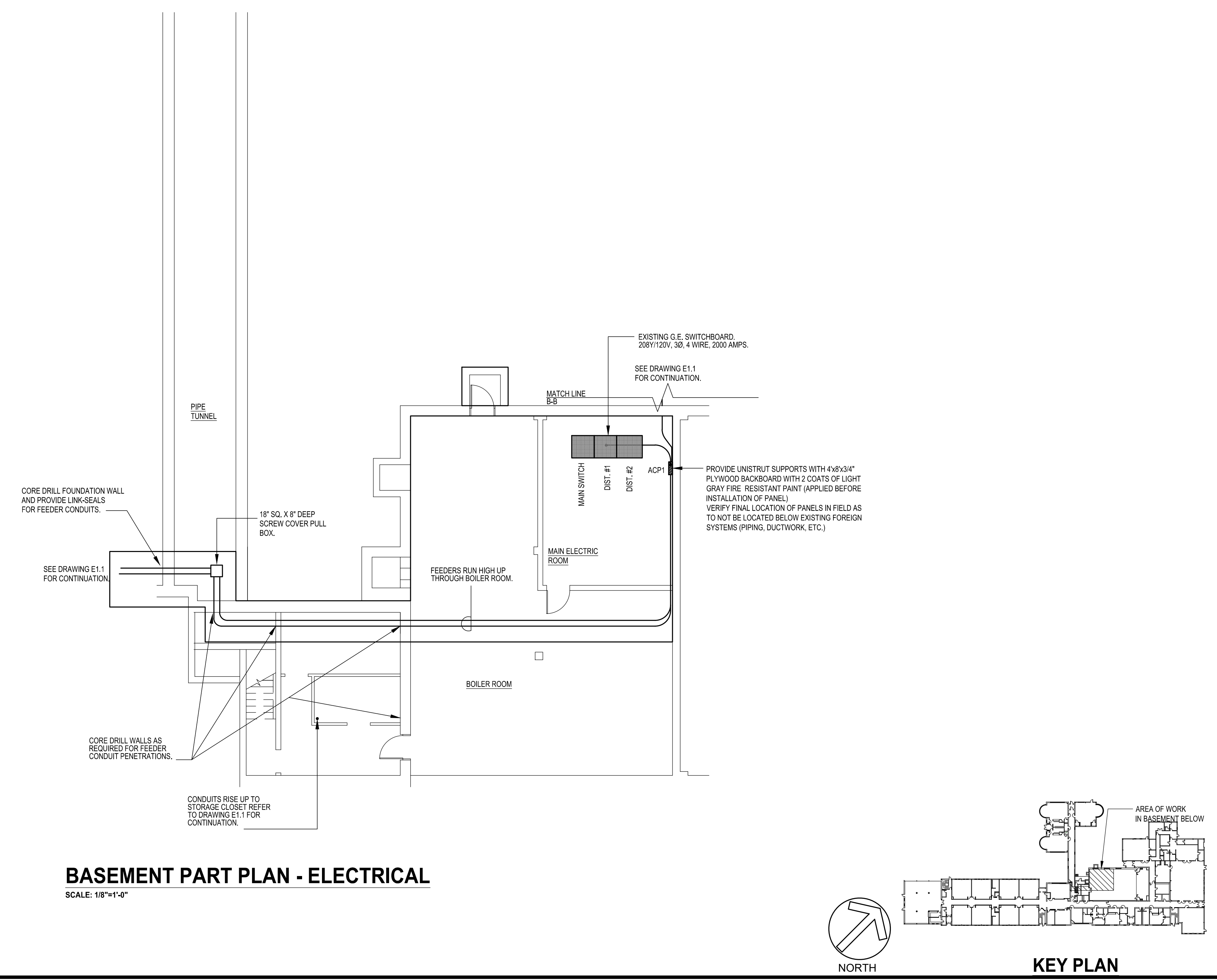
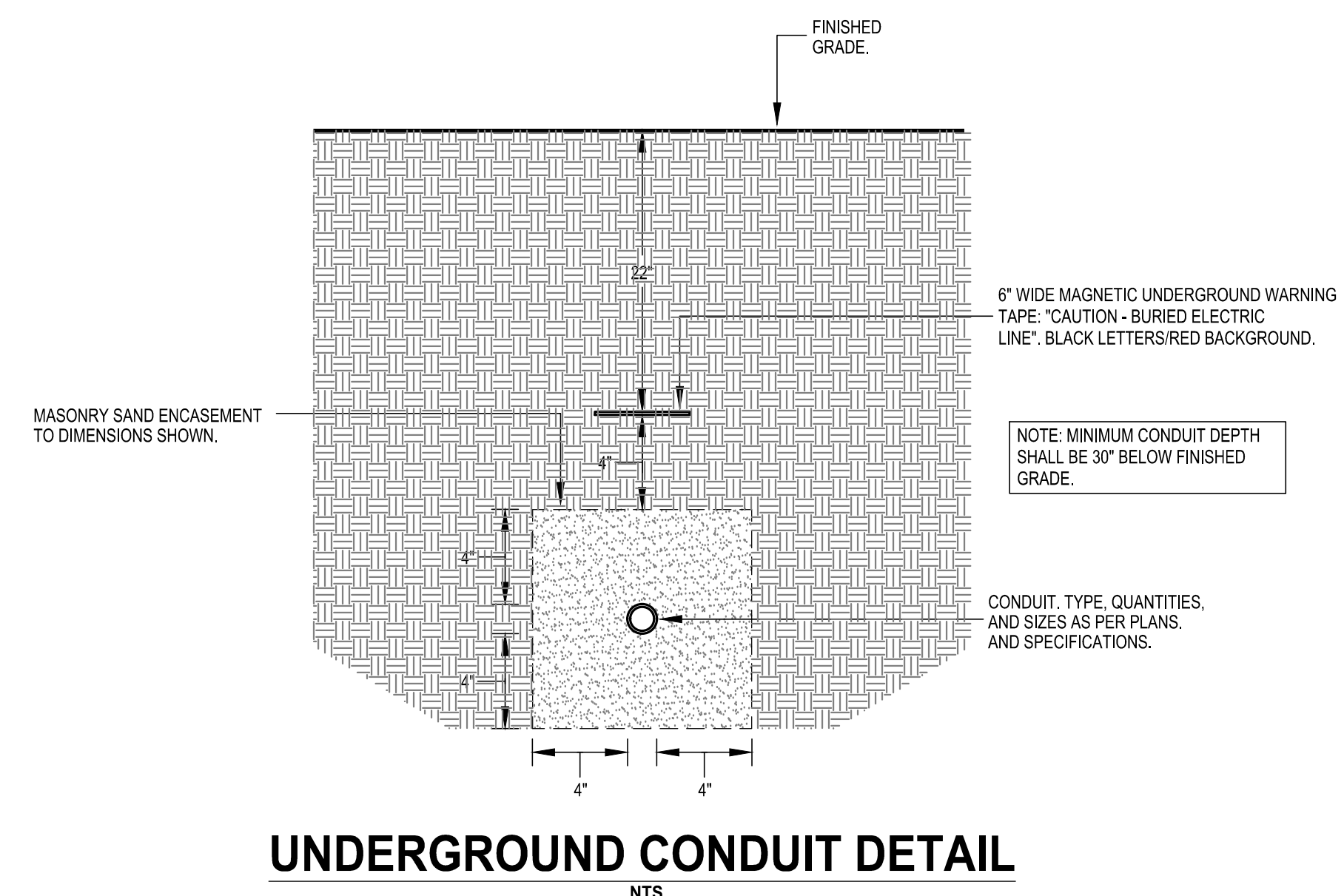
