MECHANICAL GENERAL NOTES

- 1. MATERIALS, EQUIPMENT AND INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS, BUILDING CODES, AND EQUIPMENT / MATERIALS INSTALLATION INSTRUCTIONS.
- 2. EQUIPMENT, DUCT AND PIPING LAYOUTS ARE GENERALLY DIAGRAMMATIC.
- 3. SUBMIT TESTING AND BALANCE REPORT TO THE ENGINEER UPON COMPLETION. BALANCE AIR FLOW TO 10% +/- OF VALUES SHOWN. TESTING AND BALANCE TO BE PROVIDED BY A CERTIFIED THIRD-PARTY COMPANY.
- 4. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ANY ELECTRICAL CHANGES RESULTING FROM USING EQUIPMENT NOT SPECIFIED. THE COSTS ASSOCIATED WITH
- THE ELECTRICAL CHANGES SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- DESIGNED. MAINTAIN A MAXIMUM ASPECT RATIO OF 2:1. b. DUCT MATERIAL SHALL BE G-60 COATED GALVANIZED STEEL OF ASTM STANDARDS A653 AND

a. RESIZE DUCT TO ACCOMMODATE ACTUAL FIELD CONDITIONS. MAINTAIN DUCT VELOCITY AS

- A924 GRADES.
- c. RECTANGULAR DUCT MAY BE USED IN LIEU OF ROUND OR VICE VERSA.
- d. ALL DUCTWORK SHOWN OF THE PLANS ARE FREE FLOW AREA (DOES NOT INCLUDE DUCT AND INSULATION THICKNESS).
- e. SEALING: SMACNA SEAL CLASS C: A MINIMUM OF TWO LAYERS OF MASTIC SHALL BE APPLIED TO TRAVERSE JOINTS. WIDTH SHALL EXTEND 1/2" ON EACH SIDE OF THE SEAM. MASTIC SHALL BE THICK ENOUGH SO THAT NO METAL IS VISIBLE THROUGH THE MASTIC.
- f. SUPPLY AND RETURN DUCT INSULATION (INDOORS): R6 DUCT LINER.
- g. DUCT INSTALLED OUTSIDE: INSULATE EXTERIOR OF DUCT WITH A RIGID DUCT BOARD AND COAT WITH MASTIC FOR WATER-PROOFING. INSTALL INSULATION TO ALLOW WATER TO DRAIN OFF TOP OF DUCT. PONDING OF WATER ON DUCT IS NOT ACCEPTABLE.
- h. DUCTWORK AND PIPING SHALL BE STORED IN COVERED AREAS SO THAT IT IS NOT EXPOSED TO THE ELEMENTS. THE ENDS OF THE DUCT MUST BE WRAPPED TO PREVENT DEBRIS FOR ENTERING THE DUCT.
- i. INSTALL DUCT PER CURRENT SMACNA STANDARDS AND NC MECH CODE. DUCT SHALL BE GALVANIZED.
- j. ALL ELBOWS SHALL BE SMACNA SMOOTH RADIUS ELBOWS.
- k. ALL BRANCH DUCTS SHALL BE 45 DEGREE ENTRY TYPE.
- I. PROVIDE BALANCING DAMPERS AT ALL BRANCH RUNOUTS TO GRILLES. BALANCING DAMPERS MUST BE ACCESSIBLE.
- 6. THERMOSTATS: TRANE PIVOT SMART THERMOSTAT, TOUCHSCREE INTERFACE, MOBLE APP, WIFI ENABLED, GROUPED TOGETHER ON ONE-SITE WITH GROUP EDITTING OF SCHEDULES AND SET-POINTS. PROVIDE TRAINING WITH OWNER AND ASSIST OWNER WITH SET-UP.
- 7. EQUIPMENT MANUFACTURERS
- a. SPLIT HEAT PUMPS: TRANE, AMERICAN STANDARD, CARRIER AND DAIKIN.
- b. DOAS: TRANE, CARRIER AND MUNTERS
- c. DUCTLESS SPLITS: MITUSIBISHI, CARRIER AND DAIKIN.
- a. GAS: LABEL PIPE IN ACCORDANCE WITH CODE. GAS PIPING SHALL BE SCHEDULE 40 STEEL, ASTM A-106, WITH MALLABLE THREADED FITTINGS FOR 2" AND SMALLER. GAS PIPING EXPOSED SHALL BE PRIMED AND PAINTED. SUPPORT 1/2" PIPING AT 6 FOOT INTERVALS, 3/4" AND 1" PIPING AT 8 FOOT INTERVALS AND 1 1/4" AND LARGER AT 10 FOOT INTERVALS. COORDINATE PAINT COLOR WITH OWNER.
- b. CONDENSATE: SCHEDULE 40 PVC.
- 9. MC SHALL REMOVE CEILING TILES / GRID AS NEEDED FOR CONSTRUCTION. MC MUST REPLACE ANY DAMAGED TILE WITH MATCHING TILE.

DOAS SEQUENCE OF OPERATION DWG NO.: AE-2020-09-10

SPACE CONTROL: RESET THE DISCHARGE AIR TEMPERATURE SETPOINT BY COMPARING THE SPACE TEMPERATURE ACTIVE TO THE COOLING AND HEATING SETPOINTS. THE SPACE IS A MUSEUM AND WILL ALWAYS BEEN IN THE OCCUPIED MODE.

SUPPLY FAN: CONSTANT VOLUME WITH ECM, CONTROL THE FAN SPEED TO MAINTAIN DESIGN CFM SUPPLY AIR. VENTILATION MODE: ENABLED WHEN THE OUTSIDE AIR IS BETWEEN 75 AND 50 DEGREES AND THE UNIT IS NOT IN THE DEHUMIDIFICATION MODE. THE HEATING AND COOLING IS LOCKED OUT.

HEATING MODE: ENABLED WHEN OUTDOOR TEMPERATURE FALLS BELOW 50 DEGREES. HEATING SIGNAL WILL

MODULATE TO MAINTAIN THE HEATING DISCHARGE AIR TEMPERATURE SETPOINT OF 100 DEGREES. COOLING MODE: ENABLED WHEN THE OUTDOOR TEMPERATURE IS ABOVE 75 DEGREES. THE COOLING

CAPACITY MODULATES TO MAINTAIN THE DISCHARGE AIR TEMPERATURE OF 55 DEGREES. THIS SEQUENCE IS BASED ON A FACTORY SEQUENCE WITH ADJUSTABLE SETPOINTS. IT IS NOT INTENDED THAT CUSTOM SEQUENCING CHANGES BE MADE BASED ON USING THE TRANE DOAS UNIT.

	AIR DISTRIBUTION SCHEDULE								
TAG	TYPE	MANUF.	MODEL	NECK SIZE	CFM RANGE	NOTES	REMARKS		
S1	SUPPLY DIFFUSER	PRICE	SCD	6	0-140	24X24 MODULE	A-C		
S2	SUPPLY DIFFUSER	PRICE	SCD	8	145-240	24X24 MODULE	A-C		
S3	SUPPLY DIFFUSER	PRICE	SCD	10	245-425	24X24 MODULE	A-C		
S4	SUPPLY DIFFUSER	PRICE	SCD	12	430-625	24X24 MODULE	A-C		
S5	SUPPLY DUCT GRILLE	PRICE	500	18X4	0-265	-	A,E,F		
S6	SUPPLY DUCT GRILLE	PRICE	500	22X6	400-530	-	A,E,F		
S7	SUPPLY DUCT GRILLE	PRICE	500	12X12	525-700	-	A,E		
S8	SUPPY GRILLE	PRICE	540	14X12	750	FLOOR	Α		
S9	SUPPY GRILLE	PRICE	540	10x10	375	FLOOR	Α		
R1	RETURN PLENUM GRILLE	PRICE	500	14X14	0-700	T-BAR	A,G		
R2	RETURN PLENUM GRILLE	PRICE	500	24X20	1600	T-BAR	A,G		
TG1	RETURN TRANSFER GRILLE	PRICE	500	28X20	800-1600	-	A,G		

- A. GRILLES: MAX NC 30, STANDARD WHITE FINISH,
- B. EXTERNAL FOIL BACKED FACTORY INSTALLED INSULATION ON ALL SUPPLY GRILLES
- C. LOUVERED FACE CEILING DIFFUSER
- E. STEEL, DOUBLE DEFLECTION
- F. OPPSED BLADE DAMPER G. 45° DEFLECTION 3/4" BLADE SPACING

OUTSIDE AIR UNIT SCHEDULE						
DRAWING TAG	DOAS -1	DOAS -2				
MANUFACTUER	TRANE	TRANE				
HORIZON MODEL #	OAGD144	OAGD240				
UNIT WEIGHT, LBS	2,923	3,425				
EER	12.10	12.20				
SUPPLY FAN						
TYPE	ECM WITH BACKWARD CURVED PLENUM	ECM WITH BACKWARD CURVED PLENUM				
CFM	1900	3000				
UNIT EXT. SP, in. wg.	1.00	1.00				
FAN EXT. SP, in. wg.	1.39	1.57				
FAN RPM	1158	1408				
FAN BHP	0.7	0.7				
MOTOR RPM	1750	1750				
VOLTS/PH	208-3	208-3				
ENCLOSURE	ODP	ODP				
FILTER	MERV 13	MERV 13				
CONDENSING UNIT						
TYPE	DIGITAL SCROLL	DIGITAL SCROLL				
NO. COMPRESSORS	2	2				
PERFORMANCE						
COOLING						
OUTSIDE AIR, db/wb	86/76	86/76				
SUPPLY AIR, db/wb	53.5/53.4	52.1/52.1				
REHEAT AIR, db/wb	83.6/64.7	85.4/64.7				
HEATING						
OUTSIDE AIR	19	19				
SUPPLY AIR	97.0	93.0				
GAS INPUT, MBH	200.0	300.0				
GAS OUTPUT, MBH	160.0	240.0				
ELECTRICAL						
VOLTS/PHASE	208/3	208/3				
UNIT MAX FUSE SIZE	90	110				
UNIT MCA	74.2	92				
ACCESSORIES	1-15	1-13,15				

ACCESSORIES

- 1. TRANE UC600 DISCHARGE AIR CONTROL WITH BACNET WITH DISPLAY
- 2. HORIZONTAL DISCHARGE WITH NO RETURN 3. OUTDOOR INSTALLATION
- 4. CONTROL UNIT TO PROVIDE A CONSTANT 50 DB (ADJUSTABLE)SAT DURING DEHUMIDIFICATION MODES.
- 5. SINGLE POINT POWER CONNECTION
- 6. 2 POSITION OUTSIDE AIR DAMPER SUPPLY AIR SMOKE DETECTOR
- 8. 1 YEAR PARTS WARRANTY AND 5-YEAR DIGITAL/VARIABLE SPEED COMPRESSOR WARRANTY
- 9. 2" DOUBLE WALL CASING WITH R-13 FOAM INSULATION AND SS DRAIN PANS
- 10. HAILGUARD
- 11. SUPPLY AIR DISCHARGE SENSOR 12. MODULATING HOT GAS REHEAT
- 13. STAINLESS STEEL FURNACE, 10:1 TURNDOWN
- 14. SOUND ATTENUATION PACKAGE: Hz/dBA, 63/56, 125/70, 250/77, 500/79, 1000/75, 2000/67, 4000/58, 8000/49, Total dBA 81.2
- ALTERNATE MANUF MUST BE WITHIN 5% OF TOTAL DBA LISTED.
- 15. PROVIDE WIRELESS SPACE HUMITY / TEMP SENSOR FOR DOAS ON 2ND FLOOR.

