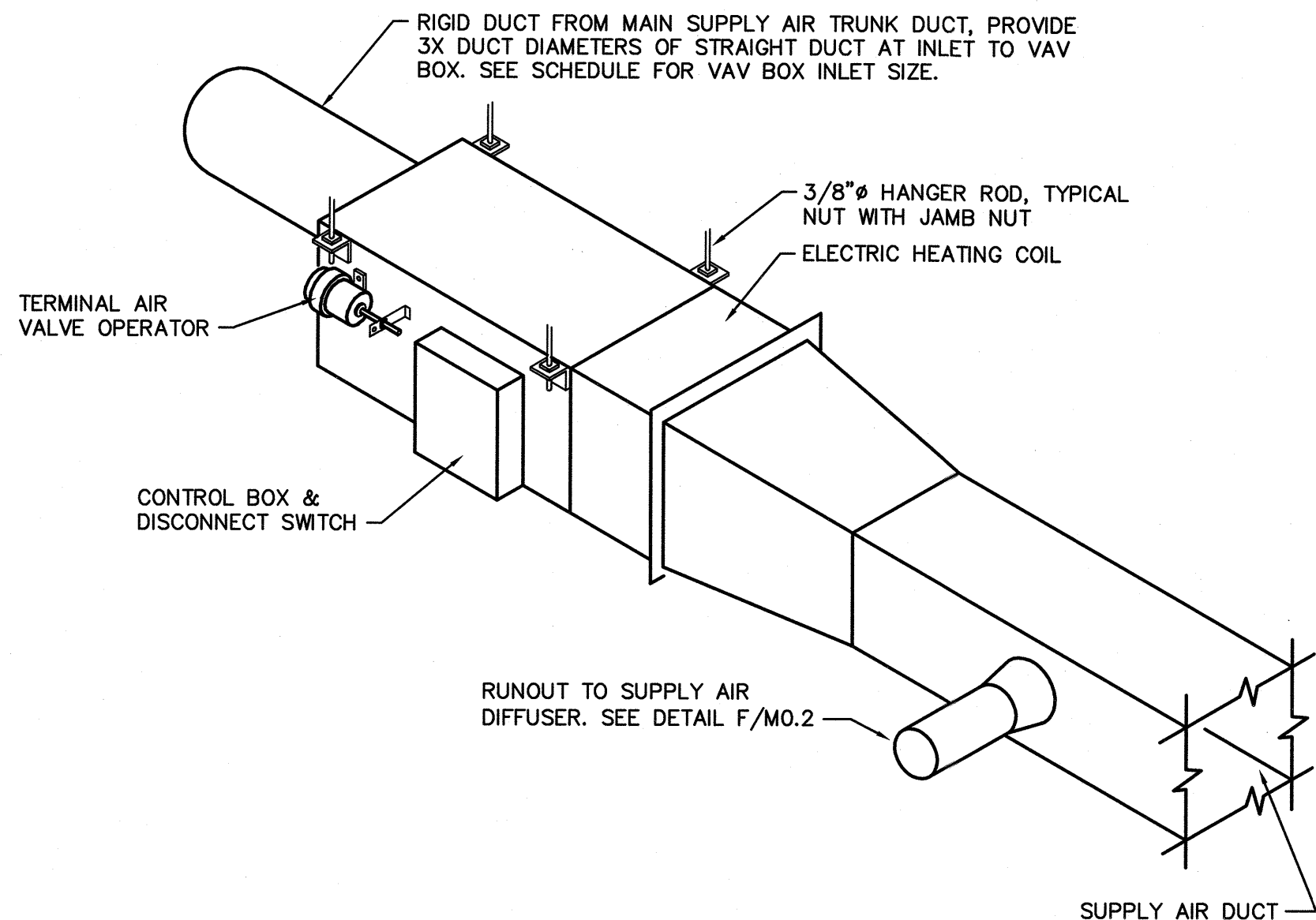


MECHANICAL EQUIPMENT CONNECTION NOTES:

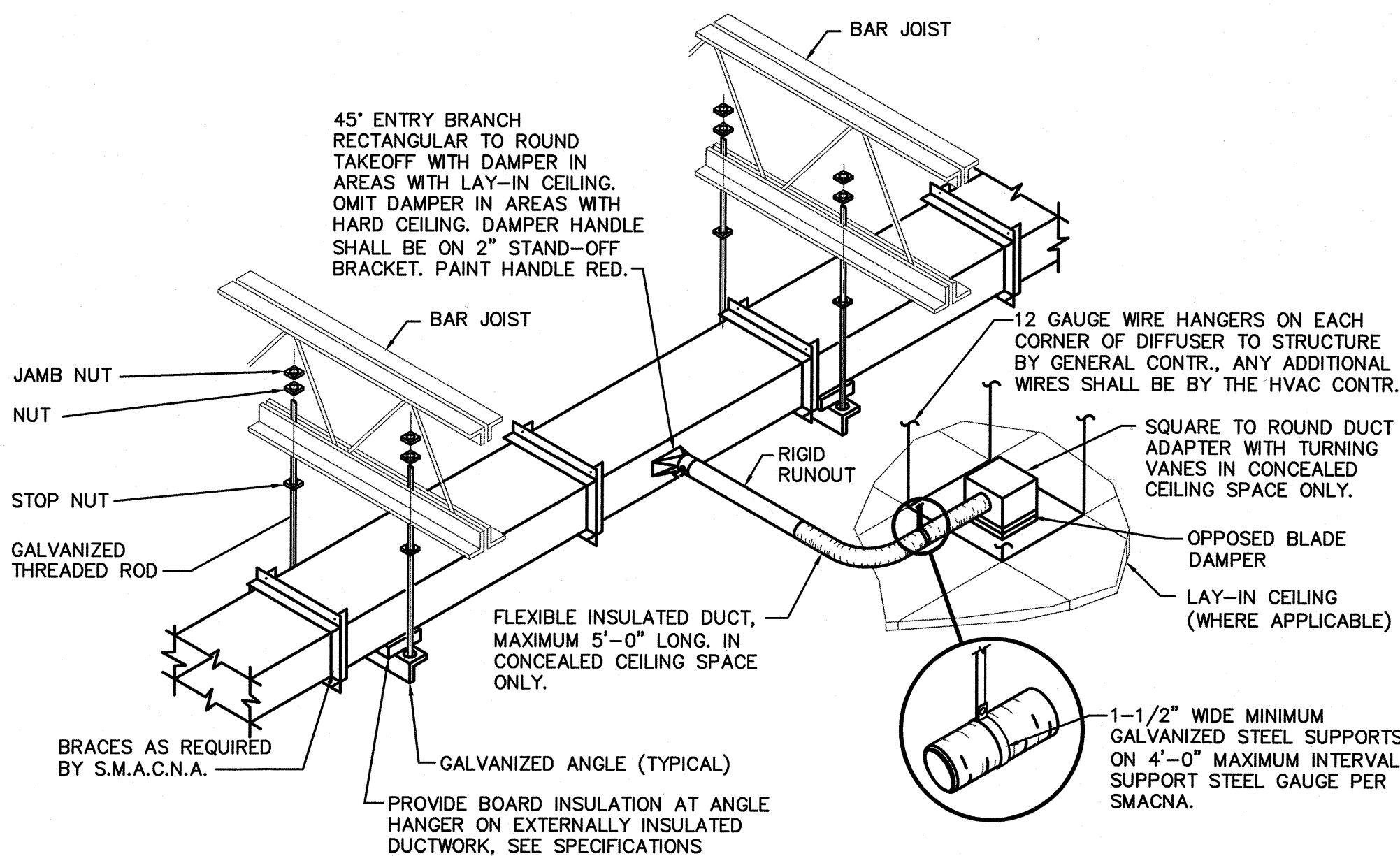
- ① MECHANICAL EQUIPMENT.
- ② CONDUIT AND WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
- ③ SAFETY SWITCHES BY HVAC CONTRACTOR. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- ④ A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. IT SHALL BE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR, AND LOCATED ADJACENT TO EQUIPMENT.
- ⑤ FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
- ⑥ JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
- ⑦ PROJECTS UTILIZING AN MCC, THE STARTER CB, OR VFD IN THE MCC ARE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- ⑧ IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP AND TEST EQUIPMENT.
- ⑨ IF THE ROOFTOP FAN IS NOT PROVIDED WITH A BUILT-IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.
- ⑩ IN A SINGLE PRIME CONTRACT, IT IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND THE OTHER TRADES.

A MECHANICAL EQUIPMENT CONNECTION DETAIL
M0.1 NO SCALE



B ROOM VAV BOX DETAIL
M0.1 NO SCALE

LEGEND		
	REMOVE EXISTING DUCTWORK	A.F.F. ABOVE FINISHED FLOOR
	REMOVE EXISTING PIPING, LINE SYMBOL INDICATES SERVICE	A.F.G. ABOVE FINISHED GRADE
	EXISTING DUCTWORK TO REMAIN	A.P.D. AIR PRESSURE DROP
	AIR CONDITIONING CONDENSATE PIPING	CB CIRCUIT BREAKER
	REFRIGERANT LINE SET. VERIFY QUANTITY	CFM CUBIC FEET PER MINUTE
	PUMPED CONDENSATE PIPING	CONC. CONCRETE
	RECTANGULAR DUCTWORK	CONT. CONTINUATION
	SUPPLY AIR DUCTWORK TURNED DOWN	CONTR. CONTRACTOR
	SUPPLY AIR DUCTWORK TURNED UP	CU CONDENSING UNIT
	RETURN AIR/EXHAUST AIR TURNED DOWN	DDC DIRECT DIGITAL CONTROL
	RETURN AIR/EXHAUST AIR TURNED UP	DISCH. DISCHARGE
	DUCT WITH RUNOUT TO DIFFUSER (SPIN-IN TAKE OFF WITH SEPERATE DAMPER)	DX DIRECT EXPANSION
	CEILING RETURN AIR/ EXHAUST AIR REGISTER	E.D.B. ENTERING DRY BULB
	CEILING SUPPLY AIR DIFFUSER	EFF EFFICIENCY
	ROUND SUPPLY AIR DIFFUSER	EER ENERGY EFFICIENCY RATIO
	DOUBLE WALL INSULATED ROUND DUCTWORK	E.S.P. EXTERNAL STATIC PRESSURE
	DUCT COLLAR	ET CETERIA
	MANUAL DAMPER WITH LOCKING OPERATOR	EX. EXISTING
	MOTOR OPERATED DAMPER	EX. A. EXHAUST AIR
	REGISTER, GRILLE OR DIFFUSER SYMBOL WITH CFM. ** DESIGNATES EXISTING DIFFUSER REUSED.	E.W.B. ENTERING WET BULB
	HEATING AND COOLING TEMPERATURE/HUMIDITY SENSOR WITH # INDICATING UNIT	F. FAHRENHEIT
	STATIC PRESSURE SENSOR WITH # INDICATING UNIT	FIN. FL. FINISHED FLOOR
	DISCONNECT SWITCH BY MECHANICAL CONTRACTOR	FLA. FULL LOAD AMPS
	KEYED NOTE SYMBOL	GEN. GENERAL
	SMOKE DETECTOR WITH DUCT ACCESS DOOR, ACCESS DOOR BY THE MECH. CONTR., DETECTOR FURNISHED BY THE ELECT. CONTR. AND INSTALLED BY THE MECH. CONTR. PROVIDE CEILING ACCESS DOOR (16"x16" MIN.) WHERE NECESSARY.	IN. INCHES
	TERMINATION POINT OF DEMOLITION	JB JUNCTION BOX
	POINT OF NEW CONNECTION TO EXISTING	KW KILOWATT
	FIRE DAMPER (1 HOUR RATED) MOUNTED IN WALL WITH DUCT ACCESS DOOR AND CEILING ACCESS DOOR (16"x16" MIN.) WHERE NECESSARY.	L.D.B. LEAVING DRY BULB
	DIAMETER	L.W.B. LEAVING WET BULB
	TEMP. PERCENTAGE	MAX. MAXIMUM
	1 HOUR WALL DESIGNATION	MCA MINIMUM CIRCUIT AMPACITY
		MCC MOTOR CONTROL CENTER
		M.D. MANUAL DAMPER
		MIN. MINIMUM
		MOCP MAXIMUM OVERCURRENT PROTECTION
		M.O.D. MOTOR OPERATED DAMPER
		N.C. NORMALLY CLOSED
		N.O. NORMALLY OPEN
		O.A. OUTSIDE AIR
		O.C. ON CENTER
		QTY. QUANTITY
		R.A. RETURN AIR
		S.A. SUPPLY AIR
		SCR SILICON CONTROLLED RECTIFIER
		SEER SEASONAL ENERGY EFFICIENCY RATIO
		TEMP. TEMPERATURE
		VAV VARIABLE AIR VOLUME VARIABLE
		VFD FREQUENCY DRIVE
		W.C. WATER COLUMN



C TYPICAL SUPPLY DUCT DETAIL
M0.1 NO SCALE (RETURN GRILLES SIMILAR)

GENERAL NOTES:

1. HVAC CONTRACTOR SHALL FIELD VERIFY ALL RELEVANT DIMENSIONS, CLEARANCES, LOCATIONS AND ELEVATIONS PRIOR TO ORDERING, FABRICATION, AND INSTALLATION OF HIS WORK. DISCREPANCIES OR INTERFERENCE'S SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE. THE DRAWINGS DIAGRAMMATICALLY INDICATE THE GENERAL LOCATION OF DUCTS, PIPING AND EQUIPMENT AND DO NOT SHOW ALL SUPPORTS, OFFSETS, FITTINGS, BOLTS, CONNECTIONS, ETC.. REQUIRED FOR A COMPLETE SYSTEM. WHILE THE DRAWINGS ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS FOUND NECESSARY TO CHANGE THE LOCATION OF ANY WORK TO ACCOMMODATE THE CONDITIONS AT THE BUILDING, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER, AND AS DIRECTED BY THE ENGINEER.
2. ALL SUPPLY AND RETURN CONNECTIONS TO AHU SHALL BE MADE WITH A FLEXIBLE DUCT CONNECTION.
3. PIPING, DUCTWORK, ETC., SHALL NOT BE SUPPORTED FROM BAR JOIST BRIDGING OR ROOFDECK. EQUIPMENT SUPPORTED BY BAR JOISTS SHALL HAVE SUPPORTS ATTACHED AS CLOSE AS POSSIBLE TO BAR JOIST PANEL POINTS. HVAC CONTRACTOR SHALL SUPPLY ANY AND ALL STRUCTURAL MEMBERS NECESSARY TO SUPPORT WORK BETWEEN BAR JOISTS, BEAMS, ETC.
4. ALL DUCT JOINTS SHALL BE SEALED AS SPECIFIED.
5. IN AREAS WITH GYPBOARD CEILINGS, HVAC CONTRACTOR SHALL INSTALL EQUIPMENT, DUCTWORK AND PIPE HANGERS PRIOR TO GYPBOARD INSTALLATION.
6. HVAC CONTRACTOR/ CONTROLS CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR PROVISIONS OF POWER TO DDC CONTROL SYSTEM CONTROL PANELS, CONTROLLERS, ETC.. NOT SHOWN ON M OR E DRAWINGS. ELECTRICAL CONTRACTOR WILL PROVIDE POWER TO GENERAL POINTS, JUNCTION BOXES, ETC., AND POWER WIRING FROM THOSE POINTS TO EQUIPMENT SHALL BE BY THE HVAC CONTRACTOR/CONTROL CONTRACTOR.
7. RETURN AIR DUCTWORK SHALL BE INSTALLED IN SUCH A MANNER THAT DUCT MOUNTED SMOKE DETECTORS ARE NO MORE THAN 24" ABOVE LAY-IN CEILING TILES.
8. ALL THERMOSTATS AND SWITCHES FOR MECHANICAL SYSTEMS AND TOP OF HVAC CONTROL PANEL SHALL BE MOUNTED 48" A.F.F MAXIMUM EXCEPT FOR NIGHT SETBACK THERMOSTAT.
9. COORDINATE MECHANICAL DUCTWORK AND PIPING TO AVOID ALL ELECTRICAL PANELS WITH ELECTRICAL CONTRACTOR.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

