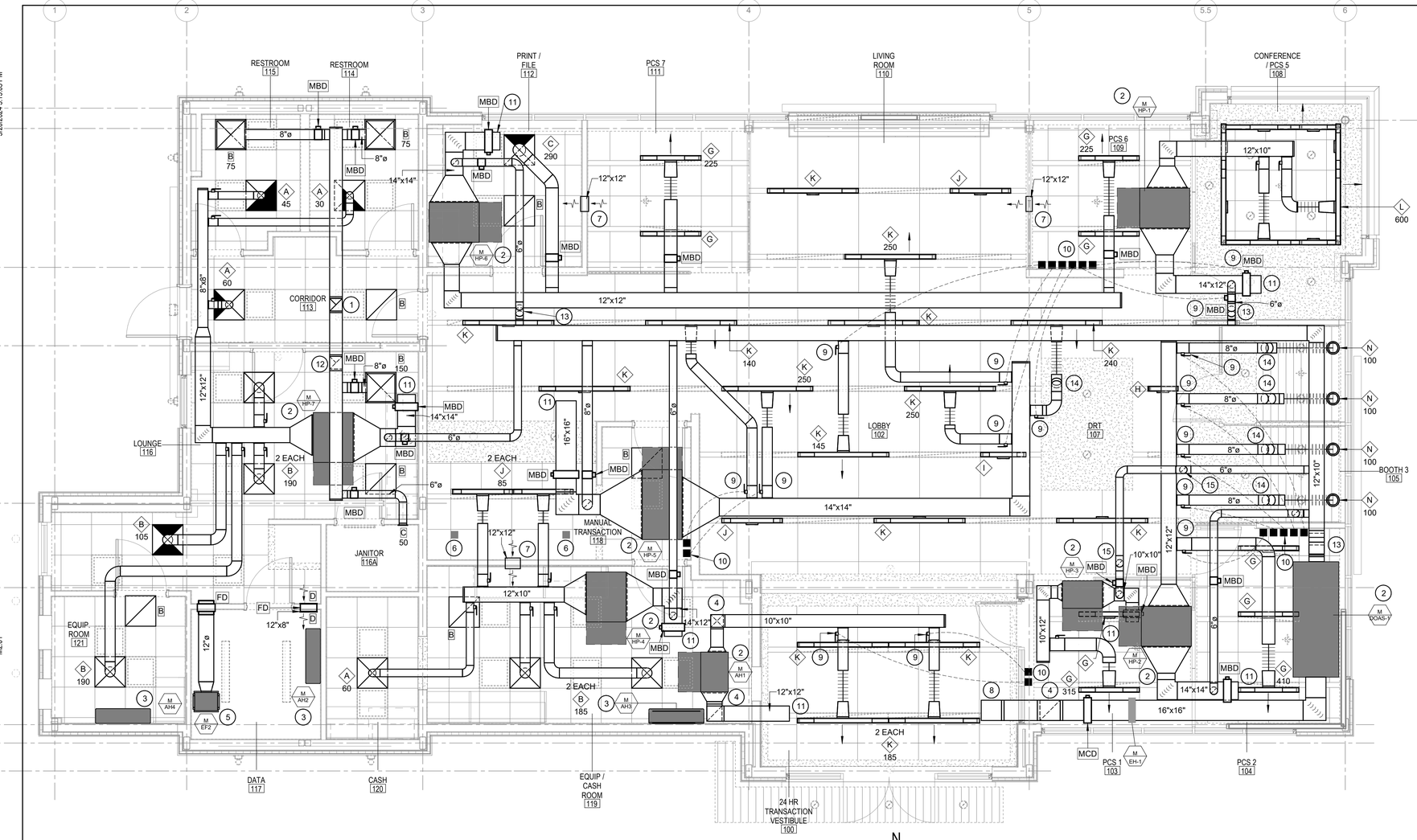

1 M2.01 HVAC FLOOR PLAN
1/4" = 1'-0"

3 M2.01 HVAC SYMBOL SCHEDULE

M AH1	MECHANICAL EQUIPMENT DESIGNATION AH1, REFER TO MECHANICAL EQUIPMENT TYPES SCHEDULE	T	WALL-MOUNTED THERMOSTAT
K 200	LINEAR SLOT CEILING DIFFUSER TYPE "K", BALANCE TO 200 CFM, SLOT DIFFUSER TAGS WITHOUT A CFM LISTED INDICATE DIFFUSER IS BEING UTILIZED FOR RETURN. FURNISH WITH FBRI RETURN HOOD. REFER TO MECHANICAL SCHEDULES FOR SIZE AND CONFIGURATION	TS	WALL-MOUNTED REMOTE TEMPERATURE SENSOR
		H	WALL-MOUNTED REMOTE HUMIDITY SENSOR
RA	RETURN AIR	TIMER	DAINTREE WALL TIMER TO CONTROL EXHAUST FAN, RE: ELECTRICAL
SA	SUPPLY AIR	TEST	IN-DUCT SMOKE DETECTOR TEST KEY SWITCHES BY MECHANICAL, HARDWIRE TO DETECTOR
EXH	EXHAUST AIR	1	REFERENCE TO MECHANICAL KEYNOTE NUMBER 1.
OA	OUTSIDE AIR	RE: 2M2.01	REFER TO DETAIL 2, SHEET M2.01
		B	RETURN AIR GRILLE IN CEILING, SEE EQUIPMENT SCHEDULE, OTHERS SIMILAR.

B 300	TYPE B, EXH GR, BALANCE TO CFM INDICATED, SEE EQUIPMENT SCHEDULE, OTHERS SIMILAR	RS	REFRIGERANT SUCTION
B 200	TYPE "B" CEILING DIFFUSER (4 WAY THROW UNLESS NOTED OTHERWISE BY SHADING.) BALANCE TO 200 CFM, SEE EQUIPMENT SCHEDULE, OTHERS SIMILAR.	VOJ	VERIFY ON JOB
	DUCT TURNING VANE	SP	DUCT STATIC PRESSURE SENSOR FOR VRF SYSTEM BY MECHANICAL.
6x6 OR 6x6	6"x6" RECTANGULAR DUCT	FD	FIRE DAMPER. COORDINATE RATING WITH WALL TYPE.
12"Ø OR 12"Ø	12" DIAMETER ROUND DUCT	CO	CLEANOUT
MBD	MANUAL BALANCING DAMPER (MBD)		
MCD	MOTORIZED CONTROL DAMPER (MCD)		
RL	REFRIGERANT LIQUID		

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH 2018 NORTH CAROLINA MECHANICAL CODE WITH ALL LOCAL AMENDMENTS AND ORDINANCES; HENCEFORTH REFERRED TO AS THE NCMC.
2. ALL SUPPLY, RETURN, OUTSIDE, AND EXHAUST AIR DUCTWORK INSIDE BUILDING SHALL BE WRAPPED WITH 2" INSULATION (MIN. R-6 INSTALLED). SIZES SHOWN ARE SHEET METAL DIMENSIONS.
3. LAY-IN RETURN GRILLES SHALL BE EQUIPPED WITH PRICE MODEL RAC RETURN AIR CANOPY OR APPROVED EQUAL PRODUCT.
4. PROVIDE PERMANENT PRINTED LABELS FOR THERMOSTATS INDICATING AREA(S) SERVED.
5. CEILING SPACE IS BEING UTILIZED AS AN RA PLENUM. MATERIALS WITHIN PLENUM SPACE SHALL BE RATED FOR SUCH USE. NO PLASTIC PIPING PERMITTED IN CEILING PLENUM.
6. CONTROLS FOR VRF SYSTEMS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR. ALL OTHER HVAC EQUIPMENT SHALL BE CONTROLLED BY THE DAINTREE BMS PROVIDED BY ELECTRICAL. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ALL REQUIREMENTS. VRF CONTROLS SHALL TIE INTO DAINTREE FRONT END JACE PANEL.
7. DAINTREE DEVICES ARE SHOWN ON MECHANICAL PLANS FOR COORDINATION PURPOSES AND TO SHOW SUGGESTED LOCATIONS. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ALL REQUIREMENTS.
8. PROVIDE DAINTREE SUPPLY DUCT TEMPERATURE SENSOR IN ALL SUPPLY MAINS.
9. AT EACH HVAC FAN MOTOR, PROVIDE DAINTREE CURRENT SENSOR WIRED TO WGA100 ADAPTER.
10. PROVIDE DAINTREE OUTDOOR AIR TEMPERATURE SENSOR MOUNTED ON WALL ABOVE ELECTRIC METER/MAIN PANELS, UNLESS SHOWN OTHERWISE.
11. COORDINATE EXACT HVAC SENSOR ROUGH-IN LOCATIONS IN FIELD WITH ARCHITECT/OWNER.
12. TOP OF TEMPERATURE CONTROLS SHALL BE 40" A.F.F. UNLESS NOTED OTHERWISE.
13. ALL AIR FLOWS SHALL BE BALANCED TO WITHIN +/- 10% OF SCHEDULED VALUES.
14. PROVIDE A DUCT DETECTOR IN ALL RETURN AIR MAINS PER NCMC SECTION 606.2

KEYNOTES

1. 10"x10" WRAPPED EXHAUST DUCT UP TO FAN ON ROOF.
2. INDOOR UNIT SUSPENDED FROM ROOF STRUCTURE ABOVE CEILING, RE: 4M2.05 FOR DETAIL. RE: 1M2.02 FOR CONDENSATE DRAIN ROUTE.
3. INDOOR UNIT MOUNTED ON WALL. RE: 1M2.02 CONDENSATE DRAIN ROUTE.
4. DUCT RISE TO RUN ABOVE TRANSACTION VESTIBULE CEILING.
5. BACKUP EXHAUST FAN INSTALLED INTO DATA ROOM, SUSPENDED FROM STRUCTURE ABOVE. ROUTE 12" DIA. EXHAUST DUCT THROUGH DATA ROOM WALL TO CEILING PLENUM. INSTALL 12" x 8" LOUVERED TRANSFER GRILLE IN WALL ADJACENT TO LOUNGE AS SHOWN. REFER TO BACK UP VENTILATION SYSTEM DETAIL, RE: 3M2.06.
6. VRF BRANCH SELECTOR BOX, COORDINATE EXACT LOCATION IN FIELD TO MAINTAIN PROPER ACCESS.
7. TRANSFER AIR DUCT TO PROVIDE RETURN AIR THROUGH UP TO DECK WALL. PROVIDE DUCTWORK IN CELING SPACE.
8. 16" x 16" WRAPPED OUTSIDE AIR DUCT UP TO INTAKE ON ROOF.
9. PROVIDE REMOTE CABLE BALANCING CONTROL FOR THIS BRANCH DUCTWORK. DAMPER SHOWN FOR BRANCH SHALL BE YOUNG REGULATOR MODEL 5020CC2 OR EQUAL. PROVIDE YOUNG REGULATOR BOWDEN CABLE CONTROL SYSTEM MODEL 270-275-PH (PHILLIPS HEAD ADJUSTMENT TOOL) AND MOUNT OPERATOR ABOVE ACCESSIBLE CEILING AS SHOWN. SECURE OPERATOR TO WALL ABOVE CEILING AND PROVIDE PERMANENT LABEL FOR DAMPER DESCRIPTION.
10. REMOTE CABLE CONTROL OPERATOR(S).
11. OPEN END RA DUCT FOR PLENUM RETURN.
12. DUCT TO RISE OVER ADJACENT HEAT PUMP UNIT.
13. DUCT TO RISE AT A 45 DEGREE ANGLE.
14. DUCT TO DROP AT A 45 DEGREE ANGLE.
15. DUCT TO TURN AT A 90 DEGREE ANGLE TO AVOID BEAM.

