



**CEILING RADIATION DAMPER**



**MODEL:**  
50EA (Rectangular)

**APPLICATION**  
The CRD-50EA has been UL tested and labeled for protection of ceiling openings in fire rated floor/ceiling assemblies with fire resistance ratings of 3 hours or less. This product can also be applied to steel lay-in style ceiling diffusers up to 24 in. x 24 in. (610mm x 610mm) maximum size. The damper is UL fire rated Ceiling/Floor Assembly L-563 and Ceiling/Roof Assembly P-544.

**RATING:** UL 555C Fire Resistance Rating  
**UL CLASSIFIED:** Fire resistance rated 3 Hours  
Building materials rated 3 Hours or less

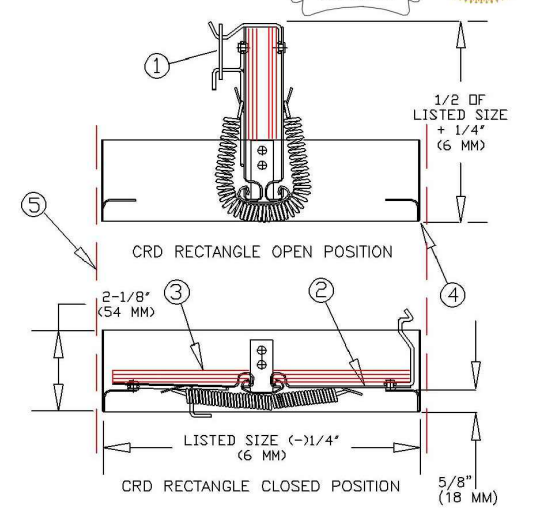
Model CRD 50EA meets the requirements for fire dampers established by:  
**CSEM California State Fire Marshal**  
**Fire Damper Listing (#3225-1417:101)**



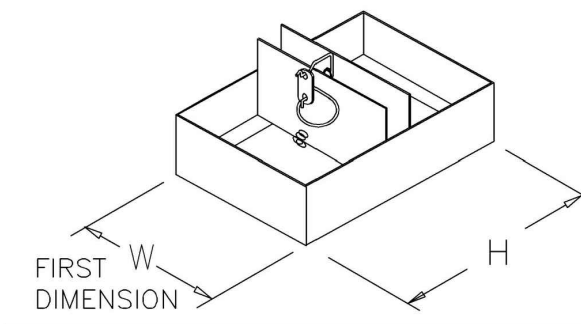
- Standard Construction**
- UL listed link (165°F Standard)
  - Blades 22 (0.853mm) Ga. Galv. Steel
  - Roll-formed frame 22 (0.853mm) ga. Galv. Steel
  - Steel duct drop (by others).

**Note:**

- Maximum size 24"x24" (600mm x 600mm)  
Minimum size 4"x6" (101mm x 152mm)
- Manufactured with blade opening as per sketch #1: when "W" equal to or greater than 6"
- Manufactured with blade opening as per sketch #2: when "W" is less than 6" and "H" is greater than "W".
- "Ceramic insulation is not UL required on dampers with areas less than 80 square inches and is optional. Dampers above 80 square inches will be provided with blade insulation.



Note:  
First dimension is always the hinge length  
Example:  
A 12x6 CRD 50-EA has a 12"(W) long hinged length



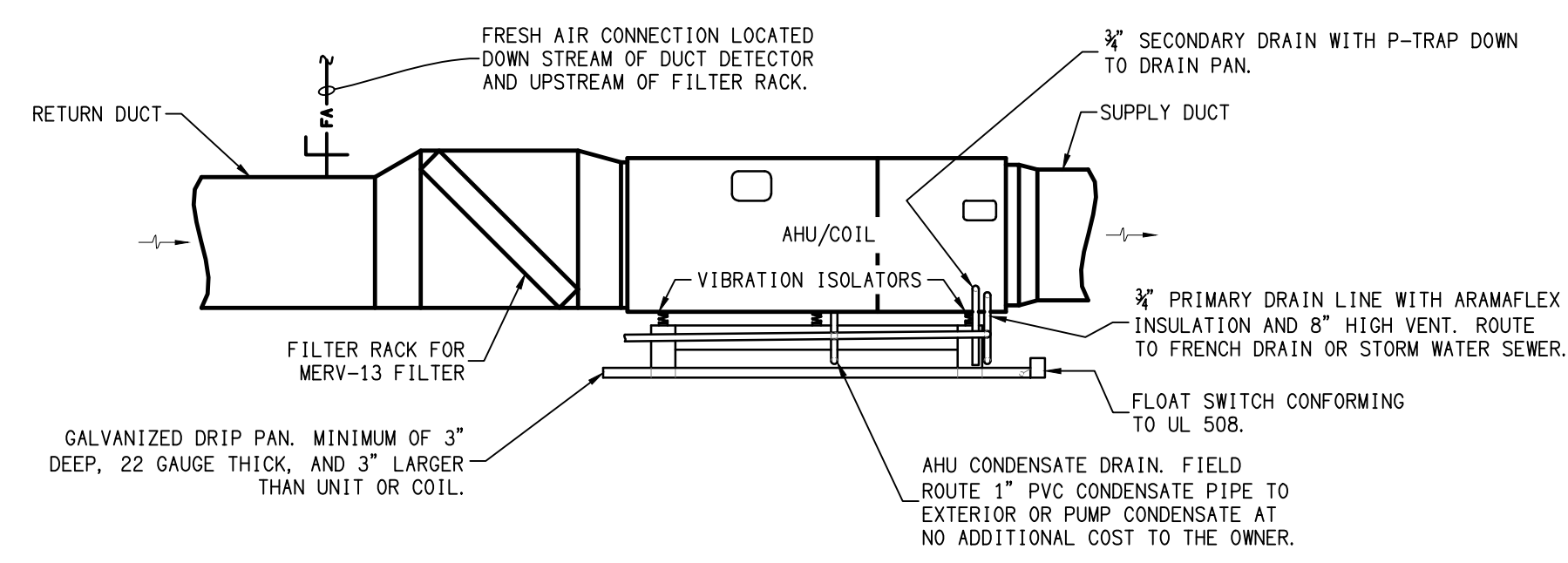
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THE OPERATING TEMPERATURE OF THE CEILING RADIATION DAMPER ACTUATION DEVICE SHALL BE 50°F ABOVE THE NORMAL TEMPERATURE WITHIN THE DUCT SYSTEM, BUT NOT LESS THAN 160°F.  
VERIFY WITH MANUFACTURER THE ACCEPTABILITY OF THIS PRODUCT WITH THE INSTALLATION AND APPLICATION PRIOR TO ORDERING. VERIFY THE MANUFACTURER HAS DOCUMENTATION AND THAT THE DAMPER CAN BE INSTALLED WITH ALUMINUM GRILLES/DIFFUSERS PRIOR TO ORDERING. INSTALLATION SHALL BE AS PER THE MANUFACTURERS RECOMMENDATIONS.  
THE RADIATION DAMPER SHALL BE WITHIN 1/4" OF THE RATED CEILING.

