

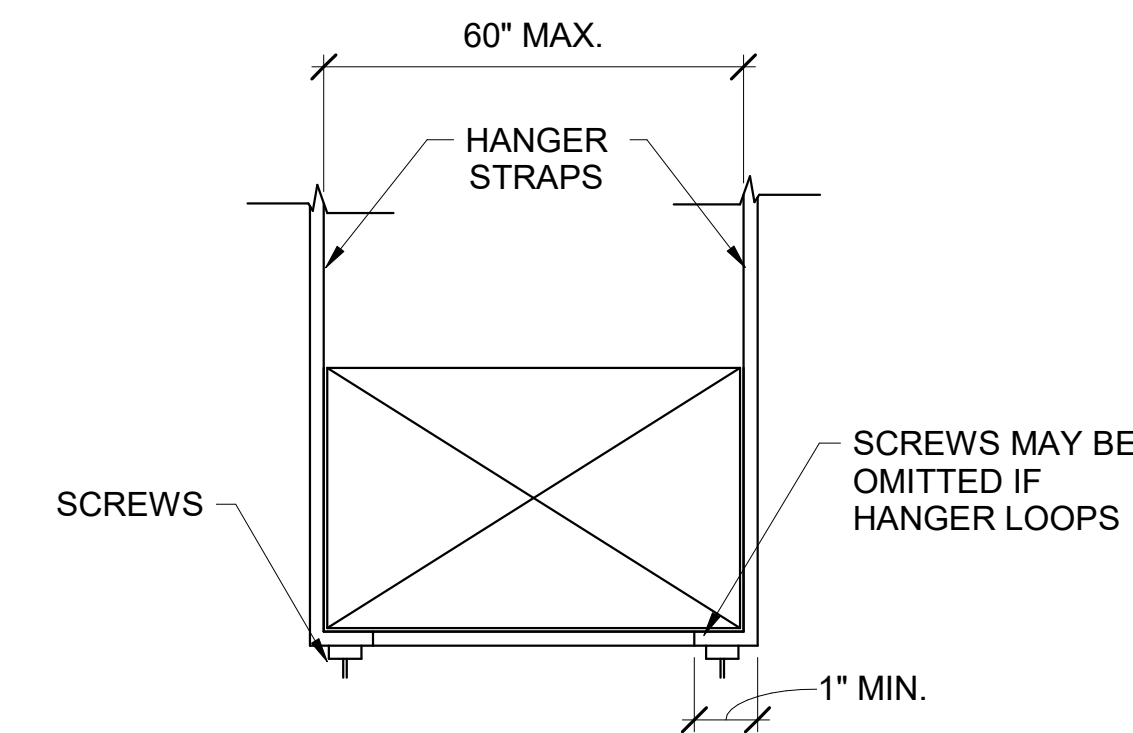
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GENERAL HVAC NOTES

