

1  
M002

**LEVEL 1 DUCTWORK PLAN - OVERALL**

1" = 20'-0"

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01.30.2026

**SPRINGBROOK NURSING AND  
REHABILITATION CENTER  
ADDITION**

195 SPRINGBROOK AVE, CLAYTON, NC

**CONSTRUCTION DOCUMENTS**

FOR CONSTRUCTION

Revisions		
No.	Description	Date

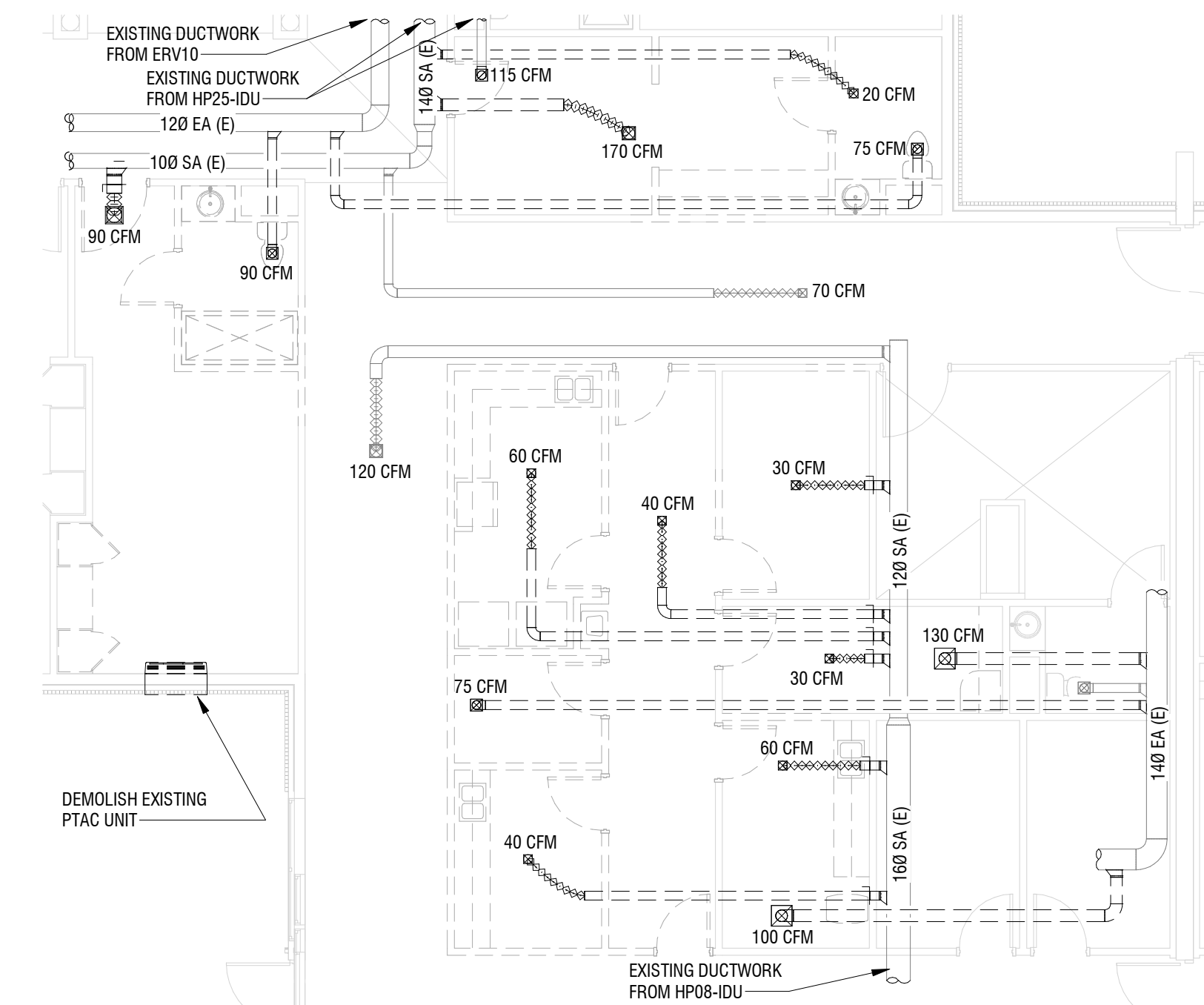
date: 02/06/2024  
commission: NH-3138

sheet title:  
**OVERALL LEVEL 1 DUCTWORK  
PLAN**

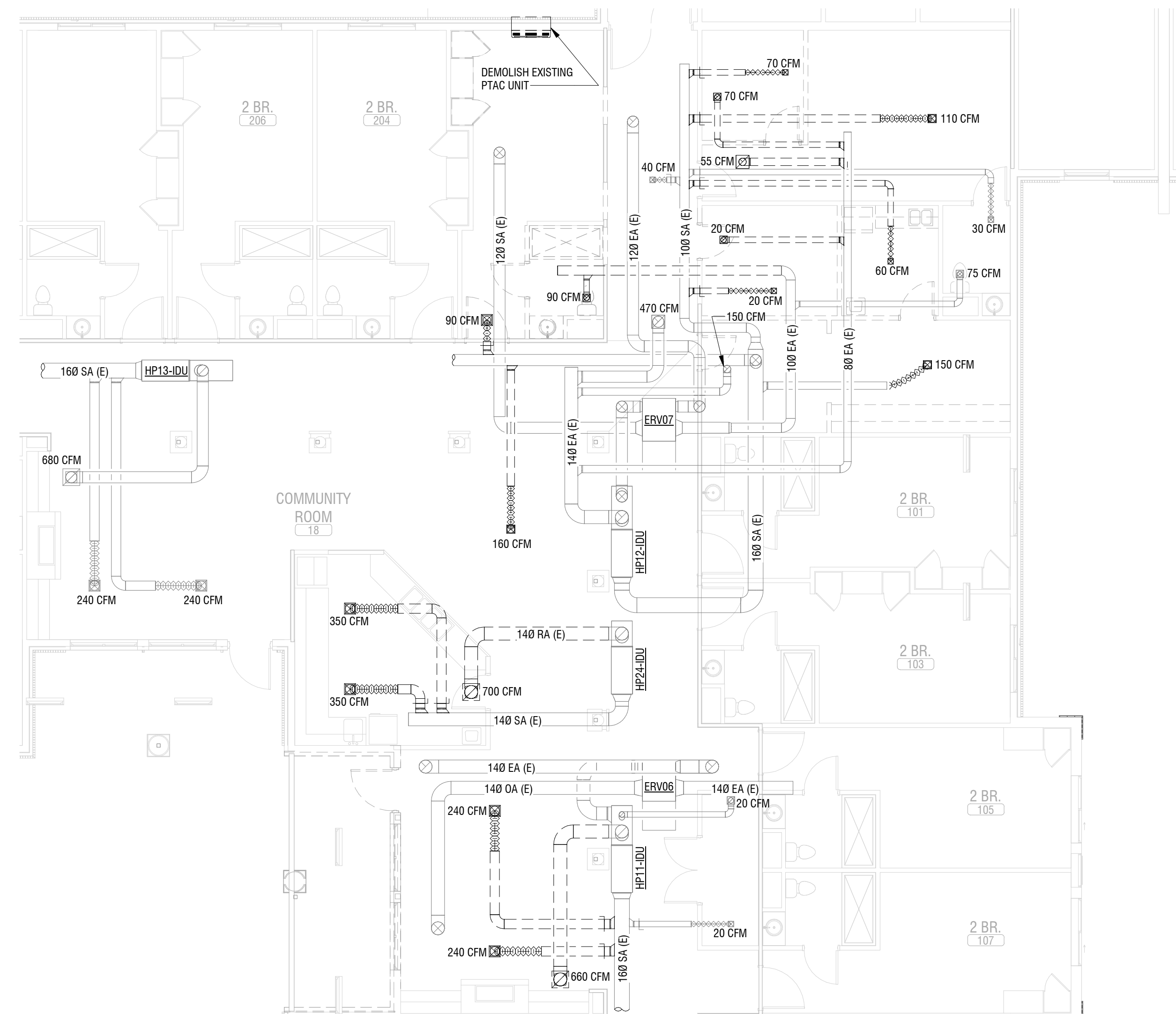
sheet number :