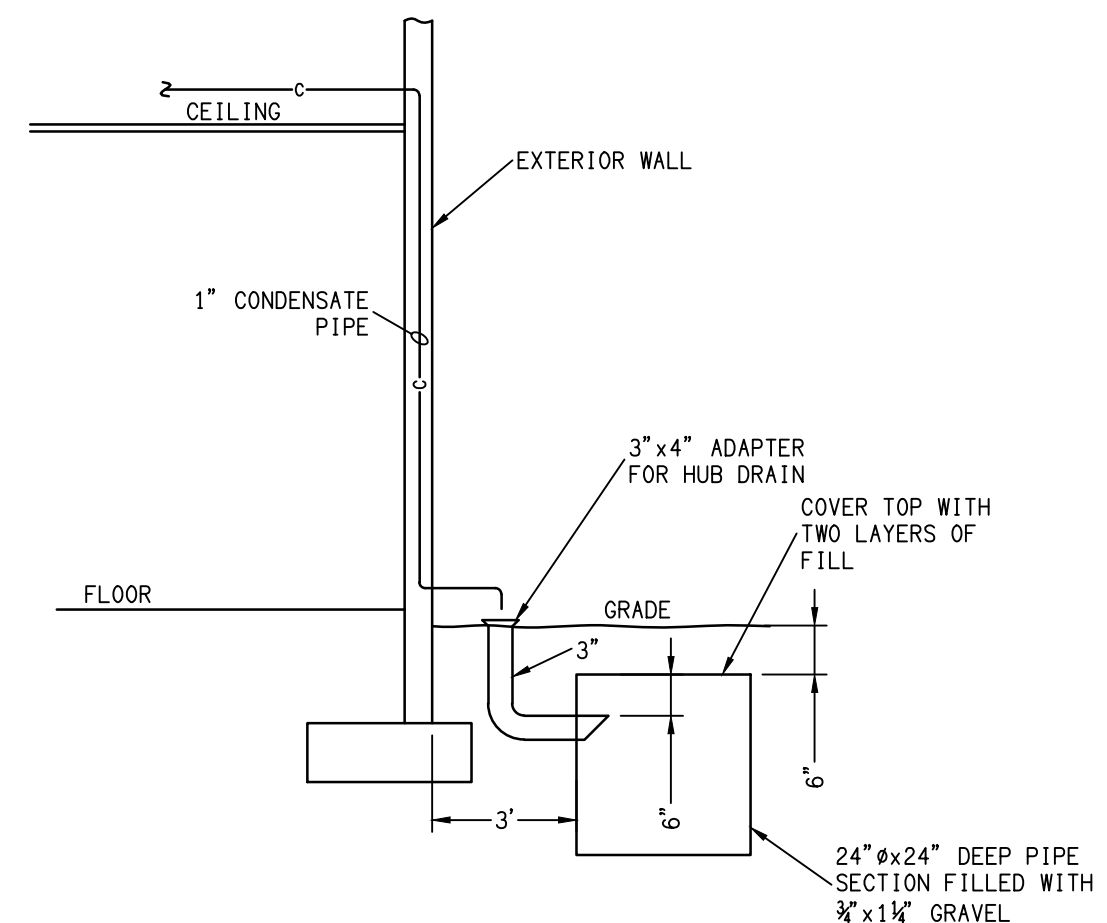
**A RADIATION DAMPER DETAIL**  
SCALE: NTS

WALL HEATER SCHEDULE									
SYMBOL	DESCRIPTION	KW	VOLT	PHASE	THERMOSTAT	MFG.	MODEL	REMARKS	
EH-1	MECH EQ ROOM	2	208	1	MOUNT ON HEATER	Q-MARK	AH420B	-	

**HEATER NOTES:**  
1. MAINTAIN WALL RATINGS AS NECESSARY.  
2. VERIFY COLOR WITH OWNER.



**B AHU FILTER DETAIL**  
SCALE: NTS



**C FRENCH DRAIN DETAIL**  
SCALE: NONE

**ROOF MOUNTED GRAVITY VENTILATOR - INTAKE**

SYMBOL	TYPE	CFM	MFG.	SIZE	MODEL	MATERIAL	REMARKS
IC-1	INTAKE	50	GREENHECK	8"	GRS-8	ALUMINUM	-
IC-2	INTAKE	1445	GREENHECK	24"	GRS-24	ALUMINUM	-
IC-3	INTAKE	1400	GREENHECK	24"	GRS-24	ALUMINUM	-
IC-4	INTAKE	400	GREENHECK	12"	GRS-12	ALUMINUM	-
IC-5	INTAKE	1300	GREENHECK	20"	GRS-20	ALUMINUM	-
IC-6	INTAKE	1100	GREENHECK	20"	GRS-20	ALUMINUM	-
IC-7	INTAKE	425	GREENHECK	12"	GRS-12	ALUMINUM	-

**GRAVITY VENTILATOR NOTES:**  
1. PROVIDE ROOF CURB.  
2. FOLLOW ALL GENERAL NOTES ON SHEET M1.  
3. FOR ALL VENTILATORS, DROP INTO ATTIC WITH SIZE AS INDICATED.  
4. FOR ALL INTAKE VENTILATORS, MOUNT INTAKE 37" FROM ROOF DECK.  
5. INSTALLATION SHALL COMPLY WITH ANY LOCAL WIND CODES.

**ROOF MOUNTED GRAVITY VENTILATOR - EXHAUST**

SYMBOL	TYPE	CFM	MFG.	SIZE	MODEL	MATERIAL	REMARKS
DC-1	EXHAUST	800	GREENHECK	16"	GRS-16	ALUMINUM	-
DC-2	EXHAUST	800	GREENHECK	16"	GRS-16	ALUMINUM	-
DC-3	EXHAUST	1200	GREENHECK	20"	GRS-20	ALUMINUM	-
DC-4	EXHAUST	400	GREENHECK	12"	GRS-12	ALUMINUM	-
DC-5	EXHAUST	1250	EXHAUST	20"	GRS-20	ALUMINUM	-
DC-6	EXHAUST	300	EXHAUST	12"	GRS-12	ALUMINUM	-

**GRAVITY VENTILATOR NOTES:**  
1. PROVIDE ROOF CURB.  
2. FOLLOW ALL GENERAL NOTES ON SHEET M1.  
3. FOR ALL VENTILATORS, DROP INTO ATTIC WITH SIZE AS INDICATED.  
4. INSTALLATION SHALL COMPLY WITH ANY LOCAL WIND CODES.

**DUCTLESS SPLIT SYSTEM UNIT SCHEDULE - I.T. ROOM (A/C ONLY)**

COOLING CAP TONS	AIR HANDLER		OUTSIDE UNIT		MANUFACTURER	VOLT	PHASE	FUZE	SEER	HSPF	REMARKS
	SYMBOL	MODEL	SYMBOL	MODEL							
1 TON	DAHJ-1	PKA-A12HA7	DC-1	PUY-A12NK47	DAIKIN	208	1	15	20.8	10.2	STRAIGHT AIR

**FRESH AIR MAKE UP UNIT NOTES:**  
1. PROVIDE CONDENSATE PUMP WITH PIPING TO OUTSIDE FRENCH DRAIN.  
2. PROVIDE THERMOSTAT.  
3. PROVIDE CONCRETE PAD FOR OUTDOOR UNIT AND SECURE THE OUTDOOR UNIT TO THE CONCRETE PAD.

**REGISTER SCHEDULE**

SYMBOL	DESCRIPTION	NECK	RUN OUT	BALANCING DAMPER AT REGISTER	MATERIAL	COLOR	MFG.	MODEL	REMARKS
A	LOUVER FACED 4-WAY SUPPLY	6"x6"	6"ø	YES	STEEL	WHITE	PRICE	SMD	100 OR LESS
B	LOUVER FACED 4-WAY SUPPLY	6"x6"	7"ø	YES	STEEL	WHITE	PRICE	SMD	100 TO 150
C	LOUVER FACED 4-WAY SUPPLY	9"x9"	8"ø	YES	STEEL	WHITE	PRICE	SMD	150 TO 225
D	LOUVER FACED 4-WAY SUPPLY	9"x9"	9"ø	YES	STEEL	WHITE	PRICE	SMD	225 TO 300
E	LOUVER FACED 4-WAY SUPPLY	12"x12"	10"ø	YES	STEEL	WHITE	PRICE	SMD	300 TO 400
F	LOUVER FACED 4-WAY SUPPLY	12"x12"	12"ø	YES	STEEL	WHITE	PRICE	SMD	400+
RA	LOUVERED RETURN	8"x8"	SEE DWG	YES	STEEL	WHITE	PRICE	530	125 OR LESS
RB	LOUVERED RETURN	12"x12"	SEE DWG	YES	STEEL	WHITE	PRICE	530	125 TO 300
RC	LOUVERED RETURN	18"x18"	SEE DWG	YES	STEEL	WHITE	PRICE	530	300 TO 750
RD	LOUVERED RETURN	18"x24"	SEE DWG	YES	STEEL	WHITE	PRICE	530	750 TO 1055
RE	LOUVERED RETURN	18"x30"	SEE DWG	YES	STEEL	WHITE	PRICE	530	1055+