UILDING CODE SUMMAR	8 APPENDIX B Y FOR ALL COMMI IANICAL DESIGN	ERCIAL PROJECTS
MECHA	NICAL SUMMARY	
MECHANICAL SYSTEMS, SERVICE	SYSTEMS AND EQUIPMENT	
THERMAL ZONE 4		
WINTER DRY BULB: 14°F SUMMER DRY BULB: 93°F		
INTERIOR DESIGN CONDITIONS WINTER DRY BULB: 70°F SUMMER DRY BULB: 74°F RELATIVE HUMIDITY: 30-50%		
BUILDING HEATING LOAD: 231 MI BUILDING COOLING LOAD: 27.2 To		
MECHANICAL SPACING CONDITION	NING SYSTEM	
	SEE EQUIPMENT NOTES SEE EQUIPMENT NOTES SEE EQUIPMENT NOTES SEE EQUIPMENT NOTES T: SEE EQUIPMENT NOTES	5. 5.
BOILER SIZE CATEGORY. IF OVERS	SIZED STATE REASON	N/A
CHILLER	JILLD, STATE NEAGON	14/73
SIZE CCATEGORY. IF OVER	RSIZED. STATE REASON.:	N/A

	AIR DIST	RIBUTIO	ON SCHE	DULE			SPLIT SYSTEM HEAT PUMP SCHEDULE - AREA A									
	MANUF.	MODEL	NECK SIZE	CFM RANGE	NOTES	REMARKS	MANUFACTURER	TRANE	TRANE							
		+	NECK SIZE				AIR HANDLER	FC-G1	FC-G2	FC-F1	FC-F2	FC-F3	FC-F4	FC-S1	FC-S2	FC-S3
JSER	PRICE	SCD	6	0-140	24X24 MODULE	A-C	MODEL	TEM6	TEM6							
JSER	PRICE	SCD	8	145-240	24X24 MODULE	A-C	SUPPLY AIR, CFM	700	700	1600	1200	1900	1200	1600	800	1600
JSER	PRICE	SCD	10	245-425	24X24 MODULE	A-C	EXT. SP, in. wg	0.5"	0.5"	0.6"	0.6"	0.6"	0.6"	0.6"	0.6"	0.6"
		+	+		<u> </u>		VOLTS/PH	208/1	208/1	208/3	208/3	208/3	208/3	208/3	208/1	208/3
JSER	PRICE	SCD	12	430-625	24X24 MODULE	A-C	ELECTRIC HEAT, TOTAL KW	3.6	3.6	10.8	7.2	10.8	10.8	10.8	7.2	10.8
RILLE	PRICE	500	18X4	0-265	-	A,E,F	VOLTS/PH OF HTR	208/1	208/1	208/3	208/3	208/3	208/3	208/3	208/1	208/3
GRILLE	PRICE	500	22X6	400-530	-	A,E,F	MCA	25	25	45	30	45	42	45	46	45
GRILLE	PRICE	500	12X12	525-700		Δ Ε	MOCP	25	25	45	30	45	45	45	50	45
		+	+			A,E	HEAT PUMP	HP-B1	HP-B2	HP-F1	HP-F2	HP-F3	HP-F4	HP-S1	HP-S2	HP-S3
.LE	PRICE	540	14X12	750	FLOOR	Α	MODEL	4TWR5018	4TWR5018	4TWA7048	4TWA7036	4TWA7060	4TWA7036	4TWA7048	4TWR5024	4TWA704
.LE	PRICE	540	10x10	375	FLOOR	Α	NOMINAL CAPACITY, TONS	2	2	4	3	5	3	4	2	4
GRILLE	PRICE	500	14X14	0-700	T-BAR	A,G	SEER @ ARI CONDITONS	15	15	17	17	17	17	17	15	17
		+	 				VOLTS/PHASE	208/1	208/1	208/3	208/3	208/3	208/3	208/3	208/1	208/3
GRILLE	PRICE	500	24X20	1600	T-BAR	A,G	MCA	12	12	18	15	22	15	18	14	18
R GRILLE	PRICE	500	28X20	800-1600	-	A,G	MOCP	20	20	30	25	35	25	30	25	30

- 1. MERV 8 FILTER 2. SECONDARY CONDENSATE PAN WITH OVERFLOW SWITCH
- 3. PROGRAMMABLE THERMOSTAT 4. HEAT PUMP SUPPLEMENTARY HEAT LOCK OUT SET AT 40 DEGREES
- 5. SEER AND HSPF ARE MATCHED WITH AHU.
- 7. PROVIDE RA SMOKE DETECTOR IN RETURN DUCT OF FC-F3 TO DISABLE UNIT UPON DETECTION OF SMOKE.
- 8. INSTALL HEAT PUMPS ON EQUIPMENT PADS.

REMARKS: 17 SEER UNITS WERE SELECTED BC TRANE DOES NOT HAVE A 3-PHASE 15 SEER HEAT PUMP. ALL UNITS MUST MEET THE NEW DOE REQUIREMENTS THAT ARE EFFECTIVE JAN 1, 2023.

MANUFACTURER	TRANE							
AIR HANDLER	FC-G2	FC-G3	FC-F1	FC-F2	FC-S1	FC-S2	FC-S3	FC-S4
MODEL	TEM6							
SUPPLY AIR, CFM	1400	1200	1400	1400	785	800	800	800
EXT. SP, in. wg	0.5	0.6"	0.5	0.5	0.6"	0.6"	0.6"	0.6"
VOLTS/PH	208/3	208/1	208/3	208/3	208/1	208/1	208/1	208/1
ELECTRIC HEAT, TOTAL KW	10.8	7.2	10.8	10.8	3.6	3.6	3.6	5.8
VOLTS/PH OF HTR	208/3	208/1	208/1	208/3	208/1	208/1	208/1	208/1
MCA	45	49	45	45	25	25	25	38
MOCP	45	50	45	45	25	25	25	40
HEAT PUMP	HP-G2	HP-G3	HP-F1	HP-F3	HP-S1	HP-S2	HP-S3	HP-S4
MODEL	4TWA7048	4TWA7036	4TWA7048	4TWA7048	4TWR5024	4TWR5024	4TWR5024	4TWR5024
NOMINAL CAPACITY, TONS	4	3	4	4	2	2	2	2
SEER @ ARI CONDITONS	17	17	17	17	15	15	15	15
VOLTS/PHASE	208/3	208/3	208/3	208/3	208/1	208/1	208/1	208/1
MCA	18	15	18	18	14	14	14	14
MOCP	30	25	30	30	25	25	25	25

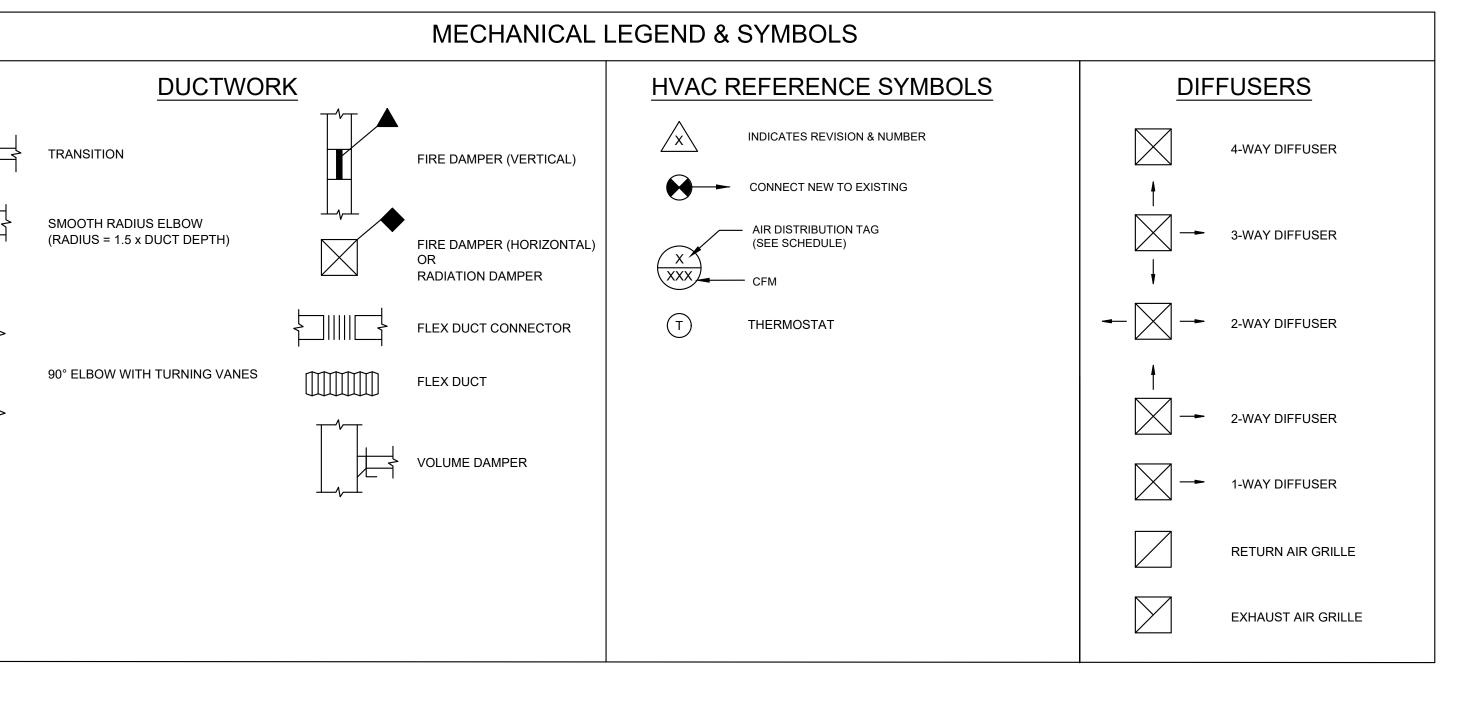
- ACCESSORIES
- 1. MERV 8 FILTER 2. SECONDARY CONDENSATE PAN WITH OVERFLOW SWITCH
- PROGRAMMABLE THERMOSTAT
- 4. HEAT PUMP SUPPLEMENTARY HEAT LOCK OUT SET AT 40 DEGREES
- 5. SEER AND HSPF ARE MATCHED WITH AHU. 6. RETURN AIR FILTER SECTION AT UNIT.
- 7. INSTALL HEAT PUMPS ON EQUIPMENT PADS.