Verges Rome Architects
320 N. Carrollton Avenue, Suite 100
New Orleans, Louisiana 70119
t. 504.488.7739 f. 504.488.7743
www.VergesRome.com

NORTH CAROLINA PROFESSIONAL SEAL 045041 ENGINEER JORDAN H. FISH

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NEW CONSTRUCTION

PITTSBORO, NC 27512
52 HARPER LANE

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TITLE:
HVAC FLOOR PLANS

SHEET:
M2.01

AST ENGINEERS
8417 Kelwood Avenue
Baton Rouge, Louisiana 70806
(p) 225.926.5600 | (f) 225.926.5620
www.astengineers.us

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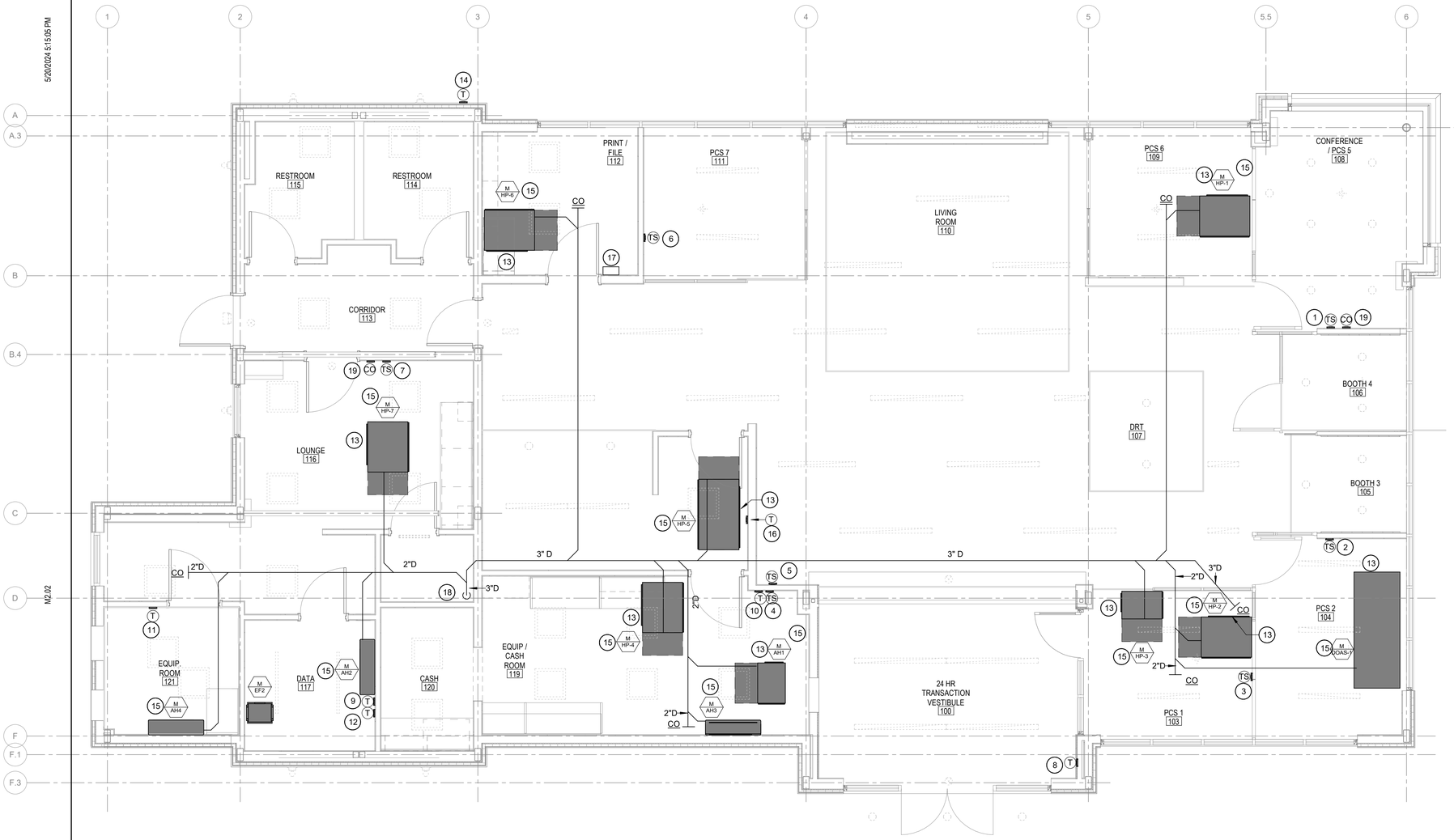

1 M2.02 HVAC CONTROLS AND CONDENSATE FLOOR PLAN
1/4" = 1'-0"

KEYNOTES

1. TEMPERATURE SENSOR TO CONTROL M-HP-1. HARDWIRE BACK TO VRF MAIN SYSTEM CONTROLLER.
2. TEMPERATURE SENSOR TO CONTROL M-HP-2. HARDWIRE BACK TO VRF MAIN SYSTEM CONTROLLER.
3. TEMPERATURE SENSOR TO CONTROL M-HP-3. HARDWIRE BACK TO VRF MAIN SYSTEM CONTROLLER.
4. TEMPERATURE SENSOR TO CONTROL M-HP-4. HARDWIRE BACK TO VRF MAIN SYSTEM CONTROLLER.
5. TEMPERATURE SENSOR TO CONTROL M-HP-5. HARDWIRE BACK TO VRF MAIN SYSTEM CONTROLLER.
6. TEMPERATURE SENSOR TO CONTROL M-HP-6. HARDWIRE BACK TO VRF MAIN SYSTEM CONTROLLER.
7. TEMPERATURE SENSOR TO CONTROL M-HP-7. HARDWIRE BACK TO VRF MAIN SYSTEM CONTROLLER
8. DAINTREE THERMOSTAT TO CONTROL M-AH/AC1. REFER TO ELECTRICAL UNIT MANUFACTURER SHALL PROVIDE ADAPTER AS REQUIRED TO COMMUNICATE WITH DAINTREE CONTROL SYSTEM.
9. DAINTREE THERMOSTAT TO CONTROL M-AH/AC2. REFER TO ELECTRICAL. UNIT MANUFACTURER SHALL PROVIDE ADAPTER AS REQUIRED TO COMMUNICATE WITH DAINTREE CONTROL SYSTEM..
10. DAINTREE THERMOSTAT TO CONTROL M-AH/AC3. REFER TO ELECTRICAL. UNIT MANUFACTURER SHALL PROVIDE ADAPTER AS REQUIRED TO COMMUNICATE WITH DAINTREE CONTROL SYSTEM.
11. DAINTREE THERMOSTAT TO CONTROL M-AH/AC4. REFER TO ELECTRICAL. UNIT MANUFACTURER SHALL PROVIDE ADAPTER AS REQUIRED TO COMMUNICATE WITH DAINTREE CONTROL SYSTEM.
12. LINE VOLTAGE THERMOSTAT FURNISHED BY MECHANICAL AND INSTALLED BY ELECTRICAL TO CONTROL M-EF2.
13. FOR UNIT CONTROLS, PROVIDE SUPPLY DUCT PROBE TEMPERATURE AND PRESSURE SENSOR FOR UNIT CONNECTED TO DAINTREE ADAPTER.
14. PROVIDE EXTERIOR HARDWIRED TEMPERATURE SENSOR. CONNECT TO DAINTREE WIRELESS ADAPTER.
15. ROUTE 1" CONDENSATE LINE TO 3"D MAIN AS SHOWN.
16. VRF SYSTEM MAIN CONTROLLER. PROVIDE BACnet CONNECTION TO TIE INTO OWNER'S CONTROL SYSTEM FRONT END IN DATA ROOM. ROUTE CABLING TO DATA ROOM FOR FINAL CONNECTION BY OTHERS. COORDINATE ALL WORK BETWEEN TRADES AS REQUIRED FOR A FULLY FUNCTIONAL CONTROL SYSTEM.
17. VRF CENTRAL CONTROL PANEL.
18. DROP 3" CONDENSATE LINE INTO FLOOR SINK IN JANITOR ROOM, RE: PLUMBING. PROVIDE AIR GAP.
19. DAINTREE CO2 SENSOR IN BAPI-STAT4 ENCLOSURE. INSTALL WITH OPTIONAL LED INDICATOR STATUS LIGHTS AND COMMUNICATE WITH DAINTREE CONTROL SYSTEM. INSTALL AT SAME HEIGHT AS TEMPERATURE CONTROLS.