- ☐ COMPLIANCE PER CHAPTER 5 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS 503.2, 503.3 SIMPLE SYSTEMS AND 506 ADDITIONAL PRESCRIPTIVE COMPLIANCE REQUIREMENTS.
- ☐ 506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT
 - ☐ 506.2.2 REDUCED LIGHTING POWER DENSITY
 - ☐ 506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS
 - ☐ 506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING
 - ☐ 506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY
 - ☐ 506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEM
- ☒ COMPLIANCE PER CHAPTER 5 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS 503.2, 503.4 COMPLEX SYSTEMS AND 506 ADDITIONAL PRESCRIPTIVE COMPLIANCE REQUIREMENTS.
- ☒ 506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT
 - ☐ 506.2.2 REDUCED LIGHTING POWER DENSITY
 - ☐ 506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS
 - ☐ 506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING
 - ☐ 506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY
 - ☐ 506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEM
- ☐ COMPLIANCE PER CHAPTER 5 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTION 507 TOTAL ENERGY PERFORMANCE.
- ☐ COMPLIANCE PER ASHRAE/IESNA STANDARD 90.1-2010
- ☐ COMPLIANCE PER NORTH CAROLINA SPECIFIC COMCHECK.

CLIMATE ZONE 3

EXTERIOR DESIGN CONDITIONS

winter dry bulb: 28°F
summer dry bulb: 92.3°F DB/76.4°F WB

INTERIOR DESIGN CONDITIONS

winter dry bulb: 70°F
summer dry bulb: 75°F
relative humidity: 50%

BUILDING HEATING LOAD: BLOCK LOAD = 214.3 MBH

BUILDING COOLING LOAD: BLOCK LOAD = 37.4 TONS

MECHANICAL SPACING CONDITIONING SYSTEM

Unitary: description of unit: heating efficiency: cooling efficiency: heat output of unit: cooling output of unit: } SEE SCHEDULES ON M3.0

Boiler: N/A total boiler output. If oversized, state reason.
Chiller: N/A total chiller capacity. If oversized, state reason.

LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES ON M3.0

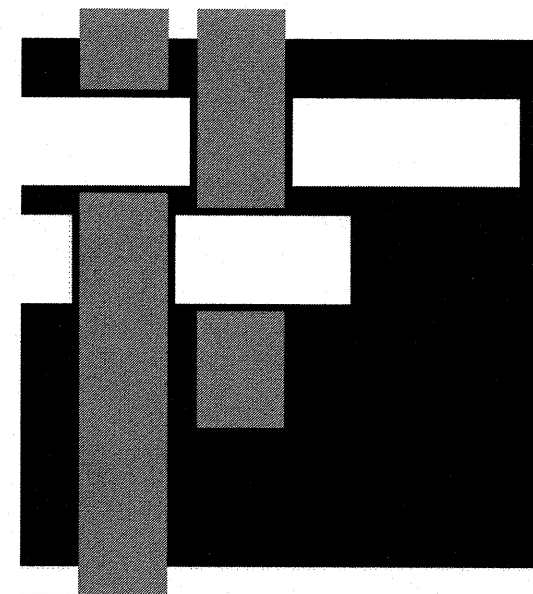
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

motor horsepower: number of phases: minimum efficiency: motor type: # of poles: } SEE SCHEDULES ON M3.0

DESIGNER STATEMENT

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Conservation Code.

SIGNED: Anthony E. Jacobs
NAME: Anthony E. Jacobs
TITLE: Professional Engineer



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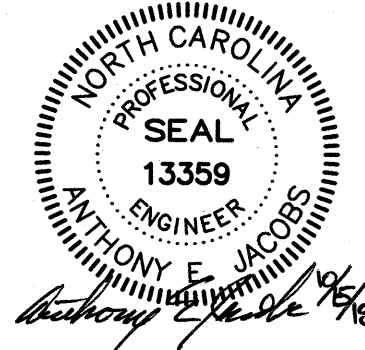
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JOB # 16.82



Brunswick Community College Allied Health
Additions & Renovations

185 College Rd NE
Bolivia, NC 28422

Project No: 16-15828-01

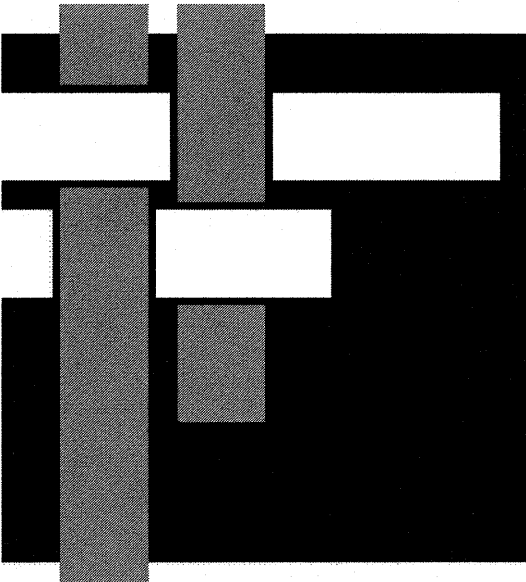
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MECHANICAL
LEGEND, ENERGY
SCHEDULE & DETAILS

M0.1

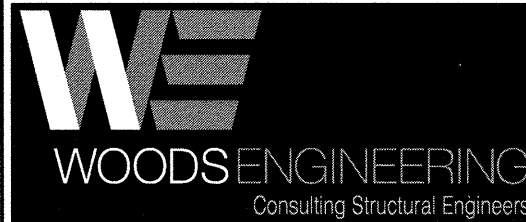
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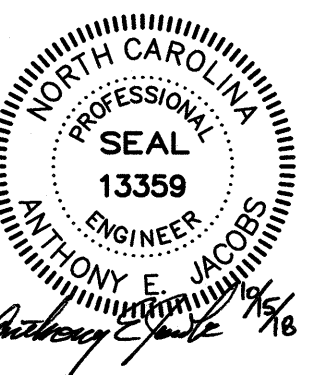
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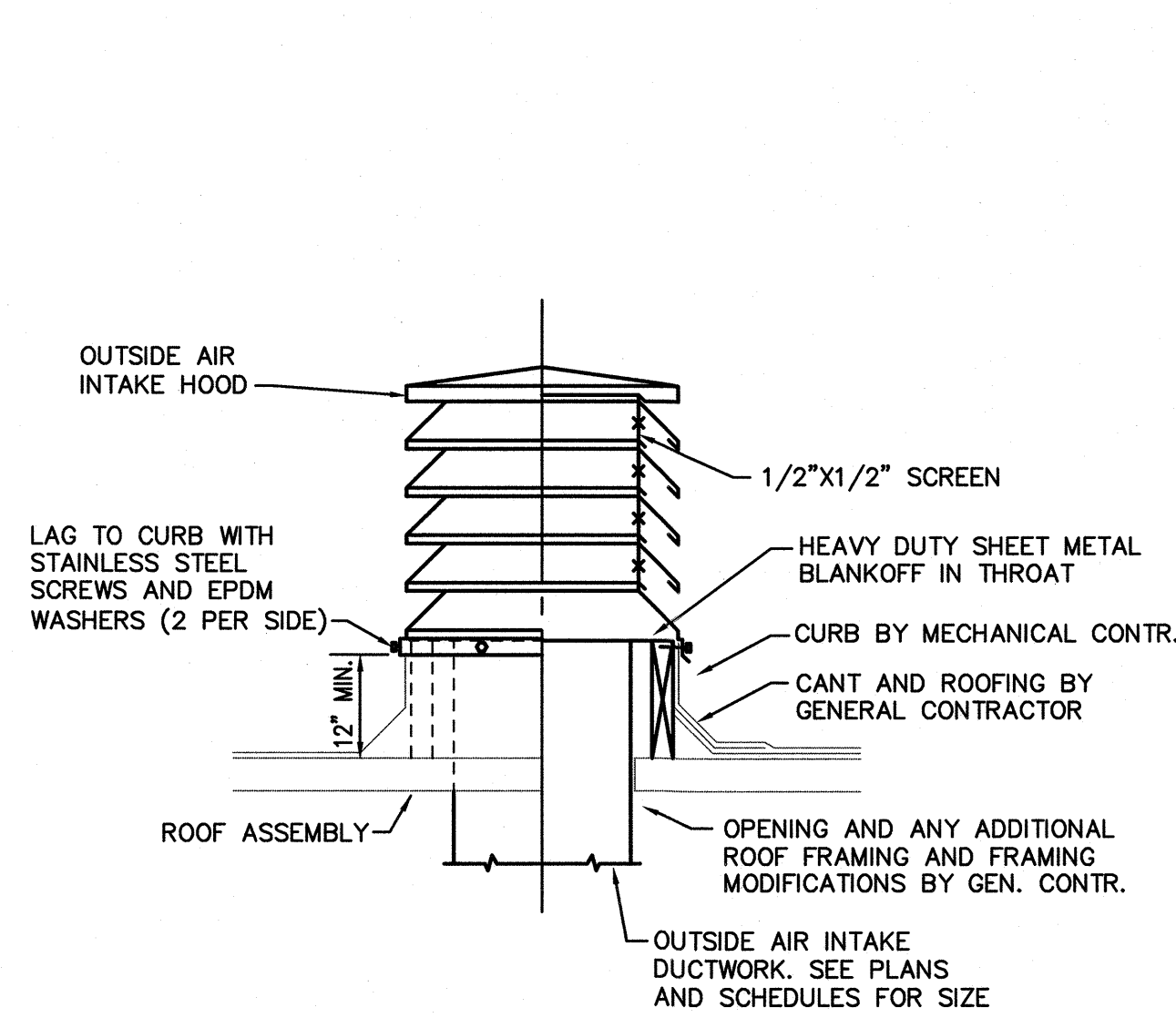
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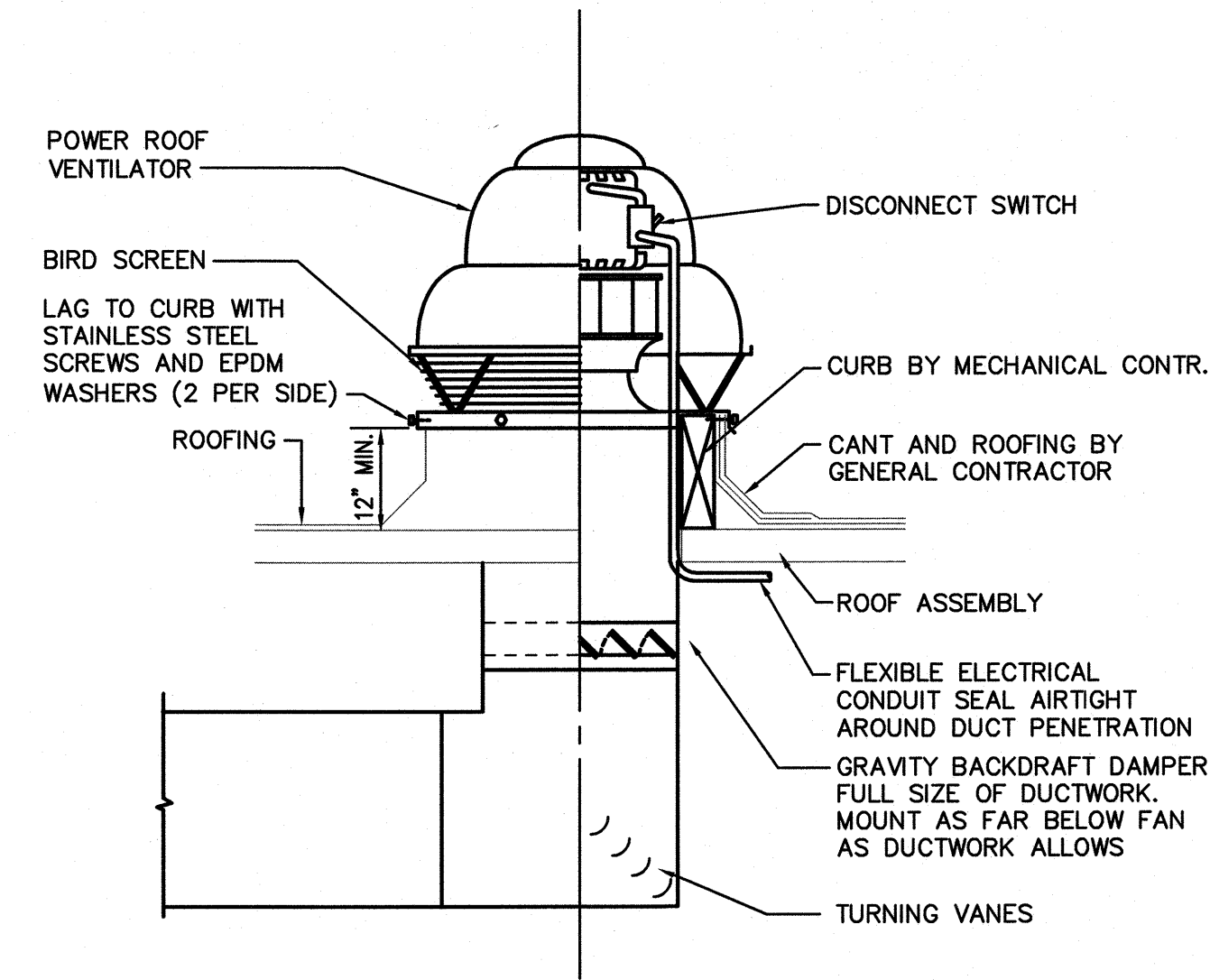
**MECHANICAL
DETAILS**