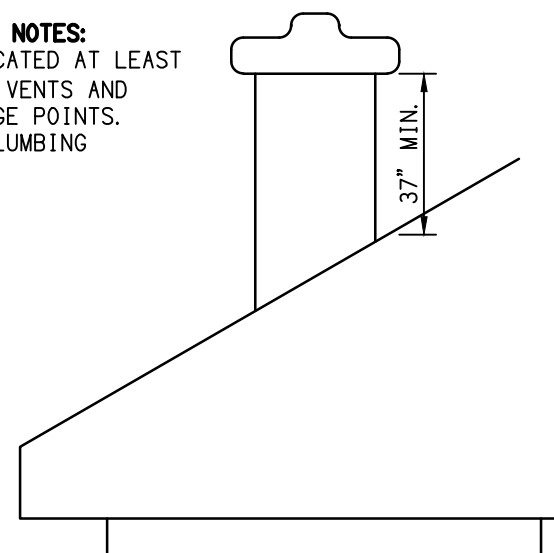
**FRESH AIR MAKE UP UNIT SCHEDULE**

SYMBOL	DESCRIPTION	MANUF.	MODEL	ELECTRIC				S. P.	SUPPLY	RETURN	WINTER OUTSIDE AIR		WINTER COND AIR		SUMMER OUTSIDE AIR		SUMMER COND AIR		LA SUMMER		LA WINTER		COMP	TOTAL COOLING CAP	TOTAL HEATING CAP	REMARKS
				VOLT	PHASE	MCA	BREAKER				TEMP	RH	TEMP	RH	TEMP	WB	TEMP	WB	TEMP	WB	TEMP	WB				
DOAS-1-12	100% FRESH AIR MAKE UP	ALPHA AIRE	AAH100G1ASTA3	208	1	10.4	15/2	1"	425 CFM	425 CFM	15°F	80%	70°F	42%	93.2°F	80.8°F	77°F	65.3°F	78.2°F	61.9°F	77.6°F	59.6°F	0.75 TON	31,900	40,000	-

**NOTES:**  
1. PROVIDE MERV-13 FILTER 12"x24" RACK.  
2. COORDINATE WITH GC TO ENLARGE ATTIC ACCESS PORT TO ALLOW A 28"x30" UNIT.  
3. PROVIDE CONDENSATE PIPING OR CONDENSATE PUMP.  
4. AIR BALANCE FOR DOAS UNITS MUST BE ± 5% MAXIMUM.  
5. PROVIDE MEANS TO BALANCE AIR AT UNIT.

**FRESH AIR INTAKE HOOD NOTES:**

- HOODS SHALL BE LOCATED AT LEAST 26' FROM PLUMBING VENTS AND OTHER AIR DISCHARGE POINTS. COORDINATE WITH PLUMBING CONTRACTOR.



**D FRESH AIR MAKEUP HOOD**  
SCALE: NONE

EQUALS CAN BE SUBMITTED FOR WALL MOUNTED HEATERS, ROOF MOUNTED GRAVITY VENTILATORS FOR EXHAUSTS & INTAKES, REGISTERS, RADIATION DAMPERS & FIRE DAMPERS

symbol	date	description	by
REVISIONS			

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REGISTERED PROFESSIONAL ARCHITECT  
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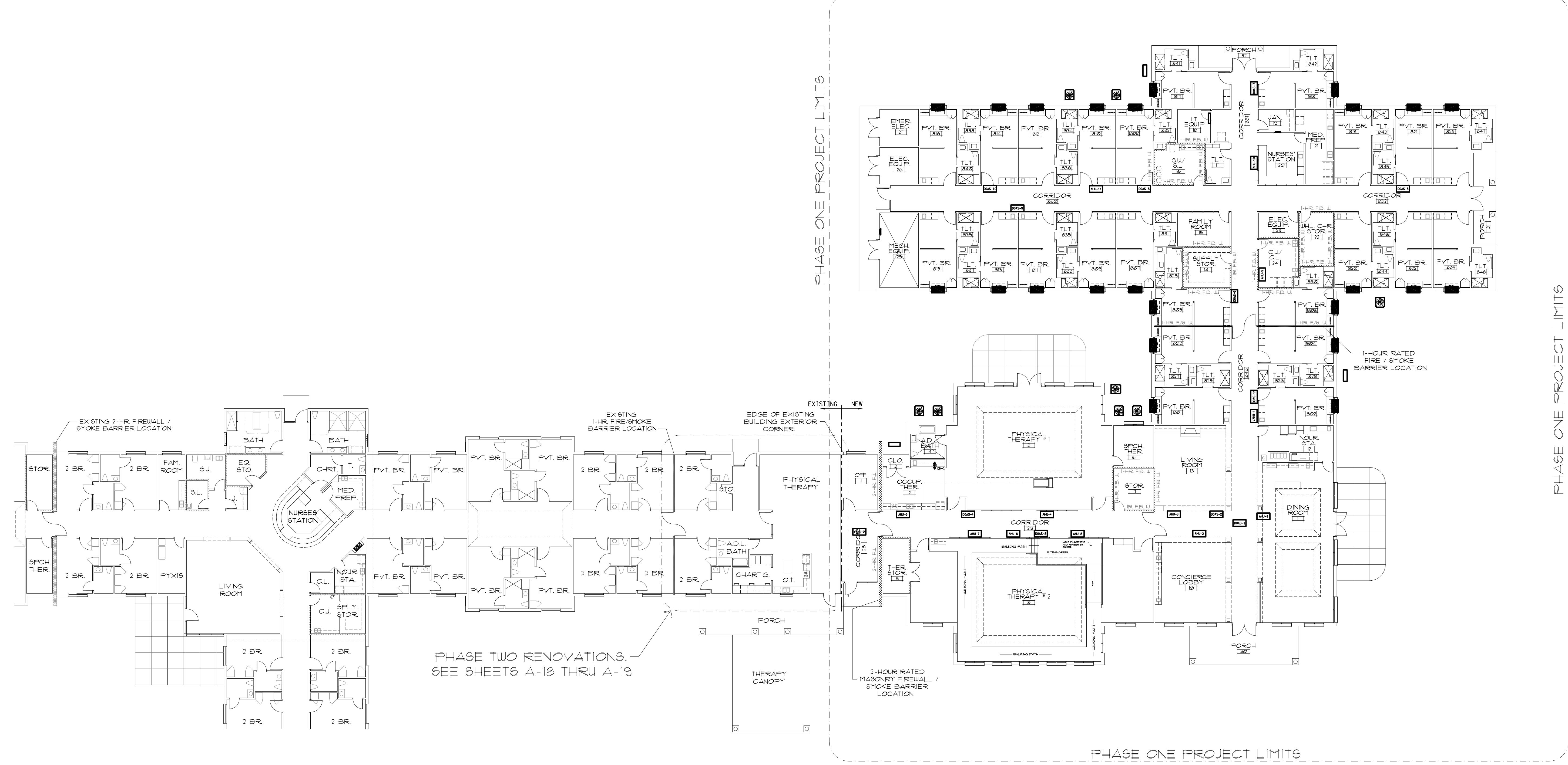
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Raleigh, North Carolina