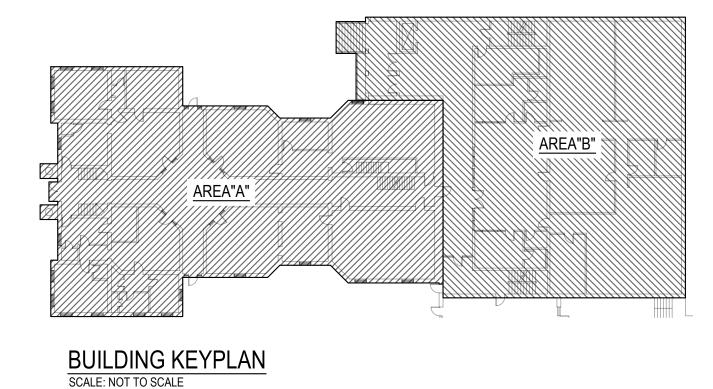
REMARKS: 17 SEER UNITS WERE SELECTED BC TRANE DOES NOT HAVE A 3-PHASE 15 SEER HEAT PUMP. ALL UNITS MUST MEET THE NEW DOE REQUIREMENTS THAT ARE EFFECTIVE JAN 1, 2023.

	R ⁻	TU SCHEDU	ILE		
DRAWING TAG	RTU1	RTU2	RTU3	RTU4	RTU5
MANUFACTUER	TRANE	TRANE	TRANE	TRANE	TRANE
MODEL	YHC060	YHC060	YHC060	4YCY5030	4YCC4036
REFRIGERANT	410A	410A	410A	410A	410A
COOLING PERFORMANCE					
SUPPLY FAN CFM	2000	2000	2000	1000	1165
OUTSIDE AIR, CFM					
NOMINAL SIZE, TONS	5.0	5.0	5.0	2.5	3.0
SEER	15	15	15	15	15
HEATING PERFORMANCE					
FUEL	NG	NG	NG	NG	NG
GAS PRESSURE, PSI	2.0	2.0	2.0	2	2.0
INTPUT, MBH	130.0	130.0	130.0	70	70.0
OUTPUT, MBH	104	104	104	56.7	56.7
SUPPLY FAN					
DRIVE	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT
EXT. STATIC PRESS., IN WG.	1	1	1	0.7	0.9
ELECTRICAL					
VOLTS/PHASE/CYCLES	208/3	208/3	208/3	208/1	208/1
MOP	45	45	45	30	35
MCA	30	30	30	21.3	23.8
ACCESSORIES	1-8	1-8	1-8	2-6	2-6

ACCESSORIES:

- 1. HOT GAS REHEAT
- 2. 2" PLEATED FILTER RACK
- 3. SINGLE POINT POWER CONNECTION
- 4. COORDINATE WITH EXISTING UNIT CURB AND PROVIDE NEW CURB OR ADAPTER AS NEEDED
- 5. CONDENSATE DRAIN OVERFLOW SWITCH MOTORIZED OUTSIDE AIR DAMPER
- 7. HAIL GUARD
- 8. RETURN AIR SMOKE DETECTOR





MECHANICAL DRAWINGS INDEX DWG NO.: AE-2020-09-10

- M1.1 MECHANICAL NOTES, SYMBOLS AND SCHEDULES.
- M2.1 MECHANICAL FLOOR PLAN GROUND FLOOR AREA "A"
- M2.2 MECHANICAL FLOOR PLAN 1ST FLOOR AREA "A" M2.3 MECHANICAL FLOOR PLAN - 2ND FLOOR AREA "A"
- M2.4 MECHANICAL FLOOR PLAN 3RD FLOOR AREA "A"
- M3.1 MECHANICAL DEMOLITION PLAN GROUND FLOOR AREA "B" M3.2 MECHANICAL DEMOLITION PLAN - 1ST FLOOR AREA "B"
- M3.3 MECHANICAL DEMOLITION PLAN 2ND FLOOR AREA "B"
- M4.1 MECHANICAL FLOOR PLAN GROUND FLOOR AREA "B"
- M4.2 MECHANICAL FLOOR PLAN 1ST FLOOR AREA "B"
- M4.3 MECHANICAL FLOOR PLAN 2ND FLOOR AREA "B" M5.1 MECHANICAL DETAILS

ENGINEERING 210 N. MAIN ST. SUITE 112 KERNERSVILLE, NC 336-999-4097 LC# P-0504



RCKH Marc Building AE-2020-09-10 08-05-2022 PS Checked By WGS Sheet Name MECHANICAL NOTES, SYMBOLS AND SCHEDULES. AS NOTED ON PLANS Sheet Number

Rev. # Date

GROUND FLOOR MECHANICAL PLAN - AREA "A" SCALE: 3/16" = 1'-0"

NOTES KEYED TO MECHANICAL FLOOR PLAN DWG NO.: AE-2020-09-10

MOUNT DEHUMIDIFIER ON WALL. FABRICATE EQUIPMENT PLATFORM APPROXIMATELY 30"L x 24"W FOR DEHUMIDIFIER AND CONDENSATE PUMP TO SIT ON.

USE 1"x1" ANGLE AND TOP BASE CAN BE 1/2" PLYWOOD. MOUNT PLATFORM 4 FT ABOVE FLOOR. ROUTE CONDENSATE FROM DEHUMIDIFIER TO CONDENSATE PUMP. ROUTE 3/4" PVC CONDENSATE DISCHARGE OUT EXISTING FRAMED OPENING AND DISCHARGE ABOVE GRADE IN FRENCH DRAIN.

2 FIRE DEPARTMENT HOSE CONNECTION.

ROUTE OUTSIDE AIR DUCT THROUGH EXISTING OPENING IN MASONRY WALL.

4 ROUTE DUCT THROUGH EXISTING FRAMED WOOD OPENING INTO CORRIDOR.

5 ROUTE DUCT THROUGH EXISTING FRAMED OPENING.

6 DEMO 4" STEAM AND 1" CONDENSATE LINE FROM BASEMENT CORRIDOR BACK TO OLD MECHANICAL ROOM.

7 CAP 4" STEAM AND 1" CONDENSATE PIPE. RE-INSULATE EXPOSED PIPING.

DEMO EXISTING SPLIT SYSTEM, RETURN DUCT, AND SUPPLY DUCT UP TO HORIZONTAL BRANCH ON 1ST FLOOR.

© CUT NEW OPENING IN WOOD FLOOR FOR SUPPLY DUCT TO 1ST FLOOR. CONNECT SUPPLY DUCT TO EXISTING HORIZONTAL DUCT IN SOFFIT ON 1ST FLOOR.

RE-USE EXISTING OPENING FOR FLOOR RETURN GRILLE ON 1ST FLOOR. TRANSITION RETURN DUCT TO FIT EXISTING GRILLE.

DEMO EXISTING UNIT AND DUCT SERVING 1ST FLOOR. INSTALL NEW SYSTEM AS INDICATED CONNECT TO EXISTING CONDENSATE DRAIN PIPING. BLOW-OUT EXISTING DRAIN PIPING.

ROUTE DUCT THROUGH EXISTING OPENING IN WALL.

DEMO EXHAUST HOOD AND ASSOCIATED DUCT.

ROUTE 3/4" CONDENSATE DRAIN TO CONDENSATE DRAIN PIPE AT FC-F4. CONNECT TO 1" DRAIN.

CONNECT 1" CONDENSATE DRAIN INTO EXISTING CONDENSATE DRAIN FROM UNIT THAT IS TO BE REMOVED.

ROUTE 3/4" CONDENSATE DRAIN TO 1" DRAIN OF FC-F3.

EXTENDED 6" CONCRETE PAD TO SUPPORT END OF DOAS UNIT. EXTENDED PAD 6" BEYOND UNIT ON EACH SIDE.

(18) EXISTING CONCRETE SIDEWALK.

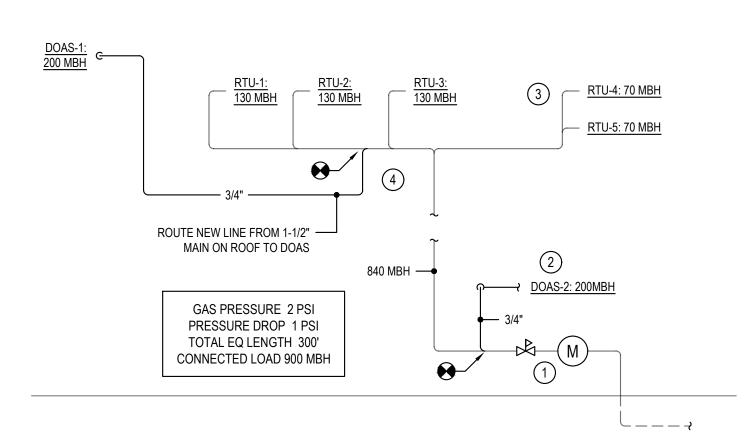
19 BOTTOM OF DUCT 3'-0" +/- ABOVE GRADE.

20 SEE CONCRETE SLAB DETAIL ON M5.1.

MECHANICAL EQUIPMENT NOTES DWG NO.: AE-2020-09-10

1. DH-1: APRIL-AIRE 1830 DEHUMIDIFIER 70 PINTS PER DAY, SET AT 55% RH, ALUM COILS, NON-DUCTED, 120V.

2. P-1: CONDENSATE PUMP, LITTLE GIANT MODEL VCMX-20UL, 1/30HP, 115V, 1.5AMPS, 93WATTS, 45 GPH @ 15FT, ABS HOUSING, MOTOR COVER AND FLOAT SWITCH, SS MOTOR SHAFT.

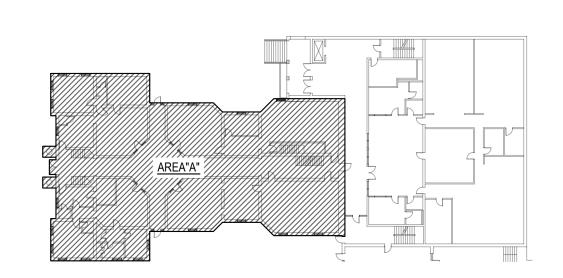


GAS PIPING SCHEMATIC

SCALE: NOT TO SCALE DRAWING NO.: AE-2020-09-10

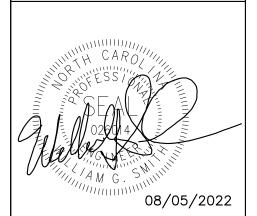
NOTES KEYED TO GAS PIPING SCHEMATIC

- (1) COORDINATE WITH PIEDMONT NATURAL GAS FOR A NEW 2PSI GAS SERVICE. JEFF ELDRIDGE 336-516-2522.
- 2) DISCONNECT GAS PIPING SERVING BOILER ON GROUND FLOOR MECHANICAL ROOM.
- 3) EXISTING RTU DO NOT HAVE REGULATORS. INSTALL REGULATORS ON EACH RTU.
- 4 LABEL PIPING PER CODE.