**M002**

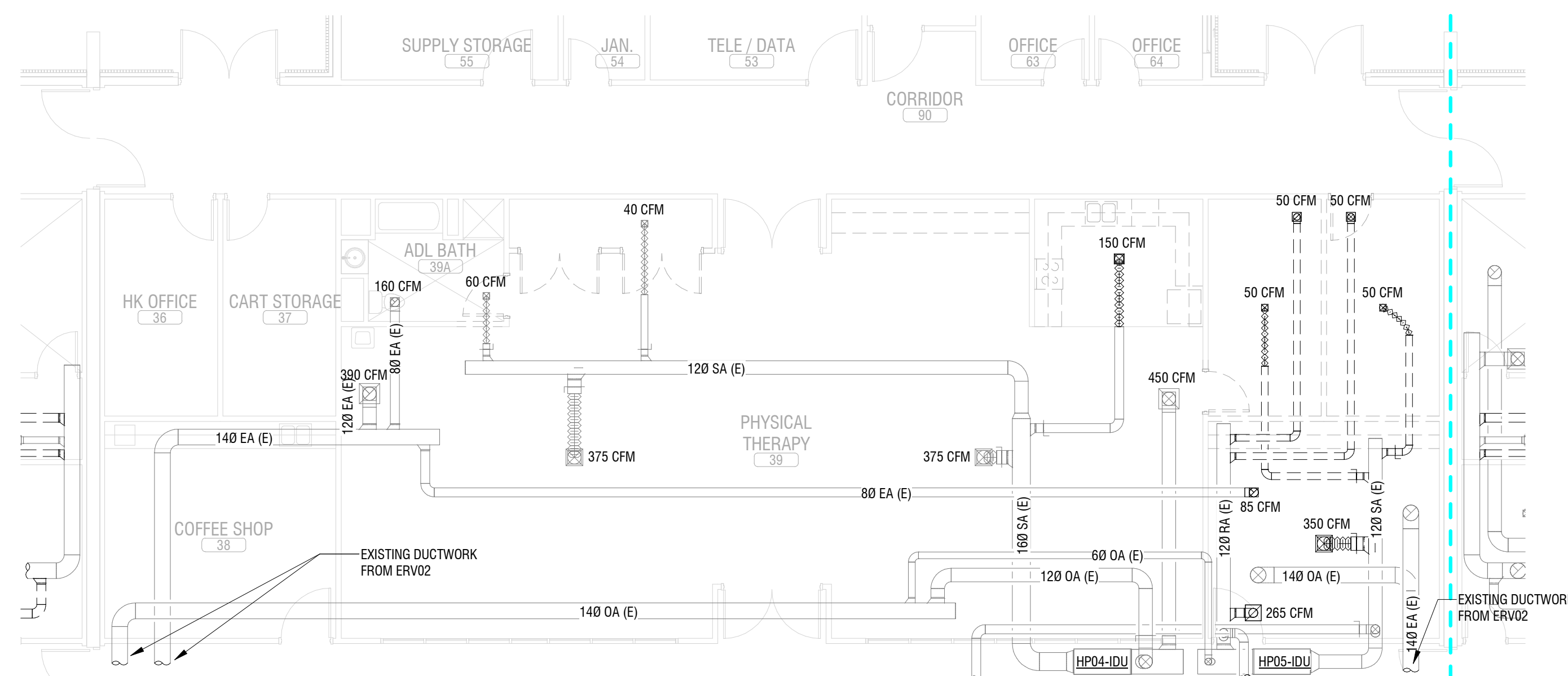




2 LEVEL 1 DEMOLITION DUCTWORK PLAN - BLDG A (NURSE STATION)  
MD101 1/8" = 1'-0"



# 1 MD101 LEVEL 1 DEMOLITION DUCTWORK PLAN - BLDG A (COMMUNITY ROOM) 1/8" = 1'-0"



3 LEVEL 1 DEMOLITION DUCTWORK PLAN - BLDG B  
MD101 1/8" = 1'-0"

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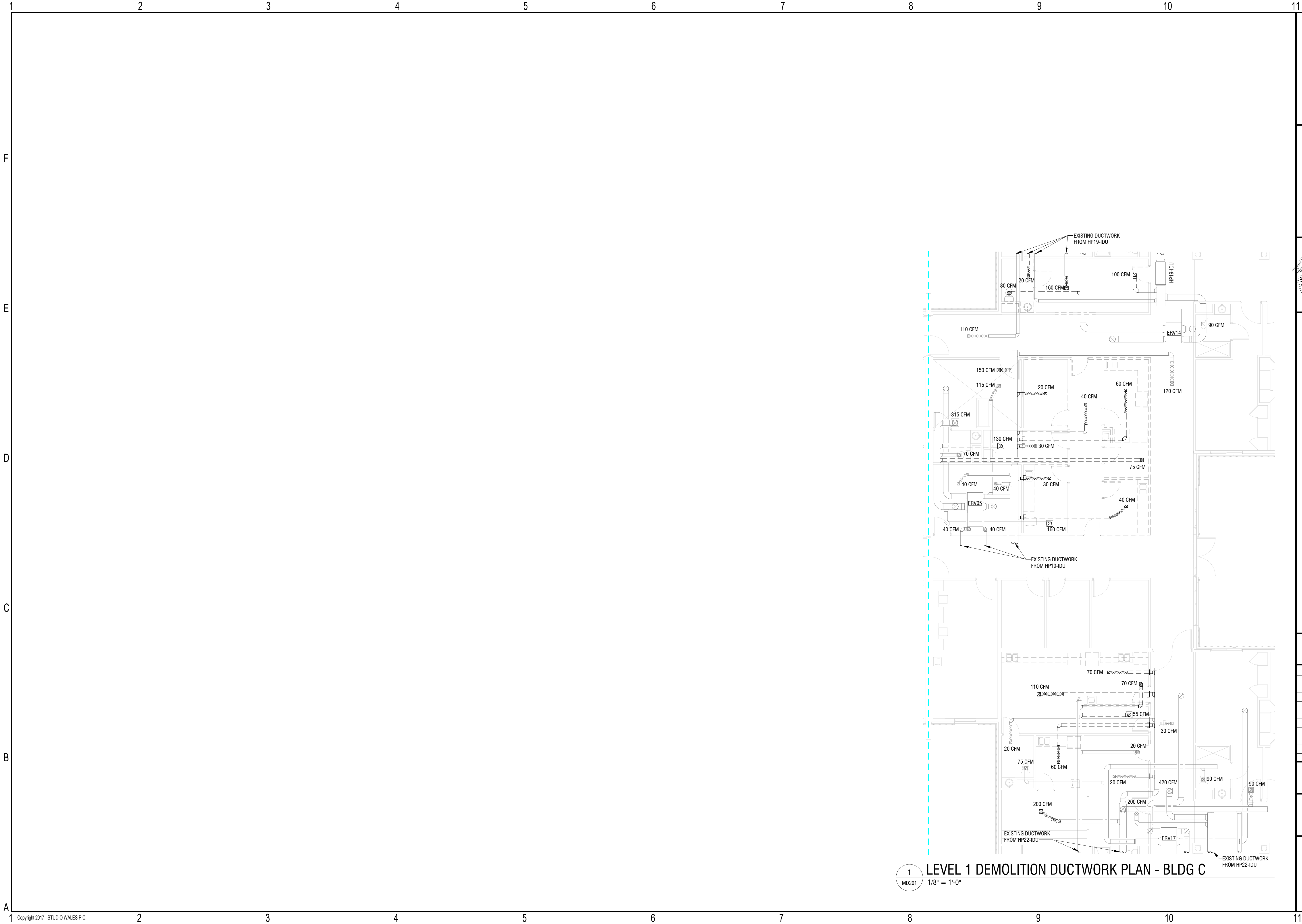
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sheet title:  
DEMOLITION DUCTWORK  
PLANS - BLDG A & B

sheet number :

MD101



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STATE OF NORTH CAROLINA  
Professional Engineer  
050139  
ANTHONY MCKENNA

CERT. NO.  
52804  
NORTH CAROLINA  
CHARLOTTE, N.C.

01.30.2026

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No.	Description	Date

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DEMOLITION DUCTWORK  
PLANS - BLDG C

sheet number :  

MD201

1  
MD201

1/8" = 1'-0"



MECHANICAL NOTES:

- ALL CEILINGS ARE FIRE RATED. PROVIDE SUITABLE RADIATION DAMPERS AT ALL DUCT, DIFFUSER OR GRILLE LOCATIONS.
- ALL PIPING PENETRATIONS THRU RATED PARTITIONS SHALL BE PER PENETRATION DETAILS. REFER TO ARCH.
- ALL OUTSIDE AIR INTAKES SHALL BE LOCATED 10'-0" MIN. FROM ANY PLUMBING VENT TERMINAL.
- ALL ROOF MOUNTED EQUIPMENT, INTAKES, CAPS, ETC. SHALL BE LOCATED ON THE REAR FACE OF THE ROOF.
- PAINT ALL ROOF VENTILATORS IN COLOR TO MATCH ROOF.
- BRANCH DUCT CONNECTION TO DIFFUSER OR GRILLE MAY HAVE 8'-0" LONG MAX. FLEX DUCT CONNECTOR.
- ALL BRANCH DUCTS SHALL HAVE BALANCING DAMPERS.
- BALANCE ALL FAN AND AIR CONDITIONING SYSTEMS TO CFMS INDICATED ON PLANS.
- SEE SPECS FOR PROCEDURE ON APPROVAL OF EQUIVALENT MATERIALS AND EQUIPMENT.
- EQUIPMENT AND DUCTWORK LOCATIONS IN ATTIC ARE APPROXIMATE BASED ON ASSUMED ROOF FRAMING ARRANGEMENTS. ADJUST AND COORDINATE WITH ACTUAL FIELD CONDITIONS AS REQUIRED TO PROVIDE CLEARANCES FOR CODE AND MAINTENANCE.
- REFRIGERANT PIPING RUNS SHALL BE SIZED AND ARRANGED PER MFR'S RECOMMENDATIONS. PROVIDE ACCUMULATOR, DRYER, TXV VALVE AND OTHER ACCESSORIES AS RECOMMENDED.
- COORDINATE REGISTER DIFFUSER LOCATIONS WITH LIGHTS, SMOKE DETECTORS ETC. ADJUST LOCATIONS AS REQUIRED.
- MECHANICAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION THAT ALL EQUIPMENT INSTALLED IN ATTIC CAN BE REMOVED THROUGH ACCESS OPENINGS PROVIDED IN ACCORDANCE WITH CODE.
- BUILDING ADDITION INCLUDES FULL COVERAGE FIRE ALARM. DUCT SMOKE DETECTORS ARE NOT REQUIRED.
- DAMPERS EQUIPPED WITH FUSIBLE LINKS, INTERNAL OPERATORS, OR BOTH SHALL BE PROVIDED WITH AN ACCESS DOOR THAT IS NOT LESS THAN 12-INCHES SQUARE OR PROVIDED WITH A REMOVABLE DUCT SECTION.