M0.2

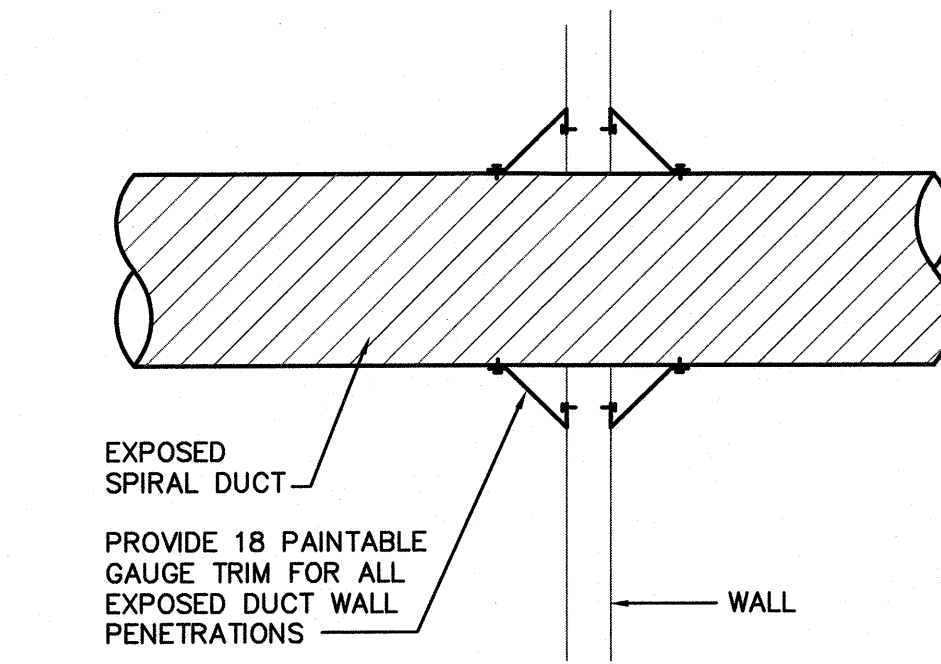
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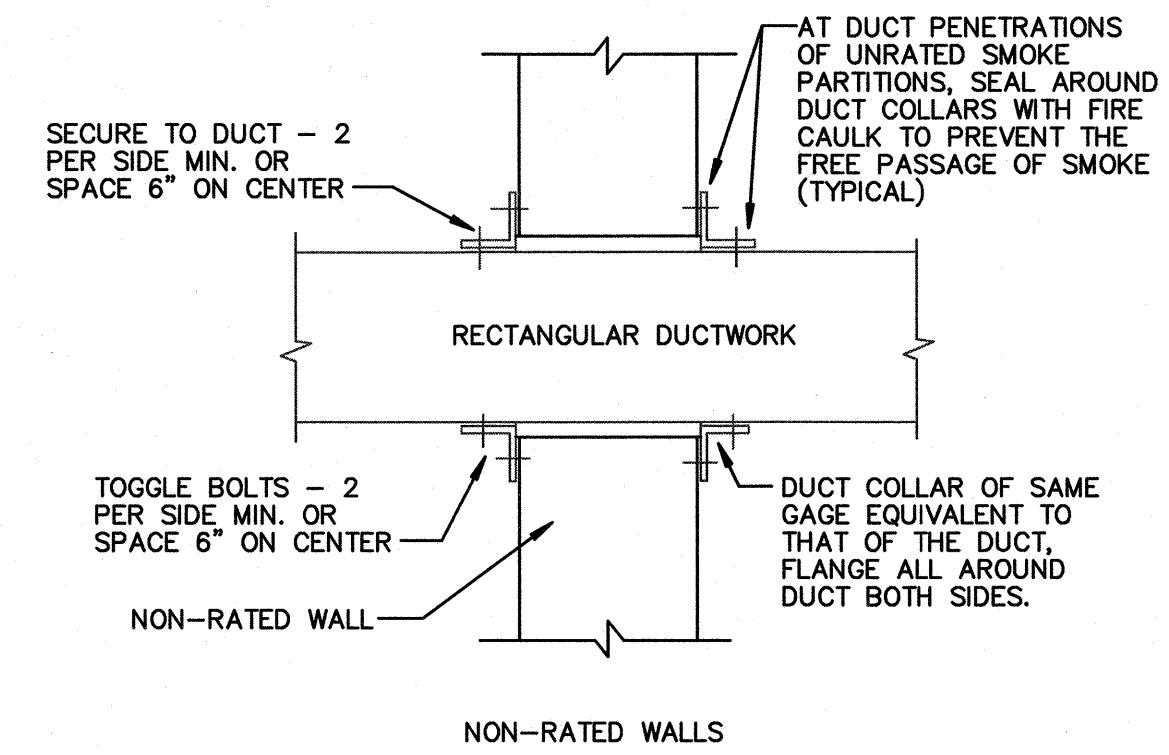
A LOUVERED PENTHOUSE DETAIL
M0.2 NO SCALE



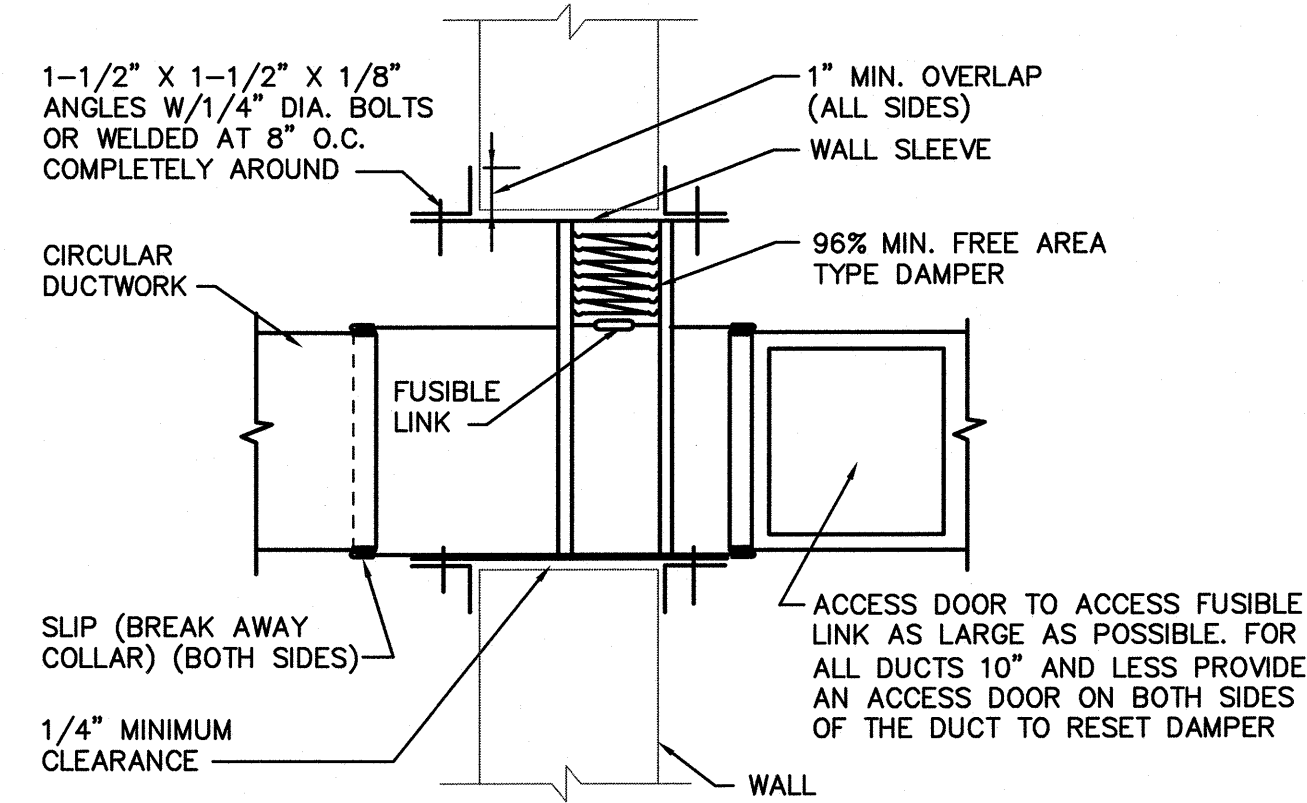
B POWER ROOF VENTILATOR DETAIL
M0.2 NO SCALE



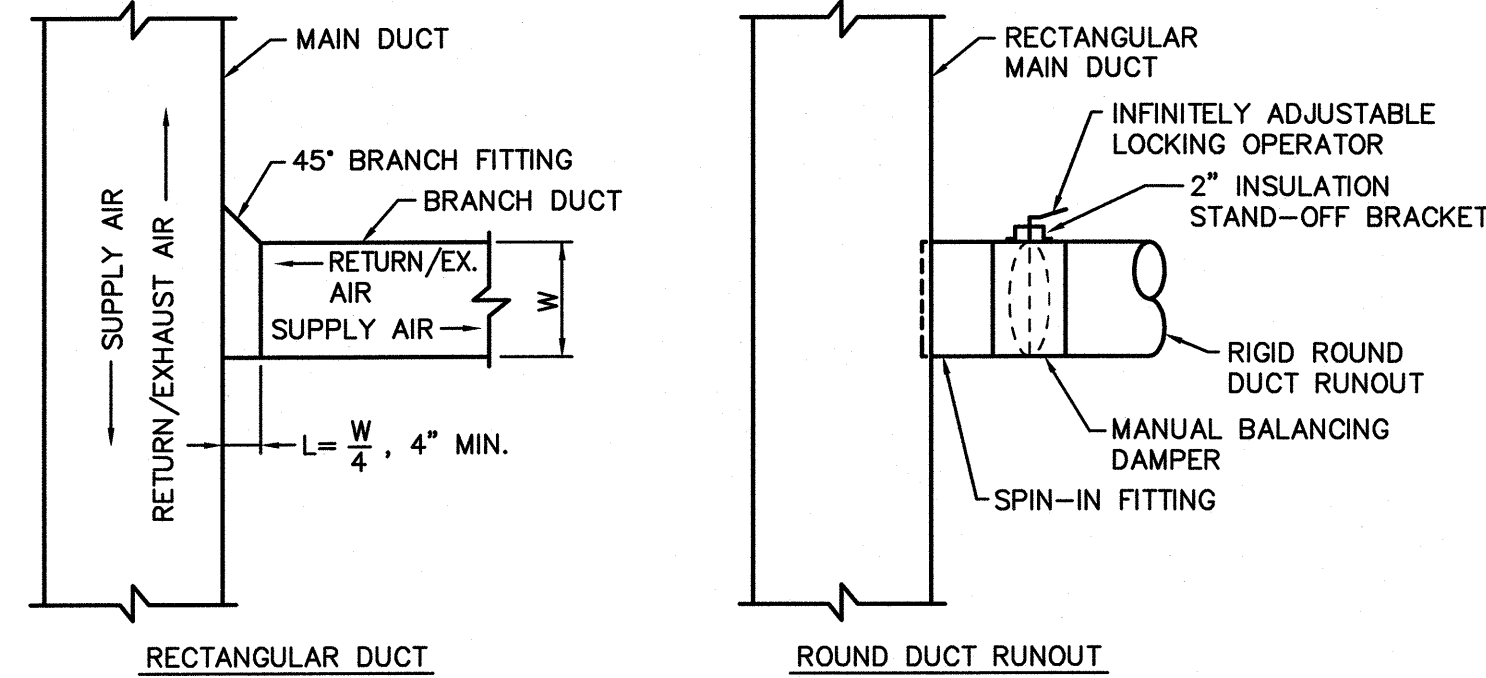
C ROUND DUCT COLLAR DETAIL
M0.2 NO SCALE



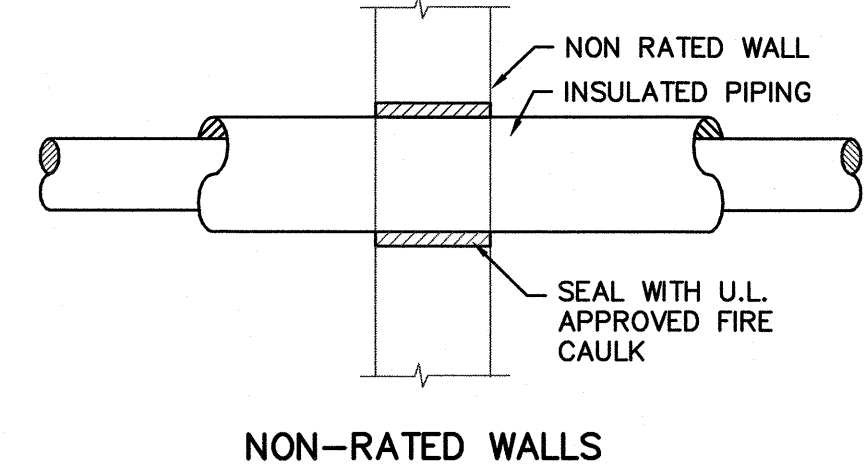
D WALL PENETRATION DETAIL
M0.2 NO SCALE



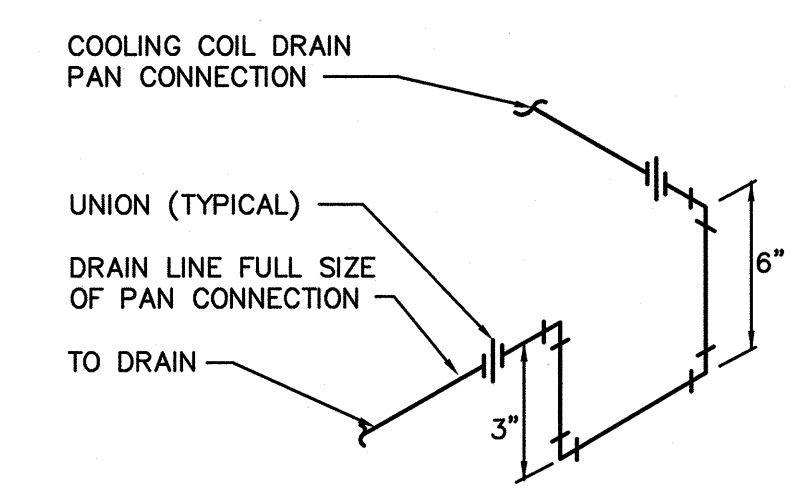
NOTE: DETAIL FOR REFERENCE ONLY. DAMPERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
E TYPICAL VERTICAL FIRE DAMPER DETAIL
M0.2 NO SCALE