BUILDING KEYPLAN SCALE: NOT TO SCALE

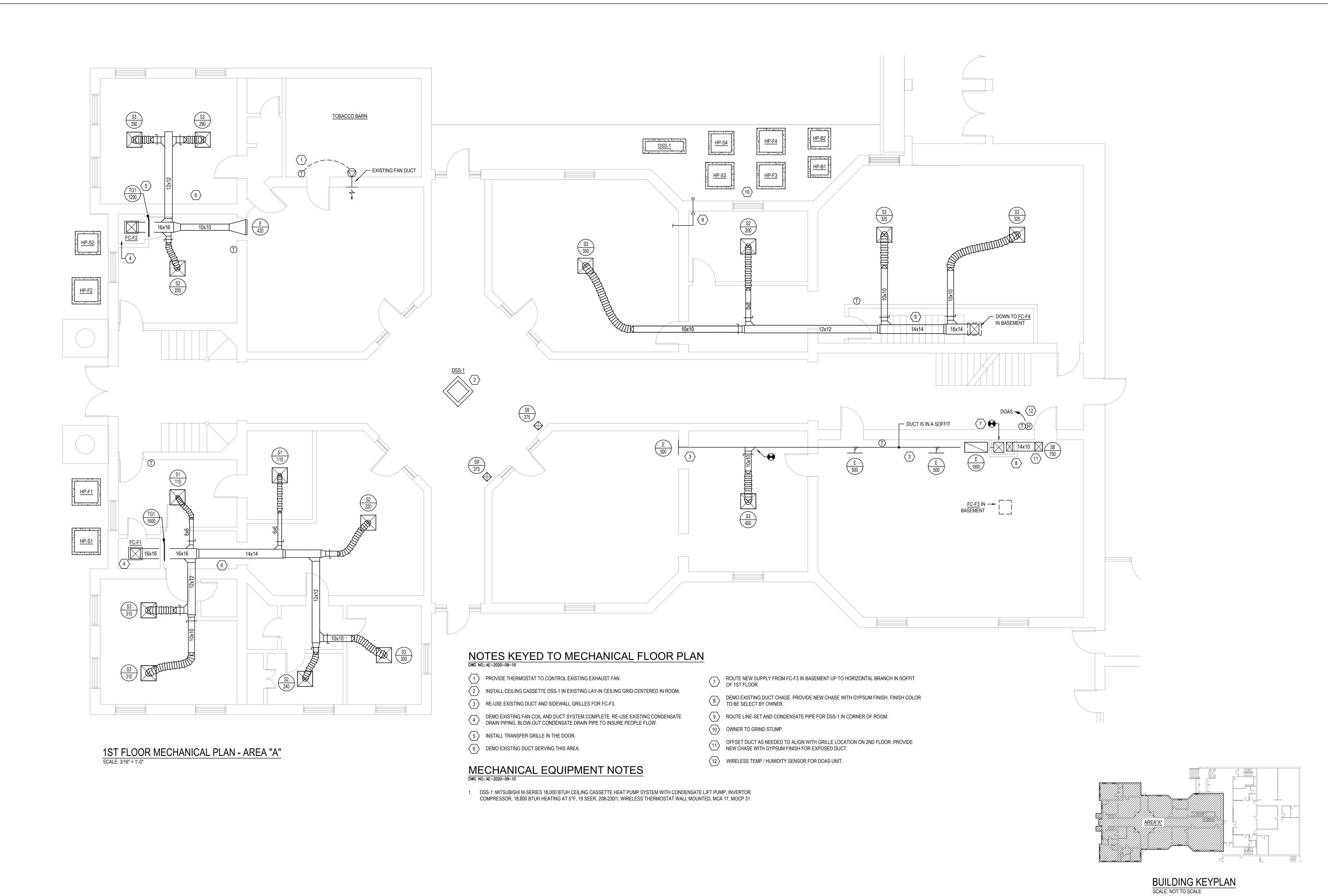




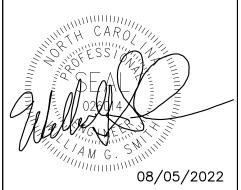
Rev. # Date RCKH Marc Building AE-2020-09-10 08-05-2022 PS Checked By WGS Sheet Name MECHANICAL FLOOR PLAN -GROUND FLOOR AREA "A" AS NOTED ON PLANS

M2.1

Sheet Number



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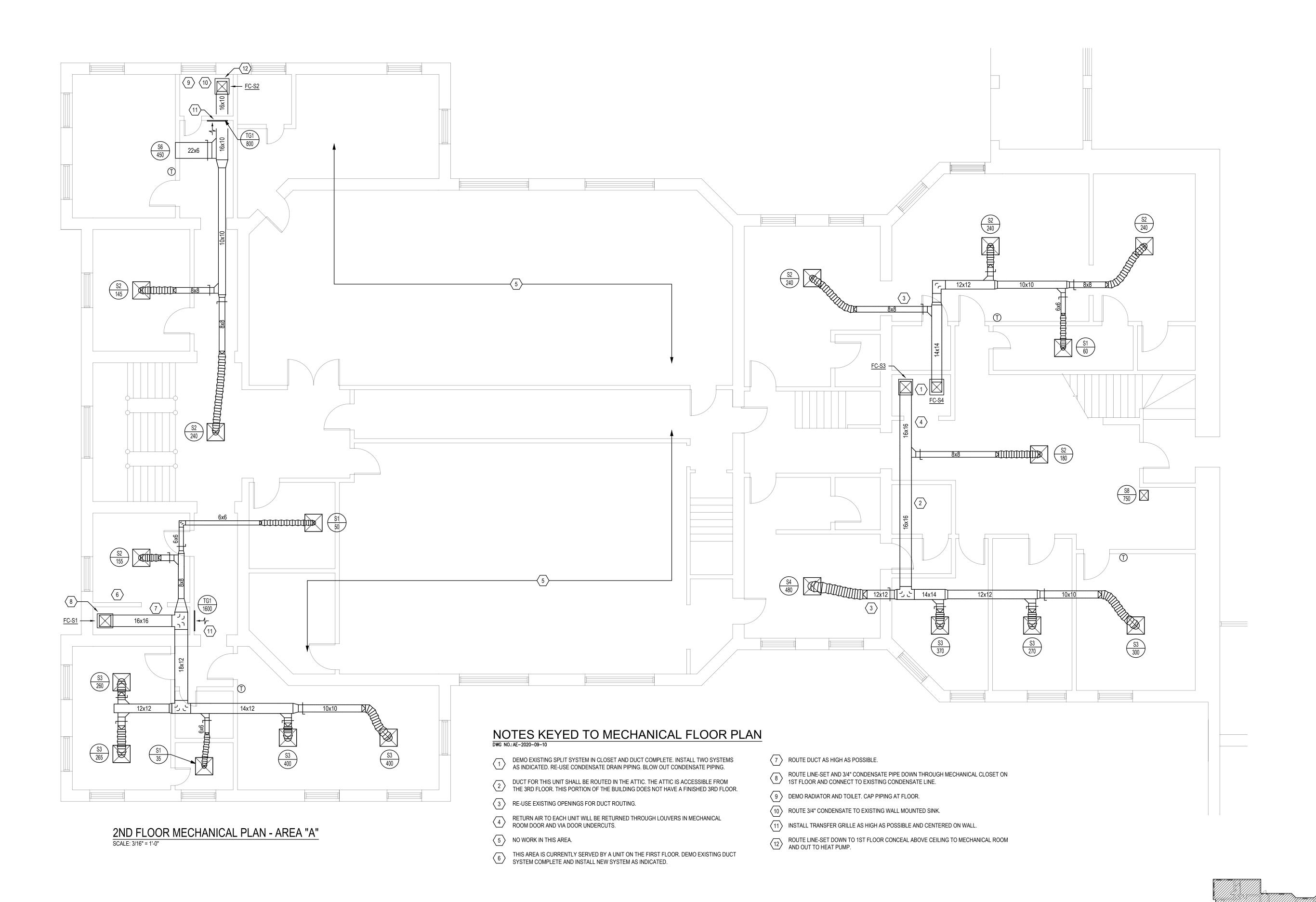
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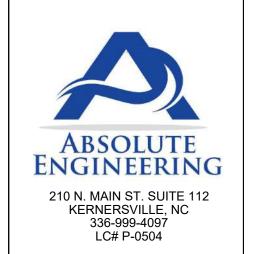
Rev. # Date RCKH Marc Building AE-2020-09-10 08-05-2022 PS Checked By Sheet Name

MECHANICAL FLOOR PLAN -1ST FLOOR AREA "A"

AS NOTED ON PLANS

M2.2







Rev. # Date RCKH Marc Building AE-2020-09-10 08-05-2022 PS

Checked By WGS Sheet Name

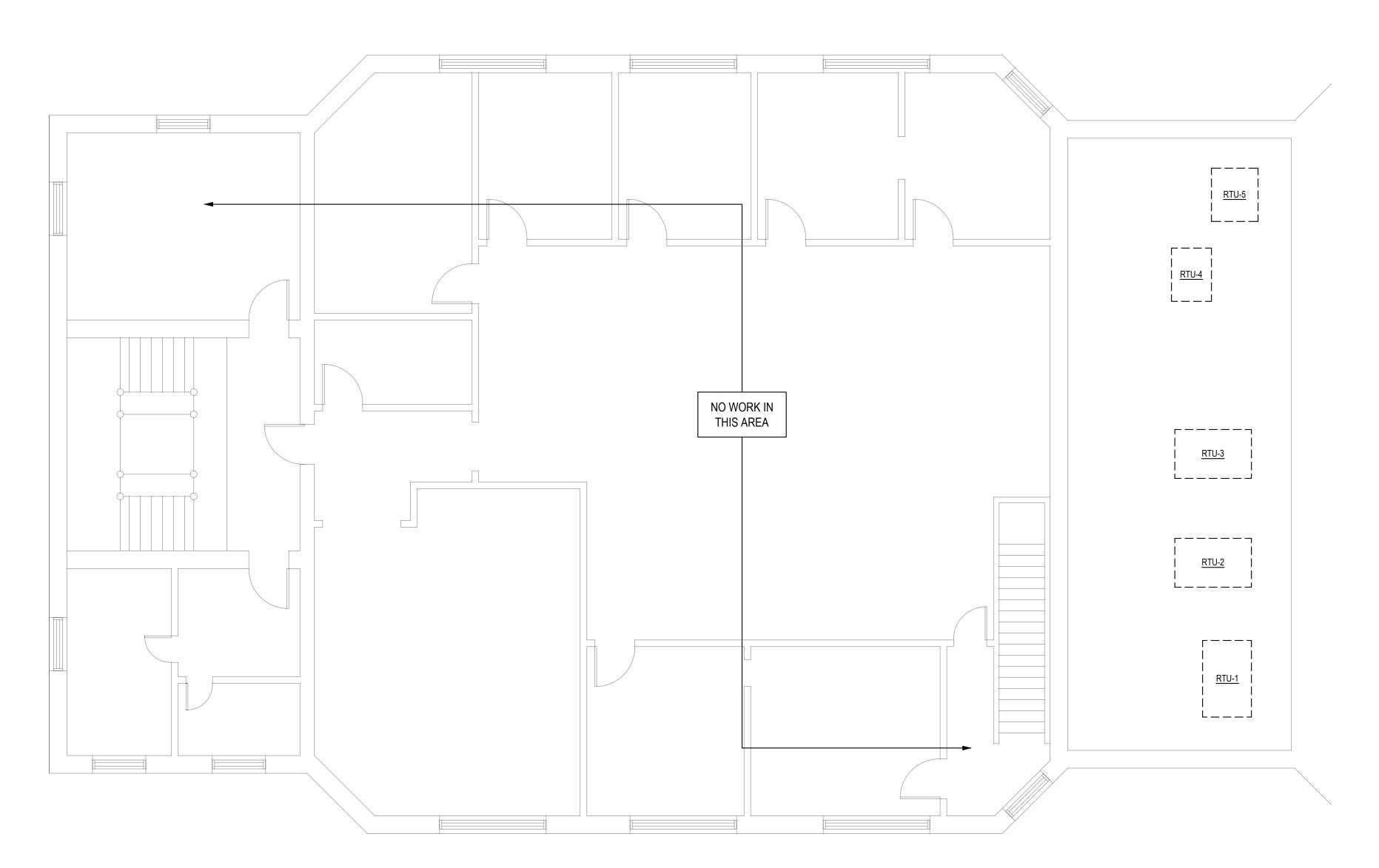
MECHANICAL FLOOR PLAN -2ND FLOOR AREA "A"