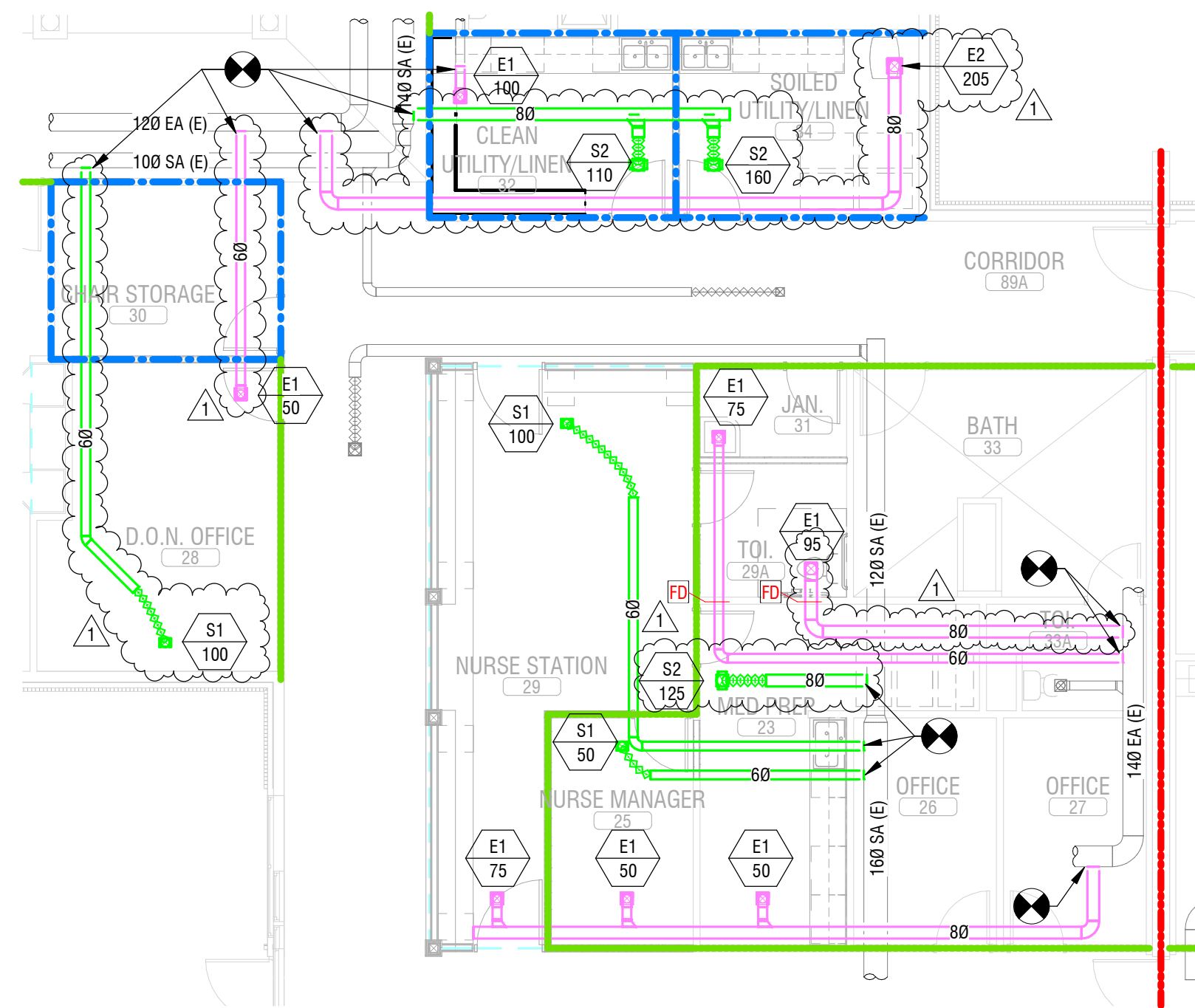
AIR BALANCE DESIGNATION - BLDG A & B						
NOTES: Balance CFM = Supply CFM - Return/Exhaust CFM Pressure Options: Positive, Negative or Neutral ACH = (Supply or Exhaust CFM * 60) / (Area * Room Height) : Room Height = 9'-0" Outdoor Air Quantities are flow-based and derived from ERV supply rates. ERVs provide 100% Outdoor Air.						
Room Name	Area (SF)	Supply (CFM)	Return/Exhaust (CFM)	Balance (CFM)	Pressure	Air Changes per Hour (ACH)
17 STAFF LOUNGE	416 SF	180	180	0	NEUTRAL	2.88
19 STAFF TRAINING	426 SF	150	150	0	NEUTRAL	2.35
20 OFFICE	126 SF	100	100	0	NEUTRAL	5.29
21 OFFICE	93 SF	100	100	0	NEUTRAL	7.17
23 COMMUNITY ROOM	1330 SF	1180	1180	0	NEUTRAL	5.91
24 OFFICE	99 SF	100	100	0	NEUTRAL	6.23
23 MED PREP	203 SF	125	50	75	POSITIVE	4.11
25 NURSE MANAGER	102 SF	50	50	0	NEUTRAL	3.27
29 NURSE STATION	357 SF	100	75	25	POSITIVE	1.87
29A TOI	62 SF	0	95	-95	NEGATIVE	10.22
31 JAN.	41 SF	0	75	-75	NEGATIVE	12.2
32 CLEAN UTILITY/LINEN	135 SF	110	100	10	POSITIVE	5.4
34 SOILED UTILITY/LINEN	135 SF	160	205	-45	NEGATIVE	10.12
40 OCC. THERAPY	350 SF	250	320	0	NEUTRAL	4.76
41 TOI	81 SF	0	125	-125	NEGATIVE	10.29
42 OCC. KITCHEN	105 SF	200	0	200	POSITIVE	12.7

ERV'S PROVIDE 100% OUTSIDE AIR DIRECTLY TO RETURN AIR PLENUMS OF EXISTING AIR HANDLERS. RATIO OF OUTSIDE AIR TO SUPPLY AIR SHOULD BE CONSIDERED TO BE 60%.

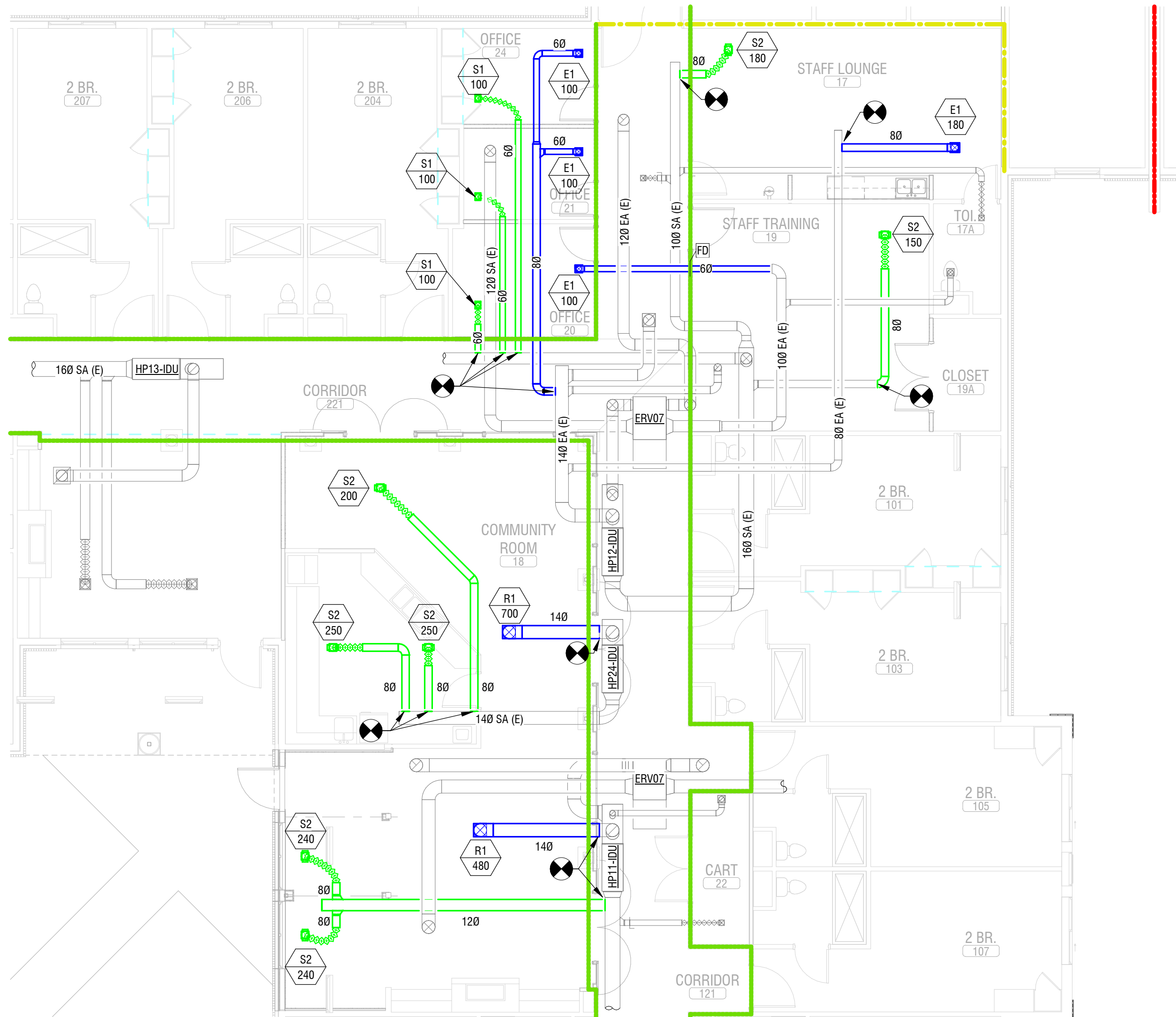
OCC. THERAPY 40 AND OCC. KITCHEN 42 ARE OPEN, CONTINUOUSLY CONNECTED SPACES EVALUATED AS A SINGLE AIR VOLUME.