- THE DRAWINGS SHOW THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL INSTALLATION W/ THE STRUCTURE AND OTHER TRADES AND SHALL PROVIDE ADDITIONAL OFFSETS AND FITTINGS AS NECESSARY.
- THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS SHALL COMPLY WITH THE THE CODES LISTED ON THIS SHEET AS WELL AS ALL LOCAL CODE OFFICIAL REQUIREMENTS. IN THE EVENT OF A CONFLICT BETWEEN CODES, THE MOST STRINGENT SHALL ALWAYS GOVERN.
- DUCT DIMENSIONS ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL CLEARANCES PRIOR TO FABRICATION OR INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING SYSTEMS. WHERE CONDITIONS REQUIRE A CHANGE IN DUCT OR PIPE ROUTING, NOTIFY THE ARCHITECT FOR AN ACCEPTABLE ALTERNATIVE METHOD. AVOID ROUTING DUCTWORK DIRECTLY OVER LIGHT FIXTURES, DIFFUSERS, AND OTHER CEILING MTD. DEVICES. LOCATE ALL MECHANICAL EQUIPMENT SO THAT FILTERS AND COMPONENTS REQUIRING ACCESS (SERVICE AND MAINTENANCE) ARE FULLY ACCESSIBLE. PROVIDE CURVED RADIUS ELBOW AT FIRST SUPPLY & RETURN FITTING FOR ALL HVAC UNITS. PROVIDE TURNING VANES IN ALL 90 DEGREE ELBOWS IN ALL RECTANGULAR SUPPLY/RETURN/EXHAUST DUCT SYSTEMS. ANY OFFSETS REQUIRED IN DUCT SYSTEMS SHALL BE INSTALLED PER SMACNA 2005 3RD EDITION MANUAL. SHARP ANGLED TRANSITIONS OR OFFSETS WILL NOT BE ALLOWED. PROVIDE DUCT ACCESS DOORS AS REQUIRED.
- INSTALL ALL DUCT MOUNTED DEVICES (DAMPERS, ACCESS DOORS, ETC.) AND PIPING SPECIALTIES IN EASILY ACCESSIBLE LOCATIONS. ADVISE THE ARCHITECT IN ADVANCE OF INSTALLATION IF ACCESS WILL BE HINDERED SO AN ALTERNATE LOCATION CAN BE SELECTED.
- ALL DUCT TAKE-OFFS SHALL BE INSTALLED AS SHOWN BY DETAILS ON THE PLANS WITH A MANUAL BALANCING DAMPER AT EVERY TAKE-OFF. WHERE DUCT RUN-OUT SIZE IS NOT SHOWN PROVIDE DUCT SAME SIZE AS GRILLE NECK SIZE. PRE-INSULATED FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTION TO SUPPLY GRILLES (MAX. LENGTH 5').
- ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH PRESCRIBED CLEARANCES FOR SERVICE AND MAINTENANCE. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IF RECOMMENDED CLEARANCES ARE NOT POSSIBLE BEFORE INSTALLING EQUIPMENT.
- ALL ROTATING MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATION. PROVIDE FLEXIBLE NEOPRENE DUCT CONNECTORS BETWEEN DUCTWORK AND ISOLATED MECHANICAL EQUIPMENT.
- THE CONTRACTOR SHALL FIRESTOP ALL PENETRATIONS OF FIRE RATED WALLS/FLOORS/CEILINGS BY DUCTWORK PIPING, ETC., WITH U.L. LISTED FIRE STOPPING MATERIAL TO MAINTAIN FIRE RATING OF THE BARRIER.
- SEISMIC PROTECTION OF EQUIPMENT, DUCTWORK, PIPING AND UTILITIES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16 OF THE INTERNATIONAL BUILDING CODE, 2018 EDITION. ALL SEISMIC RESTRAINT AND BRACING SHALL BE SUBSTANTIATED BY MANUFACTURER'S SUBMITTALS PER THE SPECIFICATIONS. FOR ADDITIONAL INFORMATION, SEE 'MECHANICAL SYSTEMS SEISMIC AND WIND REQUIREMENTS' ON THIS SHEET. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION OF SEISMIC BRACING DEVICES WITH THE OWNER'S SEISMIC SPECIAL INSPECTOR. PROVIDE A MINIMUM OF SEVEN DAYS ADVANCE NOTICE OF INSTALLATION.
- BALANCE ALL AIR DISTRIBUTION DEVICES, EXHAUST FANS, AND OUTSIDE AIR QUANTITIES AS SCHEDULED OR SHOWN ON THE DRAWINGS. PROVIDE MARKERS AT ALL DAMPER LOCATIONS SHOWING FULL OPEN/CLOSED POSITIONS AND DAMPER SETTING FOR REQUIRED AIRFLOW. PROVIDE FINAL TEST AND BALANCE REPORT ALONG W/ SCHEMATIC DRAWINGS SHOWING DIFFUSER LOCATION W/ DESIGN AND ACTUAL CFM. THE DIFFUSER TAGS ON THE DRAWINGS SHALL CORRESPOND TO THE DIFFUSER TAGS ON THE REPORT. THIS REPORT SHALL BE SUBMITTED BEFORE THE FINAL INSPECTION IS PERFORMED. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
- ALL CONTROL WIRING, CONDUIT AND CONTROLS ACCESSORIES NECESSARY TO IMPLEMENT THE OUTLINED SEQUENCES OF OPERATION SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR.
- WIND LOAD PROTECTION OF ROOF MOUNTED EQUIPMENT AND DUCTWORK SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16 OF THE INTERNATIONAL BUILDING CODE, 2018 EDITION. ALL WIND LOAD RESTRAINT AND BRACING SHALL BE SUBSTANTIATED BY MANUFACTURER'S SUBMITTALS PER THE SPECIFICATIONS.
- WHERE "APPROXIMATELY" IS USED TO DEFINE INSTALLATION LOCATIONS, CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES TO VERIFY THERE ARE NO CONFLICTS PRIOR TO INSTALLATION AT DIMENSION LISTED.

MECHANICAL ABBREVIATIONS	
ABBR	DESCRIPTION
(E)	EXISTING
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AH	AIR HANDLER
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
BHP	BRAKE HORSE POWER
BOD	BASIS OF DESIGN
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
DB	DECIBELS
DIA	DIAMETER
EA	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
FPM	FEET PER MINUTE
FT	FEET
HP	HEAT PUMP
HP	HORSEPOWER
IN	INCHES
LAT	LEAVING AIR TEMPERATURE
MBH	THOUSANDS OF BTU'S PER HOUR
MC	MECHANICAL CONTRACTOR
MD	MANUAL DAMPER
NC	NOISE CRITERIA
OA	OUTSIDE AIR
PD	PRESSURE DROP
RA	RETURN AIR
REFR	REFRIGERANT
RH	RELATIVE HUMIDITY
RPM	ROTATIONS PER MINUTE
SA	SUPPLY AIR
TYP	TYPICAL
VNT	VENT
W/	WITH
°F	DEGREES FAHRENHEIT

HVAC SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	AIR TERMINAL TAG, X=TYPE MARK, Y=CFM	---	COMPONENT TO BE DEMOLISHED
	AIR TERMINAL DIFFUSER (CEILING MOUNTED)		DUCTWORK (X" = WIDTH, Y" = HEIGHT)
	AIR TERMINAL RETURN GRILLE (CEILING MOUNTED)		CONDENSING UNIT
	AIR TERMINAL EXHAUST GRILLE (CEILING MOUNTED)		ROOFTOP UNIT
	SIDEWALL REGISTER / GRILLE		CEILING MOUNTED EXHAUST FAN
	THERMOSTAT	+++++	PREINSULATED FLEXIBLE DUCT
	DUCT MOUNTED SMOKE DETECTOR (BY E.C.)		CABLE OPERATED DAMPER
	EQUIPMENT CLEARANCE		PITCH POCKET
	FIRE DAMPER		FLEXIBLE DUCT CONNECTION
	MANUAL DAMPER		CONNECTION TO EXISTING SYSTEM
	THERMOSTAT (DUCT MOUNTED)		MOTORIZED DAMPER
	HUMIDISTAT (DUCT MOUNTED)		



LOUVER SCHEDULE								
MARK	AIR PRESSURE DROP	AIR VELOCITY	CFM	DIMENSION FREE AREA	DIMENSION WIDTH	DIMENSION HEIGHT	BASIS OF DESIGN	MODEL
L-1	0.05 in-wg	585 FPM	2450	4.19 SF	32"	32"	RUSKIN	ELF6375DXD
L-2	0.04 in-wg	520 FPM	2760	5.31 SF	40"	32"	RUSKIN	ELF6375DXD

NOTES:

- EXTRUDED ALUMINUM, MILL FINISH, FLATTENED EXPANDED ALUMINUM BIRD SCREEN (MOUNTED ON INSIDE REAR OF LOUVER), EXTENDED SILL, LOUVER COLOR TO BE SELECTED BY ARCHITECT AND OWNER.