AS NOTED ON PLANS

Sheet Number

BUILDING KEYPLAN SCALE: NOT TO SCALE

M2.3

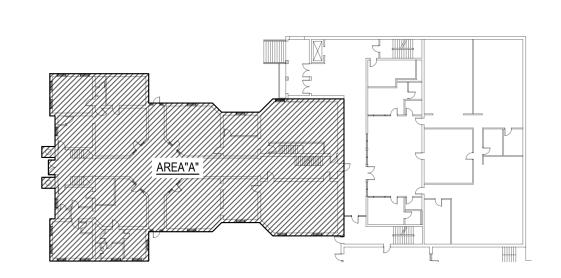


3RD FLOOR MECHANICAL PLAN - AREA "A" SCALE: 3/16" = 1'-0"

MECHANICAL GENERAL NOTES DWG NO.: AE-2020-01-04

1. REPLACE EXISTING RTU1-5. PROVIDE NEW CURBS OR ADAPTER CURBS AS NEEDED.

2. SEE GAS PIPING SCHEMATIC ON M2.1.



BUILDING KEYPLAN
SCALE: NOT TO SCALE

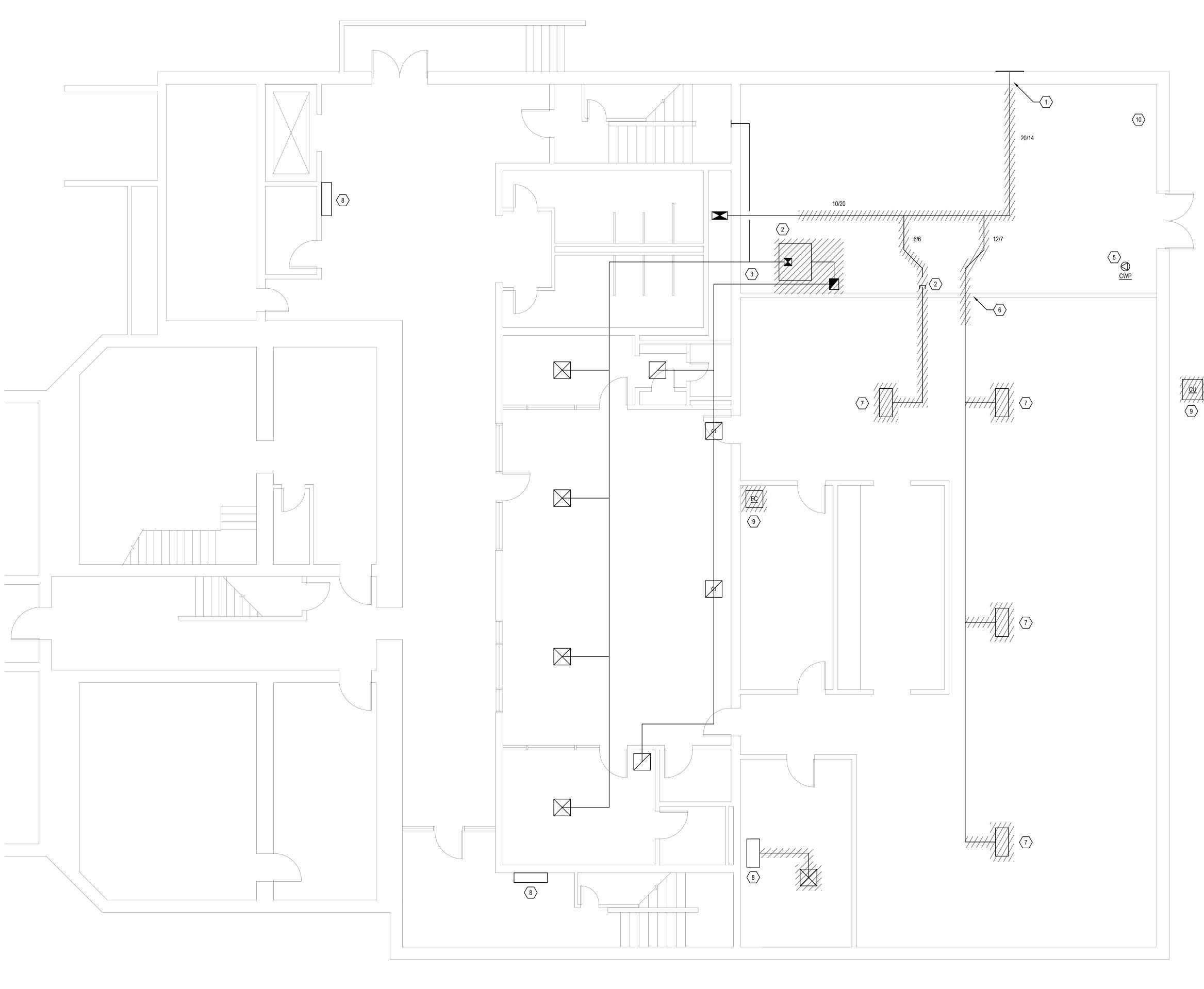




ROCKINGHAM COUNTY MARC BUILDING 1086 NC-65 Reidsville, NC 27320

Rev.#	Date		Revision/Issue			
Project Name	:	R	CKH Marc Building			
Project Numbe		ΑI	E-2020-09-10			
Date		08	-05-2022			
Drawn	by	PS	8			
Check	ed By	W	GS			
Sheet	Name					
MECHANICAL FLOOR PLAN - 3RD FLOOR AREA "A"						
Scale	AS NOT	rer	O ON PLANS			

M2.4



GROUND FLOOR MECHANICAL DEMOLITION PLAN - AREA "B" SCALE: 3/16" = 1'-0"



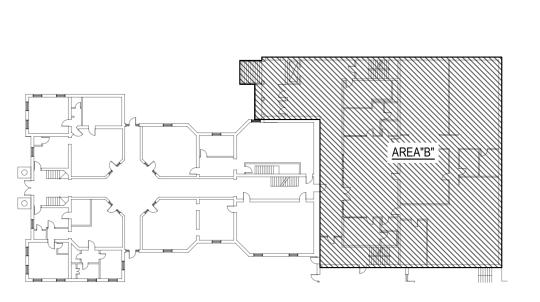


NOTES KEYED TO DEMOLITION PLAN DWG NO:: AE-2020-01-04

DEMO OUTSIDE AIR DUCT. SEAL INSIDE OF LOUVER AIR. TIGHT WITH RIGID INSULATION BOARD AND SHEET METAL.

 $\langle 4 \rangle$

- DEMO HOT WATER & CHILL WATER SUPPLY/RETURN PIPING BACK TO HEADER.
- COORDINATE WITH NEW WORK PLAN FOR RE-USE OF DUCT.
- DEMO AIR-COOLED CHILLER. REMOVE PIPING BACK TO ONE FEET BELOW GRADE.
- DEMO CHILLED WATER PUMP (CWP) AND 4" SUPPLY AND RETURN PIPING BACK TO CHASE AT OPPOSITE END OF MECHANICAL ROOM.
- 6 ENLARGE OPENING FOR NEW OUTSIDE AIR DUCT SERVING VAULT.
- 7 DEMO FAN COIL.
- 8 FAN COIL TO BE ABANDONED IN PLACE.
- DEMO FAN COIL AND CONDENSING UNIT. SEE DRAWING M4.1 FOR COORDINATION OF DUCT TO BE RE-USED.
- (10) DISCONNECT GAS PIPING TO BOILER. DRAIN BOILER AND ABANDON IN PLACE.



BUILDING KEYPLAN
SCALE: NOT TO SCALE

RCKH Marc Building AE-2020-09-10

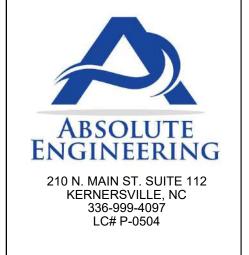
08-05-2021 PS

Checked By Sheet Name

> MECHANICAL DEMOLITION PLAN - GROUND FLOOR AREA "B"

AS NOTED ON PLANS

M3.1





NOTES KEYED TO DEMOLITION PLAN DWG NO::AE-2020-01-04

- 1 DEMO AHU. SEE NEW WORK PLAN FOR NEW AHU.
- 2 ABANDON FAN COILS IN PLACE.
- DEMO OUTSIDE AIR DUCT FROM SHAFT WALL PENETRATION TO FAN COILS. SEE NEW WORK PLAN FOR NEW OUTSIDE AIR DUCT.
- 4 DEMO FAN COIL.