40 OCC. THERAPY + 42 OCC. KITCHEN

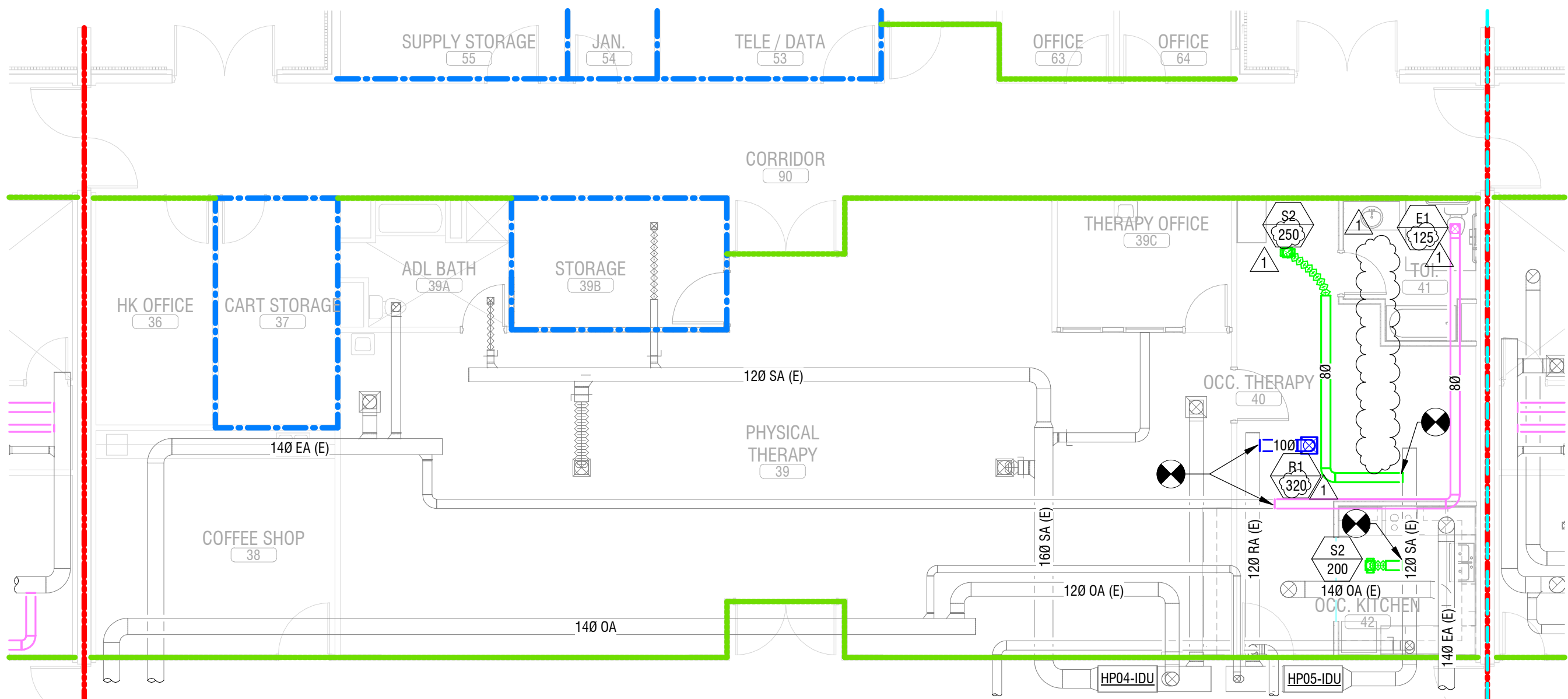
A: 455SF, H: 9'-0"  
SUPPLY: 455CFM (6.59 ACH)



2 LEVEL 1 DUCTWORK PLAN - BLDG A (NURSE STATION)  
M101 1/8" = 1'-0"



1 LEVEL 1 DUCTWORK PLAN - BLDG A (COMMUNITY ROOM)  
M101 1/8" = 1'-0"



3 LEVEL 1 DUCTWORK PLAN - BLDG B  
M101 1/8" = 1'-0"

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LEVEL 1 DUCTWORK PLAN -  
BLDG A & B

sheet number :

M101



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AIR BALANCE DESIGNATION - BLDG C

NOTES:

Balance CFM = Supply CFM - Return/Exhaust CFM

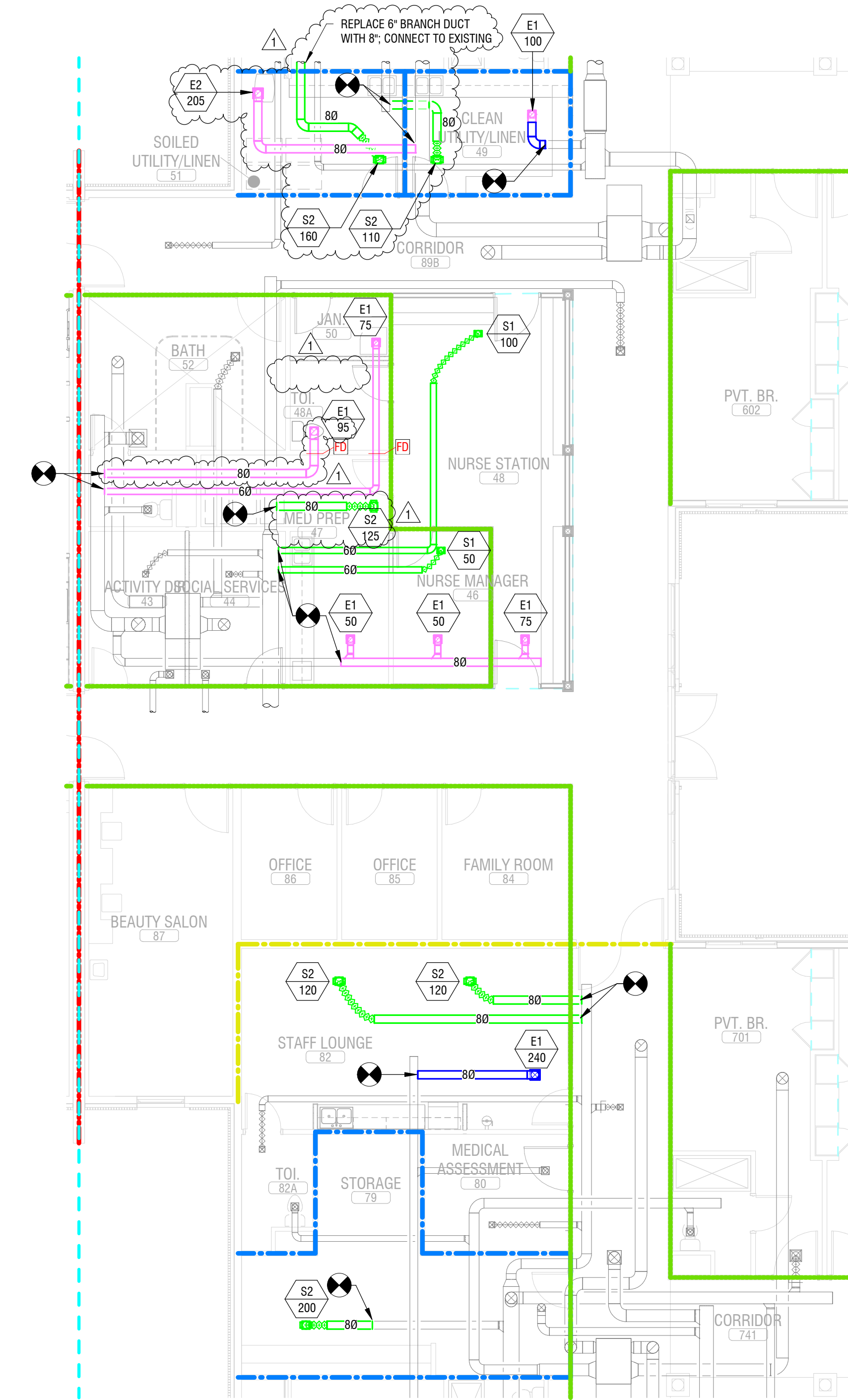
Pressure Options: Positive, Negative or Neutral

ACH = (Supply or Exhaust CFM \* 60) / (Area \* Room Height) ; Room Height = 9'-0"

Outdoor Air Quantities are flow-based and derived from ERV supply rates. ERVs provide 100% Outdoor Air.