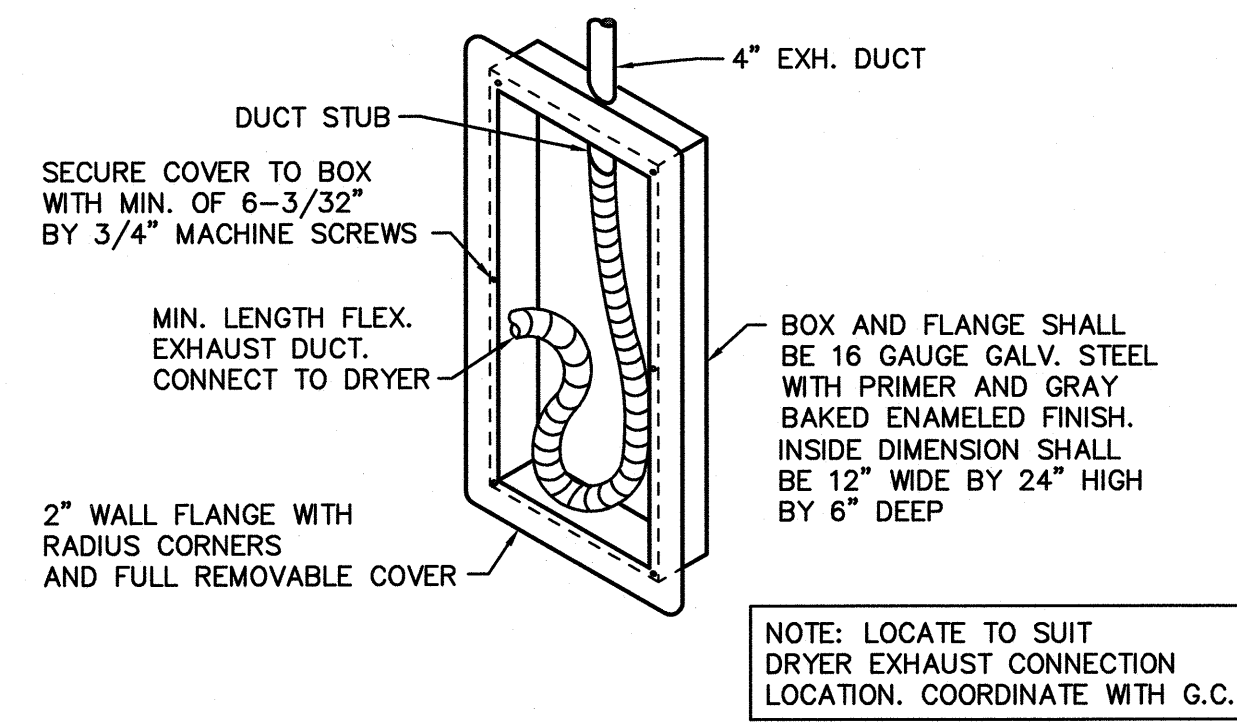
F TYPICAL DUCT BRANCH CONNECTION
M0.2 NO SCALE



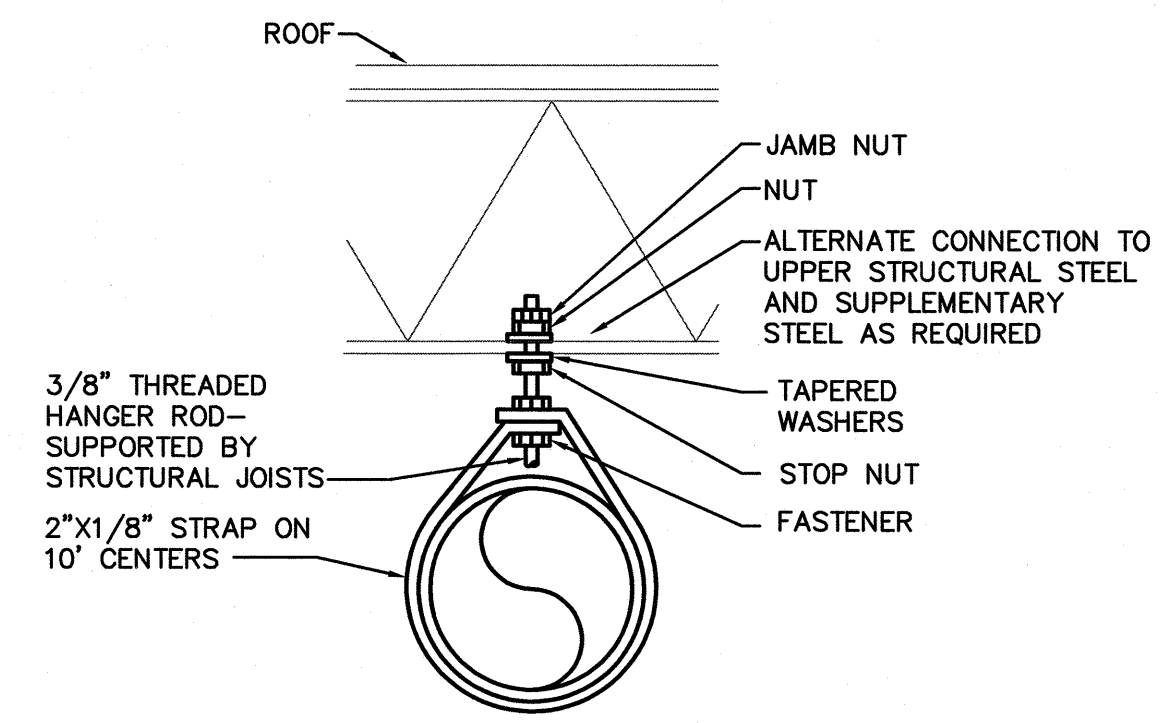
G WALL PENETRATION DETAIL
M0.2 NO SCALE



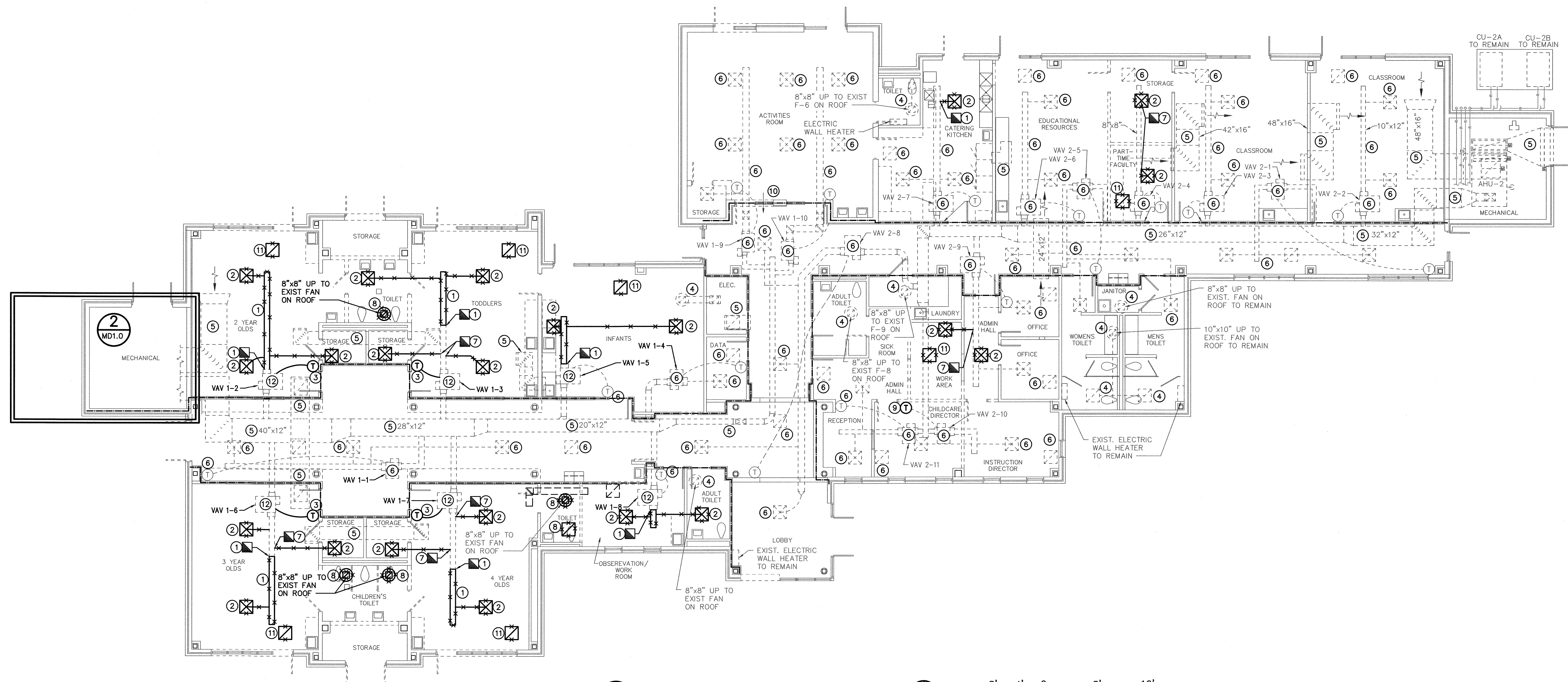
H CONDENSATE TRAP DETAIL
M0.2 NOT TO SCALE



NOTE: LOCATE TO SUIT DRYER EXHAUST CONNECTION LOCATION. COORDINATE WITH G.C.
I DRYER VENT BOX DETAIL
M0.2 NO SCALE



J TYPICAL DUCT HANGER DETAIL
M0.2 NOT TO SCALE

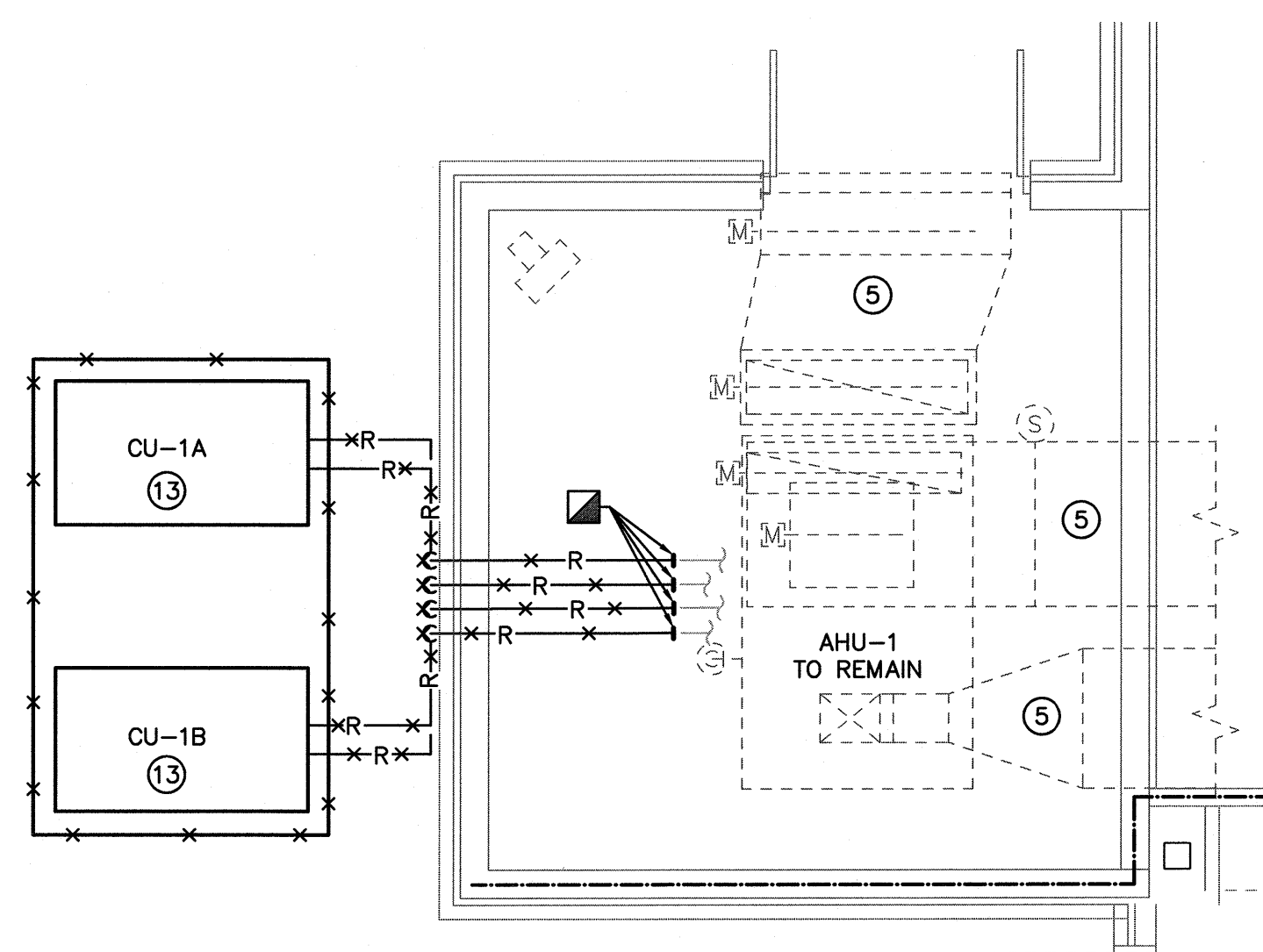


1 MECHANICAL PLAN - DEMOLITION
SCALE: 1/8" = 1'-0"

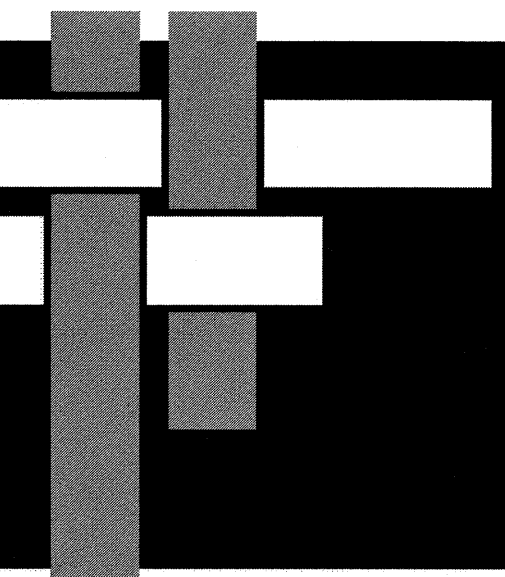
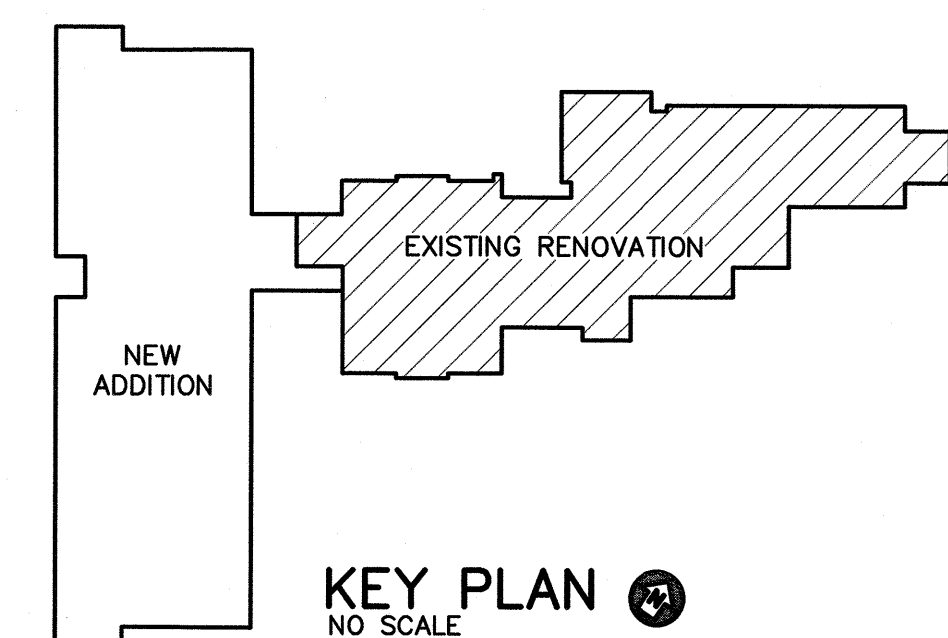
8' 4' 0' 8' 16'
SCALE: 1/8" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

