

ABBREVIATIONS table with columns for letter and description. Includes items like AHU, AUTO, BHP, BTU, BLDG, CHWR, CHWS, CFM, CEA, DIA, DB, EAT, EWT, ESP, FV, FT, FPM, FD, GPM, HD, HP, LAT, LWT, MBH, MAT, NTS, OA, OAT, PSI, PD, RM, RA, RPM, SCH, SHT, SPECS, STD, SP, SA, SYS, SIM, TEMP, T, TSP, TV, TYP, UL, UH, VAV, VD, WB.

VALVES AND FITTINGS table with symbols and descriptions. Includes Balance Valve, Check Valve, Shut-off Valve Normally Open, Valve in Vertical Line, Thermometer, Pressure Gauge, Automatic Air Vent, Manual Air Valve, Strainer, Elbow - 90°, Elbow - Turned Up, Elbow - Turned Down, Tee, Tee - Outlet Up, Tee - Outlet Down, Cap, Plug, Union, Gauge Cock, Shut-off Valve Normally Closed.

PIPING AND ACCESSORIES table with symbols and descriptions. Includes Chilled Water Supply, Chilled Water Return, Condensate, Piping to be Removed, Net Inside Dimension, Radius Type Elbow, Square Type Elbow with Turning Vanes, Ductwork to be Removed, Volume Damper, Fire Damper, Supply Air Diffuser, Return Air Grille.

DUCTWORK table with symbols and descriptions. Includes Net Inside Dimension, Radius Type Elbow, Square Type Elbow with Turning Vanes, Ductwork to be Removed, Volume Damper, Fire Damper, Supply Air Diffuser, Return Air Grille.

AUTOMATIC CONTROLS table with symbols and descriptions. Includes Automatic Valve.

GENERAL NOTES section containing numbered paragraphs 1 through 31. Covers topics like scaling, equipment location, exclusions, contractor responsibilities, dimensions, damage notification, equipment review, ductwork standards, fabrication, sealing, dimensions, supply/return/outsides, fire rated walls, supports, flexible ducts, traps, connections, flexible connections, losses, equipment signs, wall-mounted sensors, and starting work procedures.

GENERAL NOTES section containing numbered paragraphs 20 through 31. Covers topics like starting work, chilled water piping, chilled water piping insulation, piping systems labeling, equipment service access, secondary drain pan, demolition phase, protection for utilities, access panels, ductwork storage, and flexible connections.

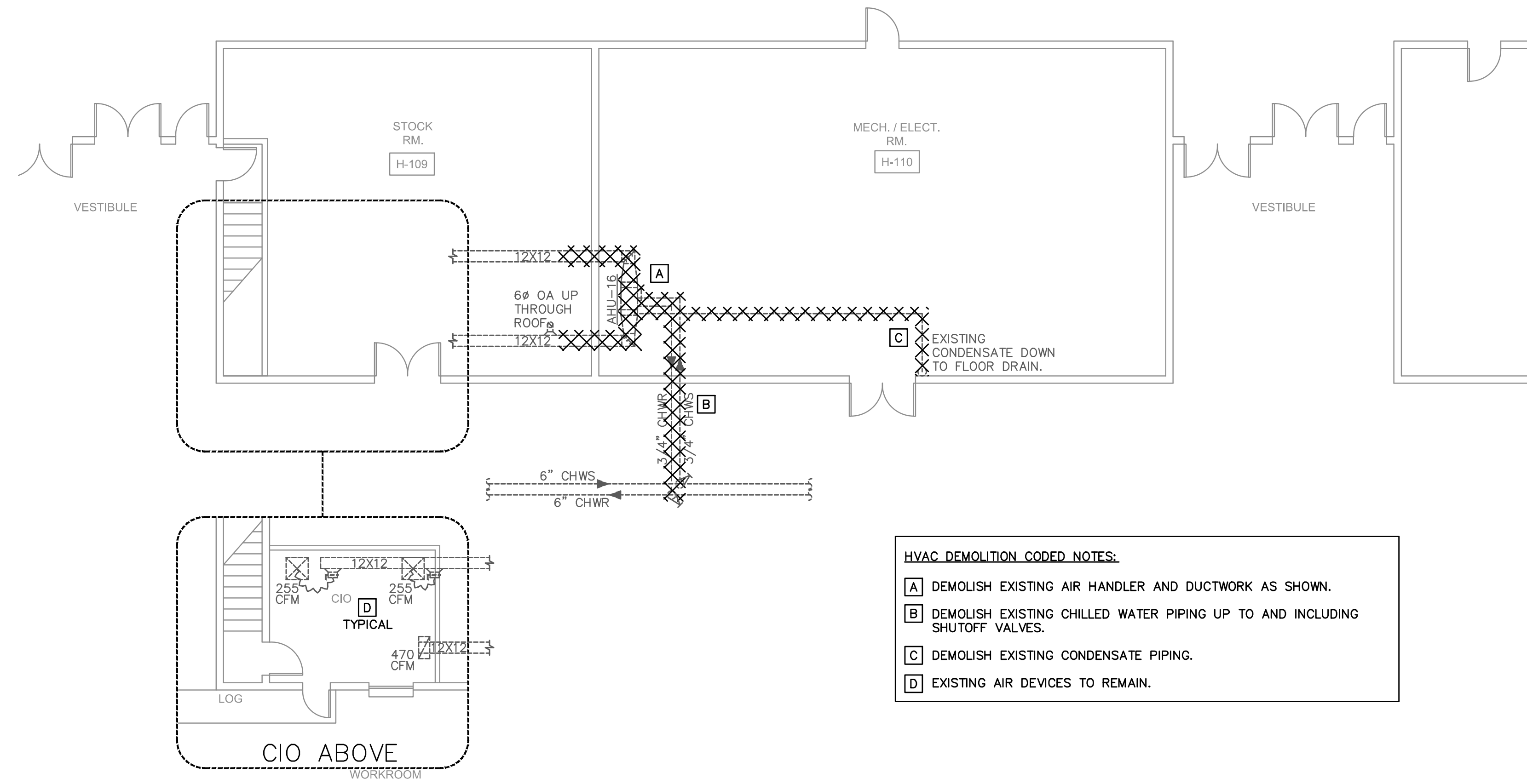
CODE CRITERIA section containing references to Florida Building Code (FBC), Florida Fire Prevention Code, National Fire Protection Association (NFPA), American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and Federal standards.