Room Name	Area (SF)	Supply (CFM)	Return/Exhaust (CFM)	Balance (CFM)	Pressure	Air Changes per Hour (ACH)
46 NURSE MANAGER	102 SF	50	50	0	NEUTRAL	3.27
47 MED PREP	203 SF	125	50	75	POSITIVE	4.11
48 NURSE STATION	359 SF	100	75	25	POSITIVE	1.86
48A TOI	62 SF	0	95	-95	NEGATIVE	10.22
49 CLEAN UTILITY/LINEN	136 SF	110	100	10	POSITIVE	5.4
50 JAN.	41 SF	0	75	-75	NEGATIVE	12.2
51 SOILED UTILITY/LINEN	135 SF	160	205	-45	NEGATIVE	5.4
79 STORAGE	362 SF	200	200	0	NEUTRAL	3.68
82 STAFF LOUNGE	416 SF	240	240	0	NEUTRAL	3.85

ERV'S PROVIDE 100% OUTSIDE AIR DIRECTLY TO RETURN AIR PLENUMS OF EXISTING AIR HANDLERS. RATIO OF OUTSIDE AIR TO SUPPLY AIR SHOULD BE CONSIDERED TO BE 60%.

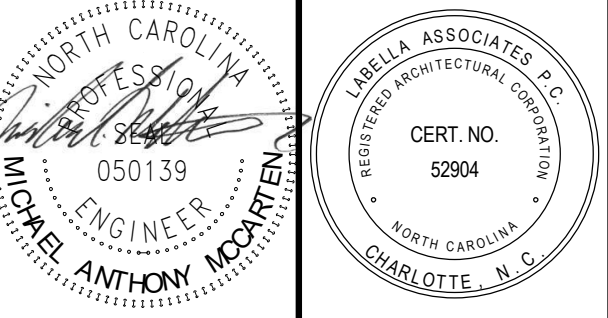


1 LEVEL 1 DUCTWORK PLAN - BLDG C  
1/8" = 1'-0"

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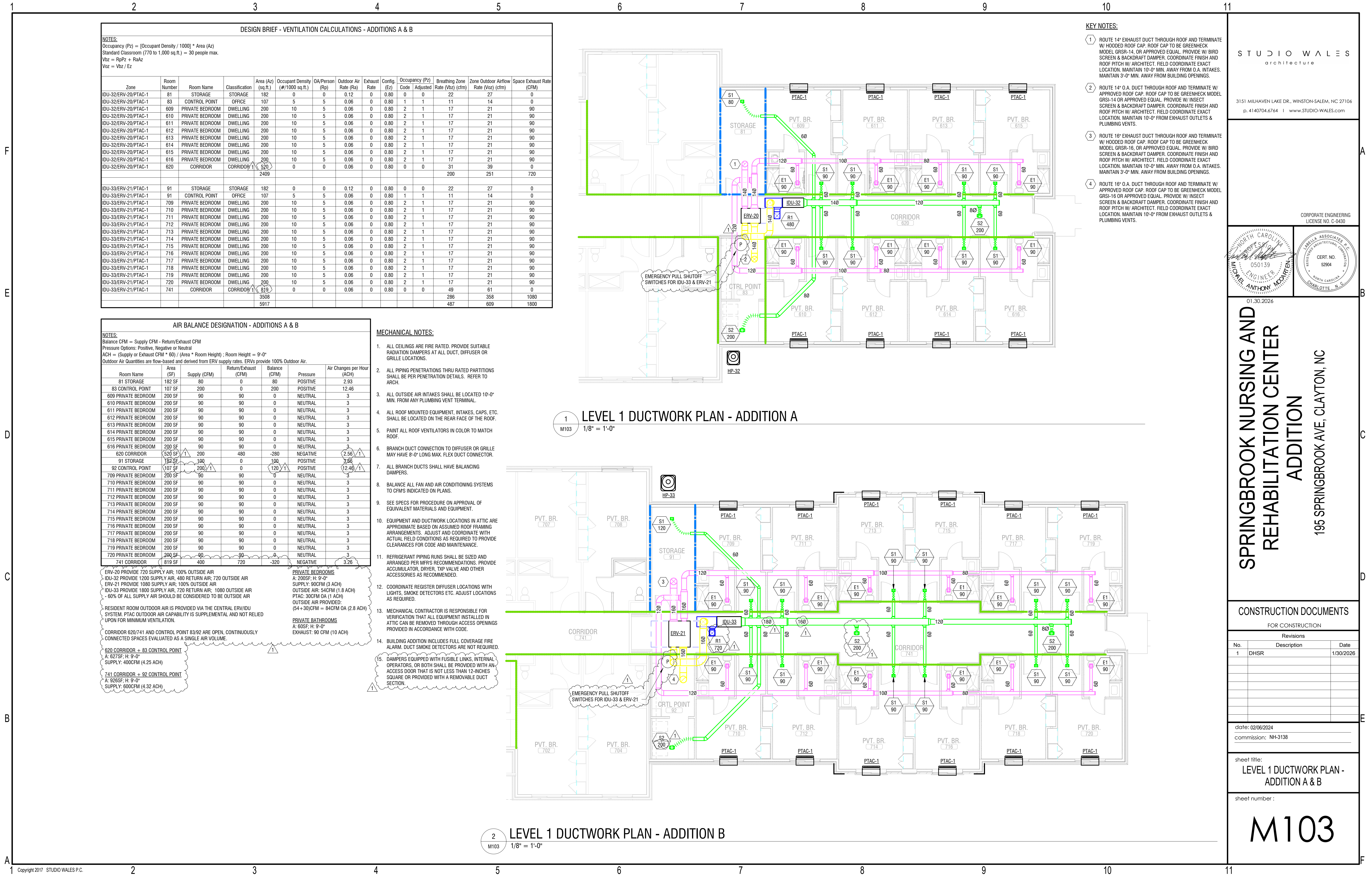
sheet title:

LEVEL 1 DUCTWORK PLAN -  
BLDG C

sheet number :

M102

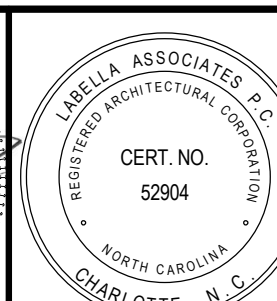
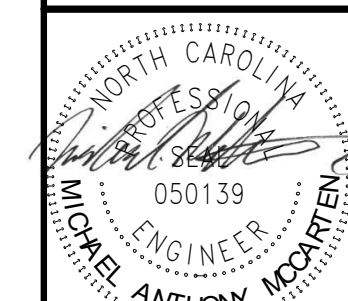




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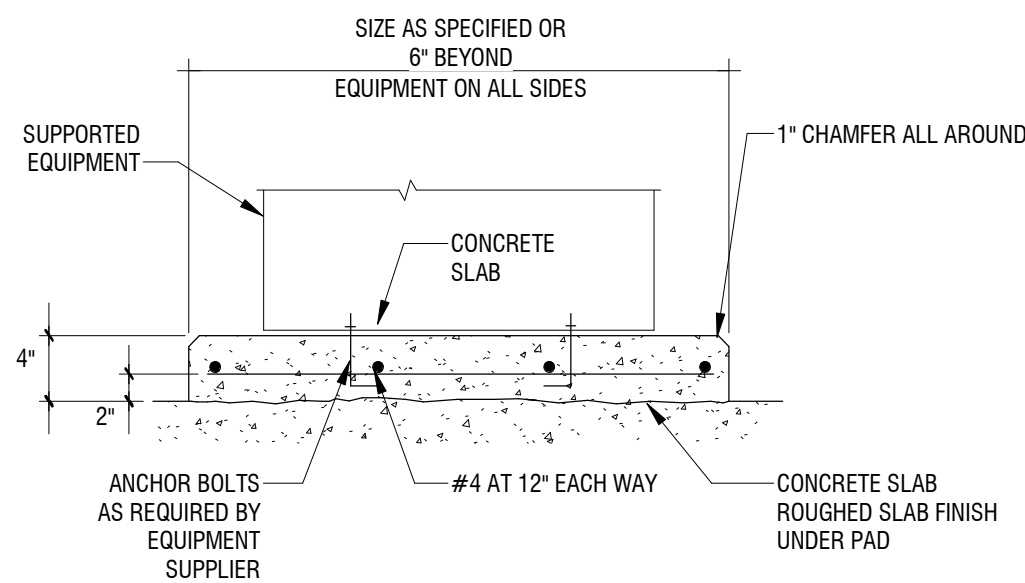
commission: NH-3138

sheet title:  
LEVEL 1 DUCTWORK PLAN -  
ADDITION A & B

sheet number :