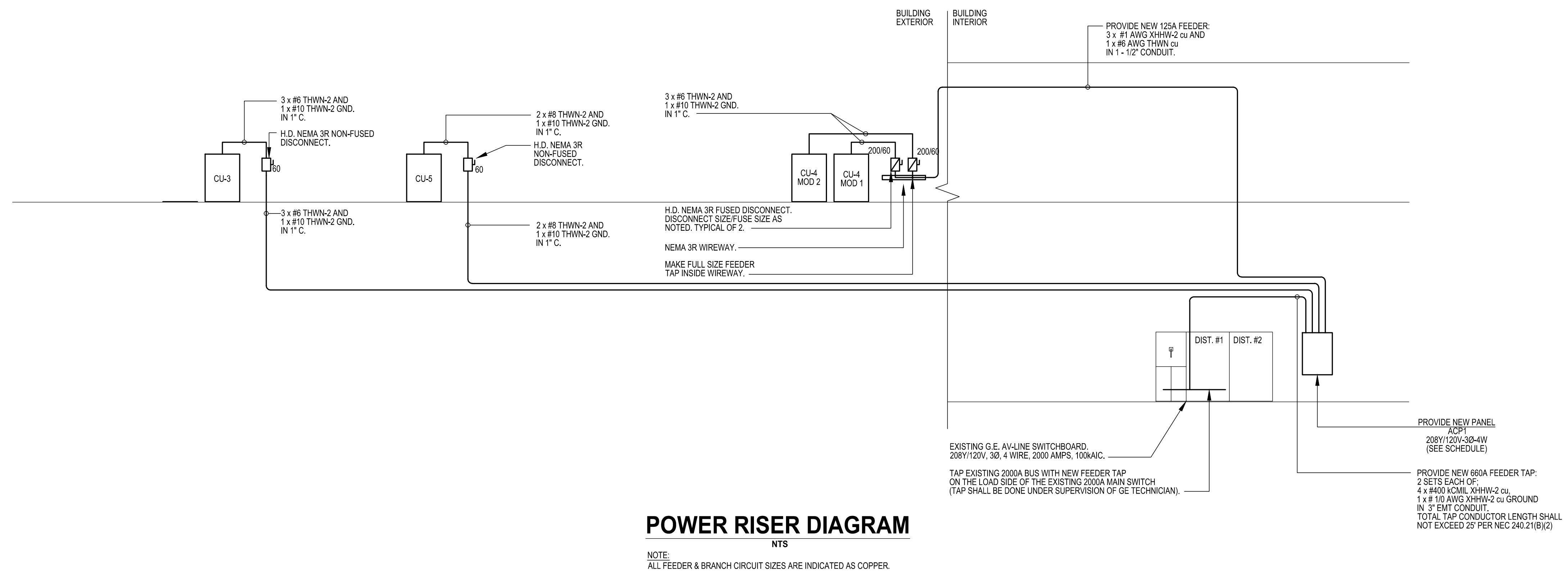
TITLE: MECHANICAL SCHEDULES, DETAILS and PIPING DIAGRAMS