VergesRome Architects
320 N. Carrollton Avenue, Suite 100
New Orleans, Louisiana 70119
t. 504.488.7739 f. 504.488.7743
www.VergesRome.com

NORTH CAROLINA PROFESSIONAL SEAL 045704 ENGINEER JORDAN H. FISH

CHASE
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HVAC CONTROLS/CONDENSATE PLAN

SHEET:
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AST ENGINEERS
8417 Kelwood Avenue
Baton Rouge, Louisiana 70806
(p) 225.926.5600 | (f) 225.926.5620
www.astengineers.us

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1 M2.03 MECHANICAL FIXTURE SCHEDULE

NOT TO SCALE

TYPE	REFL. CEILING PLAN DESIGNATION (NOTE 15)	MANUFACTURER	MODEL	SIZE	FINISH	ACCESSORIES/ TRIM / DETAILS	NOTES
2x2 GRID CEILING SA DIFFUSER	---	TITUS OR EQUAL	OMNI-NT	24"x24"	WHITE	AG-75, DB	1-5, 8, 10, 15
2x2 GRID CEILING RA GRILLE	---	TITUS OR EQUAL	PAR	24"x24"	WHITE	BORDER 3	1-3, 7, 8, 10, 11, 15
2x2 GRID EXHAUST GRILLE (1x1 SIM.)	---	TITUS OR EQUAL	PAR	24"x24"	WHITE	BORDER 3	1-3, 8, 9, 10, 11, 15
GRID LINEAR SLOT SA/RA DIFFUSER - "TECHZONE"	TZ-SA/RA/BLANK	TITUS OR EQUAL	4"FL-TZ	1" SLOT	WHITE	BORDER DF	1-3, 6, 7, 8, 12, 15
GRID LINEAR SLOT SA/RA DIFFUSER - "CONTINUOUS"	CONT - SA/RA/BLANK	TITUS OR EQUAL	FL-10	1" SLOT	WHITE	BORDER 11	1-3, 6, 8, 11, 12, 13, 15
GRID LINEAR SLOT SA/RA DIFFUSER - "FLOWBAR"	FL-SA/RA	TITUS OR EQUAL	4"FL-10/15/20	1"/1.5"/2" SLOT	WHITE	BORDER 11	1-3, 6, 7, 8, 14, 15
AIR NOZZLE DIFFUSER WITH CORE - DESIGNATED BY "N" ON PLANS	---	PRICE	ANR	8" DIA. OPENING	BLACK	---	1-3, 8, 15

MECHANICAL FIXTURES NOTES:

1. COORDINATE WITH LIGHT FIXTURES AND OTHER CEILING DEVICES FOR EXACT LOCATIONS OF ALL AIR FIXTURES.
2. COORDINATE FRAME STYLES WITH CEILING OR WALL SYSTEM FRAMING AND FINISH MATERIALS. PROVIDE GYPSUM BOARD / PLASTER FRAME TO SUPPORT FIXTURE WITHIN GYPSUM CEILING.
3. N.C. VALUES FOR DIFFUSERS, GRILLES, AND REGISTERS SHALL NOT EXCEED 25, WITH A ROOM ABSORPTION RATE OF 10dB.
4. PROVIDE BACK SIDE OF SUPPLY AIR FIXTURES WITH FACTORY-INSTALLED R-6 INSULATION BLANKET.
5. PROVIDE DIRECTIONAL BLOW CLIPS (1-3) AS REQUIRED FOR DIRECTIONAL AIRFLOW CONTROL.
6. REFER TO PLAN FOR LINEAR SLOT FIXTURE LENGTHS.
7. WHERE PLENUM RETURNS ARE UTILIZED, CONCEAL VISIBILITY TO PLENUM SPACE BY PROVIDING DUCT BOOT SECURED TO CEILING FRAMING OR OPTIONAL OPPOSABLE BLADE DAMPERS FOR 2x2 RA GRILLES, AND 'FBR' RETURN HOODS AT LINEAR SLOT RA FIXTURES. WHERE RETURN AIR FLOW CONTROL IS REQUIRED, PROVIDE OPTIONAL OPPOSABLE BLADE DAMPERS IN THE 2x2 GRILLES, AND 'FBBO' BLANK-OFF PANELS IN THE LINEAR SLOT FIXTURES. AIRFLOW SHALL NOT BE ADJUSTED BY RE-SIZING OF THE FIXTURE GRILLE AREA.
8. "OR EQUAL" SUBSTITUTIONS PERMITTED. SUBSTITUTIONS MUST BE APPROVED BY THE ARCHITECT OF RECORD BY THE PROCESS DEFINED IN THE PROJECT MANUAL.
9. EXHAUST GRILLES SHALL BE DUCTED TO THE ROOF CENTRIFUGAL EXHAUST FAN SYSTEM, WHICH IS CONTROLLED BY 4-WAY SWITCH WIRING AT THE VARIOUS INTAKE LOCATIONS. MECHANICAL INSTALLER SHALL COORDINATE WITH THE ELECTRICIAN FOR EQUIPMENT AND CONTROL DEVICE PROVISION AND INSTALLATION. REFER TO ELECTRICAL DRAWINGS.
10. ALL SA, RA, AND EXH FIXTURES IN 2x2 CEILING GRIDS SHALL BE 24"x24" FULL FIXTURES. THE USE OF REDUCED VENT AREAS WITHIN LARGER PLATES TO RESTRICT AIRFLOW IS NOT PERMITTED. AIRFLOW CONTROL SHALL BE PROVIDED BY ADJUSTABLE BALANCING DAMPERS WITHIN THE DUCTS OR BOOTS SERVING THE FIXTURES.
11. SPECIFY EDGE DETAIL/BORDER TYPE FOR COMPATIBILITY WITH GYPSUM BOARD CEILINGS WHERE REQUIRED.
12. LINEAR SLOT FIXTURES SET IN GRID CEILINGS ARE INTENDED TO HAVE A CONTINUOUS, SEAMLESS APPEARANCE FOR THE FULL RUN OF THE CEILING GRID FINISH AS INDICATED IN THE PLAN, WITHOUT VISUAL DIFFERENTATION BETWEEN SA, RA, AND UNUSED PORTIONS OF THE RUN. PROVIDED OPTIONAL 'FBR' RETURN HOODS AND 'FBBO' BLANK-OFFS AS REQUIRED.
13. PROVIDE TITUS (OR EQUAL) FBMC-10 MITERED CORNERS.
14. FLOWBAR DIFFUSER TYPE SHALL BE SPECIFIED IN PRIVATE OFFICES ONLY. SPECIFY SLOT DIFFUSER WIDTH AS REQ'D. TO MEET AIR DISTRIBUTION REQUIREMENTS IN THE HIGHEST-DEMAND OFFICE, AND APPLY THAT DIFFUSER THROUGHOUT ALL OFFICES.
15. REFER TO REFLECTED CEILING PLANS, RE: ARCHITECTURAL DRAWINGS.

2 M2.03 MECHANICAL EQUIPMENT TYPES

NOT TO SCALE

TAG	EQUIPMENT TYPE	MANUFACTURER / MODEL	SERVICE AREA	HEATING TYPE	COOLING TYPE	ELECTRICAL VOLTS	ELECTRICAL PHASE	MIN. SEER	NOTES
M-HP-1-7	VRF HEAT PUMP, HORIZONTAL, CONCEALED UNIT	DAIKIN/FXSQ	OFFICES AND BOH	ELEC	ELEC	208	1	14	3, 6, 7, 8, 9, 10, 11, 12, 14, 20, 23
M-HR-1-2	VRF HEAT RECOVERY OUTDOOR UNIT	DAIKIN/REYQ	OFFICES AND BOH	ELEC	ELEC	208	3	14	2, 3, 4, 5, 14, 20
M-AH1	VRF HEAT PUMP, HORIZONTAL, CONCEALED UNIT	DAIKIN/FDMQ	VESTIBULE	ELEC	ELEC	208	1	14	3, 6, 7, 8, 10, 11, 12, 14, 20, 23
M-AC1	ROOF-MOUNT 'MINI-SPLIT' CONDENSING UNIT	DAIKIN/RX	VESTIBULE	ELEC	ELEC	208	1	14	2, 3, 4, 5, 14, 20
M-DOAS-1	CEILING DUCTED 100% OA AIR HANDLER (VRF)	DAIKIN/FXMQ	FoH AND BoH	ELEC	ELEC	208	1	14	2, 3, 6, 7, 8, 9, 10, 11, 12, 14, 20, 23
M-AH2-4	WALL-MOUNT 'MINI-SPLIT' AIR HANDLER	DAIKIN/FTK	DATA/ATM ROOM	--	ELEC	208	1	14	3, 6, 8, 10, 11, 12, 13, 14, 20, 21
M-AC2-4	ROOF-MOUNT 'MINI-SPLIT' CONDENSING UNIT	DAIKIN/RK	DATA/ATM ROOM	ELEC	ELEC	208	1	14	2, 3, 4, 5, 14, 20
M-EH1	ELECTRIC DUCT HEATER	DAIKIN	FoH AND BoH	ELEC	ELEC	208	1	14	3, 6
M-EF1	ROOF-MOUNTED CENTRIFUGAL EXHAUST FAN	GREENHECK MODEL G	RR / JAN / BREAK	--	--	120	1	--	3, 4, 15, 16, 17, 18
M-EF2	SUSPENDED EXHAUST FAN WITH INTEGRAL INTAKE GRILLE AND BACKDRAFT DAMPER	GREENHECK MODEL SP	DATA ROOM	--	--	120	1	--	3, 6, 15, 19, 22

MECHANICAL EQUIPMENT NOTES:

1. ADD/MODIFY ZONES AS REQUIRED TO RESPOND TO REGIONAL CLIMATE DEMANDS.
2. PROVIDE WITH 16" HIGH ROOF CURB. (EQUIPMENT SHALL BE ABOVE SNOWLINE PER LOCAL CLIMATE ZONE).
3. ELECTRICIAN TO PROVIDE AND INSTALL DAINTREE BUILDING ENERGY MANAGEMENT SYSTEM (BMS) EQUIPMENT AND DEVICES. GC AND EOR TO COORDINATE WITH GE CURRENT TO ENSURE COMPLIANCE WITH HVAC SYSTEM CONTROL DESIGN INTENT.
   - ENSURE COMPATIBILITY FOR LOCAL CONTROL THROUGH DAINTREE THERMOSTAT (WTS10), A 24V INTERFACE/THERMOSTAT INTERFACE MAY BE REQUIRED. PLEASE REFER TO MANUFACTURER.
4. PROVIDE NEMA 3R RATED STARTER AND DISCONNECT SWITCH. CONNECTION ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATION.
5. PROVIDE MANUFACTURER'S WIND BAFFLE FOR LOW AMBIENT COOLING.
6. PROVIDE NEMA 1 STARTER AND DISCONNECT SWITCH FOR INDOOR EQUIPMENT.
7. PROVIDE AC UNIT WITH MANUFACTURER'S FILTER KIT, MERV-13 FILTER.
8. PROVIDE AC UNIT WITH MANUFACTURER'S AC CONDENSATE PUMP.
9. PROVIDE WITH MOTORIZED OUTSIDE AIR DAMPER.
10. PROVIDE CONDENSATE DRAIN PIPE PER MANUFACTURER'S RECOMMENDATIONS.
11. PROVIDE HUMIDITY SENSOR AS PART OF UNIT TEMPERATURE SENSOR OR THERMOSTAT DEVICE.
12. PROVIDE WITH DEHUMIDIFICATION SYSTEM.
13. PROVIDE WALL MOUNTED WIRELESS REMOTE CONTROL THERMOSTAT.
14. PROVIDE REFRIGERANT PIPING SIZED AS PER MANUFACTURER'S RECOMMENDATIONS. "VRF SYSTEM SHALL USE ACR" COPPER ONLY.
15. PROVIDE WITH THE FOLLOWING:
    - BACKDRAFT DAMPER, IF NOT INTEGRAL TO EQUIPMENT
    - DISCONNECT SWITCH
    - SUPPORT BRACKETS AND ISOLATOR
    - FLEXIBLE CONNECTION
    - EXHAUST GRILLE MATCHING TYPICAL R.A. GRILLE SPECIFICATION, IF NOT INTEGRAL TO EQUIPMENT.
16. INTERLOCK FAN OPERATION WITH OCCUPANCY SENSORS IN ROOMS SERVED. REFER TO ELECTRICAL DRAWINGS FOR CONTROLS.
17. PROVIDE VARIABLE SPEED CONTROLLER FOR ALL DIRECT DRIVE FANS. TEST AND BALANCE CONTRACTOR SHALL MARK BALANCED POSITION ON CONTROLLER.
18. FOR CENTRIFUGAL EXHAUST FAN CONTROL, PROVIDE 4-WAY CONTROL CIRCUIT BY ONE OCCUPANCY SENSOR IN EACH RESTROOM, ONE OCCUPANCY SENSOR IN THE JANITOR CLOSET, AND ONE TIMER SWITCH IN THE LOUNGE.
19. TRANSFER AIR FAN IN DATA ROOM SHALL BE THERMOSTATICALLY CONTROLLED.
20. FOR VRF AND DAINTREE SYSTEM, PROVIDE EQUIPMENT MANUFACTURER'S COMMISSIONING SERVICE, INCLUDING MANUFACTURER'S REPRESENTATIVE'S TIME ON-SITE TO COMPLETE BAC-NET POINT ASSIGNMENTS AND INITIAL ZONE PROGRAMMMING.
21. FOR DATA ROOM, EOR TO ADJUST EQUIPMENT SPECIFICATIONS AS REQUIRED TO ENSURE ADEQUATE DEHUMIDIFICATION IN COMPLIANCE WITH CHASE GTI STRUCTURED CABLING DESIGN STANDARDS.
22. FOR DATA ROOM EXHAUST, EOR TO SPECIFY EXHAUST CFM AS REQ'D TO MAINTAIN EQUIPMENT OPERATING TEMPS WITH DISABLED COOLING UNIT. DEFAULT IS 500 CFM.
23. DURING CONTSTRUCTION, PROVIDE MERV-8 FILTERS FOR UNIT WHILE OPERATING. FILTERS SHALL BE REPLACED BI-WEEKLY OR AS NEEDED FOR PROPER UNIT OPERATION.