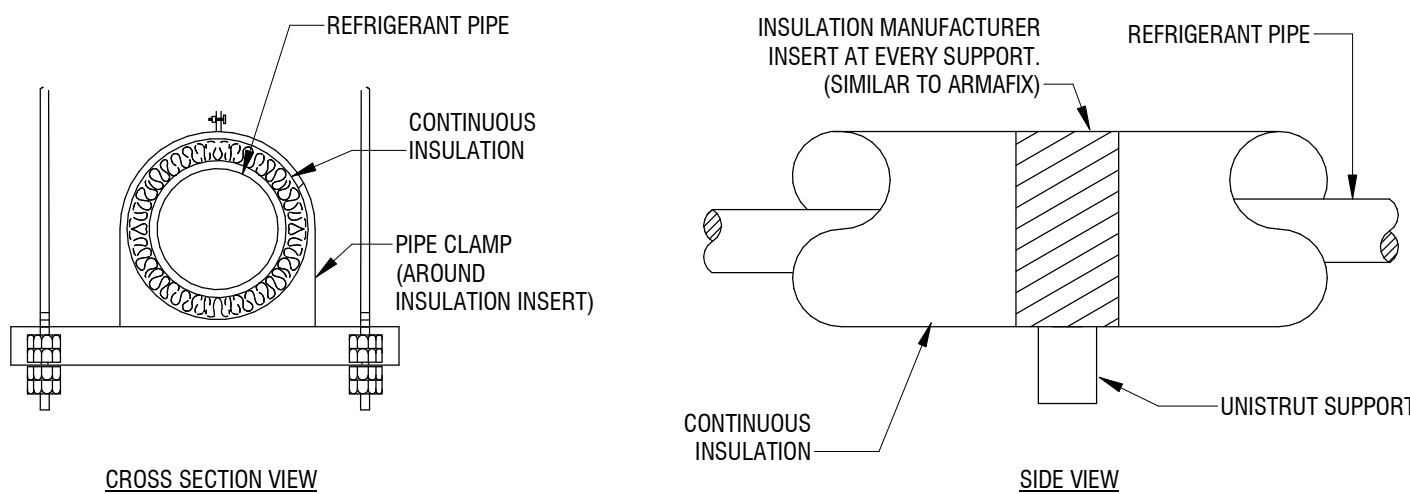
M103





7 S - HOUSEKEEPING PAD DETAIL

M501 NOT TO SCALE

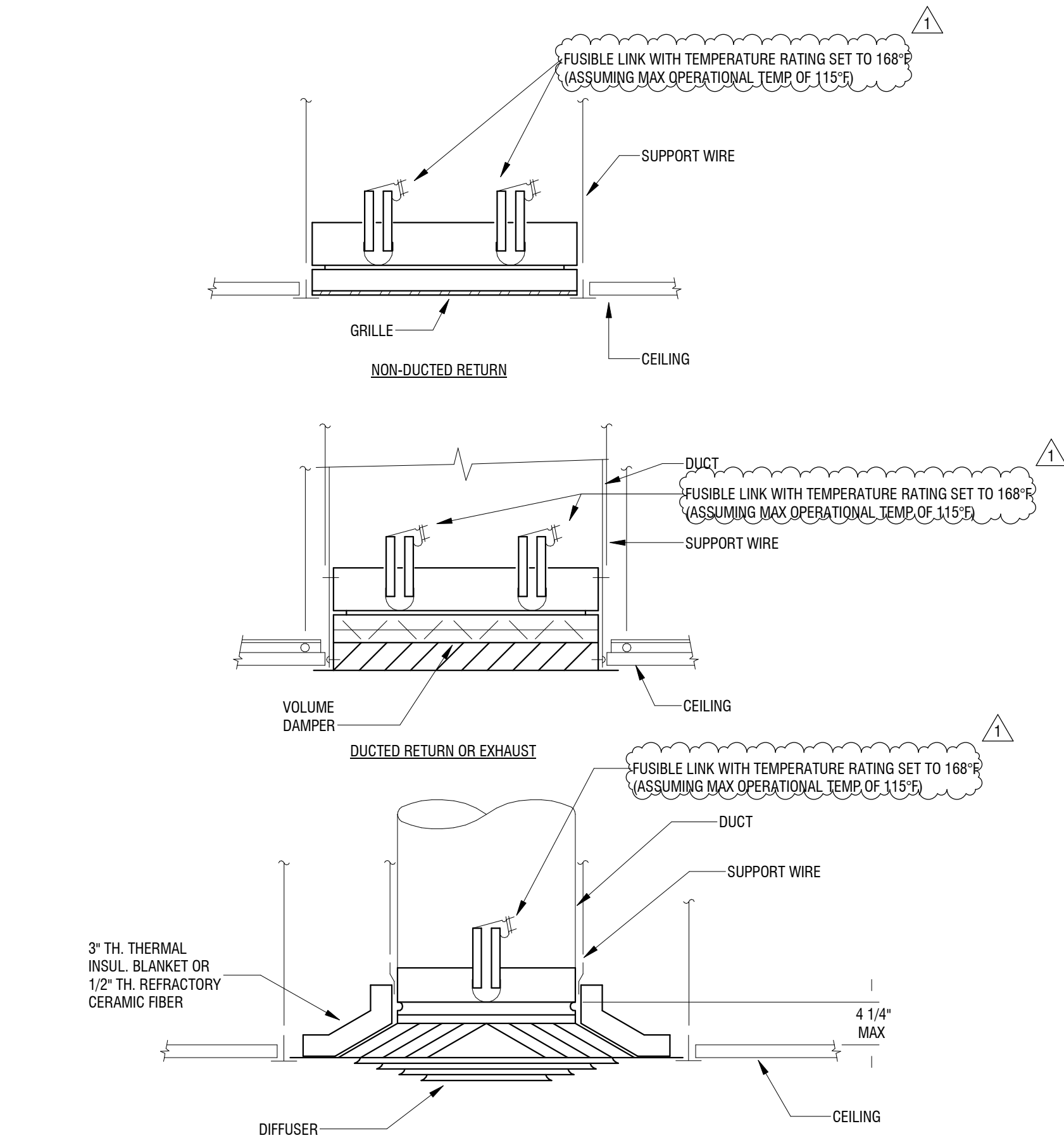


6 PIPE - REFRIGERANT PIPING SUPPORT DETAIL

M501 NOT TO SCALE

NOTES:

1. PROVIDE INSULATION CONTINUOUS THROUGH SUPPORT.
2. PROVIDE MANUFACTURERS INSULATION INSERT AT EACH PIPE CLAMP.
3. PROVIDE CLAMP AROUND INSULATION INSERT.
4. INSTALL INSULATION/INSERT PER MANUFACTURERS RECOMMENDATION.
5. PROVIDE PVC JACKET AROUND PIPE IN ALL EXPOSED LOCATIONS AND EXTERIOR INSTALLATION.