DATE: 05/30/2023

DWG. NO. M1.2

PANEL: ACP1		MANUFACTURER & MODEL # EATON (CUTLER HAMMER) #POW-R-LINE 3a										
MOUNTING: SURFACE		VOLTAGE CLASSIFICATION: 208Y/120V, 3 PHASE, 4 WIRE										
MAINS 400 A MCB		SCR (FULLY RATED) 100K A.I.C.										
200% NO		SPD: NO										
BREAKER		PHASE LOAD KW						BREAKER				
#	TRIP RATING	POLE	LOAD DESCRIPTION	LOAD KW	A	B	C	LOAD KW	LOAD DESCRIPTION	POLE	TRIP RATING	#
1				6.61	6.61	13.22		13.22				2
3	60	3	CU-3	6.61			6.61	13.22	CU-4	3	125	4
5				6.61			6.61	13.22				6
7	15	2	Southwest FCU's	1.20	1.20	1.20		1.20	Northwest FCU's	2	15	8
9				1.20			1.20	1.20				10
11	20	1	Exterior Duplex Rec	0.36			0.36	3.03	CU-5	2	35	12
13				0.10	0.10	3.03		3.03				14
15	15	2	FCU 27 & 28	0.10			0.10	0.00				16
17				0.10				0.00				18
19				0.00	0.00			0.00				20
21				0.00			0.00	0.00				22
23				0.00				0.00	0.00			24
25				0.00	0.00			0.00	0.00			26
27							0.00	0.00				28
29							0.00	0.00				30
TOTAL LOAD:				25.36	22.34	23.22	TOTAL LOAD ON PANEL		71	197		
										KW		
										AMPS		

- NOTES:
- PROVIDE WITH SILVER PLATED COPPER BUS BARS AND COPPER GROUND BAR.
 - PROVIDE WITH DOOR-IN DOOR TRIM.
 - PROVIDE WITH BLACK FACE, WHITE CORE ENGRAVED NAMEPLATE FIXED TO PANEL WITH TWO SCREWS OR RIVETS.
 - PROVIDE WITH METAL FRAME PLASTIC COVER CIRCUIT DIRECTORY FRAME.
 - PROVIDE WITH TYPE WRITTEN CIRCUIT DIRECTORY REPRESENTING CIRCUITS AS ACTUALLY CONNECTED TO PANEL.
 - CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.
 - * = GFCI C/B.
 - = AFCI C/B.