3 M2.03 ASHRAE 15 AND 34 REFRIGERANT CALCULATION TABLE

NOT TO SCALE

ACCU SYSTEM	SMALLEST ROOM NAME	AREA (SQ. FT.)	ROOM HEIGHT (FT)	ROOM VOLUME (CUFT)	REFRIGERANT TYPE	AMOUNT OF REFRIGERATION IN ACCU SYSTEM (LBS)	AMOUNT OF REFRIGERATION IN SMALLEST ROOM (LBS/1000 CUFT)	CODE REFRIGERANT LIMIT (LBS/1000 CUFT)
HR-1	RESTROOMS	142.79	12	1713.5	R-410A	25.8	14.6	26
HR-2	FoH/BoH	2490	12	29880	R-410A	25.8	1	26

4 M2.03 HVAC SEQUENCE OF OPERATIONS

OCCUPIED AND UNNOCUPIED OPERATION
- THE TEMPERATURE CONTROL SYSTEM SHALL BE SET FOR OCCUPIED AND UNNOCUPIED HOURS.
- DURING THE OCCUPIED HOURS THE SPACE SHALL BE MAINTAINED AT: 70 DEG F IN HEATING MODE AND 72 DEG F IN COOLING MODE. 100% OA UNIT (DOAS-1) SHALL BE ON DURING OCCUPIED TIMES.
- DURING UNOCCUPIED PERIODS, THE SPACE TEMPERATURE SHALL MAINTAIN 65 DEG F IN HEATING MODE AND 80 DEG F IN COOLING MODE. 100% OA UNIT (DOAS-1) SHALL BE OFF.

CEILING DUCTED AIR HANDLER UNITS
- UPON RECEIVING A SIGNAL FROM THE TEMPERATURE CONTROL SYSTEM FOR OCCUPIED HOURS, THE VRF SYSTEM SHALL ENERGIZE AND REMAIN ON DURING OCCUPIED HOURS.
- THE OUTSIDE AIR DAMPER AND 100% OA UNIT (DOAS-1) SHALL REMAIN CLOSED FOR THE MORNING WARM-UP UNTIL THE OCCUPIED HOURS ARE REACHED, AND THEN WILL OPEN.
- THE TEMPERATURE CONTROL SYSTEM SHALL MAINTAIN THE COOLING AND HEATING SETPOINTS AS INDICATED ABOVE FOR OCCUPIED AND UNOCCUPIED OPERATION.
- PROVIDE HUMIDITY OVERRIDE ROUTINES FOR EACH UNIT DURING SYSTEM OPERATION WHEN THE RELATIVE HUMIDITY EXCEEDS 55% (ADJ.). ALSO PROVIDE HUMIDITY OVERRIDE ROUTINE FOR THE UNIT TO OPERATE DURING UNOCCUPIED PERIODS WHEN THE SPACE RELATIVE HUMIDITY EXCEEDS 60% (ADJ.).

ELECTRIC DUCT HEATER (EH1)
- ELECTRIC DUCT HEATER SHALL ENERGIZE AND REMAIN ON TO MAINTAIN OUTSIDE AIR TEMPERATURE ENTERING 100% OA UNIT (DOAS-1) ABOVE 30 DEG F. WHEN 100% OA UNIT (DOAS-1) IS OFF, ELECTRIC DUCT HEATER SHALL BE OFF, AND OUTSIDE AIR DUCT'S MOTORIZED DAMPER SHALL BE IN CLOSED POSITION.

100% OA UNIT (DOAS-1)
- 100% OA UNIT SHALL ENERGIZE AND REMAIN ON DURING OCCUPIED HOURS AND POWER OFF DURING UNOCCUPIED HOURS. OUTSIDE AIR MOTORIZED DAMPER SHALL INTERLOCK WITH UNIT OPERATION. DURING COOLING AND HEATING MODE, OA UNIT SHALL MAINTAIN SUPPLY AIR TEMPERATURE AT 70 DEG F (ADJ.). SUPPLY AIR DUCT SHALL DISTRIBUTE CONDITIONED VENTILATION AIR TO EACH CEILING DUCTED UNITS' RETURN AIR PLENUM. THE AMOUNT OF VENTILATION AIR TO EACH UNIT SHALL MEET ASHRAE 62 MINIMUM REQUIREMENT.

24-HOUR VESTIBULE (AC/AH1), DATA ROOM (AC/AH2), ATM ROOMS (AC/AH3)
- THE TEMPERATURE CONTROL SYSTEM SHALL BE SET FOR THE SPACE TO BE MAINTAINED AT 72 DEG F (ADJ.) IN THE COOLING MODE AND 70 DEG F (ADJ.) IN THE HEATING MODE, AS APPLICABLE. THESE UNITS SHALL MAINTAIN THESE TEMPERATURES DURING OCCUPIED AND UNOCCUPIED TIMES.

EXHAUST FANS
- EF1 SHALL OPERATE DURING OCCUPIED TIMES AND BE INTERLOCKED TO ACTIVATE WITH DOAS-1.
- EF2 SHALL OPERATE BASED ON TEMPERATURE FEEDBACK, INITIALLY SET AT 90 DEG. F

VergesRome Architects
320 N. Carrollton Avenue, Suite 100
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t. 504.488.7739 f. 504.488.7743
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PITTSBORO, NC 27512

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TITLE:
HVAC SCHEDULES

SHEET:
M2.03

AST ENGINEERS
8417 Kelwood Avenue
Baton Rouge, Louisiana 70806
(p) 225.926.5600 | (f) 225.926.5620
www.astengineers.us

1 M2.04 MECHANICAL EQUIPMENT SCHEDULES

HEAT PUMP SCHEDULE

DESIGNATION	EVAP CFM (1)	OA CFM (11)	NET COOLING CAP., MBTUH (2)		REVERSE CYCLE HTG. CAP., MBTUH (3)	INDOOR COMPONENT			REF. PIPING SIZES, IN.		SEER	TYPE (4)	REMARKS
			SENS.	TOTAL		VOLTS	PHASE	MCA	RS	RL			
DOAS-1	645	645	22.8	56.6	36.3	208	1	4.9	7/8	5/8	16	D	(10)
HP-1	600	45	10.0	12.2	9.1	208	1	1.6	1/2	1/4	16	D	(6)
HP-2	810	45	14.1	16.1	11.6	208	1	1.8	5/8	3/8	16	D	(8)
HP-3	315	25	4.9	5.9	4.3	208	1	0.8	1/2	1/4	16	D	(5)
HP-4	600	70	9.9	12.9	6.4	208	1	1.6	1/2	1/4	16	D	(6)
HP-5	1,130	160	19.6	28.7	13.9	208	1	2.5	5/8	3/8	16	D	(9)
HP-6	740	60	13.0	15.5	11.0	208	1	1.8	5/8	3/8	16	D	(7)
HP-7	810	95	16.8	21.5	12.7	208	1	1.8	5/8	3/8	16	D	(8)

REMARKS:

1. AT HIGH SPEED SELECTION.
2. COOLING CAPACITY FOR HEAT PUMP UNITS IS BASED ON ASHRAE 2% MONTHLY OUTDOOR DRY BULB CONDITIONS OF 96°F DB / 76°F WB AND INDOOR CONDITIONS OF 72°F DB / 61°F WB. COOLING CAPACITY FOR DOAS UNIT IS BASED ON ASHRAE 2% MONTHLY OUTDOOR WET BULB CONDITIONS OF 90°F DB / 79°F WB. NET CONDITIONS INCLUDE DEDUCTION FOR HEAT PUMP FAN MOTOR HEAT ON ALL UNITS.
3. HEATING CONDITIONS AT 18°F DB OUTDOOR AMBIENT TEMPERATURE AND 70°F DB INDOOR TEMPERATURE. UNIT SHALL BE SELECTED AT 60°F DB ENTERING AIR CONDITION TO ACCOMMODATE WARM-UP CYCLE.
4. INDOOR COMPONENT TYPE:
   D - CONCEALED DUCTED, HORIZONTAL.
5. REFER TO SPECIFICATIONS: BASIS OF DESIGN DAIKIN FXSQ09TBVJU.
6. REFER TO SPECIFICATIONS: BASIS OF DESIGN DAIKIN FXSQ18TBVJU.
7. REFER TO SPECIFICATIONS: BASIS OF DESIGN DAIKIN FXSQ24TBVJU.
8. REFER TO SPECIFICATIONS: BASIS OF DESIGN DAIKIN FXSQ30TBVJU.
9. REFER TO SPECIFICATIONS: BASIS OF DESIGN DAIKIN FXSQ36TBVJU.
10. REFER TO SPECIFICATIONS: BASIS OF DESIGN DAIKIN BCHD SERIES WITH HOT GAS REHEAT COIL FOR NEUTRAL AIR DELIVERY (NOMINAL 70°F DB). UNIT MAY BE OXYGEN 8 OR EQUAL. PROVIDE INTEGRATION KIT EXPANSION VALVE AND CONTROL BOX. CONNECT CONTROL BOX AT 208 V, SINGLE PHASE, 0.4 MCA. PROVIDE INTEGRAL 3.0 KW PREHEAT COIL, 208 V, SINGLE PHASE.
11. NEUTRAL OUTSIDE AIR DELIVERED BY DOAS-1 TO ALL HP UNITS.