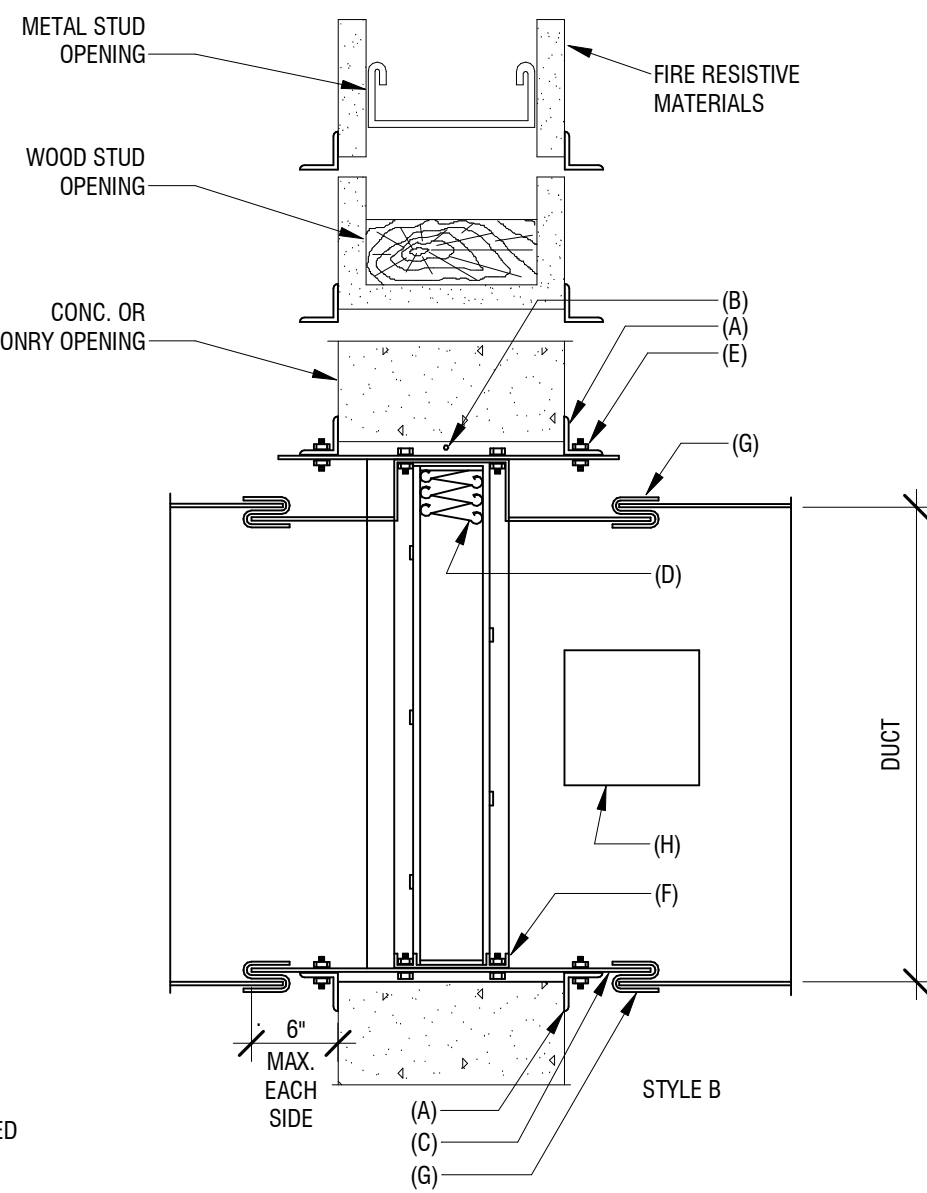


5 DUCT - FD - FIRE DAMPER DETAILS AT CEILING PENETRATION

M501 NOT TO SCALE

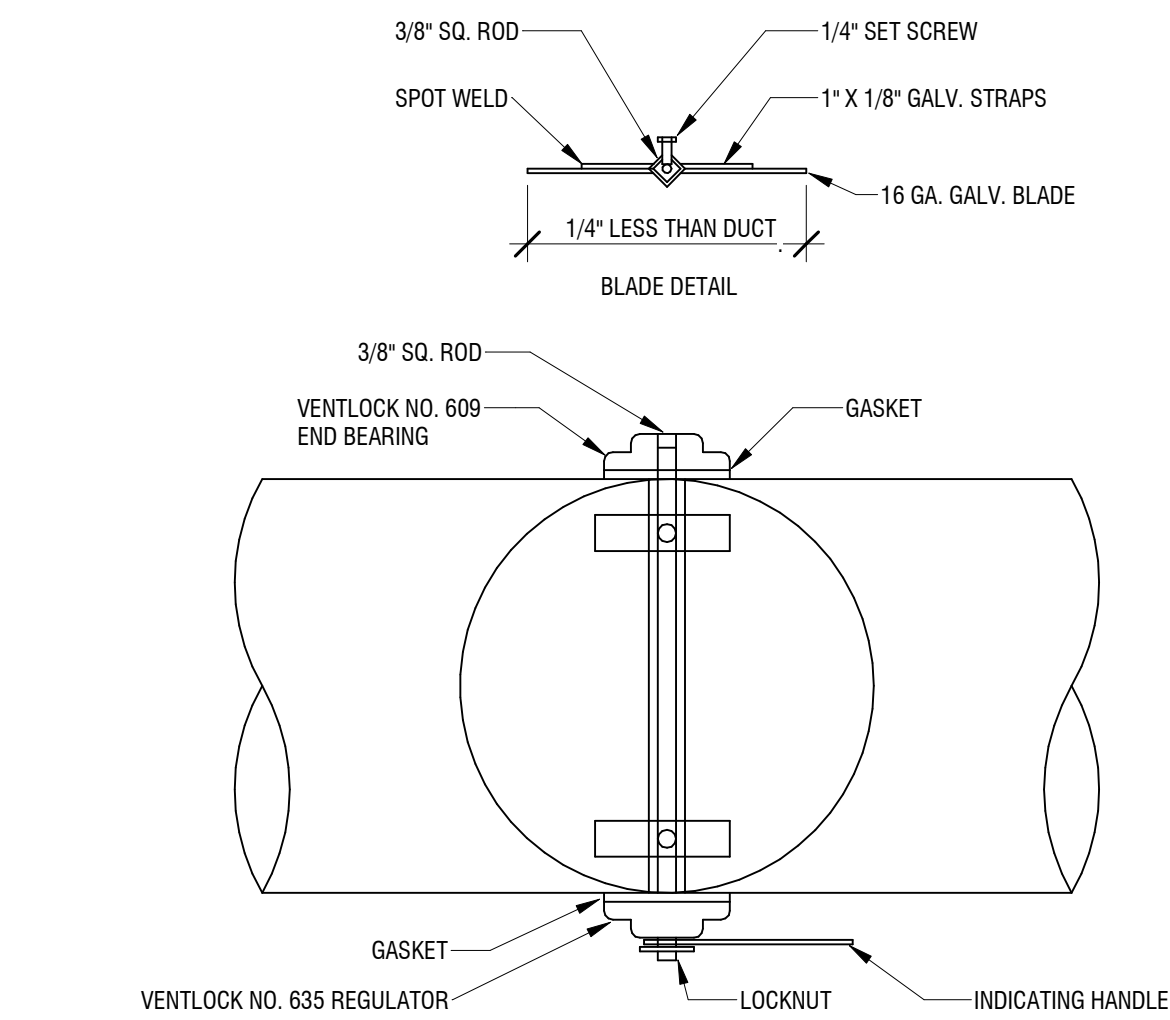
- (A) RETAINING ANGLE: SHALL BE MINIMUM OF 1-1/2"x1-1/2"x1/4" GA. FASTEN TO SLEEVE ONLY WITH 1/4" DIA. BOLTS & NUTS ON 8" CENTERS & WITH MINIMUM OF TWO CONNECTIONS IN EACH SIDE. RETAINING ANGLES SHALL OVERLAP WALL A MINIMUM OF ONE INCH ON ALL FOUR SIDES.
- (B) CLEARANCE: OPENINGS IN WALL OR FL. SHALL BE 1/8" PER FOOT LARGER THAN DAMPER DIMENSIONS (3/16" FOR STAINLESS STEEL) MINIMUM CLEARANCE OF 1/4" REQUIRED IN BOTH DIRECTIONS.
- (C) STEEL SLEEVE: 14 GAGE WITH BREAKAWAY CONNECTIONS.
- (D) FIRE DAMPER W/ FUSIBLE LINK WITH TEMPERATURE RATING SET TO 168°F (ASSUMING MAX OPERATIONAL TEMP OF 115°F); UL BLADE TYPE.
- (E) BOLTS AND NUTS: SECURE RETAINING ANGLES TO SLEEVE ONLY ON 8" CENTERS WITH 1/4" DIAMETER BOLTS & NUTS AND WITH A MINIMUM OF TWO CONNECTIONS IN EACH SIDE.
- (F) SECURE DAMPER TO SLEEVE ON SAME SPACING AS ANGLES AS RECOMMENDED BY SMACNA. BREAKAWAY CONNECTIONS: PROVIDE.
- (G) BREAKAWAY CONNECTIONS AT JOINTS BETWEEN DUCTS AND SLEEVE PER SMACNA RECOMMENDATIONS.
- (H) ACCESS DOOR

NOTE: FOR REFERENCE ONLY- USE MANUFACTURER PROVIDED UL LISTED INSULATION REQUIREMENTS.