- 1 REMOVE DUCT AS SHOWN AND ASSOCIATED DUCT HANGERS.
- 2 REMOVE EXISTING SUPPLY AIR DIFFUSER.
- 3 RELOCATE EXISTING THERMOSTAT FOR VAV 1-2, VAV 1-3, VAV 1-6, VAV 1-7 AND ASSOCIATED WIRING. PATCH AND PAINT WALL TO MATCH ADJACENT. SEE 1/M1.0 FOR NEW VAV THERMOSTAT LOCATIONS.
- 4 EXISTING EXHAUST DUCT, EXHAUST REGISTERS AND FAN ON ROOF TO REMAIN.
- 5 EXISTING DUCT TO REMAIN.
- 6 EXISTING VAV BOX, SUPPLY AIR DUCT, SUPPLY AIR DIFFUSERS, RETURN AIR REGISTERS, THERMOSTAT AND CONTROL WIRING TO REMAIN.
- 7 REMOVE EXISTING SUPPLY AIR RUNOUT AS SHOWN. PATCH AND SEAL MAIN DUCT AIRTIGHT.
- 8 REMOVE EXISTING EXHAUST REGISTER, DUCTWORK, CONTROL WIRING AND FAN ON ROOF CURB. SEAL ROOF CURB WATERTIGHT WITH INSULATED CAP.
- 9 RELOCATE THERMOSTAT, SEE 1/M1.0 FOR NEW LOCATION.
- 10 EXISTING SIDEWALL TRANSFER GRILLE TO REMAIN.
- 11 REMOVE EXISTING RETURN AIR REGISTER.
- 12 EXISTING VAV BOX TO REMAIN.
- 13 RELOCATE EXISTING OUTDOOR CONDENSING UNITS CU-1A, CU-1B. SEE 2/M1.1 FOR NEW LOCATION. RECLAIM REFRIGERANT IN APPROVED CONTAINER PRIOR TO RELOCATION OF OUTDOOR CONDENSING UNITS. REMOVE REFRIGERANT LINE TO POINT INDICATED AND REMOVE CONCRETE PAD.



2 ENLARGED PLAN - DEMOLITION
SCALE: NONE



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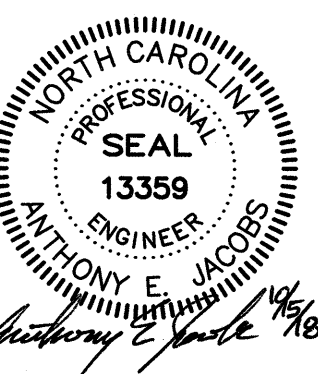
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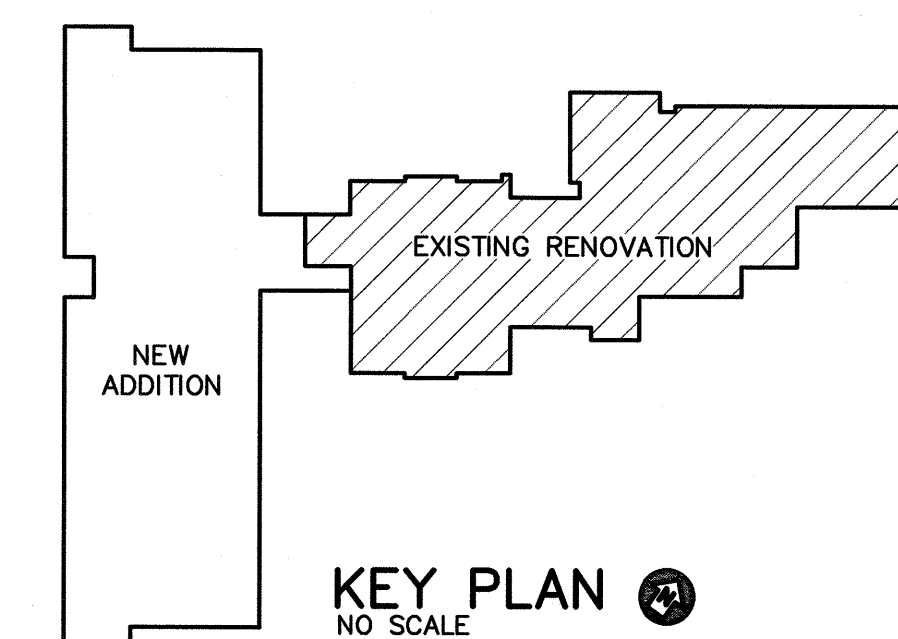
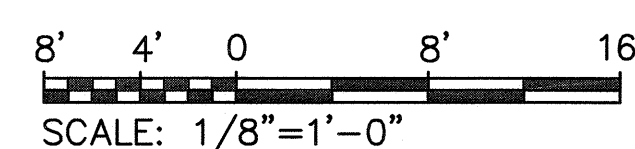
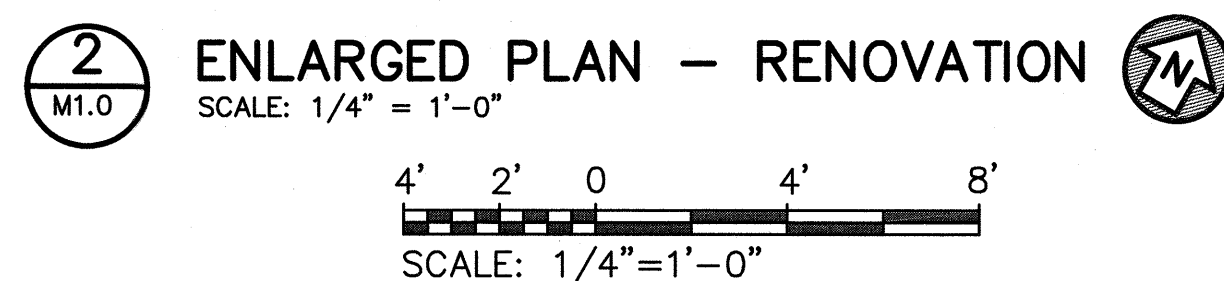
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**MECHANICAL
PLAN -
DEMOLITION**

MD1.0

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MECHANICAL
PLAN -
RENOVATION

M1.0


4 of 8

KEYED NOTES: (THIS SHEET ONLY)

- ① INSTALL NEW SUPPLY AIR DUCT AS SHOWN.
- ② VAV 2-7 PRIMARY AIRFLOW TO BE 375 CFM MAXIMUM AND 150 CFM MINIMUM.
- ③ NEW RETURN AIR REGISTER.
- ④ RELOCATED EXISTING THERMOSTAT. EXTEND CONTROL WIRING TO EXISTING VAV BOX.
- ⑤ NEW SUPPLY AIR DIFFUSER ONLY, TAB AND BALANCE TO CFM INDICATED.
- ⑥ FOR EXISTING CONDENSING UNIT RELOCATION, RECOVER REFRIGERANT FROM EXISTING SYSTEM, REMOVE EXISTING REFRIGERANT LINE SETS, RELOCATE EXISTING CONDENSING UNIT TO NEW 6" THICK CONCRETE PADS, INSTALL NEW REFRIGERANT SYSTEMS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE FACTORY START-UP SERVICES FOR EQUIPMENT.
- ⑦ NEW THERMOSTAT FOR VAV 1-11.
- ⑧ RESET EXISTING VAV 1-5 COOLING (MAXIMUM) AIRFLOW TO 350 CFM.
- ⑨ RESET EXISTING VAV 1-3 COOLING (MAXIMUM) AIRFLOW TO 650 CFM.
- ⑩ MECH. CONTR. TO PROVIDE 6" THICK CONCRETE PAD WHICH SHALL EXTEND BEYOND THE EQUIPMENT BY 4" MINIMUM ON ALL SIDES, PAD SHALL BE MADE FROM 3000 PSI CONCRETE REINFORCED WITH 10/10 x 6/6 WIRE MESH. SURFACES TO BE SMOOTH AND EDGES TOOLED.

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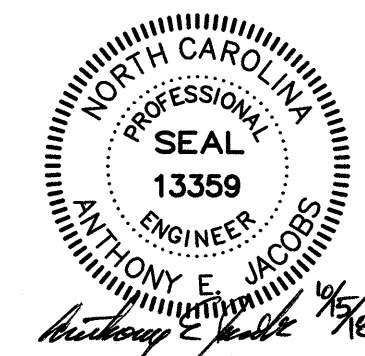
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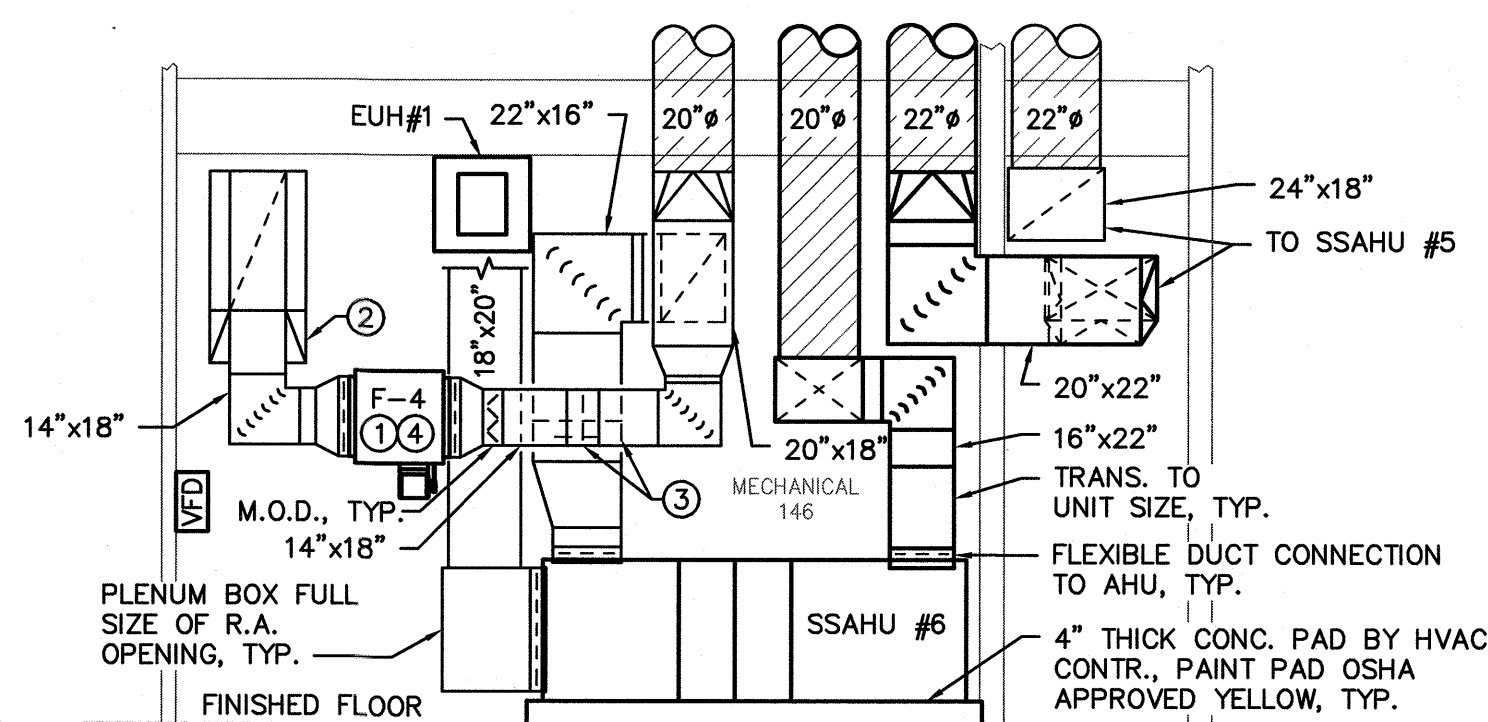
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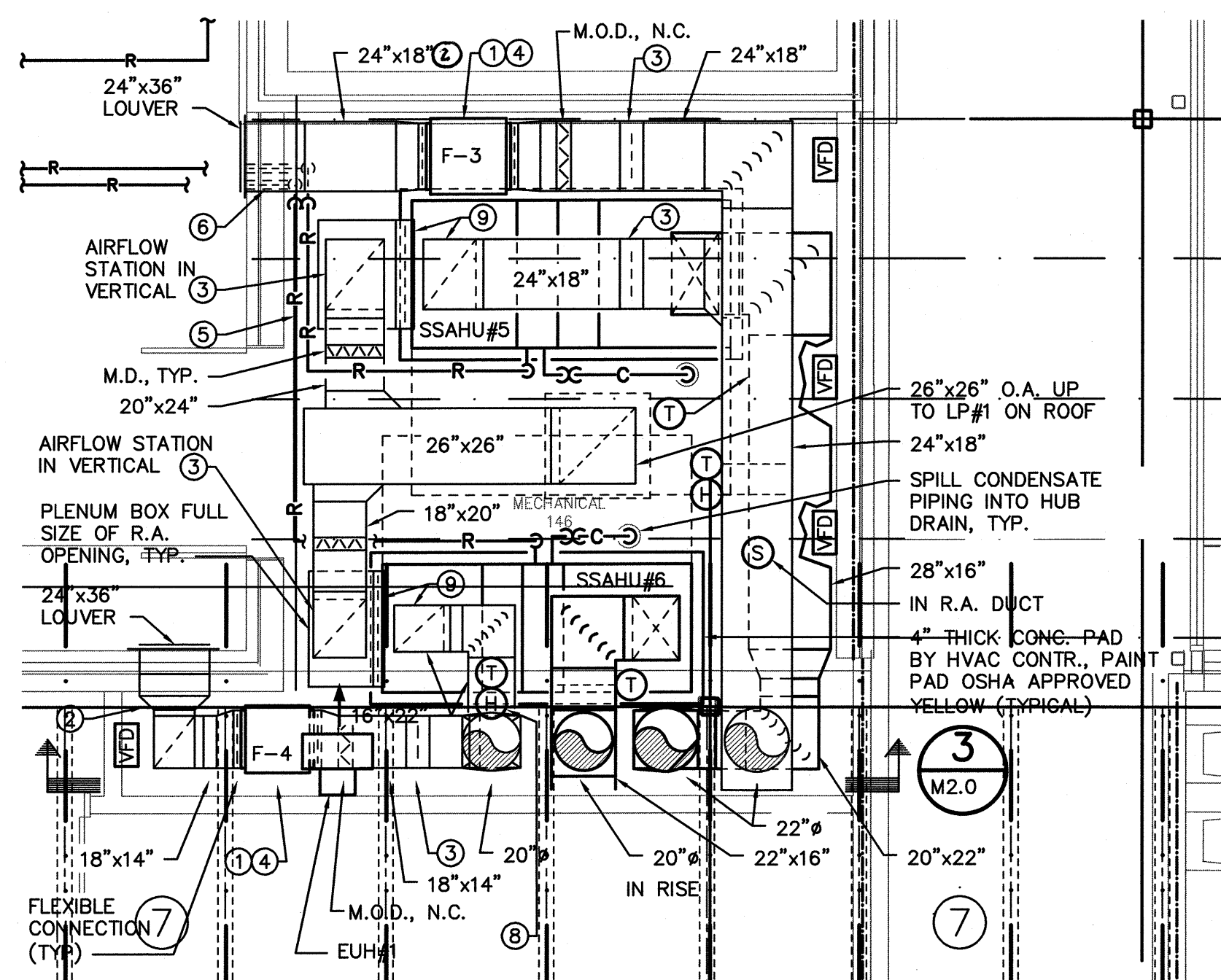
MECHANICAL
PLAN -
RENOVATION