HEAT RECOVERY UNIT, OUTDOOR

DESIGNATION	COOLING CAPACITY MBTUH	SUCTION TEMP. °F	COOLING AMB. AIR °F	HEATING AMB. AIR °F	HEATING CAPACITY MBTUH (1)	ELEC. DATA			REMARKS
						VOLTS	PH	MCA	
HR-1	144.0	45	96	18	162.0	208	3	47.8	(2),(4)
HR-2	72.0	45	96	18	80.0	208	3	38.1	(3),(4)

REMARKS:

1. HEATING CAPACITY TO INCLUDE DEFROST CYCLES. UNIT SHALL HAVE LOW-AMBIENT KIT, CAPABLE OF OPERATION DOWN TO -13°F.
2. REFER TO SPECIFICATIONS. BASIS OF DESIGN: DAIKIN REYQ144. PROVIDE BRANCH SELECTOR BOX AND CONNECT AT 208V, SINGLE PHASE, 0.8MCA.
3. REFER TO SPECIFICATIONS. BASIS OF DESIGN: DAIKIN REYQ72. PROVIDE BRANCH SELECTOR BOX AND CONNECT AT 208V, SINGLE PHASE, 0.4 MCA.
4. PROVIDE CENTRALIZED CONTROLLER FOR ENTIRE VRF SYSTEM. INDOOR HEAT PUMP UNITS SHALL HAVE ROOM SENSORS ONLY WITH ALL SETPOINTS CONTROLLED AT CENTRALIZED CONTROLLER. CONTROLLER SHOULD HAVE EXTERNAL BACnet CONNECTION TO OWNER'S BUILDING MANAGEMENT SYSTEM. BASIS OF DESIGN: DAIKIN INTELLIGENT TOUCH MANAGER.

INVERTER DRIVEN, MINI-SPLIT SYSTEMS, ONE-TO-ONE

DESIGNATION	EVAP. CFM (1)	O.A. CFM	CAPACITY MBUTH (2)	ELEC. DATA (3)			TYPE	REMARKS
				VOLTS	PH	FLA		
AH1	370	0	12.0	208	1	0.2	(6)	(4),(5)
AC1	-	-	12.0	208	1	7.7	(6)	(4)
AH2	650	0	18.0	208	1	0.2	(7)	(4),(5)
AC2	-	-	18.0	208	1	6.3	(7)	(4)
AH3	400	0	12.0	208	1	0.1	(8)	(4),(5)
AC3	-	-	12.0	208	1	3.9	(8)	(4)
AH4	400	0	12.0	208	1	0.1	(8)	(4),(5)
AC4	-	-	12.0	208	1	3.9	(8)	(4)

REMARKS:

1. AT HIGH SPEED SELECTION.
2. COOLING CONDITIONS AT 96°F DB / 76°F WB OUTDOOR AMBIENT TEMPERATURE AND 72°F DB / 61°F WB INDOOR TEMPERATURE, NET CONDITIONS INCLUDING DEDUCTION FOR FAN MOTOR HEAT.
3. INDOOR AND OUTDOOR UNIT WITH INDIVIDUAL ELECTRICAL CONNECTIONS.
4. REFER TO MECHANICAL EQUIPMENT TYPES SCHEDULE FOR DETAILS.
5. PROVIDE INTEGRAL CONDENSATE PUMP.
6. CONCEALED DUCTED, HORIZONTAL, BASIS OF DESIGN: INDOOR UNIT - DAIKIN FDMQ12 / OUTDOOR UNIT - DAIKIN RX12.
7. WALL-MOUNTED UNIT, BASIS OF DESIGN: INDOOR UNIT - DAIKIN FTK18B / OUTDOOR UNIT - DAIKIN RK18B.
8. WALL-MOUNTED UNIT, BASIS OF DESIGN: INDOOR UNIT - DAIKIN FTK12B / OUTDOOR UNIT - DAIKIN RK12B.

EXHAUST FANS

DESIGNATION	CFM	EXT. S.P. (IN. W.G.) (2)	RPM	WHEEL DIA. (IN)	DRIVE	WHEEL TYPE	MAX INLET SONES	ELECTRICAL DATA			STARTERS		REMARKS
								HP / W	VOLTS	PH	TYPE	LOCATION	
EF1	350	0.5	1,300	11.2	DIRECT	CENT.	6.8	0.25 HP	120	1	(1)	(1)	(1)
EF2	500	0.1	1,050	7.5	DIRECT	CENT.	5.3	224 W	120	1	(3)	DATA ROOM	(1)

REMARKS:

1. REFER TO MECHANICAL EQUIPMENT TYPES SCHEDULE FOR DETAILS.
2. BACKDRAFT DAMPER NOT INCLUDED AS PART OF EXTERNAL S.P.
3. FURNISH LINE VOLTAGE THERMOSTAT TO OPERATE FAN WHEN ROOM TEMPERATURE EXCEEDS 90°F (ADJUSTABLE). THERMOSTAT TO BE INSTALLED BY ELECTRICAL CONTRACTOR.

LINEAR SLOT DIFFUSERS

DESIGNATION	MAX. DESIGN CFM	NO. SLOTS/WIDTH (IN.)	DIFFUSER LENGTH	PLENUM LENGTH	PLENUM CONNECTION DUCT SIZE (1)	MAX PRESS DROP FOR SPIN TAP, 25 FT RIGID DUCT, FLEXIBLE DUCT, & DIFFUSER COMBINATION	REMARKS
F	275	1/1	60"	60"	8" OVAL	0.15	(2), (4), (5)
G	520	2/2	48"	48"	10" OVAL	0.15	(2), (4), (5)
H	110	1/1	24"	24"	8" OVAL	0.15	(2), (4), (5)
I	165	1/1	36"	36"	8" OVAL	0.15	(2), (4), (5)
J	220	1/1	48"	48"	8" OVAL	0.15	(2), (4), (5)
K	330	1/1	72"	48"	8" OVAL	0.15	(2), (4), (5)
L	600	1/1	60"	60"	8" OVAL	0.15	(2), (3), (5), (6), (7)

REMARKS:

1. LINEAR DIFFUSERS SHALL HAVE FACTORY INSULATED PLENUMS, REFER TO SPECIFICATIONS. WHERE LOCATED ADJACENT TO RECESSED LIGHT FIXTURE OR OFFSET IN CEILING, PROVIDE EXTENDED HEIGHT PLENUM. FACTORY PLENUMS SHALL BE LINED.
2. REFER TO MECHANICAL EQUIPMENT TYPES SCHEDULE FOR DETAILS.
3. DIFFUSER TO BE MOUNTED INTO CHANNEL PANEL BORDER ALONG CELING.
4. DIFFUSER TO BE MOUNTED INTO 9/16" CEILING GRID WITH CHANNEL PANELS. PROVIDE REQUIRED DIMENSIONAL ALLOWANCES FOR PROPER FIT INTO GRID. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. WHERE LINEAR SLOTS ARE BEING UTILIZED FOR RETURN AIR, FURNISH WITH FBRI RETURN HOODS. REFER TO HVAC SYMBOL SCHEDULE FOR MORE DETAILS.
6. WHERE DIFFUSER LENGTH IS LONGER THAN PLENUM LENGTH, INSTALL BLANK OFF PANELS IN UNUSED PORTIONS OF DIFFUSER.
7. GRID LINEAR SLOT SA/RA DIFFUSER - "CONTINUOUS", SEE MECHANICAL FIXTURE SCHEDULE.

CEILING DIFFUSERS

DESIGNATION	NECK SIZE	MAX. DESIGN CFM	CONNECTING DUCT SIZE	MAX PRESS DROP FOR SPIN TAP, 25 FT RIGID DUCT, 5 FT FLEX DUCT, & DIFFUSER	NOMINAL FACE SIZE	REMARKS
A	6" DIA.	100	6" DIA.	0.15	24"x24"	(1),(2)
B	8" DIA.	200	8" DIA.	0.15	24"x24"	(1),(2)
C	10" DIA.	350	10" DIA.	0.15	24"x24"	(1),(2)
D	12" DIA.	500	12" DIA.	0.15	24"x24"	(1),(2)

REMARKS:

1. REFER TO MECHANICAL FIXTURES SCHEDULE FOR DETAILS.
2. SUPPLIERS NOT ABLE TO MEET ANY OF THE ABOVE COMBINATIONS SHALL USE THE NEXT LARGER TYPE SCHEDULED.

RETURN / EXHAUST AIR GRILLES

DESIGNATION	GRILLE SIZE	GRILLE TYPE	RUN-OUT DUCT SIZE	FINISH	NOMINAL T-BAR FACE SIZE	REMARKS
B	22x22	RA/EXH	SEE PLAN	WHITE	24x24	(1),(2)
C	6x6	EXH	SEE PLAN	WHITE	8x8	(1),(3)
D	12x8	RA	SEE PLAN	WHITE	14x10	(1),(3)

REMARKS:

1. REFER TO MECHANICAL FIXTURE SCHEDULE FOR DETAILS.
2. CEILING GRILLE.
3. WALL GRILLE.

VergesRome Architects
320 N. Carrollton Avenue, Suite 100
New Orleans, Louisiana 70119
t. 504.488.7739 f. 504.488.7743
www.VergesRome.com

NORTH CAROLINA PROFESSIONAL SEAL 045704 ENGINEER JORDAN H. FISH

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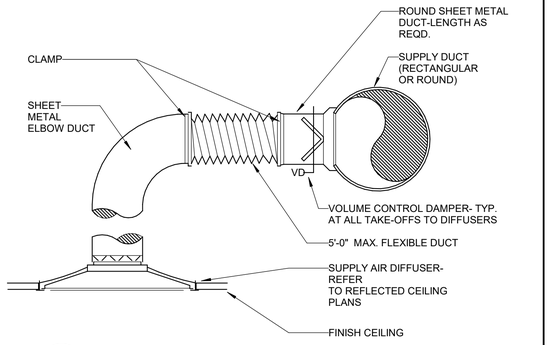

6 M2.05 SUPPLY AIR TERMINAL
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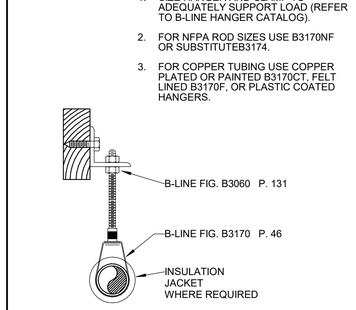