FAN SCHEDULE										
TAG	CAPACITY CFM	ESP INCHES WG	MOTOR HP	MAXIMUM SOUND RATING DB	TYPE	SYSTEM SERVED	FAN CONTROL	BASIS OF DESIGN	MODEL	
EF-1	2330	0.25	0.75	16.7	DIRECT	HVAC LAB 100	TOGGLE SWITCH	GREENHE CK	G-130-VG	
EF-2	2450	0.50	0.75	10	DIRECT	BOAT LAB 100	TOGGLE SWITCH	GREENHE CK	SQ-160-VG	
EF-3	2760	0.50	0.75	11.8	DIRECT	MARINE LAB 101	TOGGLE SWITCH	GREENHE CK	SQ-160-VG	

NOTES:

- REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- EF-1 SHALL BE PROVIDED WITH SEISMIC CURB.
- PROVIDE EXHAUST FANS WITH INTEGRAL BACKDRAFT DAMPER, SPEED CONTROLLER, AND SINGLE POINT POWER CONNECTION WITH INTEGRAL DISCONNECT.

AIR DEVICE SCHEDULE										
MARK	MANUFACTURER	MODEL	TYPE	USE			MTG	SIZE	FINISH	NOTES
				SA	RA	EA				
A	HART & COOLEY	SVH	REGISTER	X			SPIRAL DUCT	16 x 6	ALUMINUM	4-WAY BLOW
B	HART & COOLEY	SVH	REGISTER	X			SPIRAL DUCT	12 x 6	ALUMINUM	4-WAY BLOW
E	VARIES	VARIES	VARIES	X	X		VARIES	VARIES	VARIES	VARIES
R1	HART & COOLEY	HM	GRILLE		X		DUCT	22"x22"	WHITE	-
R1	HART & COOLEY	RESt	GRILLE			X	LAY-IN	22"x22"	WHITE	-

NOTES:

- ALL REGISTERS AND GRILLES SHALL BE ALUMINUM.

MECHANICAL CODES AND STANDARDS (WITH ALL SOUTH CAROLINA MODIFICATIONS)	
CODE	DESCRIPTION
IBC (2021)	INTERNATIONAL BUILDING CODE
IECC (2009)	INTERNATIONAL ENERGY CONSERVATION CODE
IMC (2021)	INTERNATIONAL MECHANICAL CODE
NFPA 90A (2021)	STANDARD FOR THE INSTALLATION AIR-CONDITIONING & VENTILATING SYSTEMS
SMACNA (2020)	HVAC DUCT CONSTRUCTION STANDARDS MANUAL, FOURTH EDITION

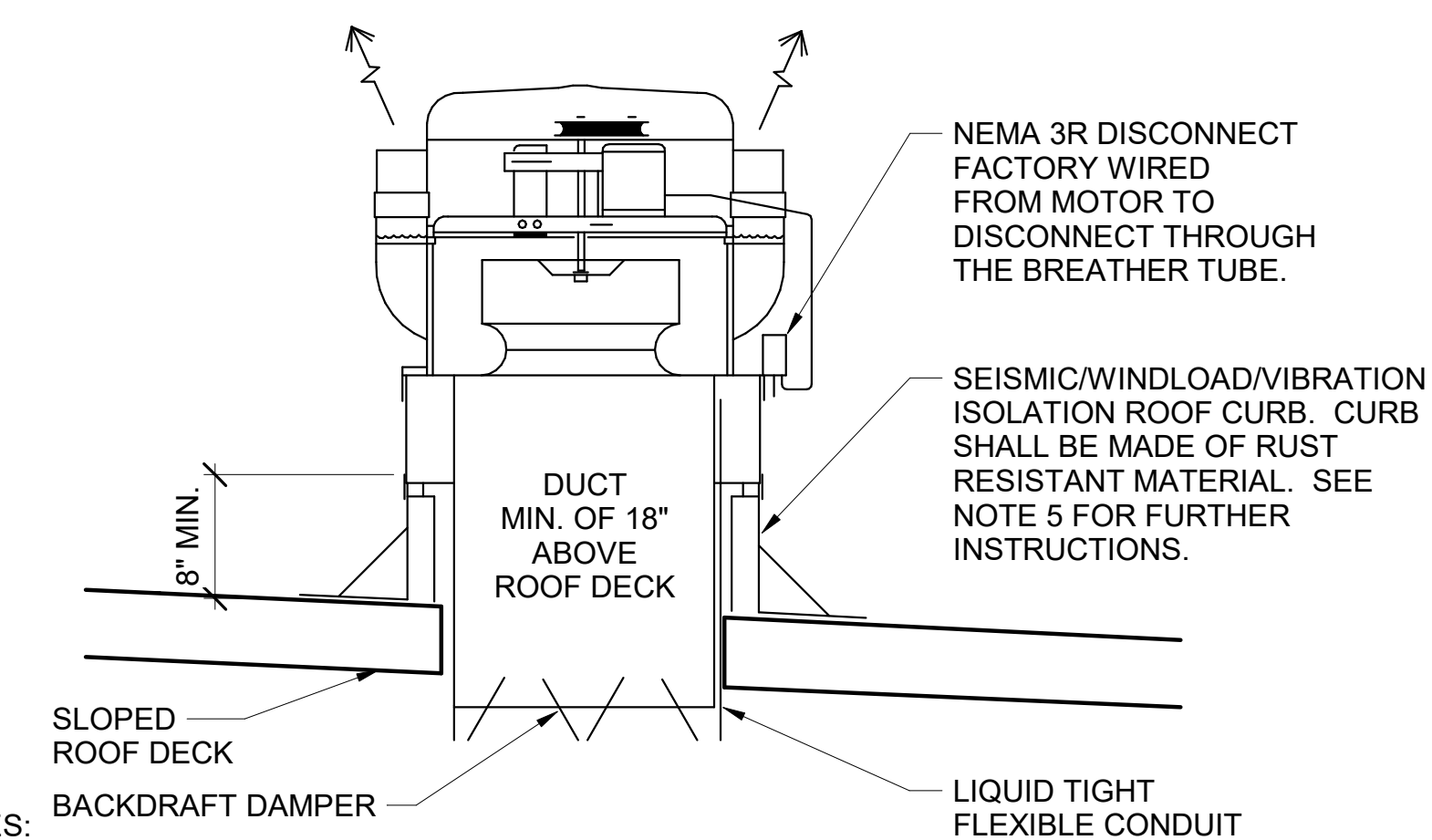
DESIGN CONDITIONS	
SUMMER	OUTDOOR: 95F DB / 80F WB INDOOR: 75F DB / 50% RH
WINTER	OUTDOOR: 25F DB INDOOR: 70F DB / 50% RH