M1.0

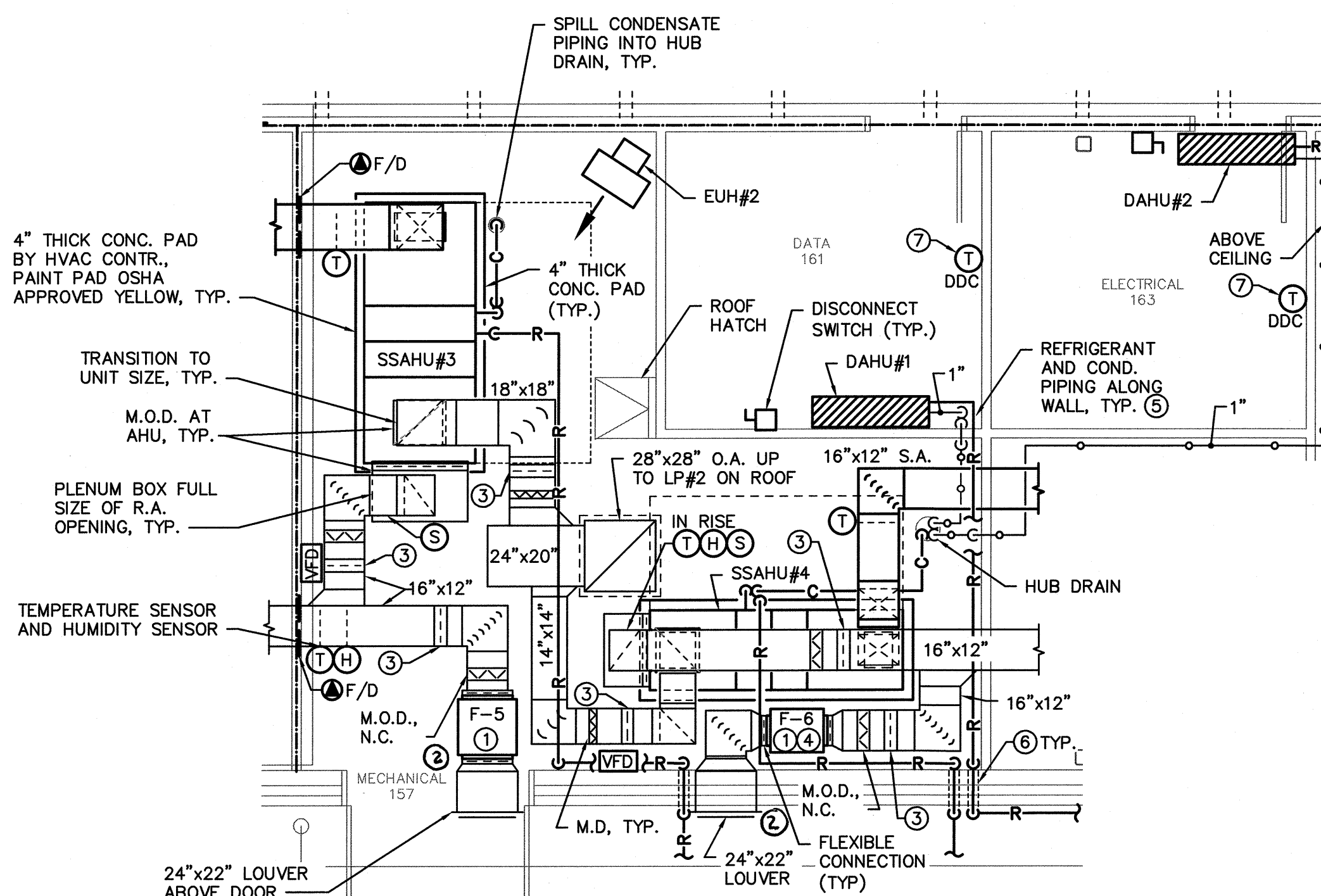
4 of 8



3 SECTION
SCALE: 1/4" = 1'-0"



1 ENLARGED PLAN - MECHANICAL ROOM 146
SCALE: 1/4" = 1'-0"

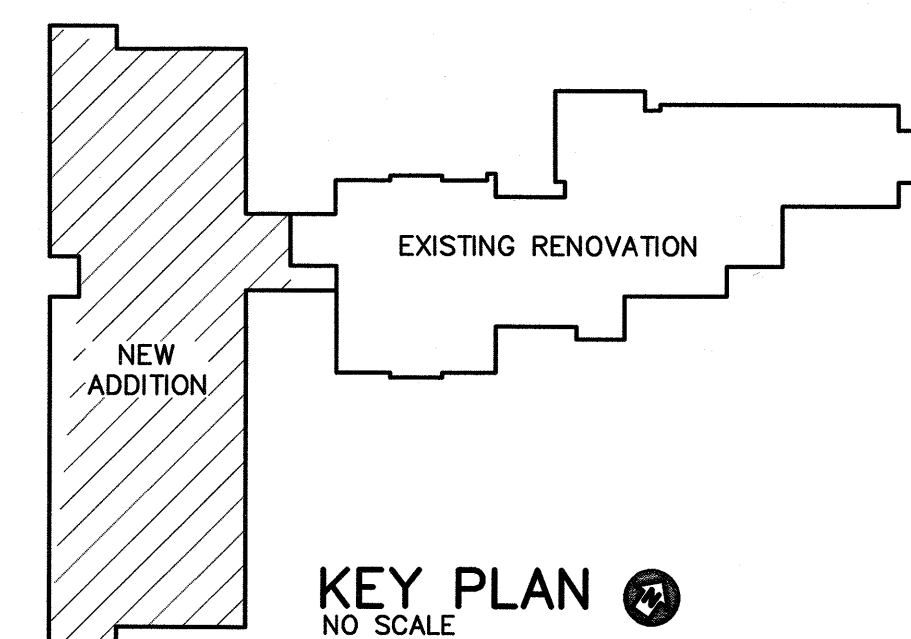


2 ENLARGED PLAN - MECHANICAL ROOM 157
SCALE: 1/4" = 1'-0"

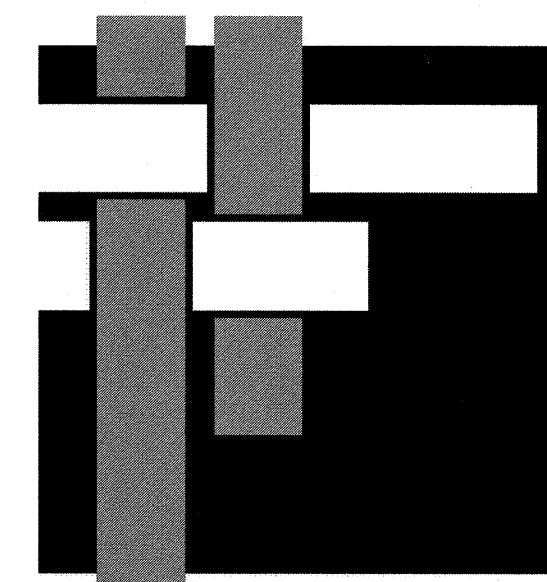
KEYED NOTES: (THIS SHEET ONLY)

- ① PROVIDE THREADED ROD HANGERS WITH VIBRATION ISOLATORS FOR FAN SUPPORT. ATTACH UPPER ROD HANGERS UTILIZING SUPPLEMENTARY STEEL PROVIDED BY HEATING AND AIR CONDITIONING CONTRACTOR AS REQUIRED.
- ② PROVIDE SLOPED DUCT FLOOR FROM DUCTWORK TO EXHAUST LOUVER TO ALLOW FOR DRAINAGE OF ANY RAINWATER AND PREVENT FROM ENTERING THE SYSTEM
- ③ PROVIDE AIR FLOW MONITORING STATIONS FOR EACH AIR HANDLING UNIT: ONE FOR UNIT RETURN AIR, ONE FOR UNIT OUTSIDE AIR, ONE FOR UNIT ECONOMIZER RELIEF AIR.
- ④ MOUNT FAN WITH MOTOR ON BOTTOM FOR EASE OF MAINTENANCE ACCESS.
- ⑤ SECURE PIPING TO WALL.
- ⑥ CORE DRILL EXTERIOR WALL FOR REFRIGERANT PIPING AND INSULATION, AND SEAL WEATHER-TIGHT. SECURE PIPING TO WALL.
- ⑦ VERIFY FINAL INSTALLED LOCATION OF TEMPERATURE SENSOR SUCH THAT THERE IS NO HEAT PRODUCING EQUIPMENT BENEATH THE SENSOR.
- ⑧ INSTALL TEMPERATURE SENSOR AND HUMIDITY SENSOR IN MAIN DUCT UPSTREAM OF ANY BRANCHES.
- ⑨ MOTOR OPERATED DAMPER AT AHU.

4' 2' 0 4' 8'
SCALE: 1/4"=1'-0"



KEY PLAN
NO SCALE



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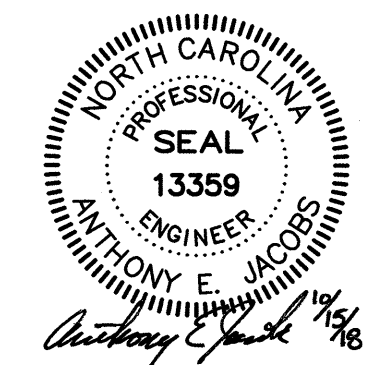
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15 October, 2018

ENLARGED
PLANS - NEW
ADDITION

M2.0

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SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE																						
AIR HANDLING UNIT SECTION													OUTDOOR SECTION							REMARKS		
SYMBOL	AIR QUANTITY		E.S.P. IN. W.C. ①	ELECTRICAL		DX COOLING COIL						FILTERS	SYMBOL	ELECTRICAL			QTY. COMPRESSORS	COOLING CAPACITY BTUH ③	EER/ SEER			
	TOTAL CFM	OUTSIDE CFM		MAX H.P.	VOLT/PHASE	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	ROWS	MAX. A.P.D. IN. W.C.			VOLTS/PHASE	MCA ②	MOCp ②						
SSAHU#3	1975	430	2.75	3	460/3	82.0	66.8	52.0	51.9	6	0.75	ANGLED, MERV 8	SSAC#3	460/3	15	20	2	91000	12.8	DESIGN BASIS: TRANE SIZE 4 CLIMATE CHANGER WITH TRANE TTA090 OUTDOOR UNIT, APR (COIL DISCH. TEMP.) CONTROL		
SSAHU#4	1100	325	2.75	1.5	460/3	82.0	72.1	51.9	51.7	6	0.75	ANGLED, MERV 8	SSAC#4	460/3	15	20	2	75000	12.0	DESIGN BASIS: TRANE SIZE 3 CLIMATE CHANGER WITH TRANE TTA072 OUTDOOR UNIT, APR (COIL DISCH. TEMP.) CONTROL		
SSAHU#5	3400	1100	3.5	5	460/3	82.0	69.0	52.0	51.9	8	0.75	ANGLED, MERV 8	SSAC#5	460/3	32	40	2	186000	12.7	DESIGN BASIS: TRANE SIZE 8 CLIMATE CHANGER WITH TRANE TTA180 OUTDOOR UNIT, APR (COIL DISCH. TEMP.) CONTROL		
SSAHU#6	2400	825	2.75	3	460/3	82.0	68.2	52.0	51.9	6	0.75	ANGLED, MERV 8	SSAC#6	460/3	20	25	2	116000	12.7	DESIGN BASIS: TRANE SIZE 6 CLIMATE CHANGER WITH TRANE TTA120 OUTDOOR UNIT, APR (COIL DISCH. TEMP.) CONTROL		

① EXTERNAL STATIC PRESSURE INCLUDES SUPPLY & RETURN AIR DUCTWORK ONLY. INTERNAL COMPONENTS SUCH AS COILS AND FILTERS ARE NOT INCLUDED IN THIS FIGURE.

② MCA = MINIMUM CIRCUIT AMPACITY, MOCp = MAXIMUM OVERCURRENT PROTECTION

③ NOMINAL ARI CAPACITY

POWER VENTILATOR SCHEDULE															
SYMBOL	SERVING		CFM	E.S.P. IN. W.C.	SPEED RPM	STATIC EFF. %	ELECTRICAL		TYPE	DRIVE	MAX. SOUND SONES	ROOF OPENING ①	CONTROL	REMARKS	
							HP	VOLTAGE/PHASE							
F-1	LAB TOILET 164		100	0.375	1600	20	1/6	120V/1ø	IN-LINE CENTRIFUGAL	DIRECT	4.6	--	LIGHT CIRCUIT	SPEED CONTROL	
F-2	MEN 151/WOMEN 147/JANITOR 149		550	0.375	1037	52	1/4	120V/1ø	ROOF MOUNTED CENTRIFUGAL	DIRECT	4.5	15"X15"	DDC SYSTEM	BACKDRAFT DAMPER, ROOF CURB, SPEED CONTROL	
F-3	MECHANICAL 146 SSAHU#5 RELIEF		2300	1.0	1199	55	1	460V/3ø	INLINE CENTRIFUGAL	BELT	12.0	--	DDC SYSTEM		
F-4	MECHANICAL 146 SSAHU#6 RELIEF		1575	1.0	1344	50	3/4	460V/3ø	INLINE CENTRIFUGAL	BELT	13.5	--	DDC SYSTEM		
F-5	MECHANICAL 157 SSAHU#3 RELIEF		1545	1.0	1337	50	3/4	460V/3ø	INLINE CENTRIFUGAL	BELT	13.5	--	DDC SYSTEM		
F-6	MECHANICAL 157 SSAHU#4 RELIEF		775	1.0	1976	30	1/2	460V/3ø	INLINE CENTRIFUGAL	BELT	17.7	--	DDC SYSTEM		

① FOR BIDDING PURPOSES ONLY

DUCTLESS SPLIT SYSTEM UNIT SCHEDULE												
SYMBOL	AIR QUANTITY		EXT SP *H2O ①	ELECTRICAL		SYMBOL	ELECTRICAL			COOLING CAPACITY BTUH ②	SEER	BASIS OF DESIGN
	TOTAL CFM	OUTSIDE CFM		FAN FLA	VOLTAGE & PHASE		MCA	MOCp	VOLTAGE & PHASE			
DAHU#1	650	—	—	0.36	208V-1Ø	DAC#1	19	26	208V-1Ø	10,000—24,000	21.4	MITSUBISHI PKA—A24KA7 AND PUY—A24NHA7
DAHU#2	650	—	—	0.36	208V-1Ø	DAC#2	19	26	208V-1Ø	10,000—24,000	21.4	MITSUBISHI PKA—A24KA7 AND PUY—A24NHA7

① EXT. S.P. INCLUDES SUPPLY & RETURN AIR DUCTWORK. FILTERS IN UNIT ARE NOT INCLUDED IN THIS FIGURE.