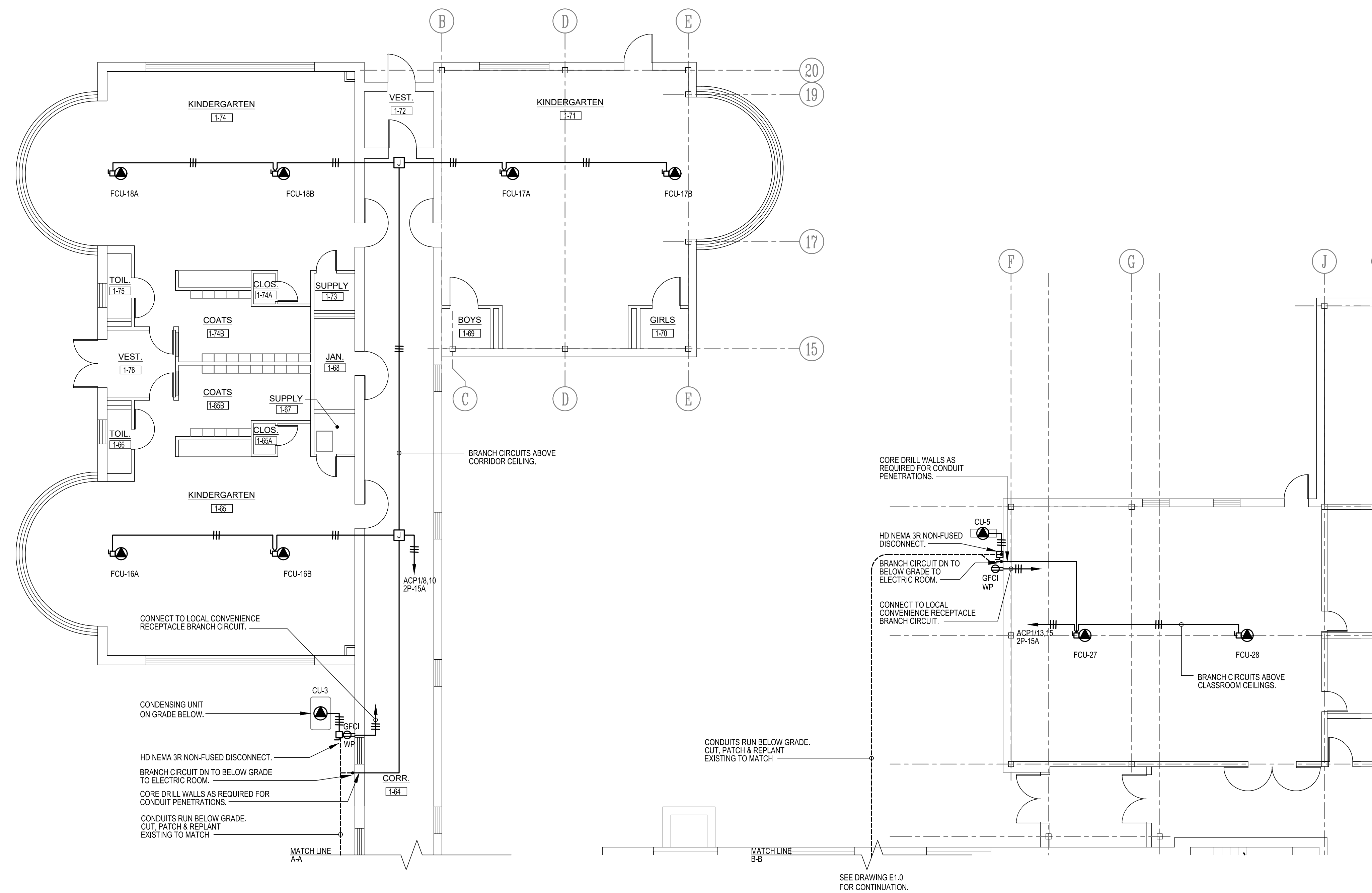
REVISIONS

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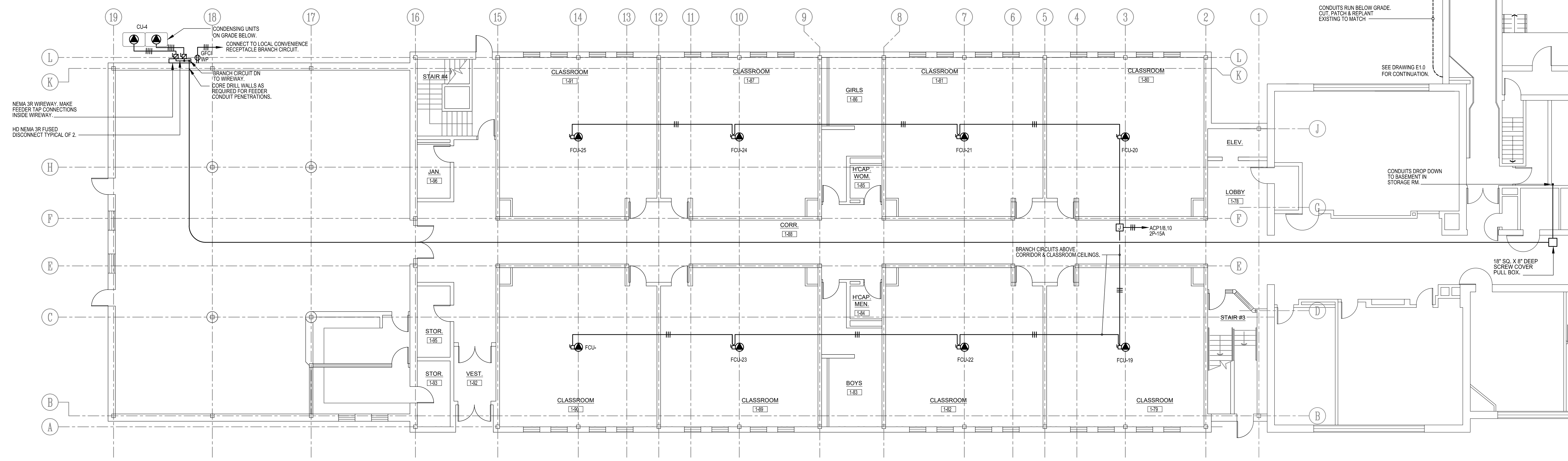
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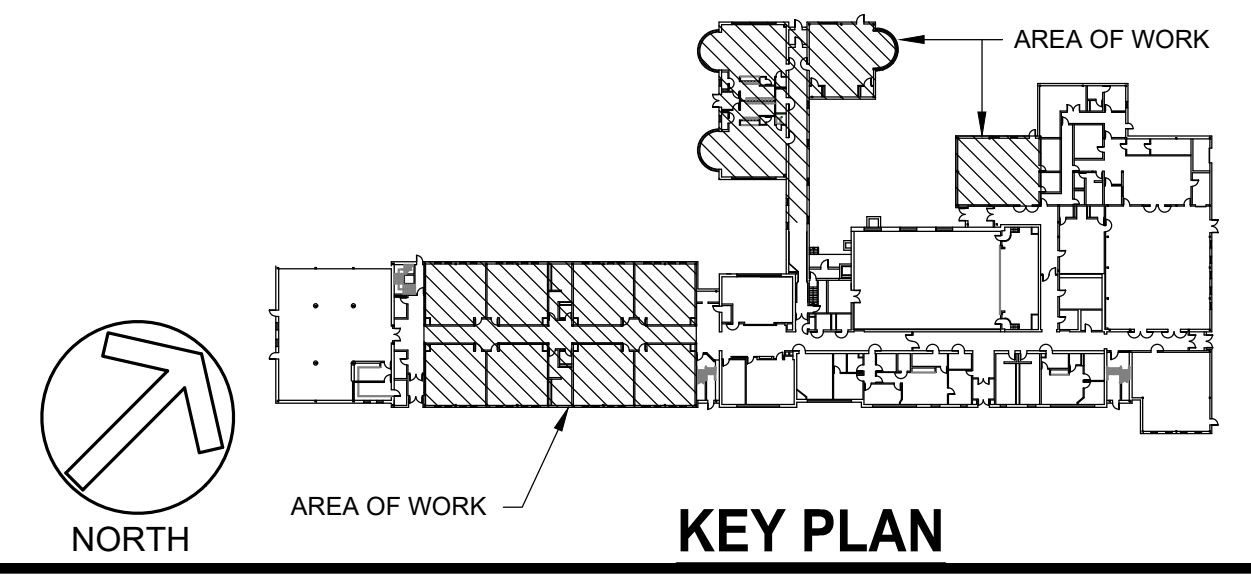


ELECTRICAL DRAWING LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
	EQUIPMENT POWER CONNECTION. EQUIPMENT TYPE AS DESIGNATED.
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	JUNCTION BOX WITH BLANK COVER PLATE.
	CONDUIT OR MC CABLE AS SPECIFIED
	CONDUIT BELOW GRADE
	BRANCH CIRCUIT WIRING. CROSS LINES INDICATE QUANTITY OF CONDUCTORS.
	BRANCH CIRCUIT WIRING HOMERUN. CROSS LINES INDICATE QUANTITY OF CONDUCTORS.
A	AMPS
C	CONDUIT
CB	CIRCUIT BREAKER
CU	CONDENSING UNIT
FCU	FAN COIL UNIT
GND	GROUND
HD	HEAVY-DUTY
P	POLE
UV	UNIT VENTILATOR
V	VOLTS

NORTHWEST FIRST FLOOR PART PLAN - ELECTRICAL
SCALE: 1/8"=1'-0"



SOUTHWEST FIRST FLOOR PART PLAN - ELECTRICAL
SCALE: 1/8"=1'-0"



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