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C-65 Reidsville, NC 27

v. # Date Revision/Issue

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Project Number AE-2020-09-10

Date

Date 08-05-2021

Drawn by

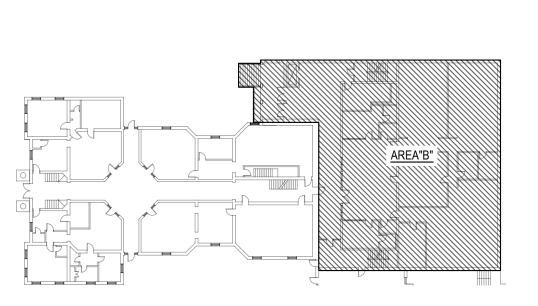
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WGS

MECHANICAL
DEMOLITION PLAN
- 1ST FLOOR AREA "B"

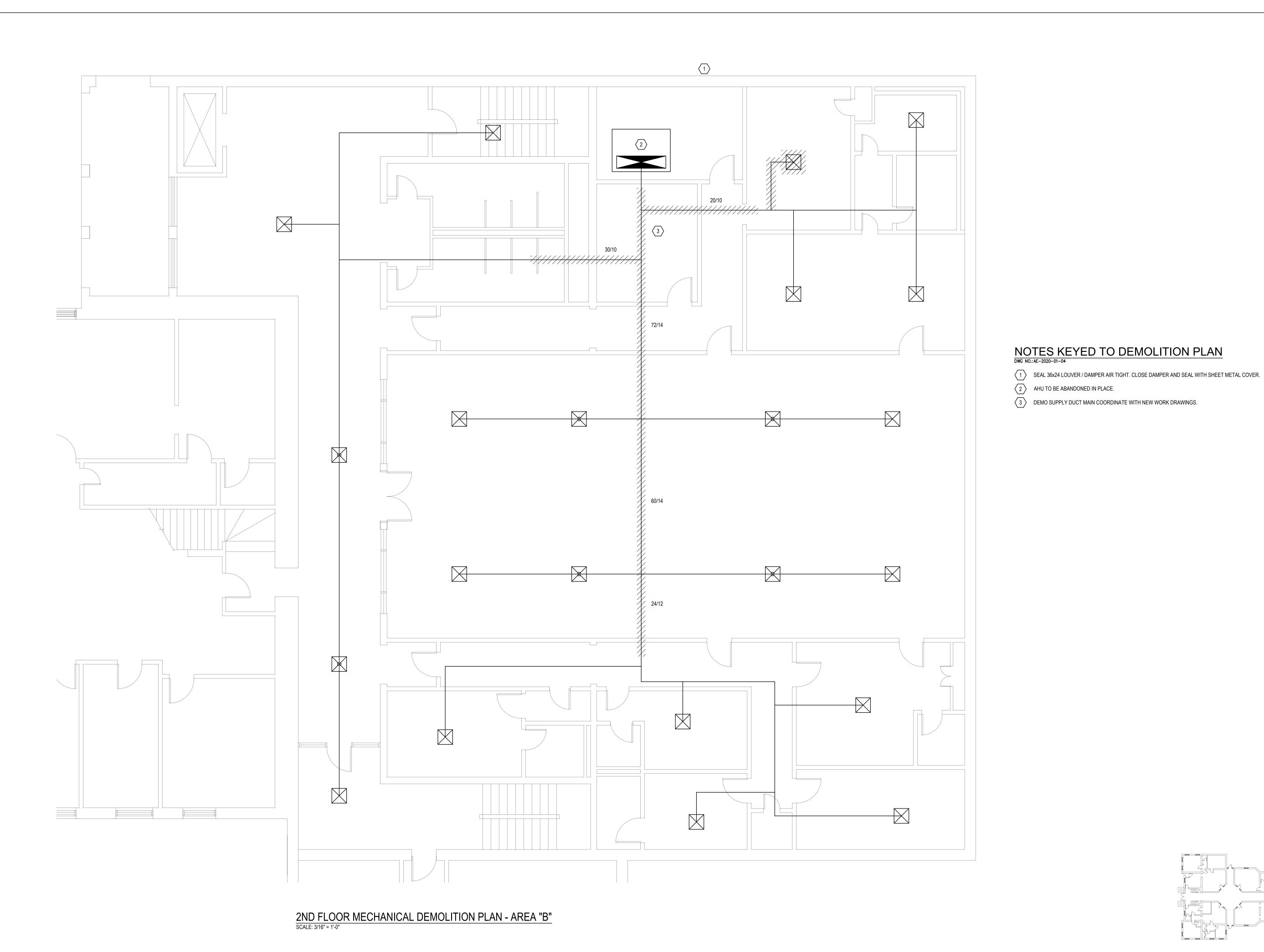
Scale AS NOTED ON PLANS

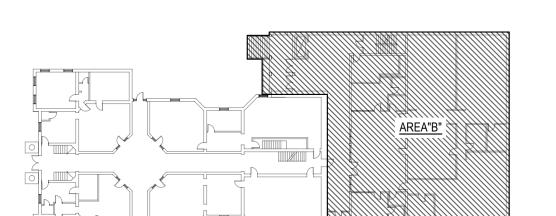
Sheet Number

M3.2

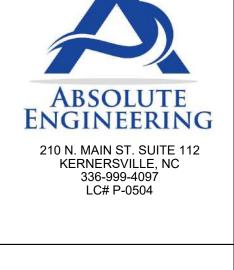


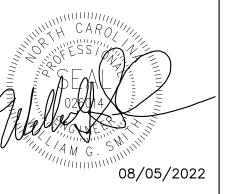
BUILDING KEYPLAN
SCALE: NOT TO SCALE





BUILDING KEYPLAN
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HAM COUNTY
BUILDING
Reidsville, NC 27320

v. # Date Revision/Issue

Project Name RCKH Marc Building

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08-05-2021

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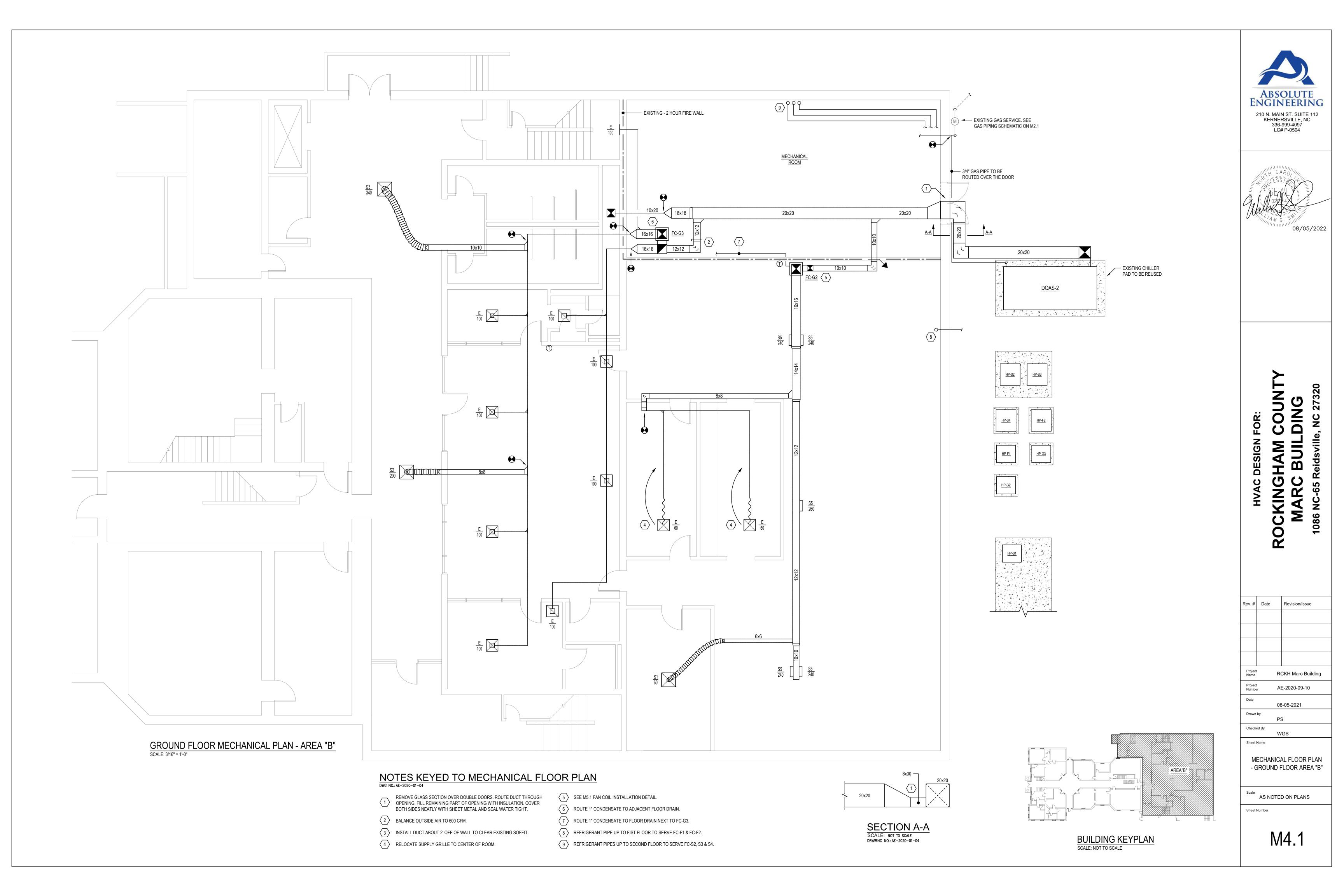
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MECHANICAL DEMOLITION PLAN - 2ND FLOOR AREA "B"

Scale
AS NOTED ON PLAN

AS NOTED ON PLANS

M3.3



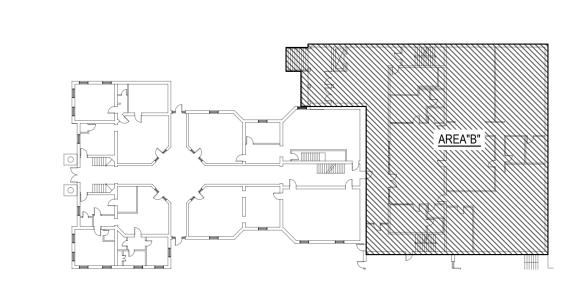
1ST FLOOR MECHANICAL PLAN - AREA "B" SCALE: 3/16" = 1'-0"



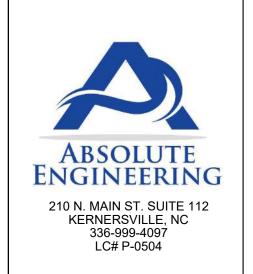
- PROVIDE CONDENSATE PUMP ADJACENT TO UNIT. PUMP CONDENSATE ABOVE CEILING AND CONNECT TO EXISTING CONDENSATE DRAIN OF UNIT REMOVED.
- 2 ADD SECTION OF DUCT TO RE-CONNECT OUTSIDE AIR DUCT TO RETURN DUCT. BALANCE OUTSIDE AIR TO 500CFM.
- (3) EXISTING 14/14 OUTSIDE AIR DUCT FROM GROUND FLOOR. EXTEND 14/14 DUCT UP TO 2ND FLOOR.
- CONNECT TO EXISTING 8/6 OUTSIDE AIR DUCT PENETRATING SHAFT AND TRANSITION TO 10/10...
- (5) WIRELESS TEMPERATURE / HUMIDITY SENSOR FOR DOAS-2.
- 6 ROUTE REFRIGERANT PIPE FOR FC-F1 & FC-F2 NEATLY OVERHEAD. CORE DRILL FLOOR AND ROUTE DOWN THROUGH GROUND FLOOR TO HEAT PUMPS.
- 7 REFRIGERANT PIPES FOR 2ND FLOOR UNITS.

MECHANICAL EQUIPMENT NOTES DWG NO.: AE-2020-01-04

 P-1: CONDENSATE PUMP, LITTLE GIANT MODEL VCMX-20UL, 1/30HP, 115V, 1.5AMPS, 93WATTS, 45 GPH @ 15FT, ABS HOUSING, MOTOR COVER AND FLOAT SWITCH, SS MOTOR SHAFT.