7 M2.05 SUSPENDED PIPE SUPPORT
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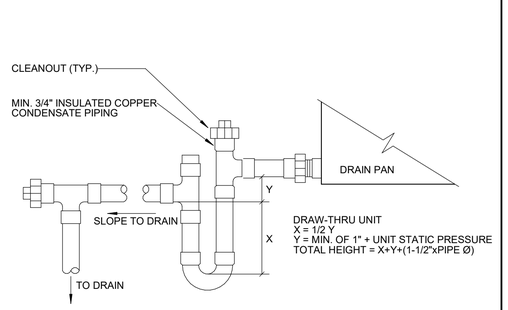

8 M2.05 CONDENSATE DRAIN TRAP
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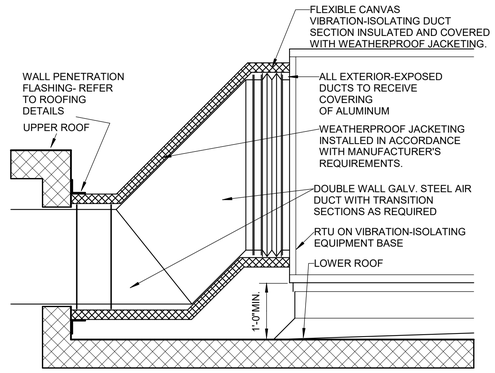

9 M2.05 RTU DUCT TRANSITION
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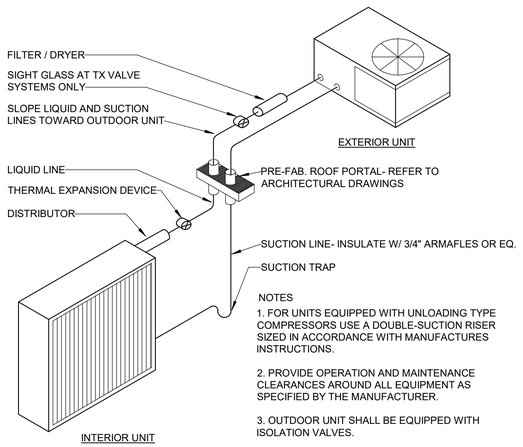
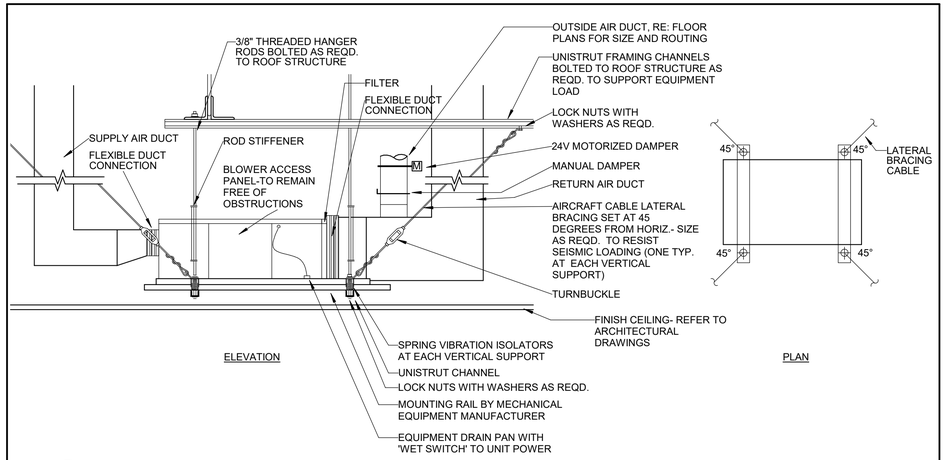


NOTES
1. FOR UNITS EQUIPPED WITH UNLOADING TYPE COMPRESSORS USE A DOUBLE-SUCTION RISER SIZED IN ACCORDANCE WITH MANUFACTURES INSTRUCTIONS.

2. PROVIDE OPERATION AND MAINTENANCE CLEARANCES AROUND ALL EQUIPMENT AS SPECIFIED BY THE MANUFACTURER.

3. OUTDOOR UNIT SHALL BE EQUIPPED WITH ISOLATION VALVES.

3 M2.05 REFRIGERANT PIPING
NOT TO SCALE



4 M2.05 SUSPENDED EQUIPMENT SUPPORT
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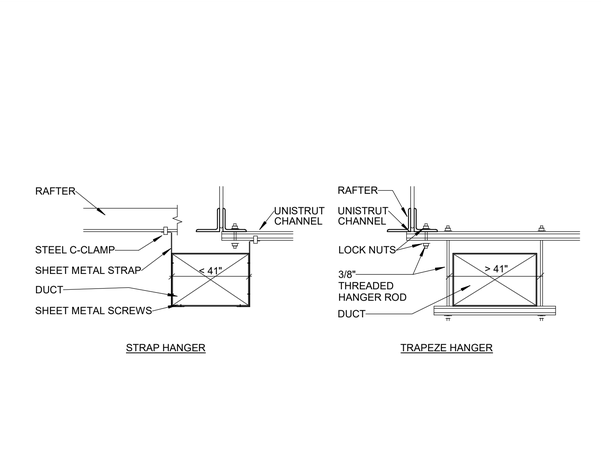


5 M2.05 SUSPENDED DUCT SUPPORT
NOT TO SCALE

NOTES:

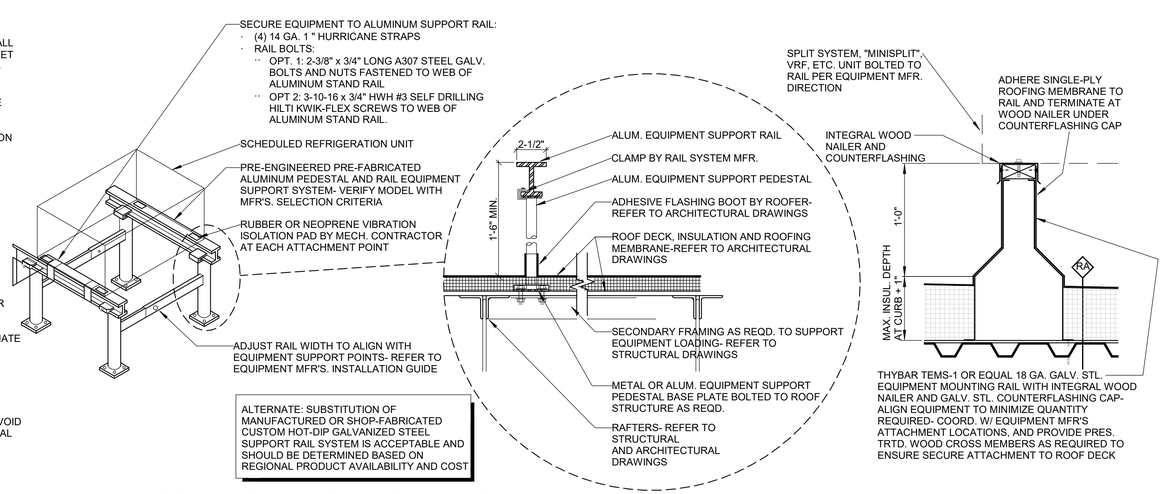
1. ALL MATERIALS AND ASSEMBLIES SHALL COMPLY WITH CONSTRUCTION TO MEET ALUMINUM ASSOCIATION STANDARDS FOR CONSTRUCTION

2. VIBRATION ISOLATION PADS SHALL BE PRE-FABRICATED COMPONENTS DESIGNED FOR THAT PURPOSE AND SHALL PREVENT EQUIPMENT VIBRATION TRANSMISSION TO THE BUILDING STRUCTURE

3. ALUMINUM EQUIPMENT STAND SUPPORTS AS MANUFACTURED BY PRECISION ALUMINUM PRODUCTS INC. OF DEERFIELD BEACH, FLORIDA, (954)-480-6919 OR APPROVED EQUAL. UNIT SHALL BE SIZED AND INSTALLED ACCORDING TO MANUFACTURERS LOAD CHARTS AND PRINTED INSTALLATION DETAILS.

4. EQUIPMENT SUPPORT RAIL INSTALLER SHALL FIELD-VERIFY ROOF MATERIAL THICKNESS AND CLEARANCES TO ADJACENT EQUIPMENT AND COORDINATE SUPPORT UNIT POSITION AS REQUIRED-REFER TO INSTALLATION MANUALS FOR SUPPORTED AND ADJACENT EQUIPMENT

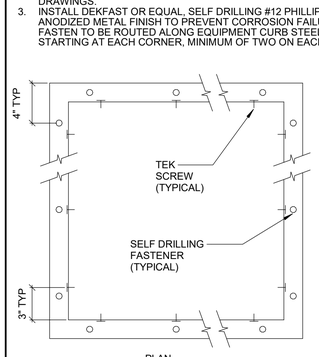
5. VERIFY COMPATIBILITY OF ALL METAL COMPONENTS AND FASTENERS TO AVOID GALVANIC CORROSION OF MECHANICAL EQUIPMENT OR SUPPORT SYSTEMS

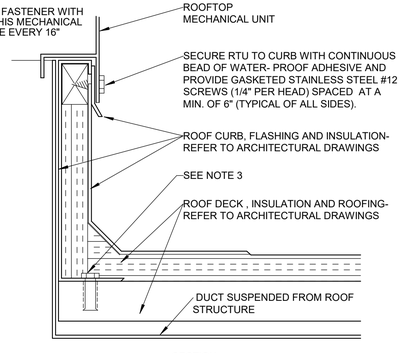


ALTERNATE: SUBSTITUTION OF MANUFACTURED OR SHOP-FABRICATED CUSTOM HOT-DIP GALVANIZED STEEL SUPPORT RAIL SYSTEM IS ACCEPTABLE AND SHOULD BE DETERMINED BASED ON REGIONAL PRODUCT AVAILABILITY AND COST

1 M2.05 ROOFTOP MECHANICAL UNIT SUPPORT RAIL SYSTEM AND EQUIPMENT CURB RAIL
NOT TO SCALE

NOTES
1. MINIMUM 2 SCREW OR ANCHORS PER SIDE.
2. SECURE UNIT TO STRUCTURE TO WITHSTAND WIND LOAD, REFER TO STRUCTURAL DRAWINGS.
3. INSTALL DEKFAST OR EQUAL, SELF DRILLING #12 PHILLIPS HEAD FASTENER WITH ANODIZED METAL FINISH TO PREVENT CORROSION FAILURES. THIS MECHANICAL FASTEN TO BE ROUTED ALONG EQUIPMENT CURB STEEL FLANGE EVERY 16" STARTING AT EACH CORNER, MINIMUM OF TWO ON EACH SIDE.