② MINIMUM AND MAXIMUM CAPACITY WHEN MATCHED WITH INDOOR HEAT PUMP SECTION AT AHRI CONDITIONS. SYSTEM IS R-410A REFRIGERANT.

NEW ADDITION: VAV BOX SCHEDULE										
TERMINAL NUMBER	BOX INLET CFM			BOX INLET SIZE ①	BOX RUNOUT SIZE ①②	HEATING COIL			BASIS OF DESIGN	REMARKS
	COOLING MAXIMUM	COOLING & HEATING MINIMUM	HEATING MAXIMUM			HEATING CAPACITY KW	STAGES	VOLTAGE & PHASE		
VAV 3-1	250	75	175	6"	8"	2.0	③	277V-1Ø	TRANE VCEF06	
VAV 3-2	150	75	100	4"	6"	1.0	③	277V-1Ø	TRANE VCEF04	
VAV 3-3	450	175	225	8"	10"	2.5	③	277V-1Ø	TRANE VCEF08	
VAV 3-4	500	175	275	8"	10"	3.0	③	277V-1Ø	TRANE VCEF08	
VAV 3-5	825	275	400	10"	12"	4.5	③	277V-1Ø	TRANE VCEF10	
VAV 4-1	500	150	275	8"	10"	3.5	③	277V-1Ø	TRANE VCEF08	
VAV 4-2	275	100	175	6"	8"	2.0	③	277V-1Ø	TRANE VCEF06	
VAV 4-3	600	200	300	8"	10"	3.5	③	277V-1Ø	TRANE VCEF08	
VAV 5-1	900	275	525	10"	12"	6.5	③	277V-1Ø	TRANE VCEF10	
VAV 5-2	900	275	525	10"	12"	6.5	③	277V-1Ø	TRANE VCEF10	
VAV 5-3	950	275	525	10"	12"	7.0	③	277V-1Ø	TRANE VCEF10	
VAV 5-4	900	275	525	10"	12"	6.5	③	277V-1Ø	TRANE VCEF10	
VAV 5-5	500	275	400	10"	12"	5.0	③	277V-1Ø	TRANE VCEF10	
VAV 6-1	1000	375	575	10"	12"	8.0	③	277V-1Ø	TRANE VCEF10	
VAV 6-2	975	350	575	10"	12"	8.0	③	277V-1Ø	TRANE VCEF10	
VAV 6-3	550	225	325	8"	10"	4.5	③	277V-1Ø	TRANE VCEF08	

① SIZE INDICATED IS ROUND DUCT DIAMETER.

② RUNOUT SIZE SHALL BE THE LARGEST OF:

A. SIZE INDICATED IN THE SCHEDULE (OR EQUIVALENT A.S.H.R.A.E. RECTANGULAR SIZE)

B. SIZE INDICATED ON THE DESIGN DRAWINGS (OR EQUIVALENT A.S.H.R.A.E. RECTANGULAR SIZE)

③ SCR CONTROLLED HEATING.

REGISTER, GRILLE & DIFFUSER SCHEDULE					
SYMBOL	C.F.M.	NECK SIZE	TYPE	RUNOUT SIZE	REMARKS
A	50-100	6"x6"	2'X2' LAY-IN CEILING S.A. DIFFUSER	6"ø	
B	125-225	9"x9"	2'X2' LAY-IN CEILING S.A. DIFFUSER	8"ø	
C	250-400	12"x12"	2'X2' LAY-IN CEILING S.A. DIFFUSER	10"ø	
D	50-150	6"ø	ROUND S.A. DIFFUSER	6"ø	
E	175-275	8"ø	ROUND S.A. DIFFUSER	8"ø	
F	50-150	10"x8"	SIDEWALL S.A. REGISTER	8"ø	
G	250-400	14"x10"	SIDEWALL S.A. REGISTER	12"ø	
H	500-1600	22"x22"	2'X2' LAY-IN R.A. REGISTER	--	
I	500-1600	24"x24"	R.A. REGISTER	--	
J	50-200	10"x10"	EXHAUST REGISTER	--	
K	225-500	12"x12"	EXHAUST REGISTER	--	

EXISTING RENOVATION: VAV BOX SCHEDULE										
TERMINAL NUMBER	BOX INLET CFM			BOX INLET SIZE ①	BOX RUNOUT SIZE ①②	HEATING COIL			BASIS OF DESIGN	REMARKS
	COOLING MAXIMUM	COOLING & HEATING MINIMUM	HEATING MAXIMUM			HEATING CAPACITY KW	STAGES	VOLTAGE & PHASE		
VAV 1-11	300	75	175	6"	8"	1.5	2	277V-1Ø	ENVIRO-TEC VFR-EH-06	

① SIZE INDICATED IS ROUND DUCT DIAMETER.

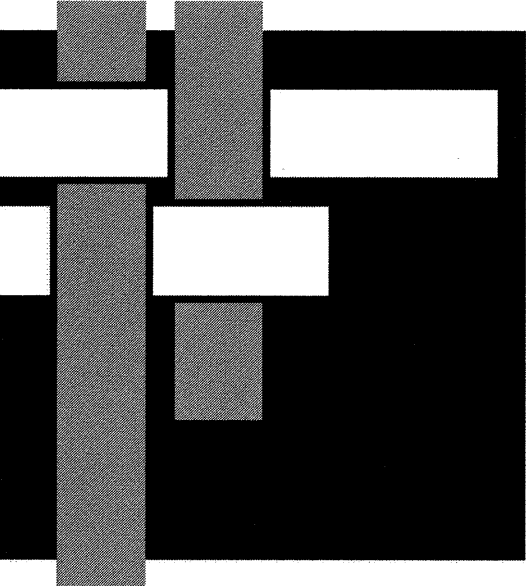
② RUNOUT SIZE SHALL BE THE LARGEST OF:

A. SIZE INDICATED IN THE SCHEDULE (OR EQUIVALENT A.S.H.R.A.E. RECTANGULAR SIZE)

B. SIZE INDICATED ON THE DESIGN DRAWINGS (OR EQUIVALENT A.S.H.R.A.E. RECTANGULAR SIZE)

LOUVERED PENTHOUSE SCHEDULE					
SYMBOL	CFM	THROAT SIZE	HEIGHT	CONN. DUCT SIZE	SERVING UNITS
LP#1	5800	36"x36"	24"	26"x26"	OUTSIDE AIR FOR SSAHU#5 & SSAHU#6
LP#2	3075	28"x28"	19 3/4"	24"x20"	OUTSIDE AIR FOR SSAHU#3 & SSAHU#4

ELECTRIC UNIT HEATER SCHEDULE						
SYMBOL	CFM	BTU/HR	ELECTRICAL		MOUNTING HEIGHT	REMARKS
			K.W.	VOLTAGE		
EUH#1	400	11200	3	277V-1ø	8'-0"	SERVING MECH. ROOM 146
EUH#2	400	11200	3	277V-1ø	8'-0"	SERVING MECH. ROOM 157

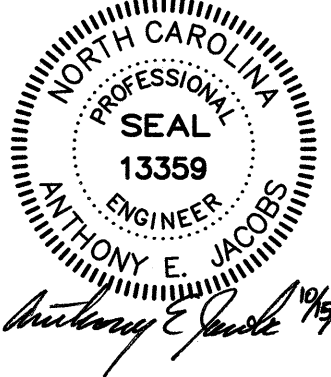


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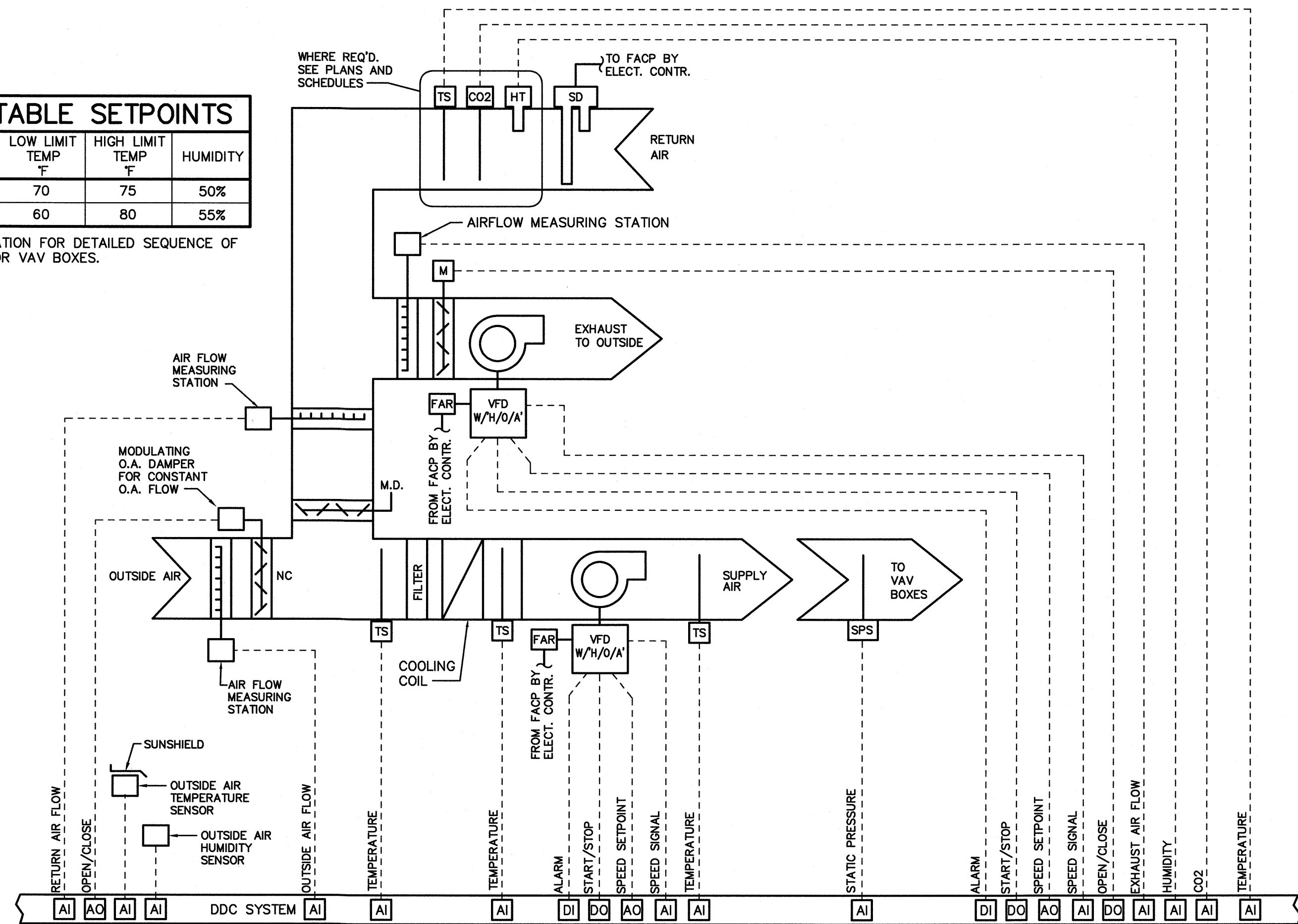
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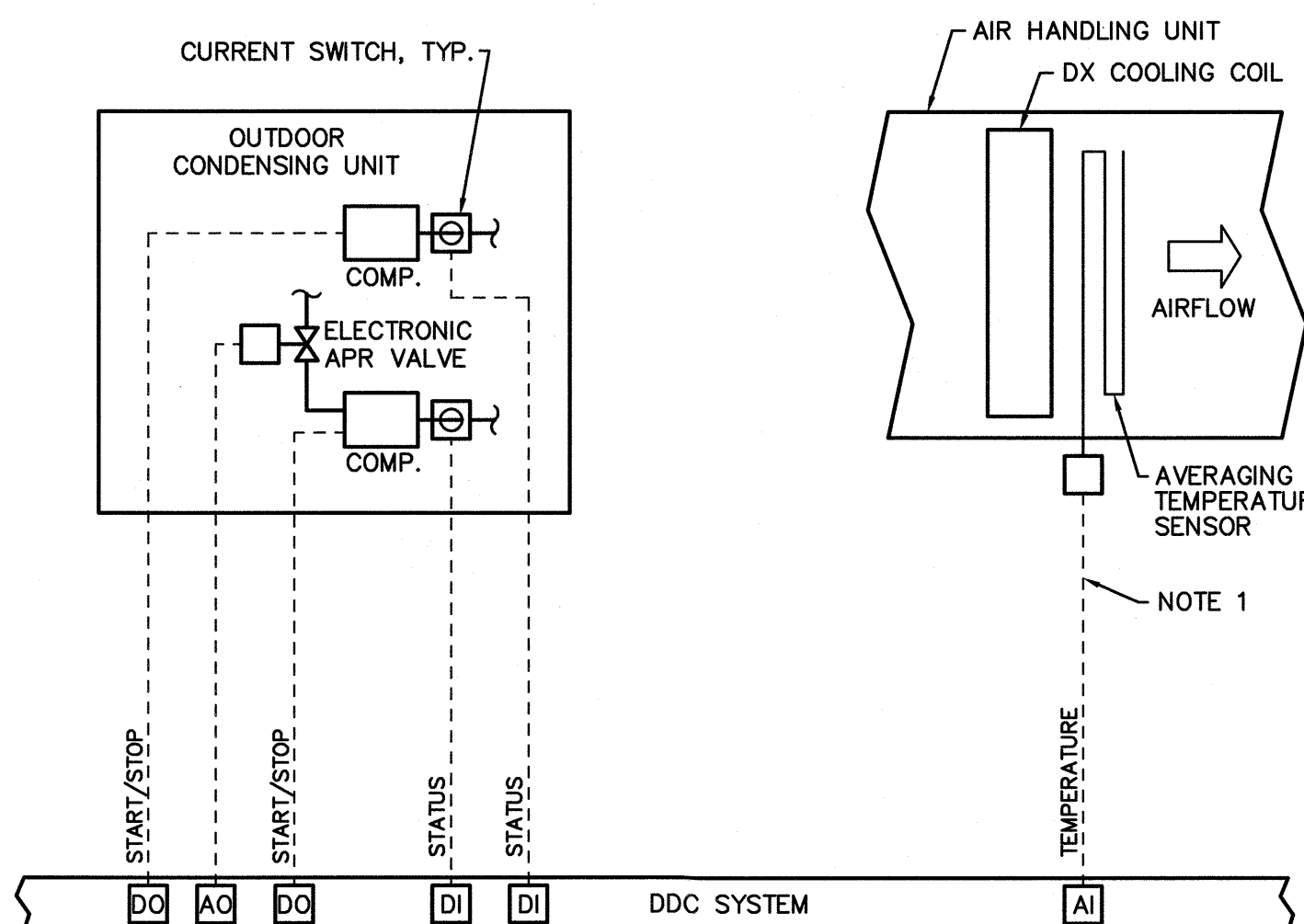
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ADJUSTABLE SETPOINTS			
MODE	LOW LIMIT TEMP °F	HIGH LIMIT TEMP °F	HUMIDITY
OCCUPIED (1)	70	75	50%
UNOCCUPIED (1)	60	80	55%

(1) SEE SPECIFICATION FOR DETAILED SEQUENCE OF OPERATION FOR VAV BOXES.