TABLE 4-1 RECTANGULAR DUCT HANGERS MINIMUM SIZE								
MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10 FT. SPACING		PAIR AT 8 FT. SPACING		PAIR AT 5 FT. SPACING		PAIR AT 4 FT. SPACING	
	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD
P/2= 30"	1" X 22 GA.	10 GA. (.135")	1" X 22 GA.	10 GA. (.135")	1" X 22 GA.	12 GA. (.106")	1" X 22 GA.	12 GA. (.106")
P/2= 72"	1" X 18 GA.	3/8"	1" X 20 GA.	1/4"	1" X 22 GA.	1/4"	1" X 22 GA.	1/4"
P/2= 96"	1" X 16 GA.	3/8"	1" X 18 GA.	3/8"	1" X 20 GA.	3/8"	1" X 22 GA.	1/4"
P/2= 120"	1-1/2"X16GA.	1/2"	1" X 16 GA.	3/8"	1" X 18 GA.	3/8"	1" X 20 GA.	1/4"
P/2= 168"	1-1/2"X16GA.	1/2"	1-1/2"X16GA.	1/2"	1" X 16 GA.	3/8"	1" X 18 GA.	3/8"
P/2= 192"	NOT GIVEN	1/2"	1-1/2"X16GA.	1/2"	1" X 16 GA.	3/8"	1" X 16 GA.	3/8"
P/2=193" UP	SPECIAL ANALYSIS REQUIRED							

WHEN STRAPS ARE LAP JOINED, USE THESE MINIMUM FASTENERS
 1" X 18,20,22 GA. - TWO #10 OR ONE 1/4" BOLT
 1" X 16 GA. - TWO 1/4" DIA.
 1-1/2" X 16 GA. - TWO 3/8" DIA.
 PLACE FASTENERS IN SERIES, NOT SIDE BY SIDE.

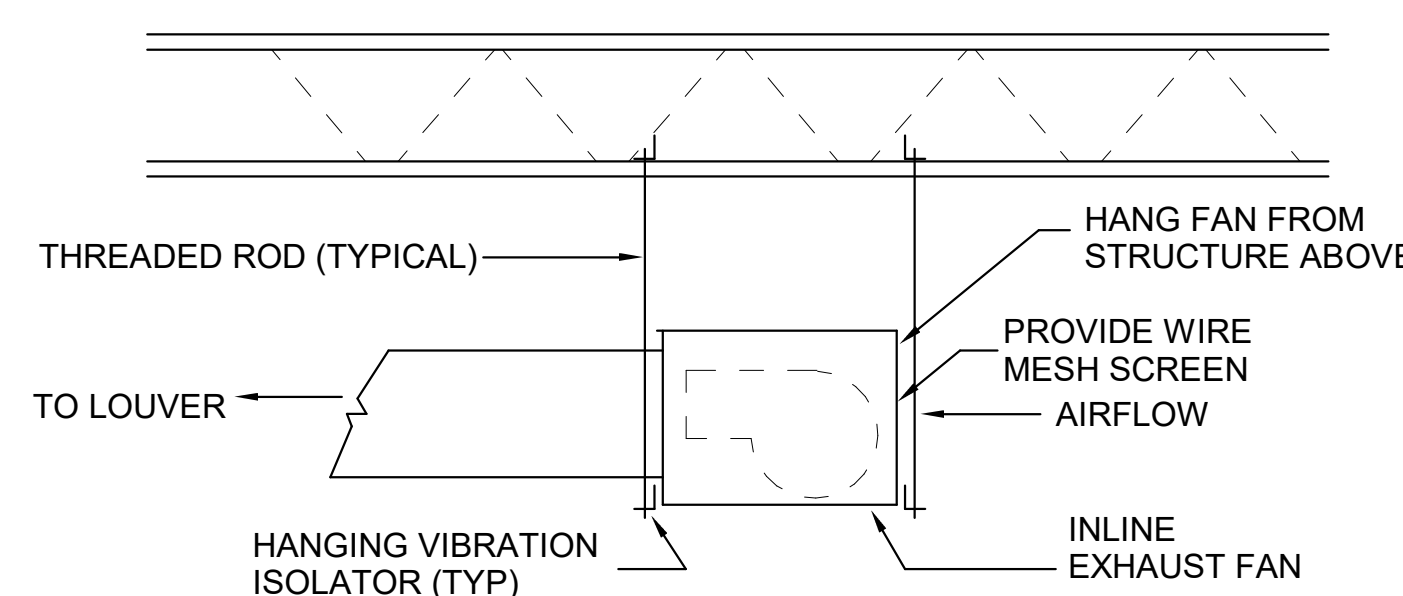
SINGLE HANGER MAXIMUM ALLOWABLE LOAD		
	STRAP	WIRE OR ROD (DIA.)
1" X 22 GA.	- 260 LBS.	1/4"-270 LBS.
1" X 20 GA.	- 320 LBS.	3/8"-680 LBS.
1-1/2" X 16 GA.	- 420 LBS.	1/2"-1250 LBS.
1" X 16 GA.	- 700 LBS.	5/8"-2000 LBS.
1-1/2" X 16 GA.	- 1100 LBS.	3/4"-3000 LBS.