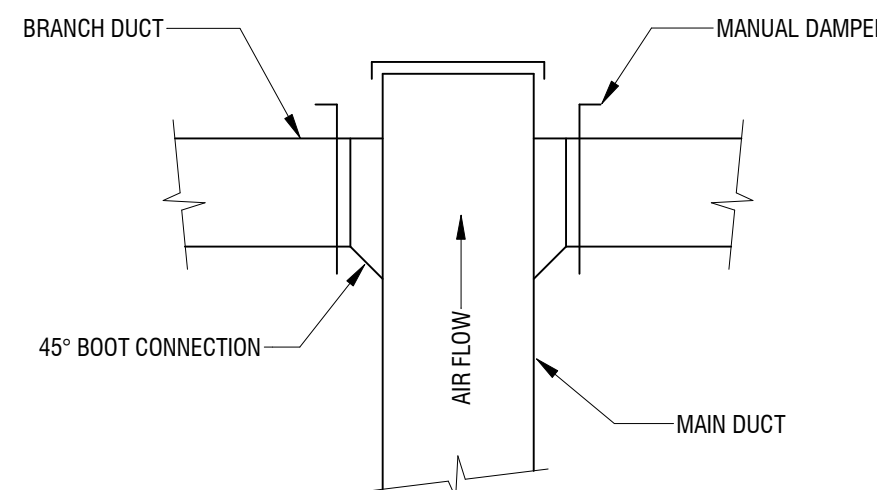
4 DUCT - FD - FIRE DAMPER DETAIL

M501 NOT TO SCALE



3 DUCT - ROUND VOLUME DAMPER DETAIL

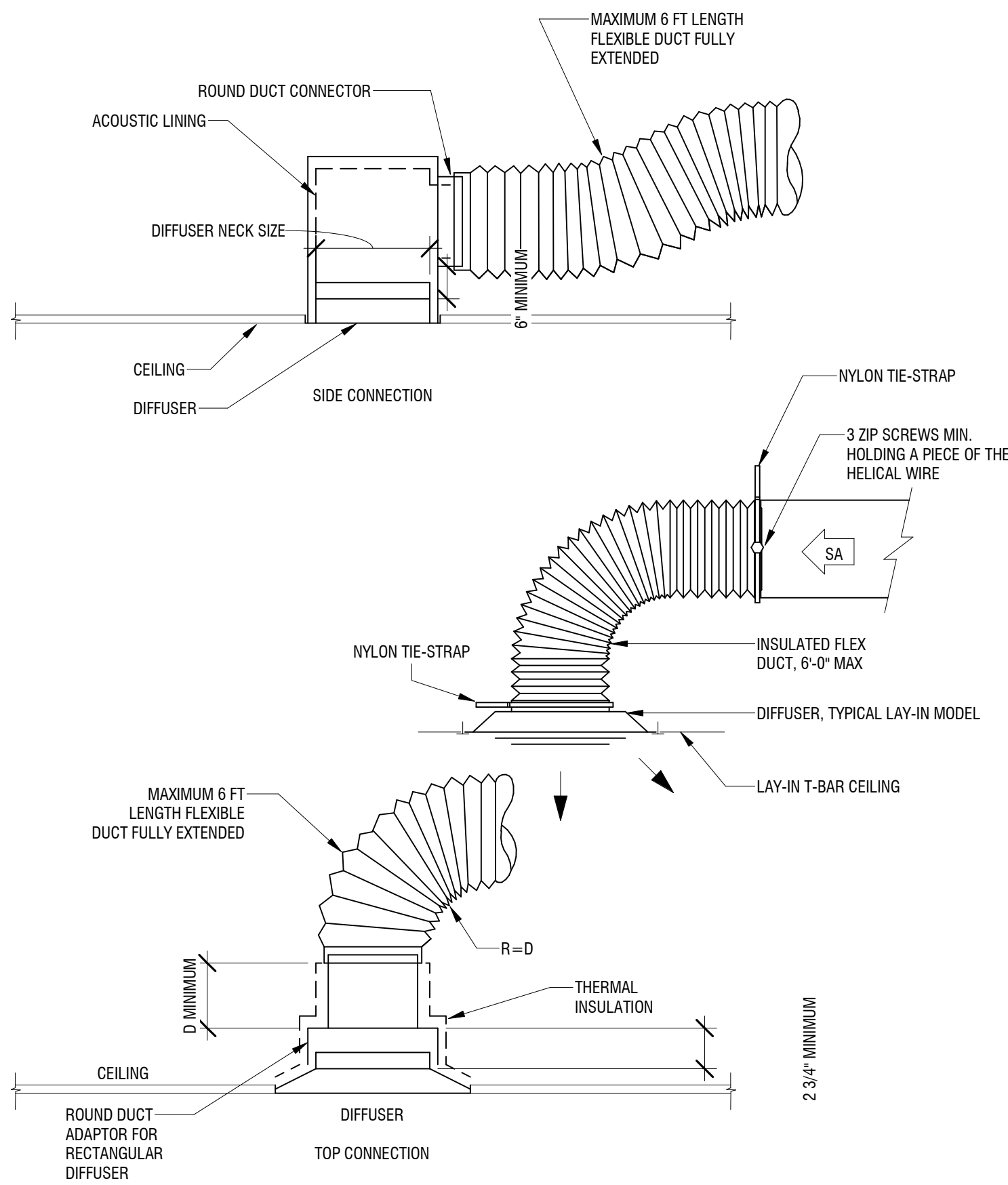
M501 NOT TO SCALE



2 DUCT - DUCT TEE BRANCH TAKE-OFF DETAIL

M501 NOT TO SCALE

NOTE:  
AIR FLOW FOR SUPPLY SYSTEM IS SHOWN. AIR FLOW FOR EXHAUST SYSTEM IS OPPOSITE.



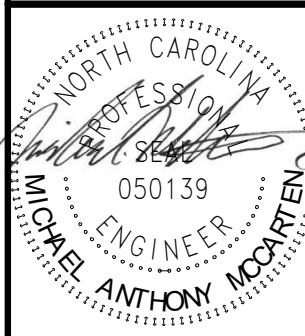
1 DUCT - AT - DIFFUSER CONNECTION DETAIL

M501 NOT TO SCALE

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sheet title:  
MECHANICAL DETAILS

sheet number :

M501



SPLIT SYSTEM HEAT PUMP SCHEDULE																					
INDOOR UNIT TAG	OUTDOOR UNIT TAG	LOCATION	COOLING PERFORMANCE			HEATING PERFORMANCE		INDOOR UNIT						OUTDOOR UNIT					MANUFACTURER	MODEL	NOTES
			CAPACITY (MBH)	EER	REFRIG. TYPE	CAPACITY @ 47°F (MBH)	CAPACITY @ 17°F (MBH)	DRY CFM	WEIGHT (lb)	POWER	MAX FUSE	MCA	FAN FLA	WEIGHT (lb)	POWER	MAX FUSE	MCA	FAN FLA			
IDU-32	HR-32	CORRIDOR 620	31.7	11.7	R-454B	32.0	21.8	1200	139	208V/1Ph/60Hz	30	27.0	3.9	222	208V/1Ph/60Hz	30	19.8	0.64	TRANE	STEM40D44C819A / STWRS048N1	3.6kW HEATER; PROVIDE MERV 13 FILTERS
IDU-33	HP-33	CORRIDOR 741	48.8	12.0	R-454B	44.0	28.8	1800	174	208V/1Ph/60Hz	60	52.0	6.8	222	208V/1Ph/60Hz	40	26.0	2.8	TRANE	STEM60D4C8H41 / STWRS048N1	9.6kW HEATER; PROVIDE MERV 13 FILTERS

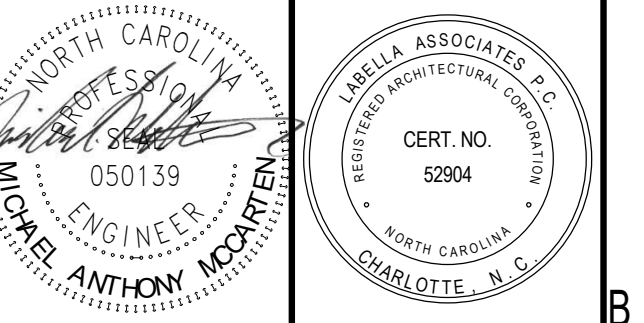
ENERGY RECOVERY VENTILATOR SCHEDULE																		
No.	SERVING	SUPPLY CFM	RETURN CFM	OUTSIDE CFM	EXHAUST CFM	SUPPLY ESP	EXHAUST ESP	ENERGY PERFORMANCE					V/Hz/Ph	MCA (A)	MAX FUSE	MANUFACTURER	MODEL	NOTES
								SUPPLY TEMP (°F)	NET FLOW (CFM)	POWER (hp)	SENSIBLE EFFICIENCY (%)	LATENT RECOVERY MOISTURE						
ERV-20	ADDITION A BEDROOMS	720	720	720	720	0.25	0.37	78.8	720	0.24	1.02	76%	120/60/1	20.5	25	GREENHECK	MINIVENT-750-VG	PROVIDE MERV 13 FILTERS
ERV-21	ADDITION B BEDROOMS	1080	1080	1080	1080	0.25	0.37	78.8	1080	0.33	1.03	80%	208/60/1	12.6	15	GREENHECK	ERV-20-15L	PROVIDE MERV 13 FILTERS

No.	NECK SIZE	FACE SIZE	SERVICE	MATERIAL	DAMPER	FINISH	MOUNTING	USE	DESCRIPTION	MANUFACTURER	MODEL	NOTES
E1	6"x6"	8"x6"	EXHAUST	ST	YES	WE	SURFACE	EXHAUST	EXHAUST GRILLE 45 DEG DEFLECTION	PRICE	530	
E2	8"x8"	10"x10"	EXHAUST	ST	YES	WE	SURFACE	EXHAUST	EXHAUST GRILLE 45 DEG DEFLECTION	PRICE	530	
R1	14"x14"	16"x16"	RETURN	ST	YES	WE	SURFACE	SUPPLY	RETURN GRILLE 45 DEG DEFLECTION	PRICE	530	
S1	6"x6"	8"x6"	SUPPLY	ST	YES	WE	SURFACE	SUPPLY	SUPPLY GRILLE DOUBLE DEFLECTION	PRICE	510	
S2	10"x4"	10"x6"	SUPPLY	ST	YES	WE	SURFACE	SUPPLY	SUPPLY GRILLE DOUBLE DEFLECTION	PRICE	510	

PTAC SCHEDULE											
No.	COOLING TOTAL BTUH	COOLING SENS. BTUH	CFM HIGH/LOW	ELECTRIC DATA	MCA	MOCp	HEATING BTU	COP	NOTES	MANUFACTURER	MODEL
PTAC-1	7.1	6.9	360/205	208V/1PH	13.6	20	9.4	4.0	2.7 KW HEATER	GE	AZ65H07DAB

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Commission: NH-3138

Sheet title:

MECHANICAL SCHEDULES

Sheet number :

M601