BUILDING KEYPLAN
SCALE: NOT TO SCALE





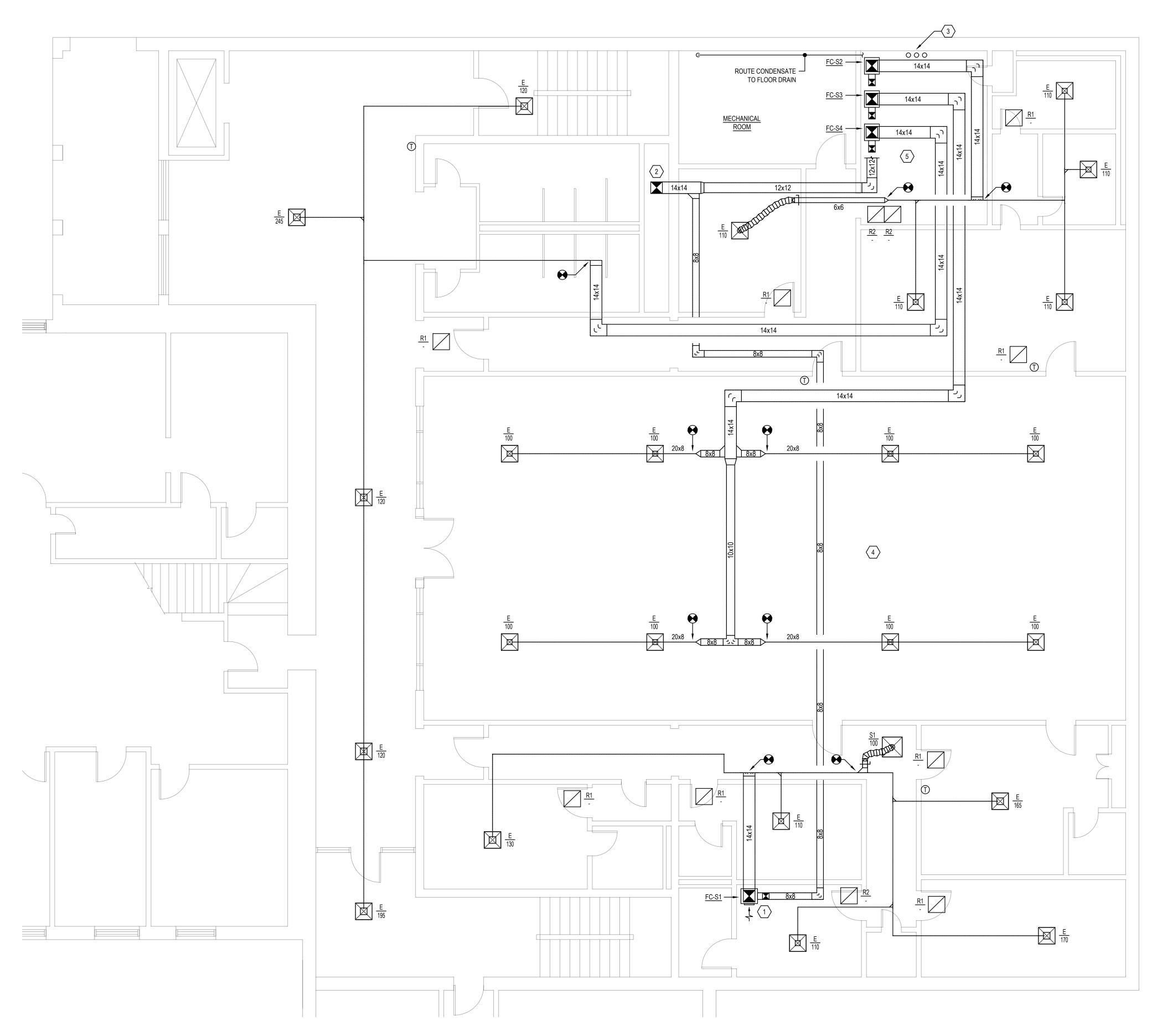
OCKINGHAM COUNTY
MARC BUILDING
1086 NC-65 Reidsville, NC 27320

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MECHANICAL FLOOR PLAN -1ST FLOOR AREA "B"

AS NOTED ON PLANS

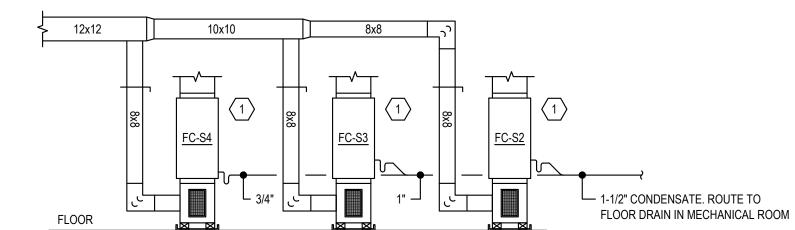
M4.2



2ND FLOOR MECHANICAL PLAN - AREA "B" SCALE: 3/16" = 1'-0"

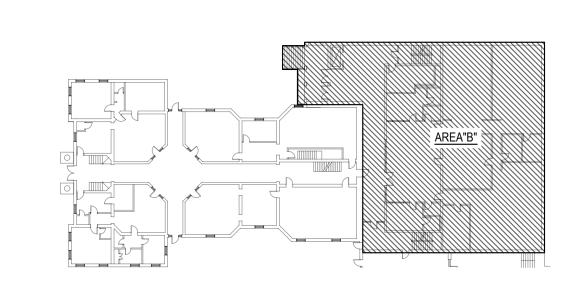
NOTES KEYED TO MECHANICAL FLOOR PLAN DWG NO.: AE-2020-01-04

- 1 SEE M5.1 FAN COIL INSTALLATION DETAIL.
- 2 14/14 OUTSIDE AIR DUCT FROM 1ST FLOOR.
- ROUTE REFRIGERANT PIPE DOWN THROUGH FIRST FLOOR TO MECHANICAL ROOM ON GROUND FLOOR.
- THIS AREA HAS EXISTING RETURN PLENUM GRILLES.
- 2ND FLOOR HAS A RETURN PLENUM ABOVE CEILING.

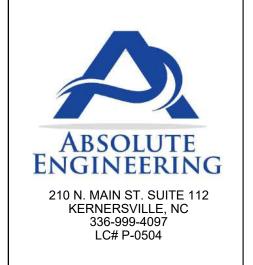


FAN COILS OA INSTALLATION DETAIL

SCALE: NOT TO SCALE
DRAWING NO.: AE-2020-01-04



BUILDING KEYPLAN
SCALE: NOT TO SCALE





MARC BUILDING

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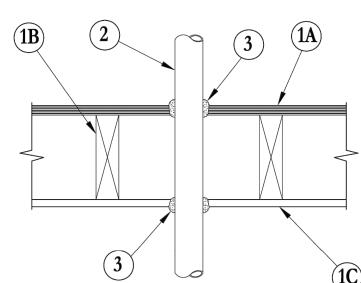
Rev.#	Date		Revision/Issue			
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MECHANICAL FLOOR F

MECHANICAL FLOOR PLAN - 2ND FLOOR AREA "B"

AS NOTED ON PLANS

M4.3



- 1. **Floor-Ceiling Assembly** The 1 or 2 hr fire-rated wood joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the UL Fire Resistance Directory. The 1 hr fire rated assembly shall be constructed as specified in Design No. L501, L512 or L537. The 2 hr fire rated assembly shall be constructed as specified in Design No. L505, L511 or L536. **The F Rating of the firestop system is equal to the fire rating of the floor-ceiling assembly**. The general construction details of the floor-ceiling assembly are supported below:
- A. **Flooring System** Lumber or plywood subfloor with finish floor of lumber, plywood or **Floor Topping Mixture*** as specified in the individual Floor-Ceiling Design. Max diam of opening is 1 in. larger than outside diam of penetrant.
- B. Wood Joists Nom 2 by 10 in. lumber joists spaced 16 in. O.C. with nom 1 by 3 in. lumber bridging and with ends firestopped.
 C. Furring Channels (Not Shown) Resilient galv steel furring channels installed perpendicular to wood joists between first and second
- layers of wallboard (Item 1D) in 2 hr fire rated assembly. Furring channels spaced max 24 in. O.C.

 D. Gypsum Board* Nom 4 ft wide by 5/8 in. thick as specified in the individual Floor-Ceiling Design. First layer of wallboard nailed to wood joists. Second layer of wallboard (2 hr fire rated assembly only) screw-attached to furring channels. Max diam of opening is 1 in.
- larger than outside diam of penetrant.

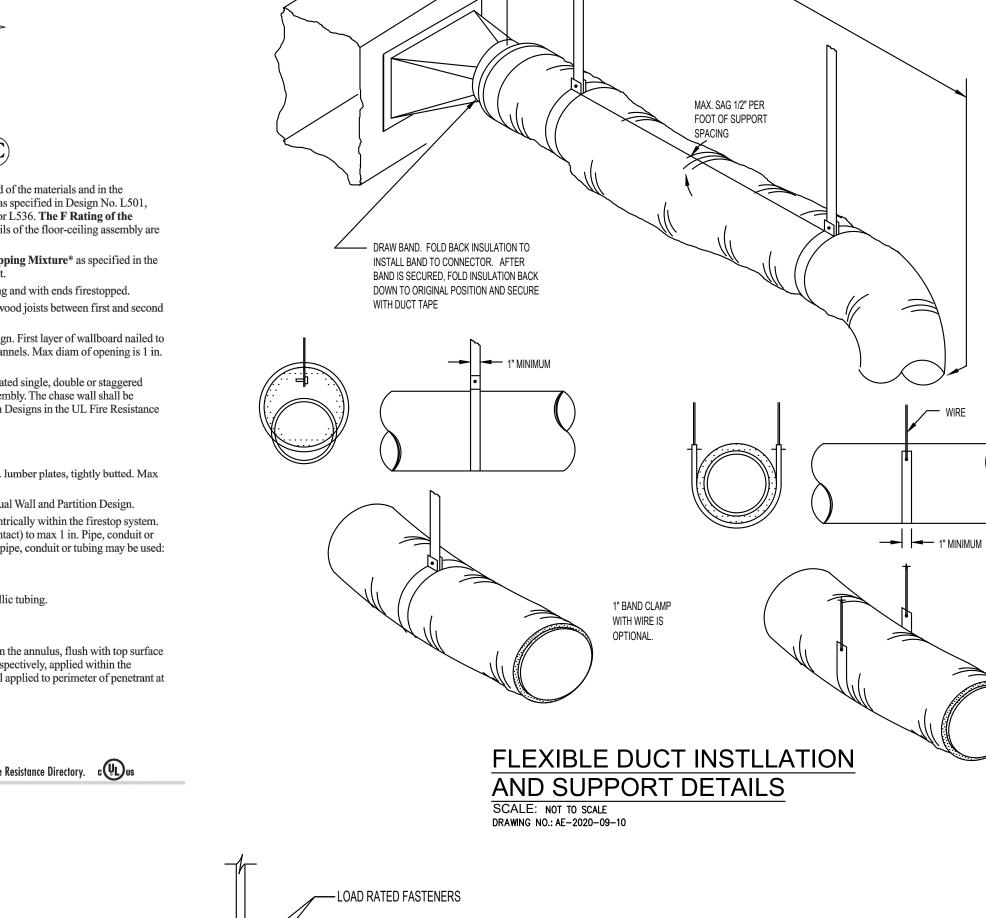
 1.1 Chase Wall (Optional, not shown) The through penetrants (Item No. 2) may be routed through a fire-rated single, double or staggered wood stud/gypsum wallboard chase wall having a fire rating consistent with that of the floor-ceiling assembly. The chase wall shall be constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the UL Fire Resistance
- Directory and shall include the following construction features:

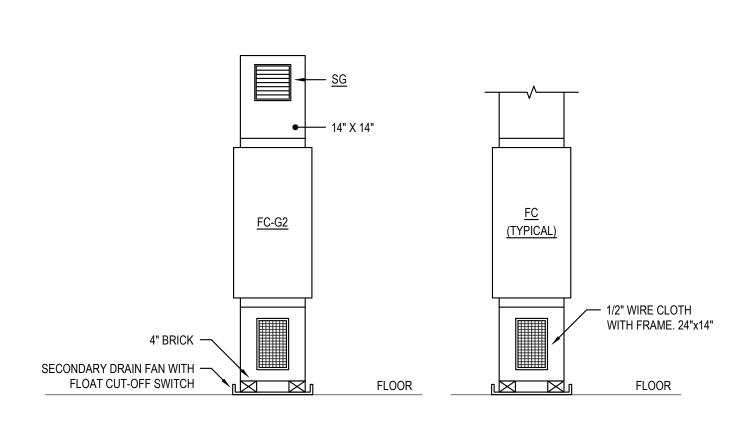
 A. Studs Nom 2 by 6 in. or double nom 2 by 4 in. lumber studs.
- B. **Sole Plate** Nom 2 by 6 in. or parallel 2 by 4 in. lumber plates, tightly butted.
- C. **Top Plate** The double top plate shall consist of two nom 2 by 6 in. or two sets of parallel 2 by 4 in. lumber plates, tightly butted. Max diam of opening is 5 in..
- D. Gypsum Board* Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.
 Through Penetrants One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (point contact) to max 1 in. Pipe, conduit or tubing to be rigidly supported on both sides of floor assembly. The following types and sized of metallic pipe, conduit or tubing may be used:
- A. **Steel Pipe** Nom 10 in. diam (or smaller) Schedule 40 (or heavier) steel pipe.
- B. Iron Pipe Nom 10 in. diam (or smaller) cast or ductile iron pipe.
- C. **Conduit** Nom 6 in. diam (or smaller) steel conduit, or nom 4 in. (or smaller) steel electrical metallic tubing.
- D. Copper Tubing Nom 4 in. diam (or smaller) Type L (or heavier) copper tubing.
 E. Copper Pipe Nom 4 in. diam (or smaller) Regular (or heavier) copper pipe.
- Fill, Void or Cavity Material* Caulk or Sealant Min 3/4 in. thickness of fill material applied within the annulus, flush with top surface of floor or sole plate. Min 5/8 in. or 1-1/4 in. thickness of fill material, for 1 and 2 hr rated assemblies, respectively, applied within the annulus, flush with bottom surface of soiling or top plate. An additional min 1/4 in group of fill material applied to perimeter of panetrant at
- annulus, flush with bottom surface of ceiling or top plate. An additional min 1/4 in. crown of fill material applied to perimeter of penetrant at its egress from the top of flooring and underside of ceiling or from top of sole plate and underside of top plate.

3M COMPANY – CP 25WB+ caulk or FB-3000 WT sealant.

*Bearing the UL Classification Mark

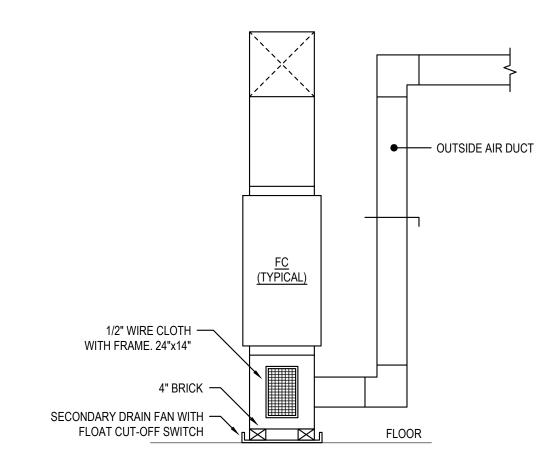
This material was extracted and drawn by 3M Fire Protection Products from the 2007 edition of the UL Fire Resistance Directory.





FAN COILS INSTALLATION DETAIL - AREA "A"

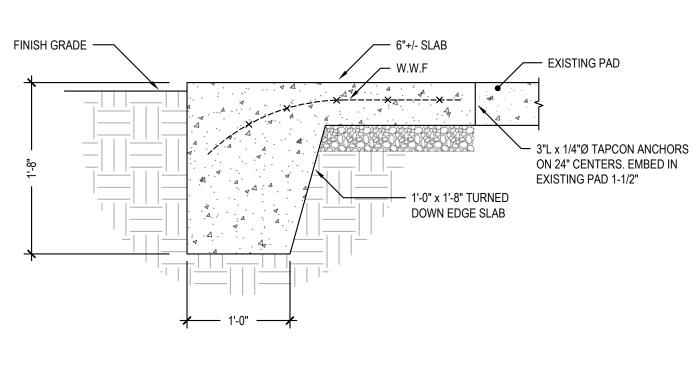
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FAN COILS INSTALLATION DETAIL - AREA "B"

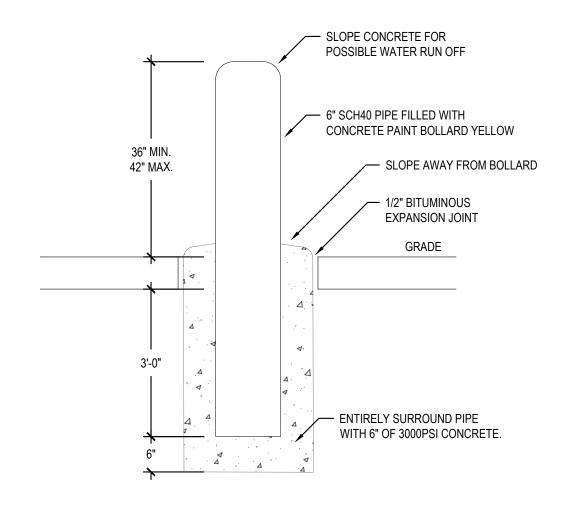
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DRAWING NO.: AE-2020-09-10



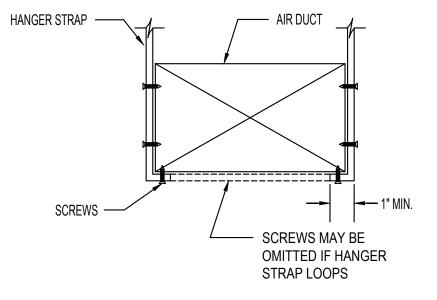
CONCRETE SLAB DETAIL

SCALE: NOT TO SCALE
DRAWING NO.: AE-2020-09-10



PIPE BOLLARD DETAIL

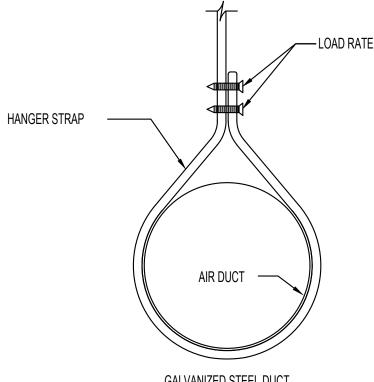
SCALE: NOT TO SCALE
DRAWING NO.: AE-2020-09-10



GALVANIZED DUCT

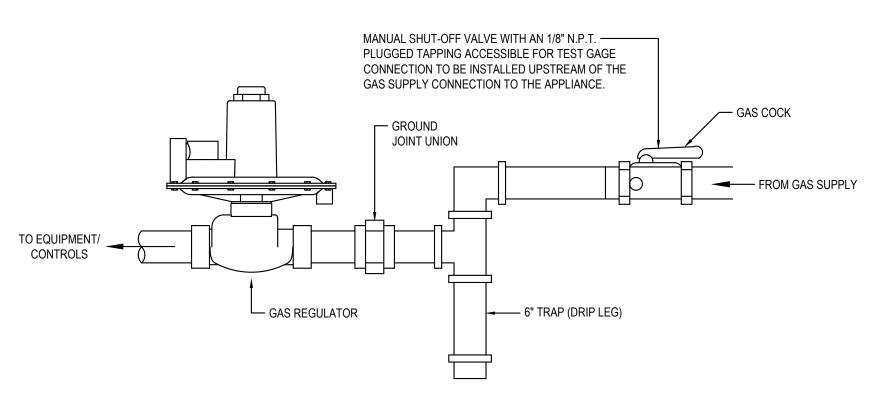
GAL	VANIZED DUCT	
MAXIMUM HALF OF DUCT PERIMETER	STRAP SIZE	MAXIMUM SPACING
P/2=30"	1"x 22 ga.	8'-0" O.C.
P/2=72"	1"x 20 ga.	8'-0" O.C.
P/2=96"	1"x 18 ga.	8'-0" O.C.
P/2=120"	1"x 16 ga.	8'-0" O.C.
P/2=192"	1½"x 16 ga.	8'-0" O.C.

DUCT STRAP SUPPORT
(MAX. 2" W.G. MAX. 2000 FPM)
SCALE: NOT TO SCALE
DRAWING NO.: AE-2020-09-10



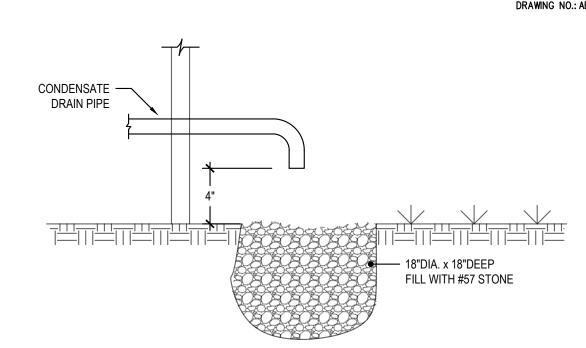
GALVANIZED STEEL DUCT							
AIR DUCT SIZE	STRAP SIZE	MAXIMUM SPACING					
UP TO 24" DIA.	1" x 22 ga.	8'-0"					
19" - 36" DIA.	1" x 20 ga.	8'-0"					





GAS CONNECTION TO EQUIPMENT DETAIL
SCALE: NOT TO SCALE

DRAWING NO.: AE-2020-09-10



CONDENSATE - FRENCH DRAIN DETAIL

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DRAWING NO.: AE-2020-09-10





ROCKINGHAM COUN MARC BUILDING

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M5.1