3 SUPPORT DETAIL
SCALE: NOT TO SCALE



- NOTES:
- PROVIDE FAN WITH HINGE FOR MAINTENANCE AND CLEANING.
 - BACKDRAFT DAMPERS SHALL BE INSTALLED SUCH THAT DAMPERS OPEN ONLY ONCE FAN IS ENERGIZED.

5 UPBLAST FAN INSTALLATION DETAIL
SCALE: NOT TO SCALE

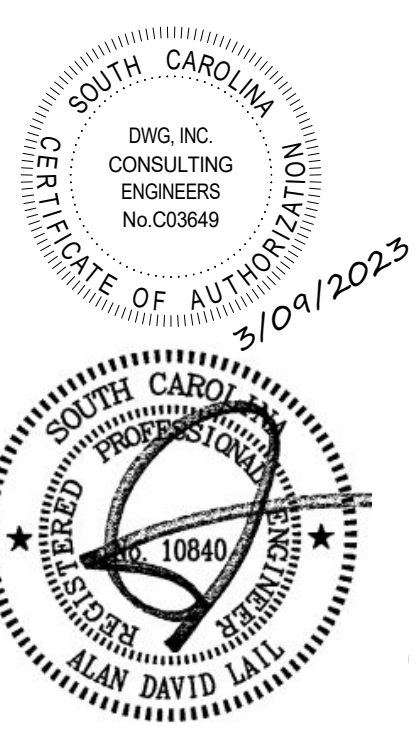


4 IN-LINE EXHAUST INSTALLATION DETAIL
SCALE: NOT TO SCALE



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PROJECT