**David R. Polston - Architect**  
3806 Park Ave. Suite 2-L, Wilmington, NC 28403  
Architecture Planning Design

24 BED CONCIERGE / THERAPY ADDITION PHASE ONE

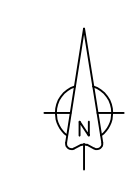
**M2**

PHASE ONE NEW CONSTRUCTION PROJECT LIMITS - SEE SHEETS A-2 THRU A-16

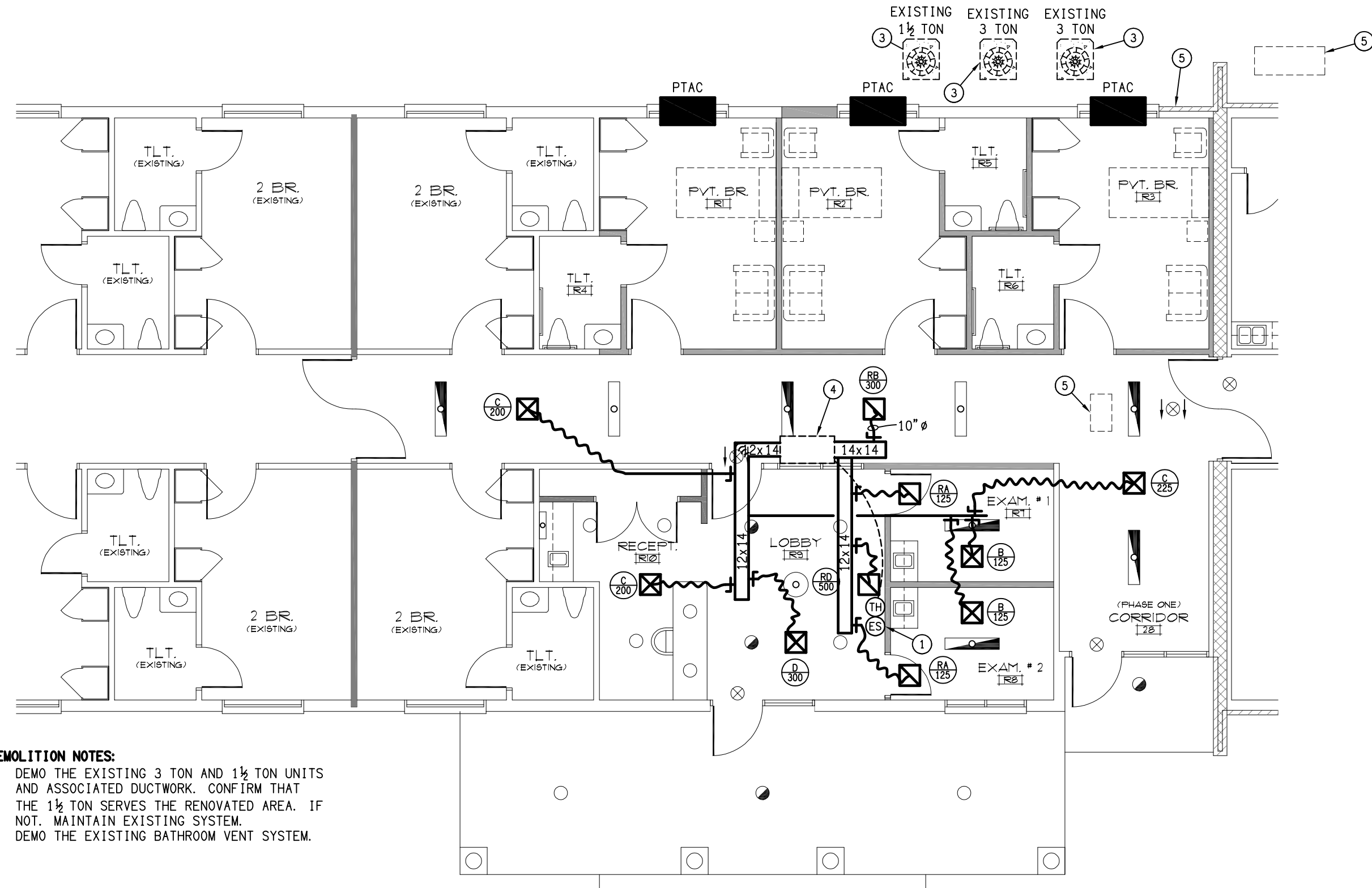


PHASE TWO RENOVATIONS.  
SEE SHEETS A-18 THRU A-19

**A  
M3** OVERALL ADDITION MECHANICAL PLAN  
SCALE: 1/16" = 1'-0"



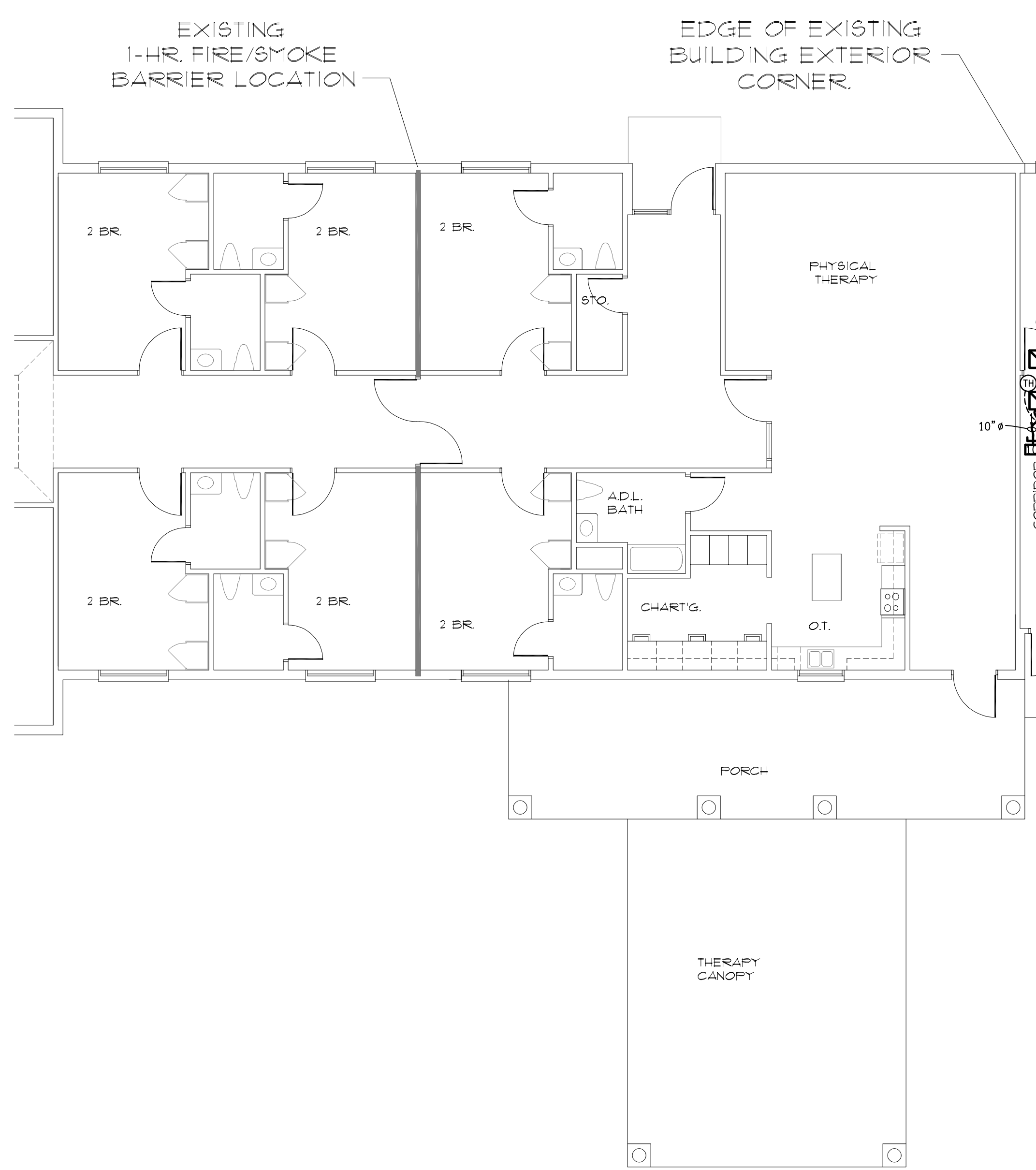
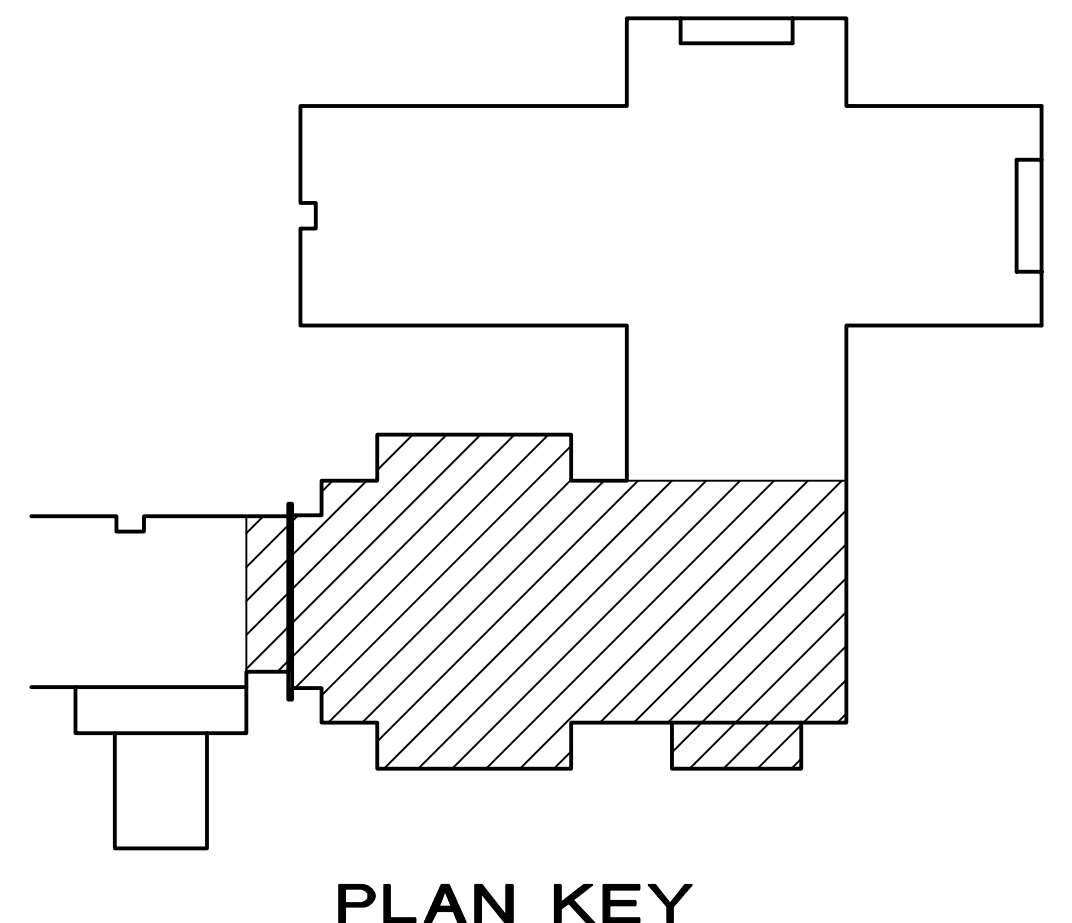
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**DEMOLITION NOTES:**  
 1. DEMO THE EXISTING 3 TON AND 1 1/2 TON UNITS AND ASSOCIATED DUCTWORK. CONFIRM THAT THE 1 1/2 TON SERVES THE RENOVATED AREA. IF NOT, MAINTAIN EXISTING SYSTEM.  
 2. DEMO THE EXISTING BATHROOM VENT SYSTEM.