2 M2.05 R.T.U. ANCHORAGE
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AST ENGINEERS
8417 Kelwood Avenue
Baton Rouge, Louisiana 70806
(p) 225.926.5600 | (f) 225.926.5620
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VergesRome Architects
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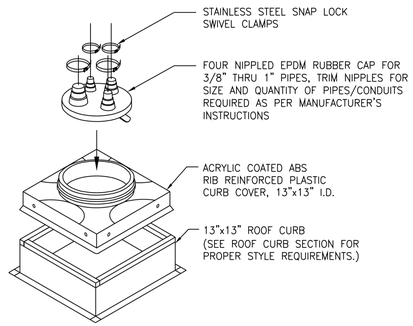
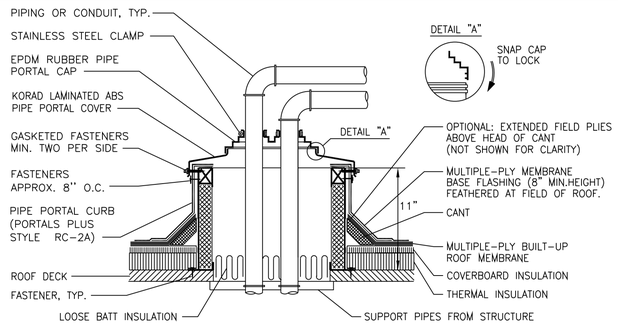




NOTES:

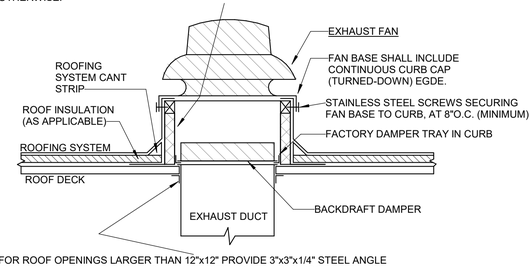
1. THIS DETAIL IS BASED ON PRODUCTS MANUFACTURED BY ROOF PRODUCTS & SYSTEMS CORP. AND PORTALS PLUS.
2. THIS DETAIL ILLUSTRATES THE METHOD OF GROUPING PIPING AND ELECTRICAL CONDUIT THAT MUST PENETRATE THE ROOF. REFER TO FLOOR PLANS AND COORDINATE WITH ELECTRICAL CONTRACTOR TO DETERMINE THE EXACT NUMBER OF PIPES AND CONDUITS.

NOTES:

1. THIS DETAIL IS BASED ON PRODUCTS MANUFACTURED BY ROOF PRODUCTS & SYSTEMS CORP. AND PORTALS PLUS.
2. THIS DETAIL ILLUSTRATES THE METHOD OF GROUPING PIPING AND ELECTRICAL CONDUIT THAT MUST PENETRATE THE ROOF. REFER TO FLOOR PLANS AND COORDINATE WITH ELECTRICAL CONTRACTOR TO DETERMINE THE EXACT NUMBER OF PIPES AND CONDUITS.

1 M2.06 PIPE SUPPORT ON ROOF
NOT TO SCALE

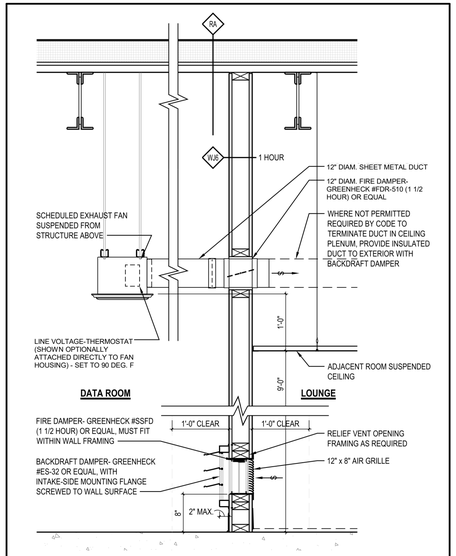
FACTORY FABRICATED ROOF CURB WITH 1.5" TO 2" THICKNESS RIGID FIBERGLASS INSULATION, WOOD NAILER AND BASE FLANGE. SECURE CURB TO ROOF DECK, IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS FOR THE WIND RESISTANCE RATING INDICATED BELOW. HEIGHT OF CURB SHALL BE 18", UNLESS NOTED OTHERWISE.



FOR ROOF OPENINGS LARGER THAN 12"x12" PROVIDE 3"x3"x1/4" STEEL ANGLE IRON FRAME AROUND OPENING AND WELD TO JOISTS. FOR ROOF OPENINGS 12"x12" AND SMALLER, REINFORCE THE ROOF AND DECK AROUND THE OPENING WITH 6" WIDE x 14 GA. STEEL PLATE, WELDED TO EACH CELL OF THE DECK.

NOTE: FAN AND CURB SHALL BE DESIGNED AND INSTALLED FOR 125 MPH WIND RESISTANCE WITHOUT THE NEED FOR GUY WIRE RESTRAINTS. CONTRACTOR SHALL PROVIDE ALL REQUIRED MOUNTING HARDWARE AND ACCESSORIES NECESSARY TO ACHIEVE THIS WIND RESISTANCE INSTALLATION.

2 M2.06 EXHAUST FAN ROOF MOUNTED DETAIL
NOT TO SCALE



3 M2.06 BACKUP VENTILATION DETAIL
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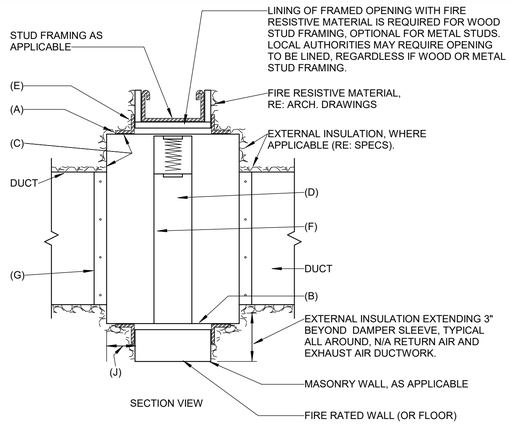

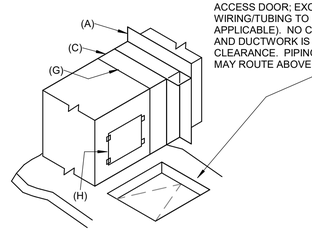

NOTES:

1. DETAIL IS SIMILAR FOR COMBINATION FIRE/SMOKE DAMPERS. INSTALLATION OF SMOKE DAMPERS IS SIMILAR EXCEPT WITHOUT REQUIREMENT FOR RETAINING ANGLES.
2. FIRE DAMPER SHALL BE INSTALLED TO MEET REQUIREMENTS OF THIS DETAIL, NFPA 90A, SMACNA "FIRE, SMOKE AND RADIATION DAMPER INSTALLATION DETAILS" AND THE LISTING AGENCY, EXCEPT WHERE MANUFACTURER'S INSTALLATION REQUIREMENTS (AS TESTED AND APPROVED BY UL) ARE MORE STRINGENT THAN ABOVE, MANUFACTURER'S REQUIREMENTS SHALL GOVERN.
3. VERTICAL POSITION IS SHOWN THIS DETAIL, HORIZONTAL INSTALLATION IS SIMILAR.
4. THIS DETAIL ILLUSTRATED TYPICAL FIRE DAMPER INSTALLATION FOR A FIRE RATED WALL/FLOOR. FOR SPECIAL APPLICATION, SUCH AS WHERE DUCTWORK TERMINATES FLUSH WITH THE WALL/FLOOR FOR A (FLUSH MOUNTED) GRILLE/DIFFUSER, OR FOR SPECIAL APPLICATION SUCH AS A BRANCH DUCT PENETRATING A FIRE RATED SHAFT WALL WHICH IS (SNUGLY) ENCLOSING A DUCT MAIN RISER, OR FOR OTHER SIMILAR SPECIAL APPLICATIONS, PROVIDE APPROPRIATE DAMPER ASSEMBLY WITH INTEGRAL SLEEVE AND RETAINING ANGLES/MOUNTING BRACKETS AS NECESSARY TO MATCH THE APPLICATION. WHERE DAMPER MUST BE MOUNTED BEYOND THE PLAN OF THE FIRE RATED WALL/FLOOR, PROVIDE "OUT OF WALL" STYLE DAMPER ASSEMBLY WITH THERMAL BLANKET AND MOUNTING ACCESSORIES.
5. FOR APPLICATIONS WITH INTERNALLY LINED PRIMARY SUPPLY AIR DUCTWORK, PROVIDE METAL NOSING (FOR LINING) AT AIR LEAVING SIDE OF DAMPER.
6. FOR FIRE DAMPERS IN RETURN AIR TRANSFER OPENINGS, FIRE DAMPERS ARE NOT REQUIRED TO HAVE BLADES RECESSED "OUT OF THE AIR STREAM.

KEYNOTES:

(A) RETAINING ANGLES: MINIMUM 1-1/2", 16 GAUGE RETAINING ANGLES MUST LAP STRUCTURAL OPENING 1" MINIMUM AND COVER CORNERS OF OPENING. RETAINING ANGLES MAY BE PRE-MANUFACTURED UL CLASSIFIED DEVICES FURNISHED WITH THE DAMPER ASSEMBLY TO MATCH THE APPLICATION.

(B) CLEARANCE: 1/8" PER FOOT BOTH DIMENSIONS. SLEEVE MAY REST ON BOTTOM OF OPENING. MECHANICAL CONTRACTOR IS TO COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE THE REQUIRED WALL/FLOOR OPENING SIZE FOR EACH DAMPER.

(C) INTEGRAL FACTORY SLEEVE: 16" GAUGE (MINIMUM), RE: SPECIFICATIONS. WHERE FLANGED BREAKAWAY TYPE DUCT CONNECTIONS ARE UTILIZED, SEE "(G)", SLEEVES MAY BE LESS THAN 16 GAUGE BUT NOT LESS THAN THE DUCT GAUGE NOR LESS THAN THE GAUGE REQUIRED PER NFPA 90A.

(D) FIRE DAMPER (OR COMBINATION FIRE/SMOKE DAMPER, AS APPLICABLE): RE: SPECIFICATIONS.

(E) SECURE RETAINING ANGLE TO SLEEVE ONLY WITH NO. 10 SCREWS ON 8" CENTER.

(F) DAMPER IS TO BE SECURED TO SLEEVE AT 8" CENTERS WITH 3/16" STEEL RIVETS, OR NO. 10 STEEL SCREWS, OR 1/2" LONG WELDS. CAULK DAMPER FRAME TO SLEEVE.

(G) DUCT CONNECTION: APPROVED RIGID TYPE. FOR DUCTWORK OTHER THAN PRIMARY SUPPLY AIR DUCTWORK, DUCT CONNECTIONS MAY BE APPROVED FLANGED (GASKETED) BREAKAWAY TYPE (DUCTMATE, NEXUS OR WARD) FURNISHED WITH THE DAMPER ASSEMBLY; INSTALL PER MANUFACTURER'S REQUIREMENTS AND UL LISTING.