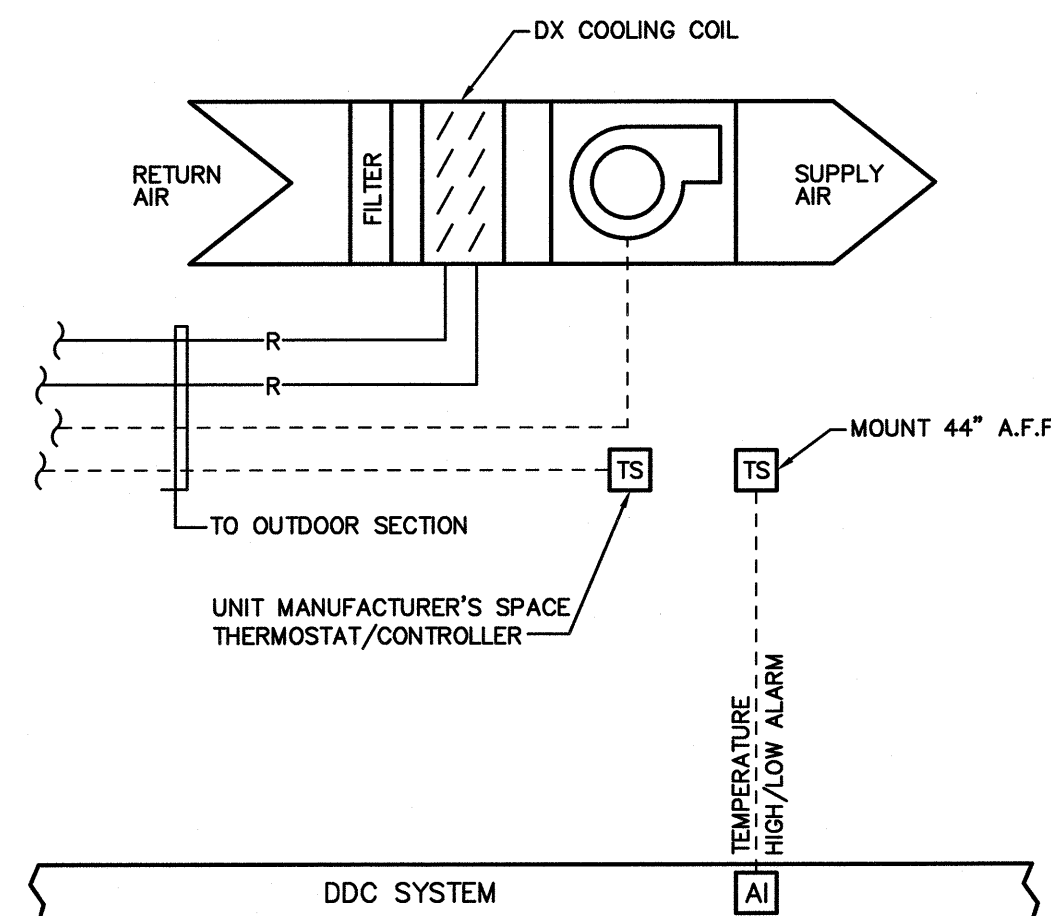
A TYPICAL MULTIZONE V.A.V. AHU CONTROL DIAGRAM
SCALE: NONE



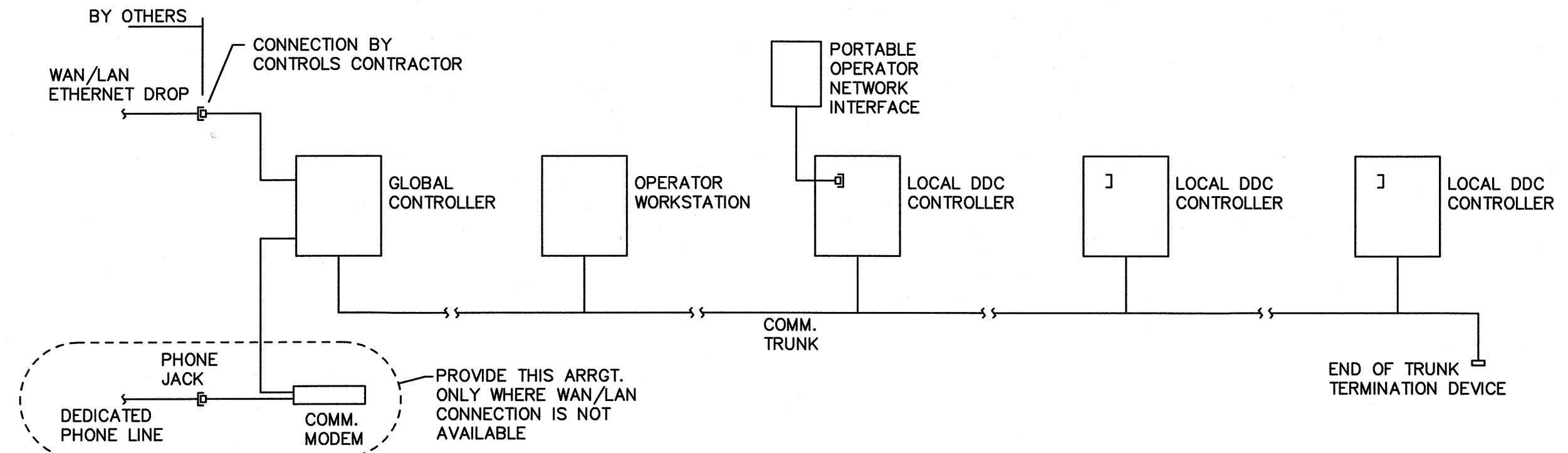
NOTES:

- COORDINATE TEMPERATURE SENSOR AND CONTROL CIRCUIT WITH AIR HANDLING UNIT CONTROL DIAGRAM.

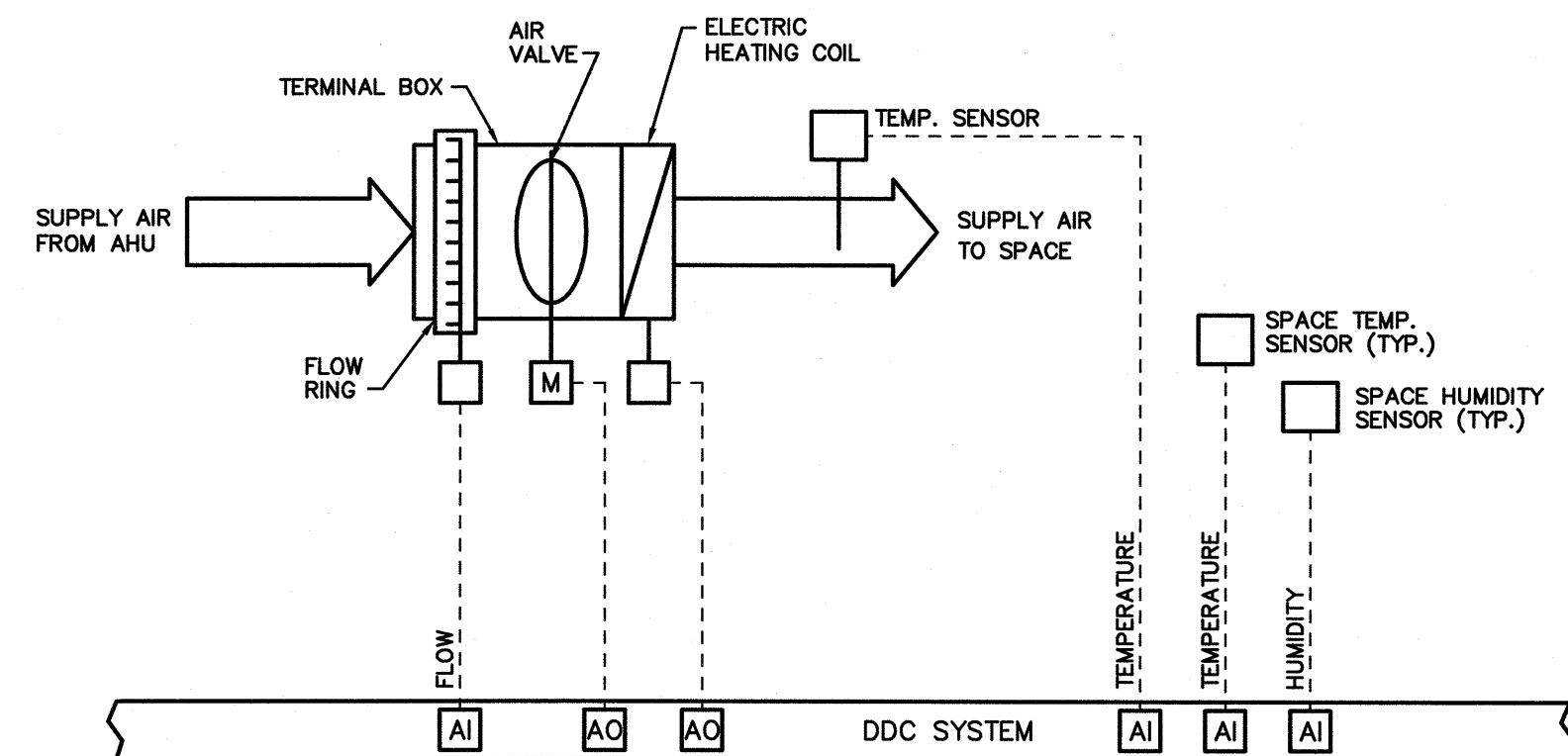
D TYPICAL DUAL CIRCUIT CONDENSING UNIT CONTROL DIAGRAM
SCALE: NONE



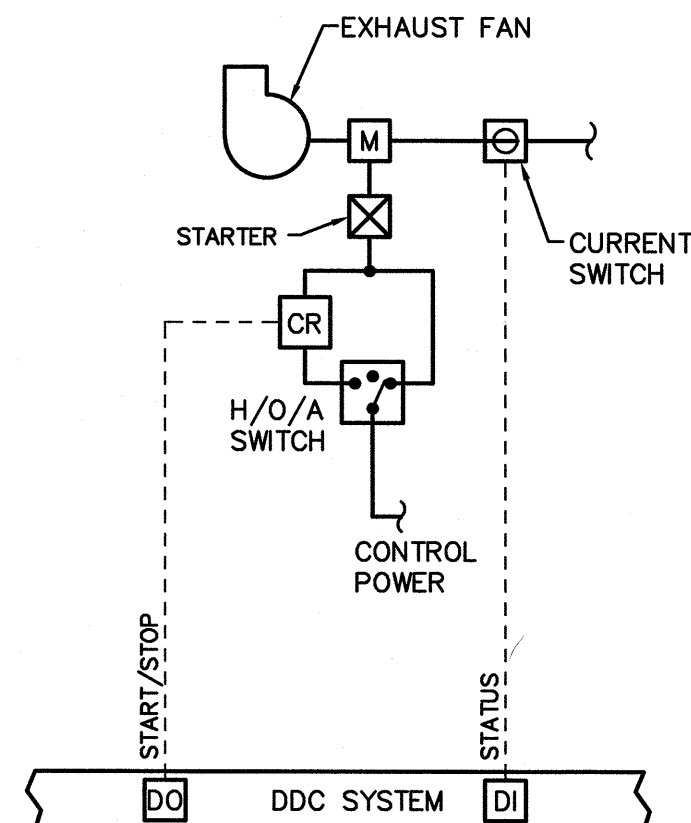
E TYPICAL DUCTLESS SPLIT SYSTEM CONTROL DIAGRAM
SCALE: NONE



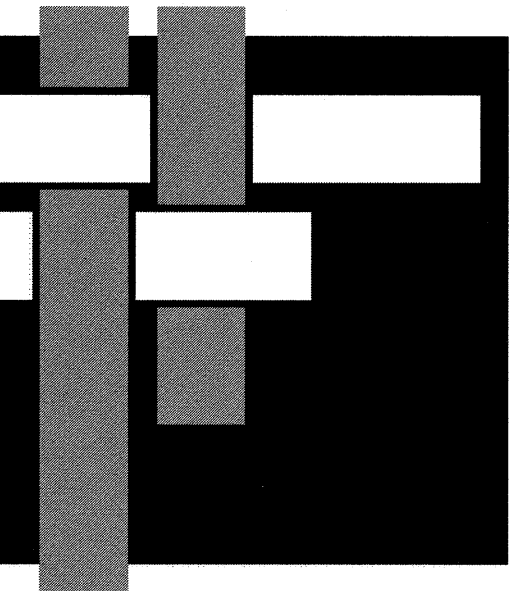
B TYPICAL DDC SYSTEM LAYOUT
SCALE: NONE



C V.A.V. TERMINAL BOX CONTROL DIAGRAM
SCALE: NONE



F TYPICAL DDC CONTROLLED EXHAUST FAN CONTROL DIAGRAM
SCALE: NONE



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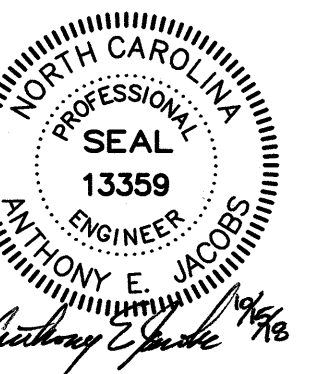
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