**A PHASE 2 MECHANICAL PLAN**  
 M4 SCALE: 1/8" = 1'-0"

- KEY NOTES**
1. PROVIDE EMERGENCY SHUTDOWN FOR EACH AHU.
  2. ROOM UNDER NEGATIVE PRESSURE.
  3. EXISTING 3 TON OUTDOOR UNIT. REUSE THE NEWEST 3 TON EXISTING OUTDOOR UNIT.
  4. REUSE EXISTING AHU AND OUTDOOR UNIT. RELOCATE AS NEEDED. PROVIDE HUMIDITY CONTROL. USE THE SAME SYSTEM AS CALLED FOR ON THE NEW AHU'S.
  5. DEMO EXISTING VHP-2 & VAHU-2 SYSTEM



**A PARTIAL ADDITION MECHANICAL PLAN**  
 M4 SCALE: 1/8" = 1'-0"

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**UNI HEALTH POST-ACUTE CARE**  
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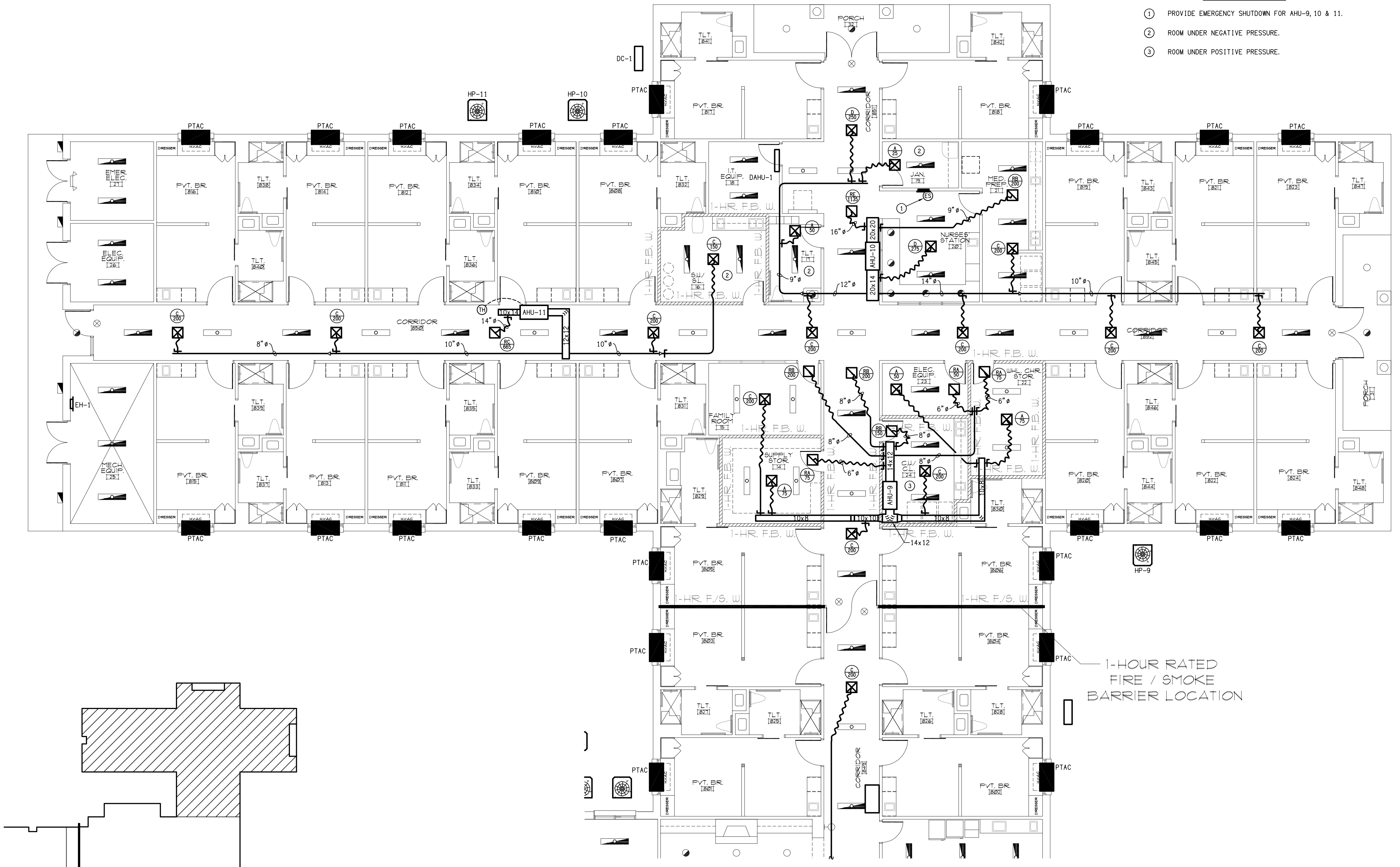
**David R. Polston - Architect**  
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 Architecture Planning Design