HORRY-GEORGETOWN TECHNICAL COLLEGE
RENOVATIONS TO:
BUILDING 100 & BUILDING 500
GEORGETOWN,
SOUTH CAROLINA

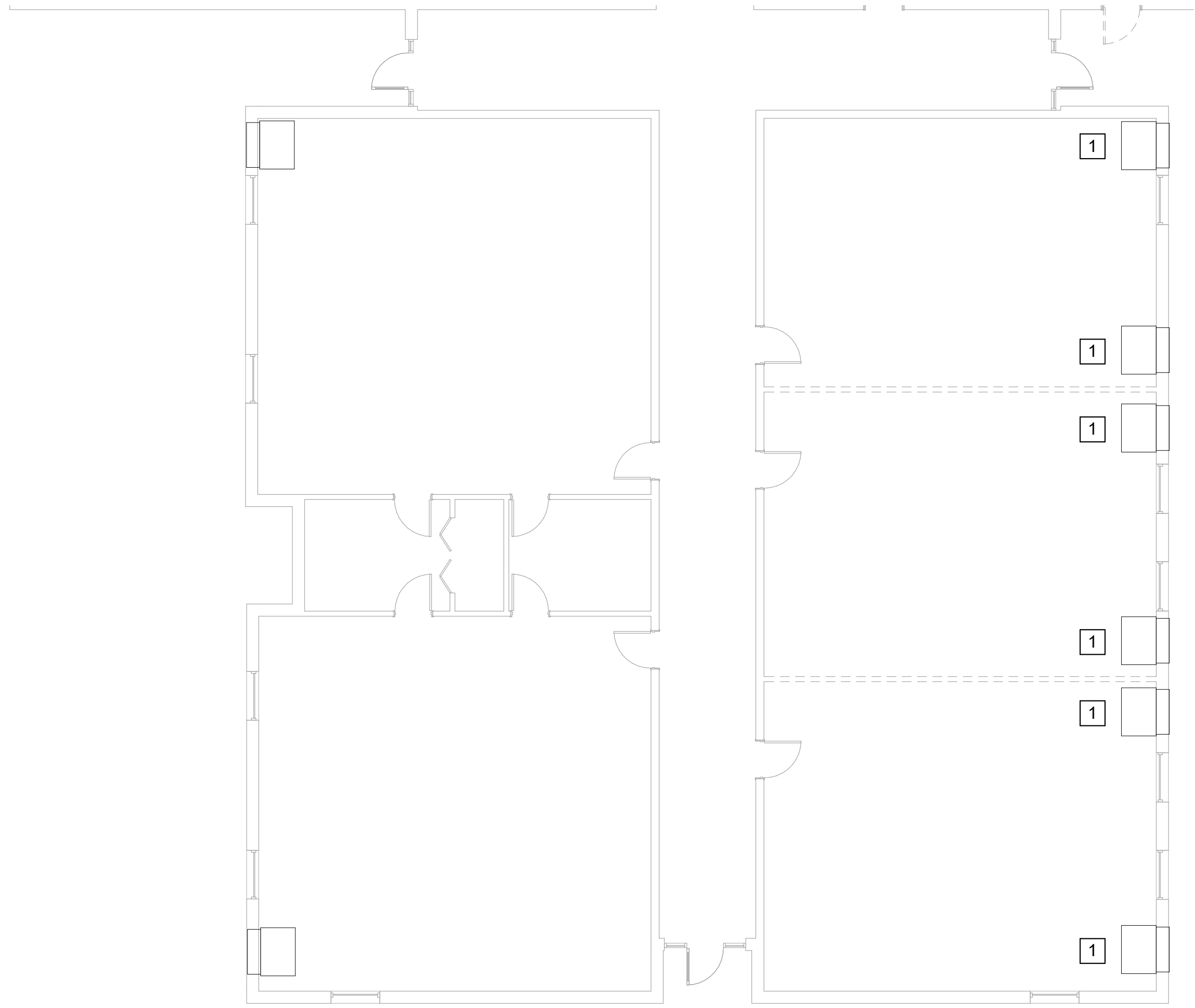
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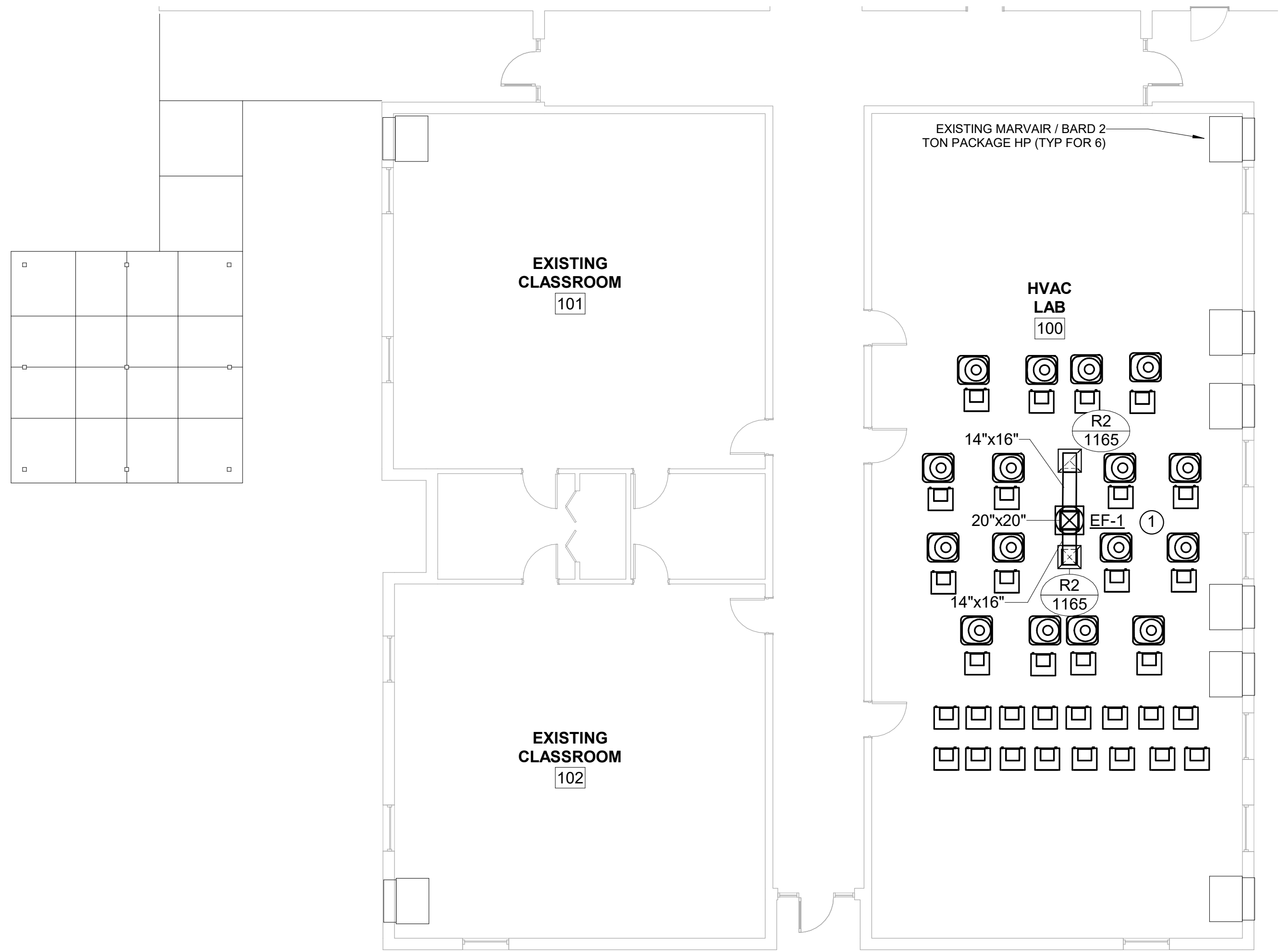
M001

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1 BUILDING 100 MECHANICAL DEMOLITION PLAN
M101 SCALE: 1/8" = 1'-0"