(H) DUCT ACCESS DOOR: POSITION TO SERVICE FUSIBLE LINK, SEE SPECIFICATIONS. DUCT ACCESS DOORS SHALL BE 18" x 18" MINIMUM SIZE, WHERE DUCT SIZE PERMITS. WHERE SPATIAL CONSTRAINTS DICTATE THAT ACCESS DOORS BE LESS THAN 12" (ANY ONE SIDE). PROVIDE APPROPRIATE SIZE ACCESS DOOR ON BOTH ENTERING AIR AND LEAVING AIR SIDE OF DAMPER. EXCEPT FOR NON-INSULATED/NON-LINED DUCTWORK, ACCESS DOORS SHALL BE INSULATED DOUBLE WALL TYPE. DO NOT CONCEAL ACCESS DOORS WITH DUCT WRAP INSULATION. PROVIDE MULTIPLE ACCESS DOORS WHERE REQUIRED FOR SERVICING DAMPER ASSEMBLIES WITH MULTIPLE FUSIBLE LINKS. PROVIDE PERMANENT SIGNAGE WITH 1/2" MIN. LETTERING READING "SMOKE DAMPER" OR "FIRE DAMPER", AS APPLICABLE, FOR EACH ACCESS DOOR.

(J) 6" MAX. EACH SIDE (EXCEPT 16" MAXIMUM ON ACTUATOR SIDE FOR COMBINATION FIRE/SMOKE DAMPERS). 3" MINIMUM EXCEPT WHERE DUCTWORK TERMINATES WITH FLUSH MOUNTED DIFFUSER/GRILLE.

4 M2.06 FIRE DAMPER DETAIL
NOT TO SCALE

VergesRome Architects
320 N. Carrollton Avenue, Suite 100
New Orleans, Louisiana 70119
t. 504.488.7739 f. 504.488.7743
www.VergesRome.com

NORTH CAROLINA PROFESSIONAL SEAL 045704 ENGINEER JORDAN H. FISH

PITTSBORO, NC 27512

CHASE
PITTSBORO NEW CONSTRUCTION

52 HARPER LANE

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HVAC DETAILS CONT.

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AST ENGINEERS
8417 Kelwood Avenue
Baton Rouge, Louisiana 70806
(p) 225.926.5600 | (f) 225.926.5620
www.astengineers.us

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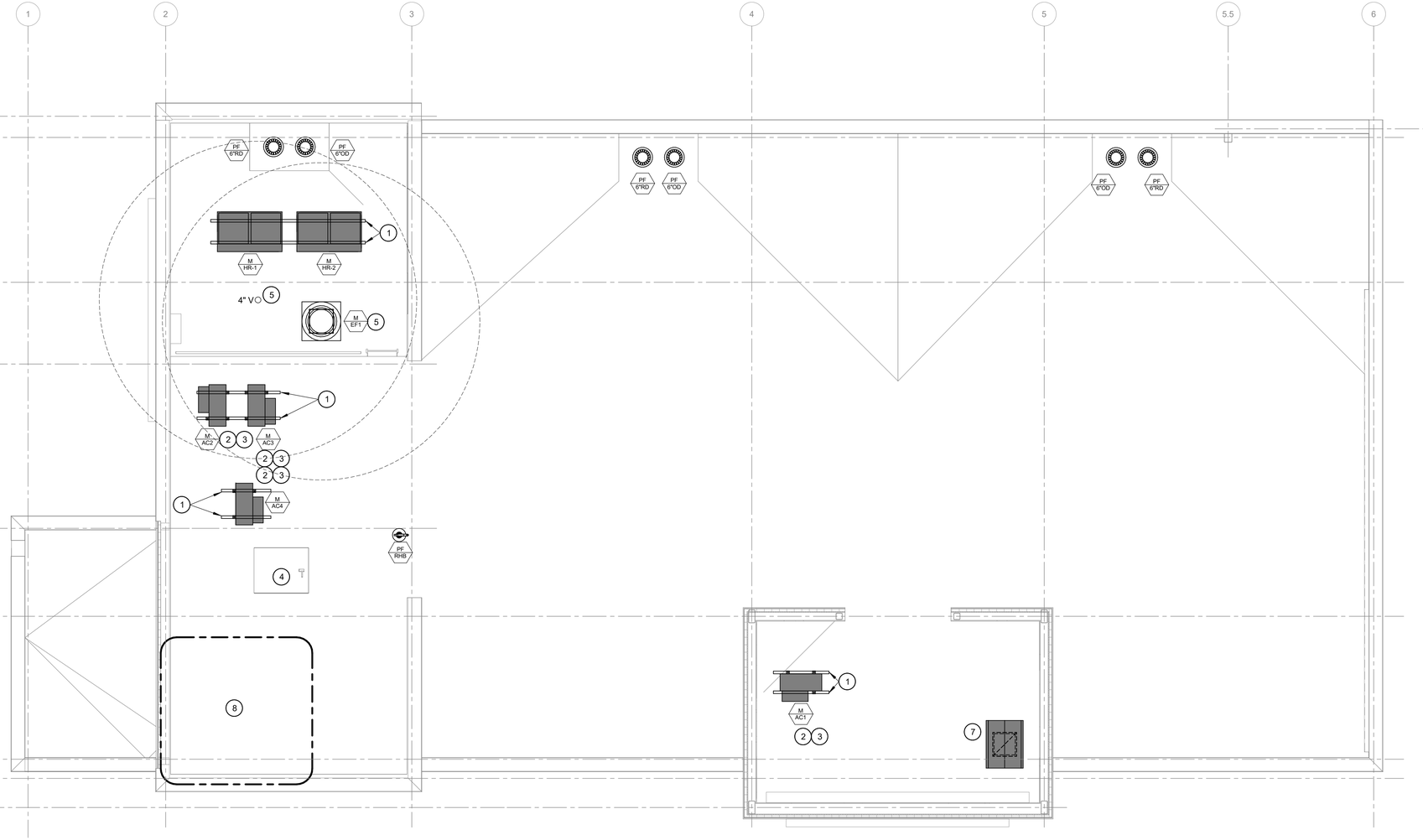
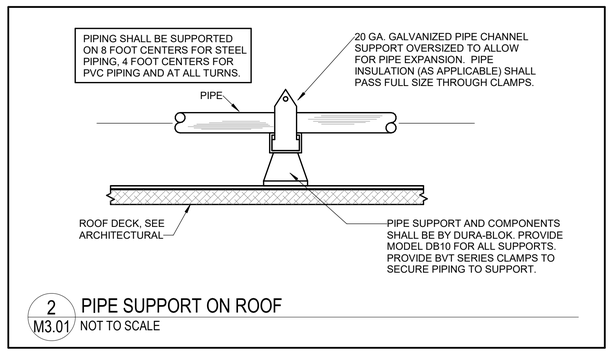


1 M3.01 HVAC ROOF PLAN
1/4" = 1'-0"



2 M3.01 PIPE SUPPORT ON ROOF
NOT TO SCALE

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT DIMENSIONS WITH BUILDING STRUCTURE PRIOR TO FABRICATING DUCTWORK. CONTRACTOR SHALL NOTIFY ARCHITECT AND ENGINEER REGARDING ANY DISCREPANCIES/CONFLICTS THAT WILL INCUR ADDITIONAL COSTS PRIOR TO CONTINUING WORK.
2. COORDINATE EXACT ROOF DRAIN LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
3. PIPING INSULATION FOR REFRIGERANT LINES EXPOSED ON ROOF SHALL BE PROTECTED WITH A LAYER OF POLYGUARD ALUMAGUARD OR OTHER APPROVED JACKETING. JACKETING SHALL BE APPLIED WITHIN 72 HOURS OF PIPING INSTALLATION TO PREVENT PERMANENT UV DAMAGE TO INSULATION.
4. REFER TO ARCHITECTURAL DRAWINGS FOR APPROVED ROOF PENETRATION METHODS AND MATERIALS.
5. ACCESS TO EQUIPMENT SHALL BE MAINTAINED TO MEET MANUFACTURER AND CODE REQUIREMENTS.
6. ALL ROOFTOP EQUIPMENT SHALL BE ANCHORED PER NCMC 301.15 AND 2018 NORTH CAROLINA BUILDING CODE 1609.1 TO MEET WIND RATING OF 125 MPH.
7. CONTROLS WIRING FROM OUTDOOR UNITS TO INDOOR UNITS SHALL BE INSTALLED IN CONDUIT.

KEYNOTES

1. RE: 1M2.05 FOR SUPPORT RAIL DETAIL.
2. PROVIDE PIPE SUPPORTS FOR ALL EXPOSED REFRIGERANT LINES, CONDENSATE DRAINS, CONDUITS, ETC. RE: 2M3.01.
3. ROUTE REFRIGERANT LINES AND CONTROLS CONDUITS TO INDOOR UNITS. RE: ARCH DRAWINGS FOR APPROVED ROOF PENETRATION METHODS.
4. ROOF ACCESS HATCH (BY OTHERS). MAINTAIN REQUIRED CLEARANCES.
5. LOCATE EXHAUST FAN AND VENT NO LESS THAN 10'-0" FROM FRESH AIR INTAKES.
6. FOR UNIT CONTROLS, PROVIDE FAN PROOF CT WIRED, VIA LOW VOLTAGE, TO DAINTREE ADAPTER. PROVIDE SUPPLY DUCT PROBE TEMPERATURE SENSOR FOR UNIT AND CONNECT TO DAINTREE ADAPTER.
7. OA INTAKE SHALL BE GREENHECK FGI SERIES, NOMINAL 36"x28" OVERALL SIZE WITH 18"X18" THROAT. INTAKE AND CURB SHALL BE HIGH WIND RATED FOR 125 MPH. PROVIDE 16" TALL ROOF CURB, INTAKE BASE HEIGHT SHALL BE 5". PROVIDE ALUMINUM BIRD SCREEN, "PERMATECTOR" COATING ON INTAKE AND CURB (COLOR BY ARCHITECT), FOAM APPLIED CURB SEAL, 1" FACTORY HOOD INSULATION, AND TIE DOWN POINTS. CURB SHALL BE INSULATED, DOUBLE-WALL WITH NO EXPOSED INSULATED MATERIAL.
8. AREA ABOVE DATA ROOM SHALL BE FREE OF MECHANICAL EQUIPMENT AND THERE SHALL BE NO ROOFTOP PENETRATIONS ABOVE THIS AREA.

VergesRome
Architects
320 N. Carrollton Avenue, Suite 100
New Orleans, Louisiana 70119
t. 504.488.7739 f. 504.488.7743
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NORTH CAROLINA PROFESSIONAL SEAL 045041 ENGINEER JORDAN H. FISH

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