24 BED CONCERGE / THERAPY ADDITION PHASE ONE

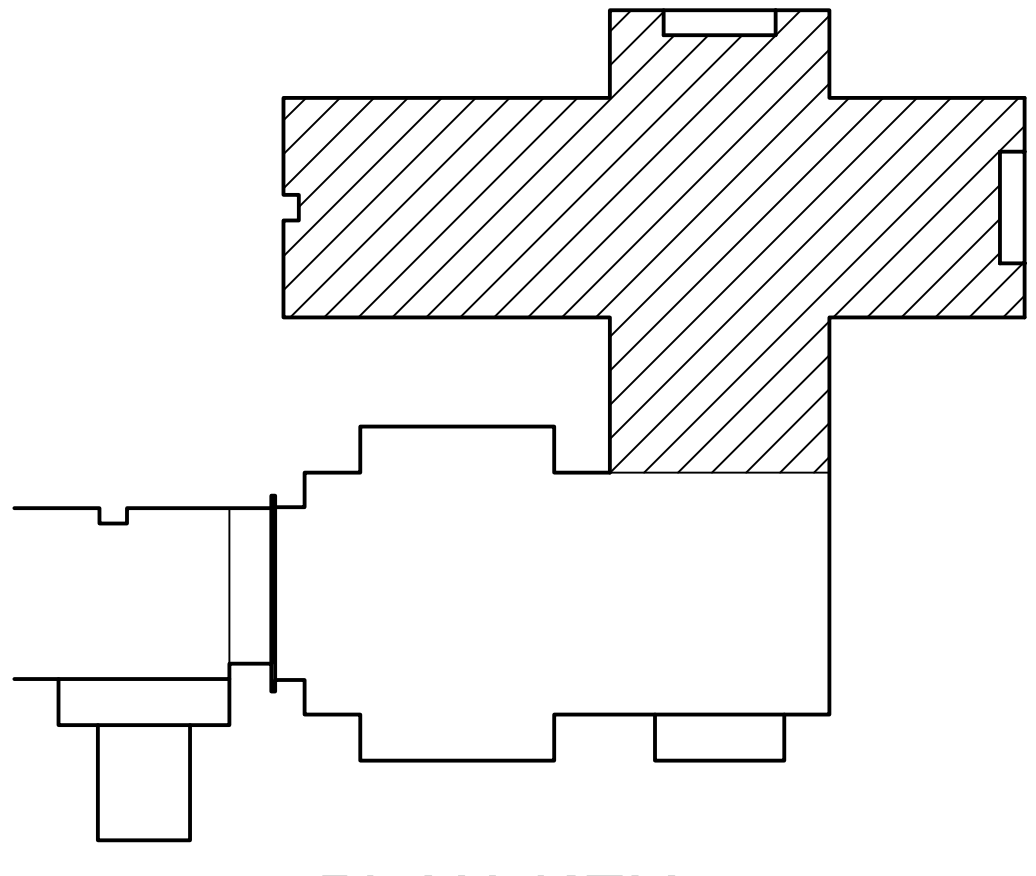
**M4**

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PHASE ONE PROJECT LIMITS

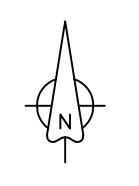


- KEY NOTES**
- ① PROVIDE EMERGENCY SHUTDOWN FOR AHU-9, 10 & 11.
  - ② ROOM UNDER NEGATIVE PRESSURE.
  - ③ ROOM UNDER POSITIVE PRESSURE.

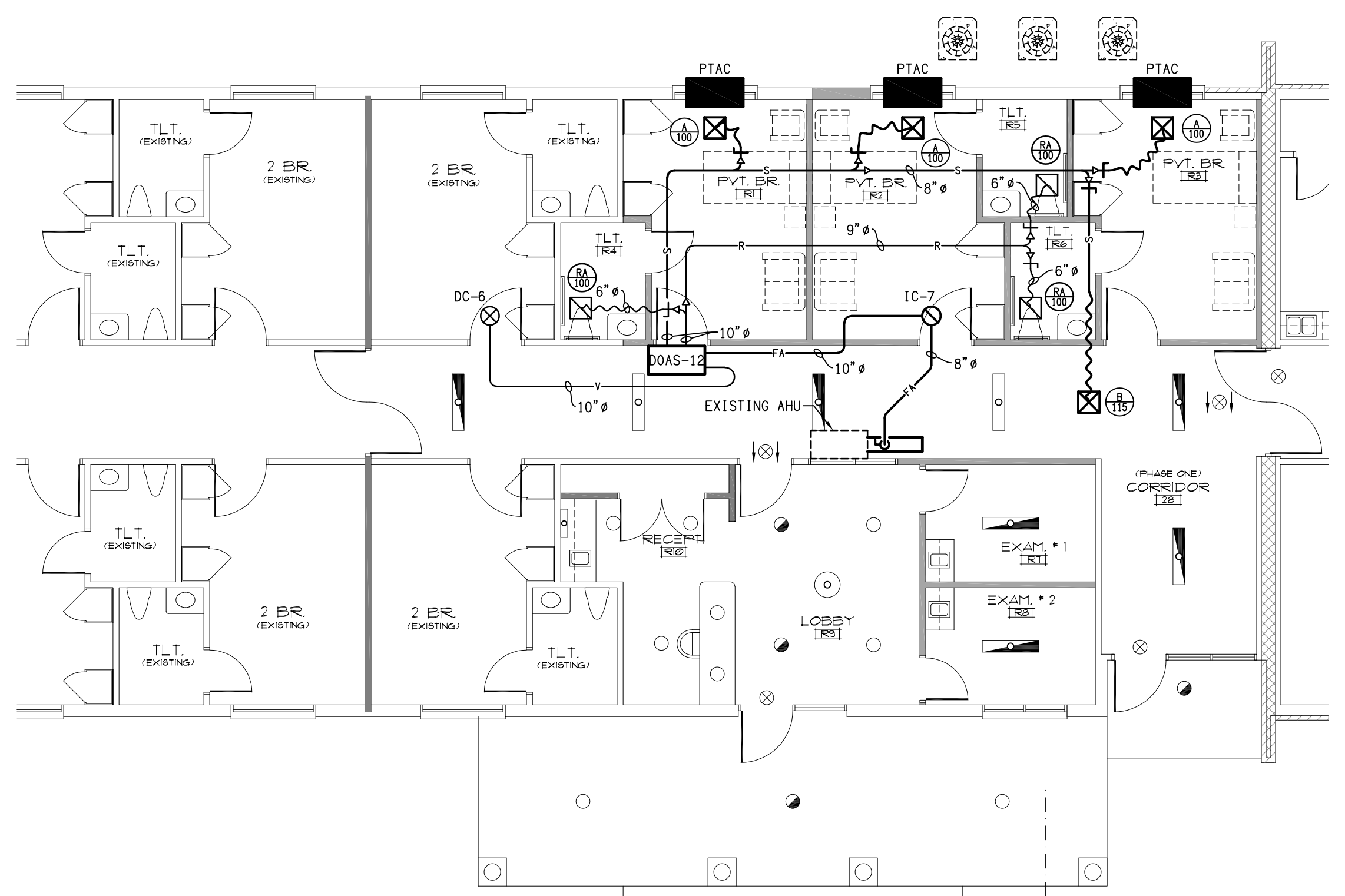


**PLAN KEY**

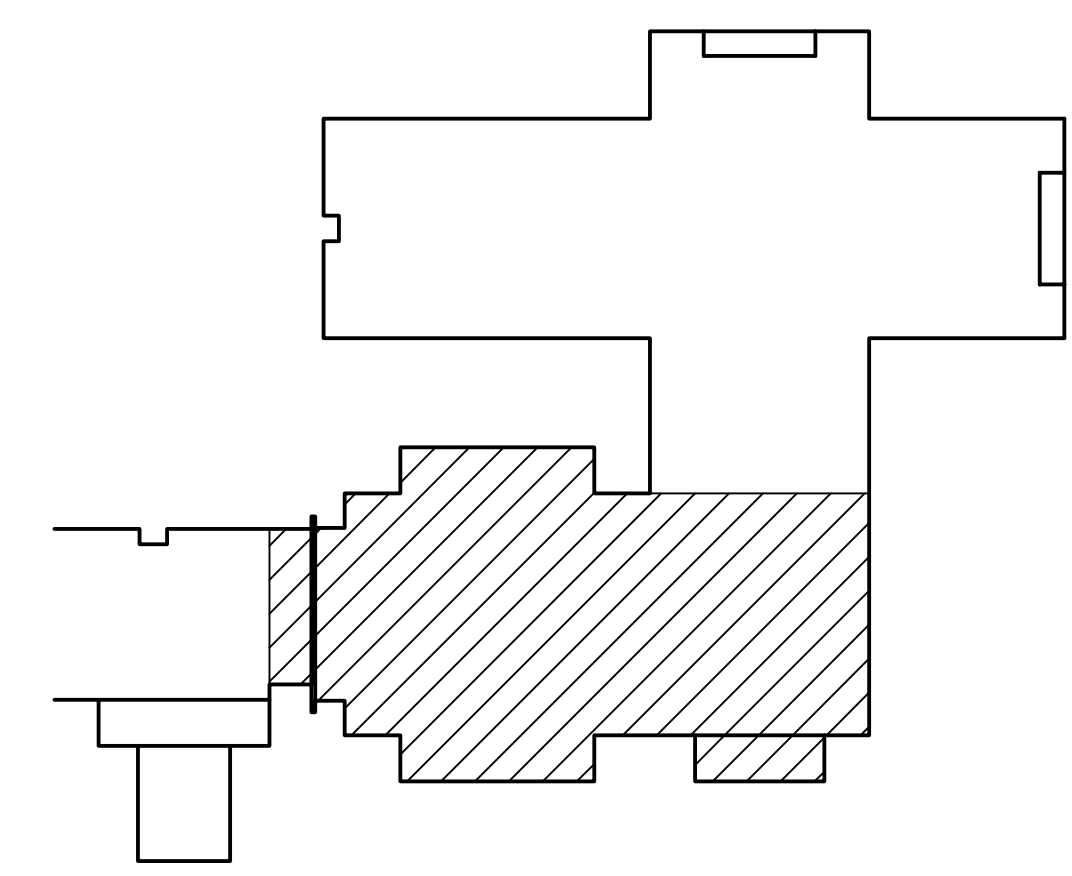
**A**  
**M5** PARTIAL ADDITION MECHANICAL PLAN  
SCALE: 1/8" = 1'-0"