2 BUILDING 100 MECHANICAL PLAN
M101 SCALE: 1/8" = 1'-0"

DEMOLITION KEYNOTES

1 EXISTING TO REMAIN UNCHANGED.

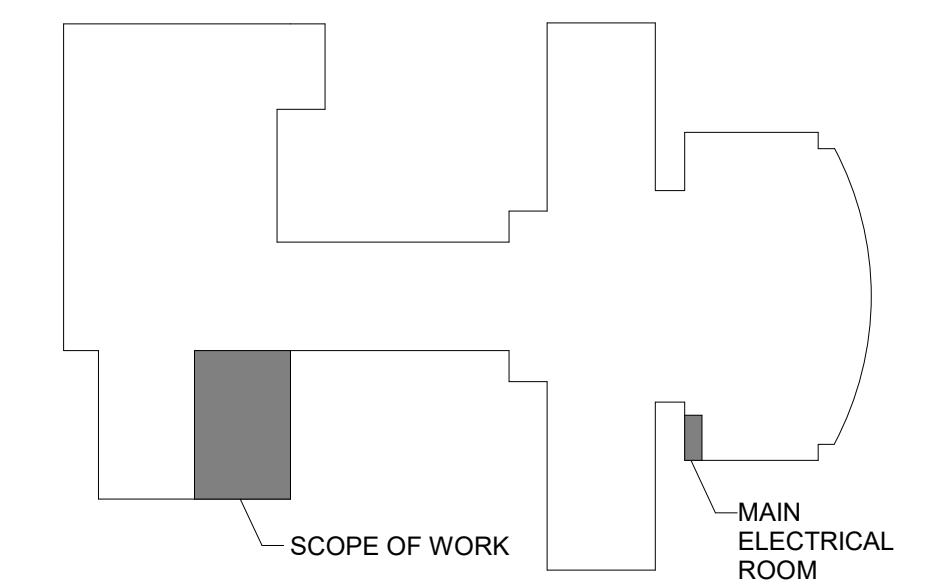
RENOVATION KEYNOES

1 NEW ROOF MOUNTED EXHAUST FAN ROUTED TO LAY IN CEILING GRILLES.

GENERAL NOTES

1. DEMO: EXISTING PACKAGE UNITS IN BUILDING 100 TO REMAIN IN PLACE.

BUILDING 100 KEYPLAN



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SOUTH CAROLINA
DWG, INC.
CONSULTING ENGINEERS
No. C23649
3/09/2023

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
10840
DAVID LALL

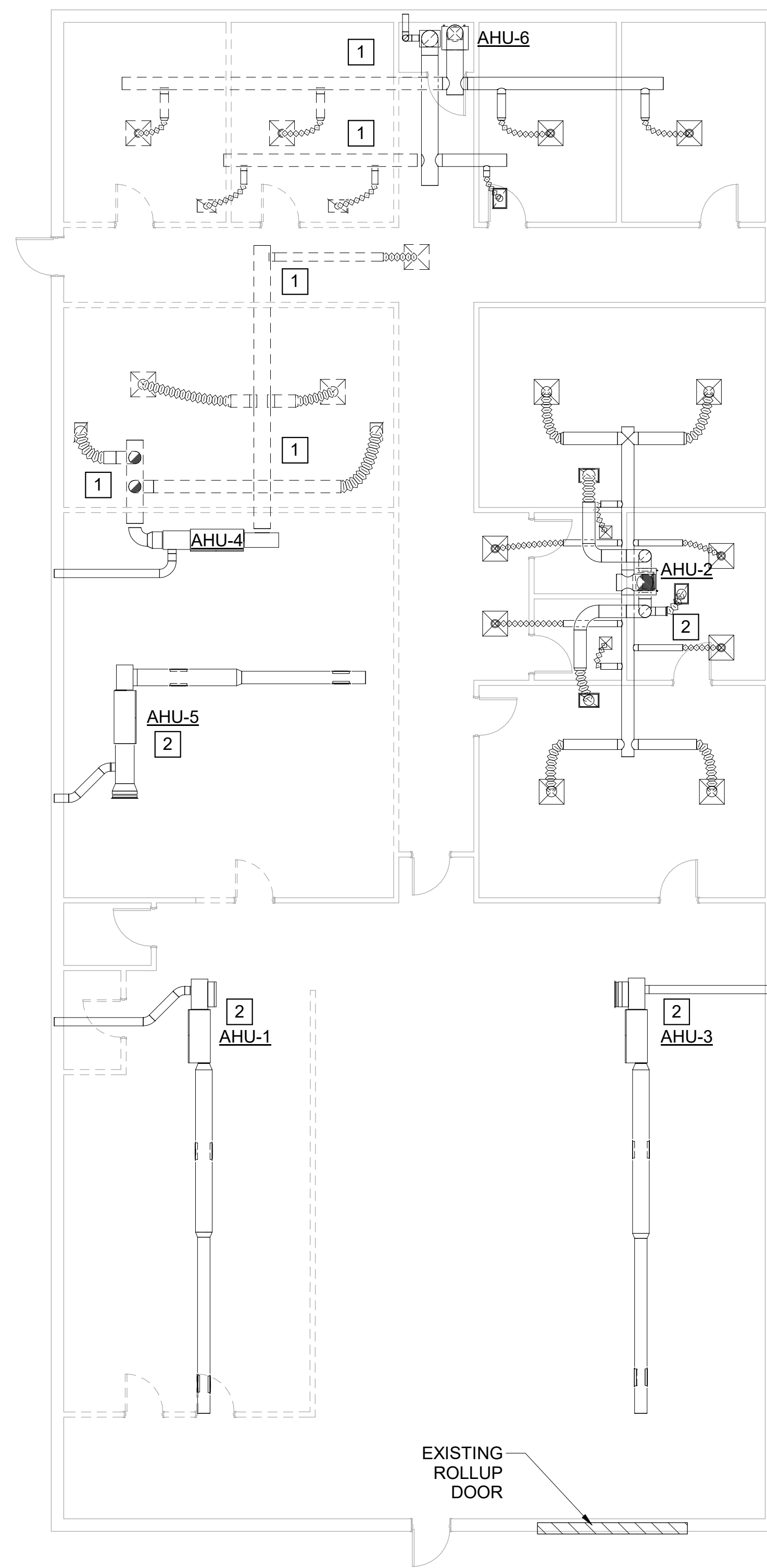
PROJECT
HORRY-GEORGETOWN TECHNICAL COLLEGE
RENOVATIONS TO:
BUILDING 100 & BUILDING 500
GEORGETOWN, SOUTH CAROLINA

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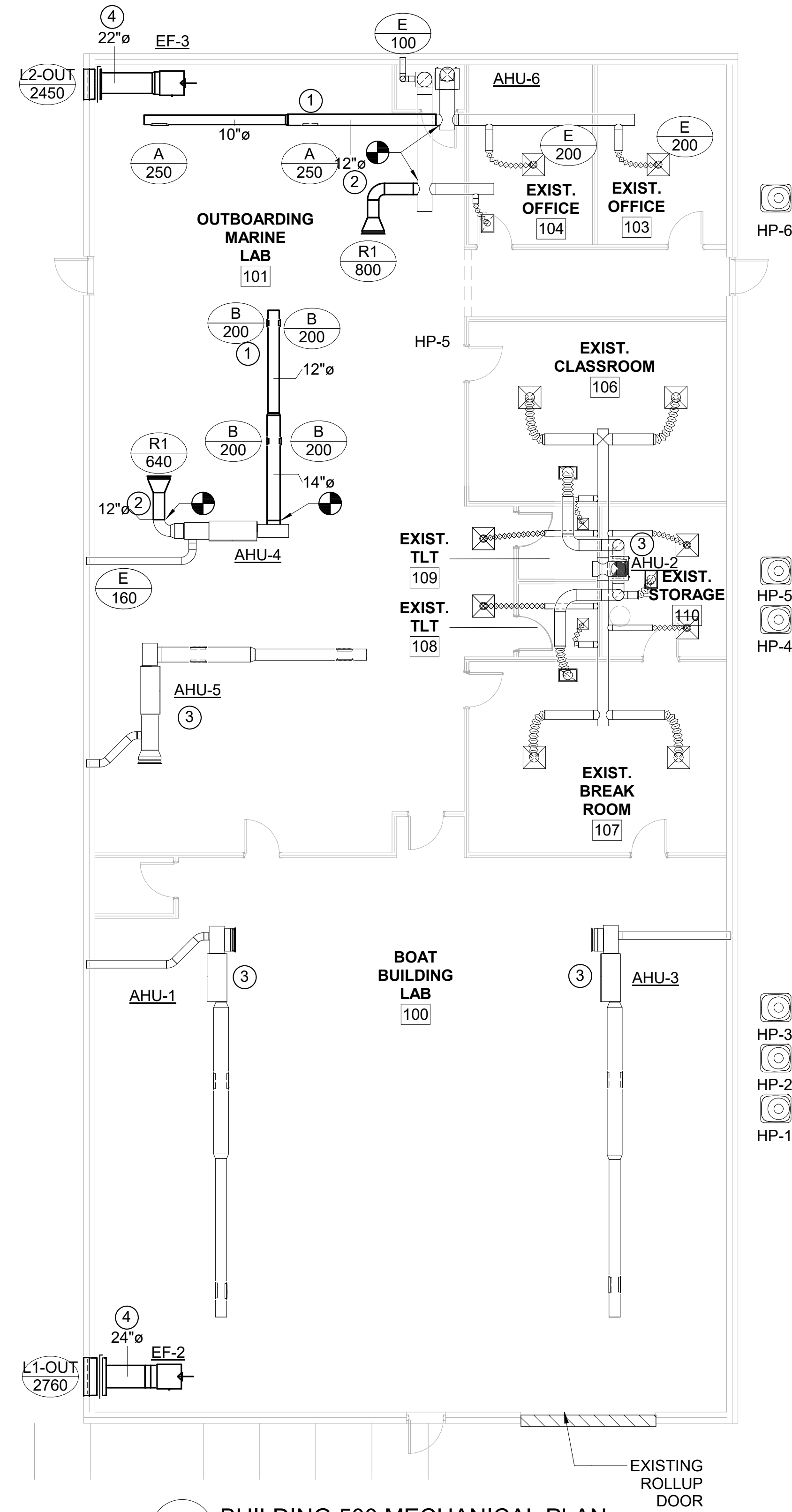
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M101

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1 BUILDING 500 MECHANICAL DEMOLITION PLAN
M102 SCALE: 1/8" = 1'-0"



2 BUILDING 500 MECHANICAL PLAN
M102 SCALE: 1/8" = 1'-0"

DEMOLITION KEYNOTES

- 1 EXISTING DUCTWORK AND AIR DEVICES TO BE REMOVED.
- 2 EXISTING TO REMAIN UNCHANGED.

RENOVATION KEYNOES

- 1 NEW SUPPLY SPIRAL DOUBLE WALL DUCT WITH 1" INSULATION AND SIDEWALL REGISTERS MOUNTED AT 45 DEGREE ANGLE. VERIFY SIZE OF EXISTING DUCT CONNECTION.
- 2 NEW RETURN DUCT. VERIFY SIXE OF EXISTING DUCT CONNECTION.
- 3 EXISTING TO REMAIN UNCHANGED.
- 4 NEW SINGLE WALL SPIRAL DUCT ROUTED BETWEEN INLINE EXHAUST FAN AND EXHAUST LOUVER.

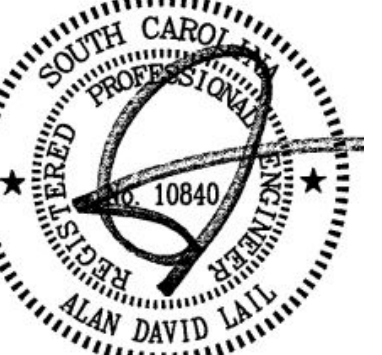
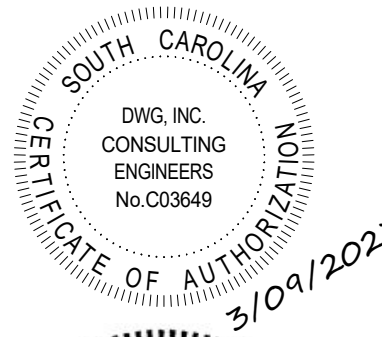
GENERAL NOTES

- 1. PROVIDE MANUAL DAMPER FOR EACH SUPPLY AND RETURN AIR DEVICE.
- 2. AIR BALANCE REQUIRED ONLY FOR UNITS WITH MODIFIED DUCTWORK.
- 3. DEMO: EXISTING AIR HANDLING UNITS AND HEAT PUMPS IN BUILDING 500 TO REMAIN IN



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PROJECT

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GEORGETOWN, SOUTH CAROLINA

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