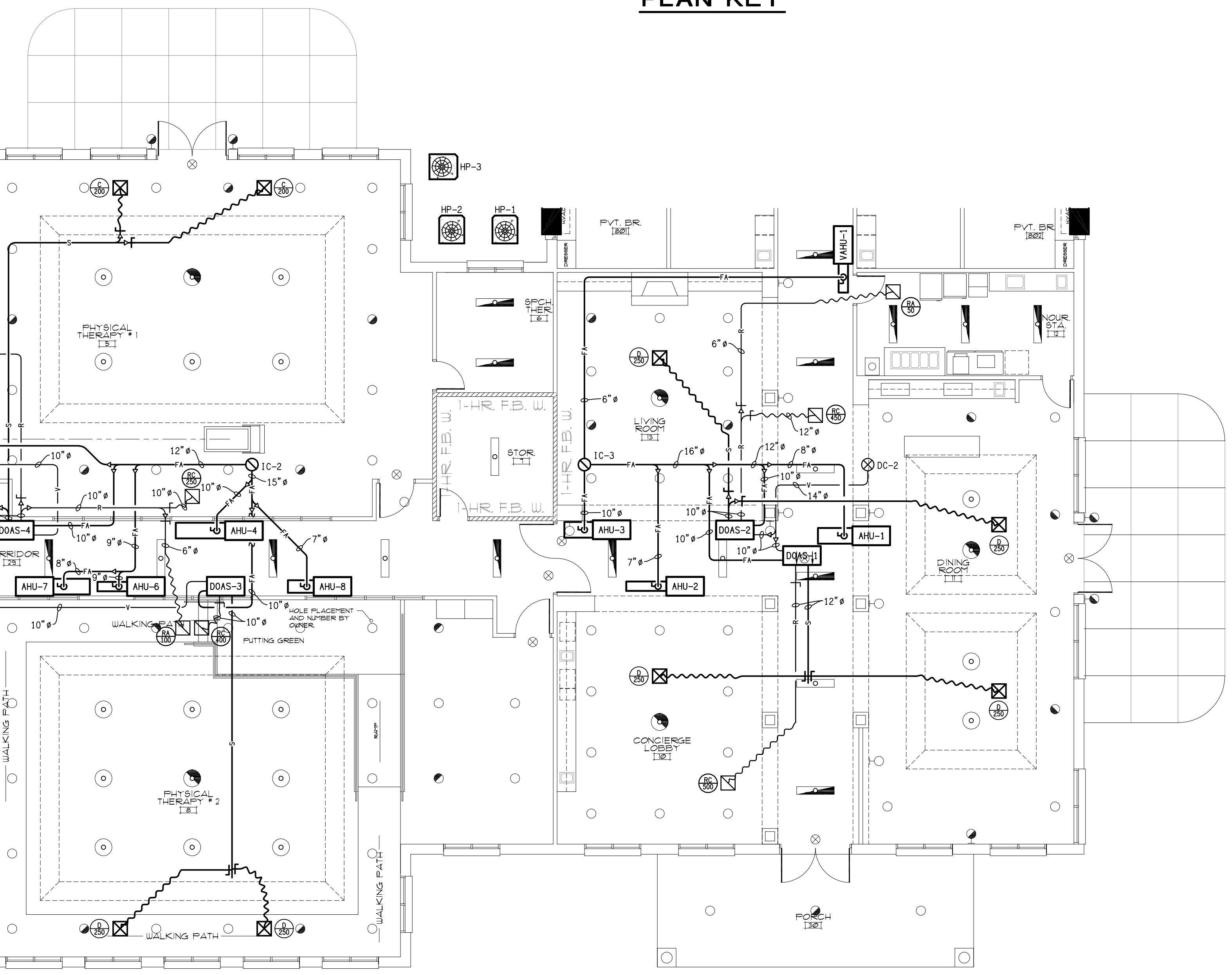
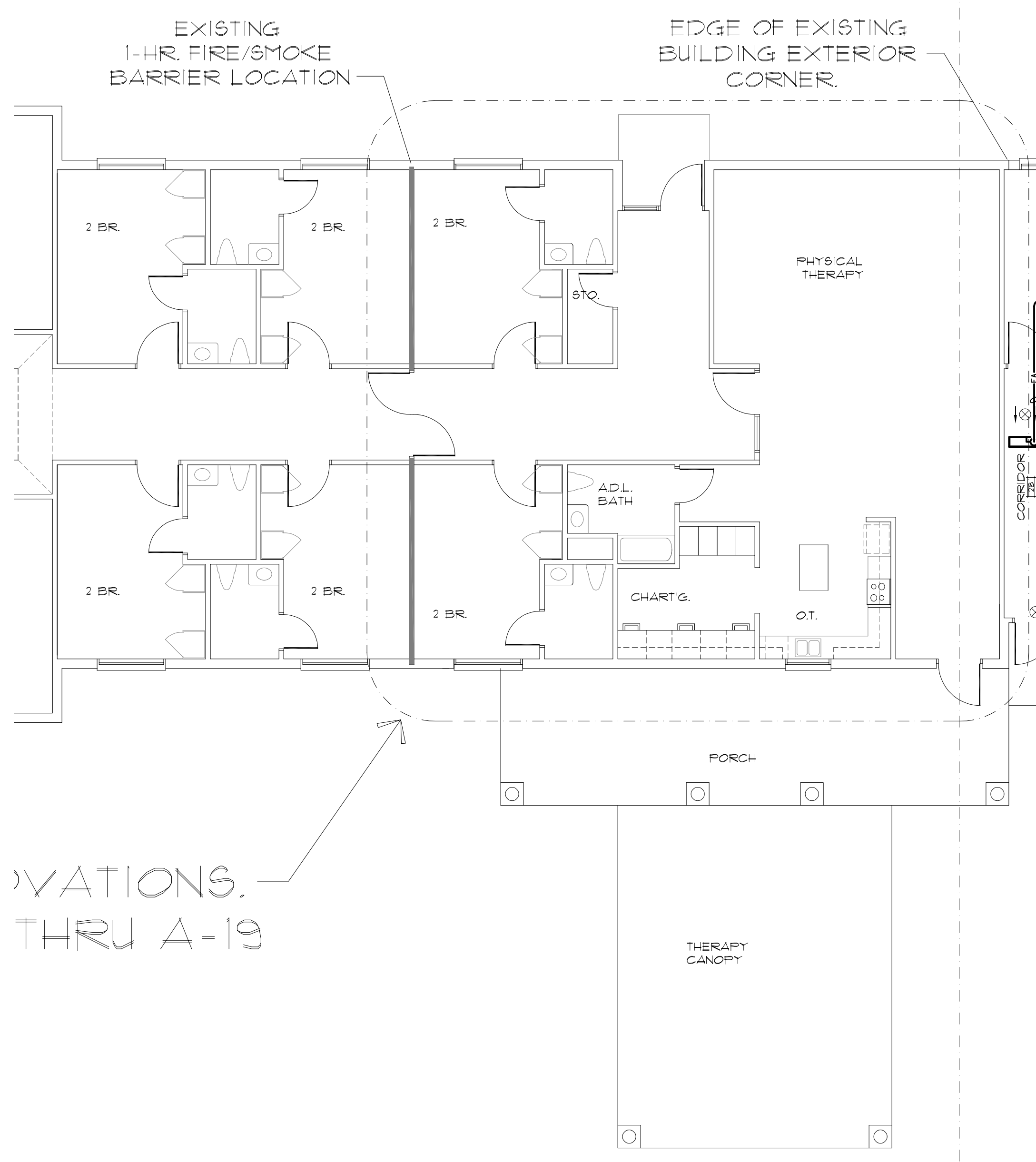
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**B PHASE 2 VENTILATION PLAN**  
M6 SCALE: 1/8" = 1'-0"



**PLAN KEY**



**A PARTIAL ADDITION VENTILATION PLAN**  
M6 SCALE: 1/8" = 1'-0"

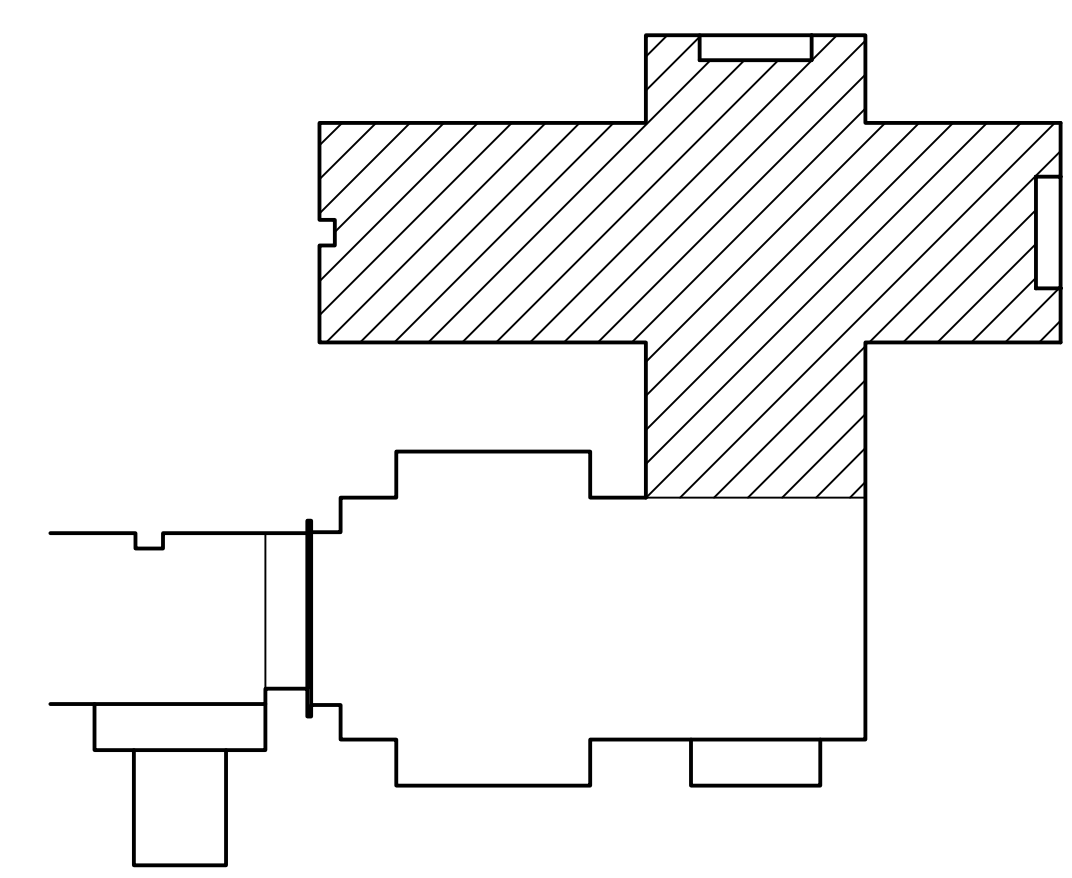
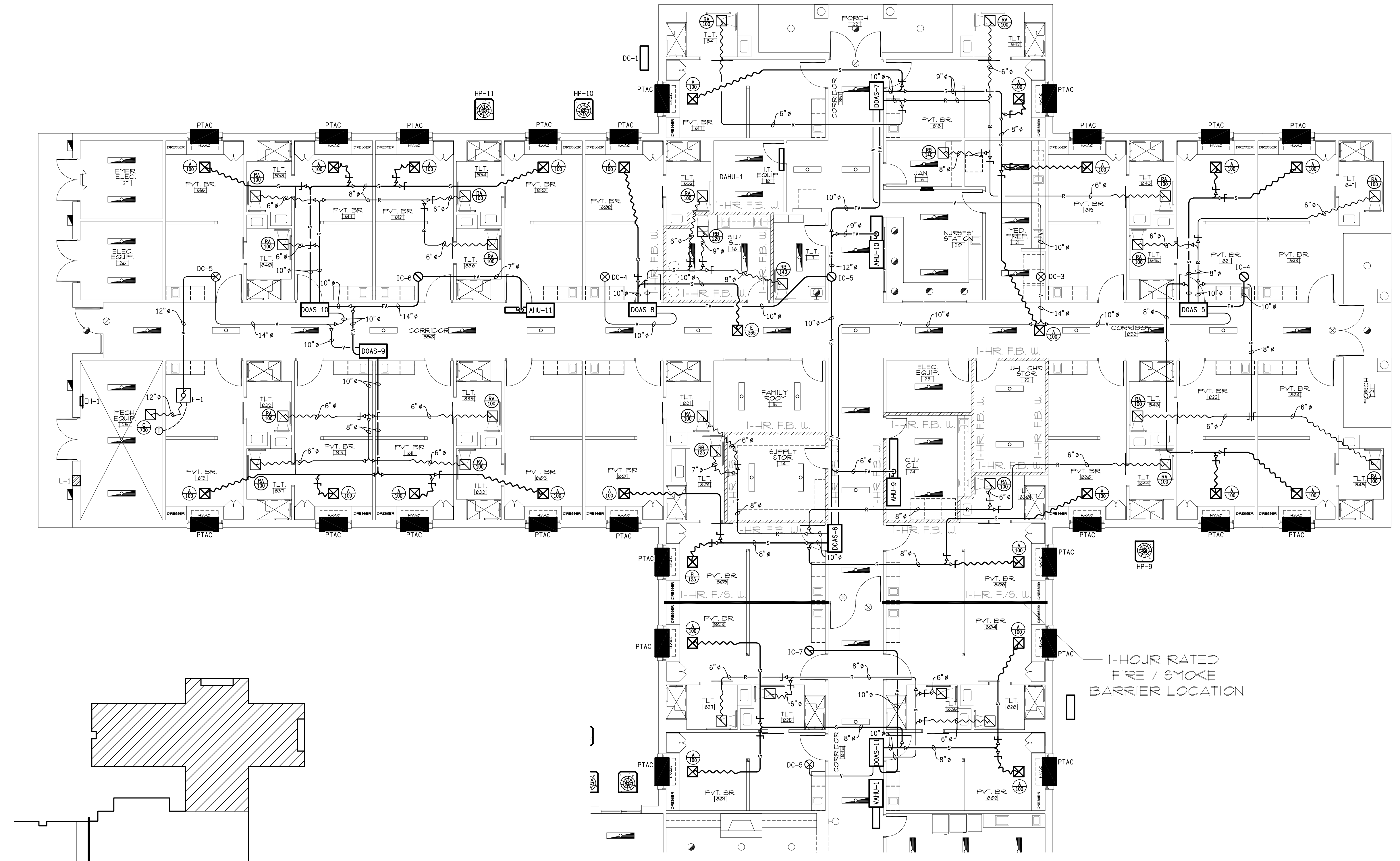
- KEY NOTES**
- ① 7" VENT FOR RANGE HOOD. WRAP DUCT IN 1HR FIRE WRAP FROM DRYWALL CEILING TO THE ROOF AND PROVIDE DISCHARGE CAP.

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REVISIONS			

MODIFICATIONS  
THRU A-19

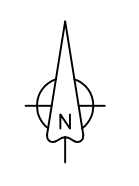
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PHASE ONE PROJECT LIMITS



**PLAN KEY**

**A M7 PARTIAL ADDITION VENTILATION PLAN**  
 SCALE: 1/8" = 1'-0"



symbol	date	description	by
REVISIONS			