HVAC DESIGN CRITERIA table with columns for Location, Outdoor Temp, Summer Indoor Temp, Winter Indoor Temp, and Load Criteria. Includes values for Florida and various insulation/duct criteria.

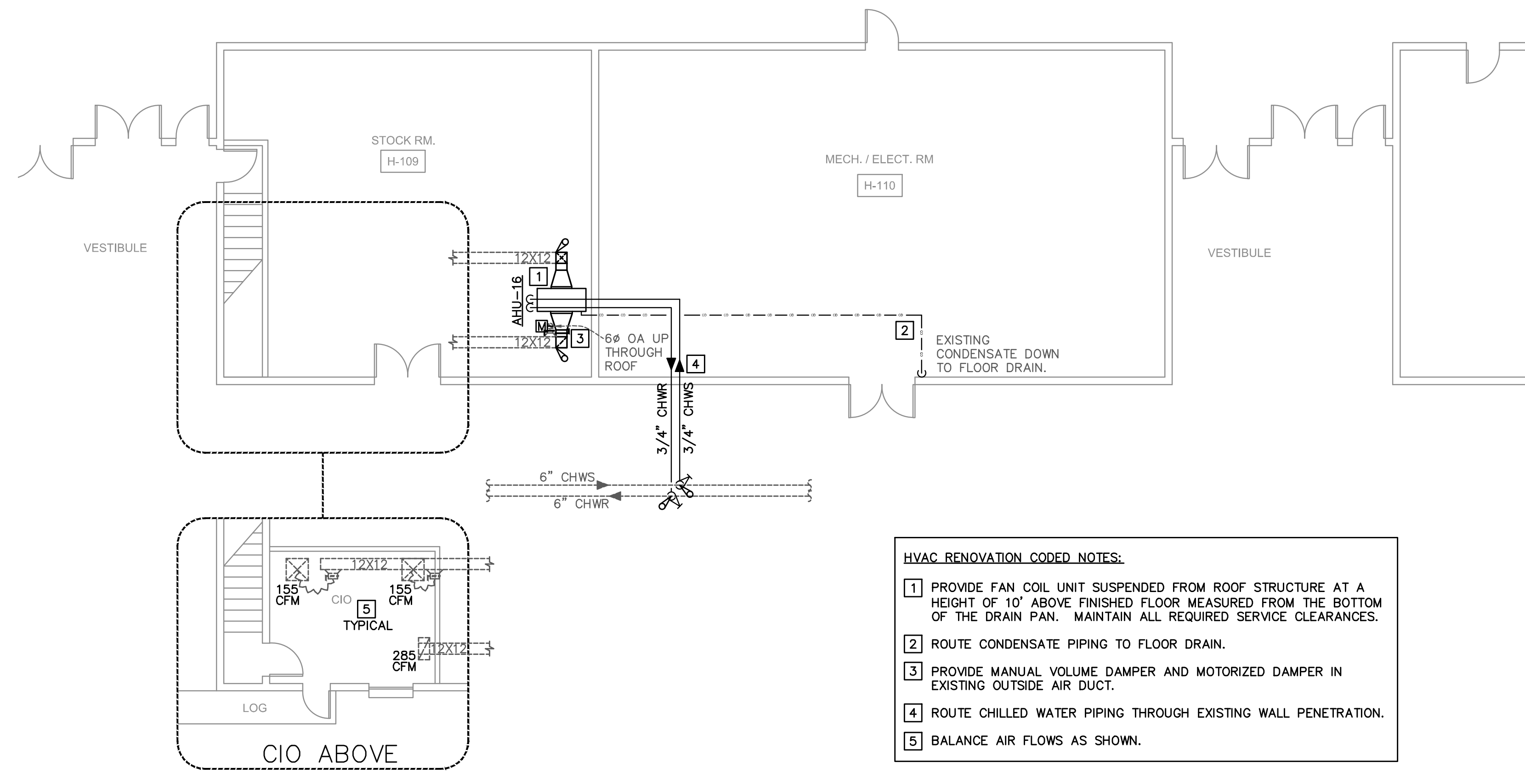
NOTES section containing numbered paragraphs 1 through 4. Covers general conditions of heating, ventilation, and air conditioning work, references to specifications, design drawings, and the engineer's knowledge.

DRAWING INDEX table with columns for drawing number and description. Includes m0.1 (HVAC Legend, Notes, and Symbols), m1.1 (HVAC Demolition and Renovation Plan), m1.2 (HVAC Demolition and Renovation Plan), m4.1 (HVAC Details), and m5.1 (HVAC Schedules, Controls, and Diagrams).

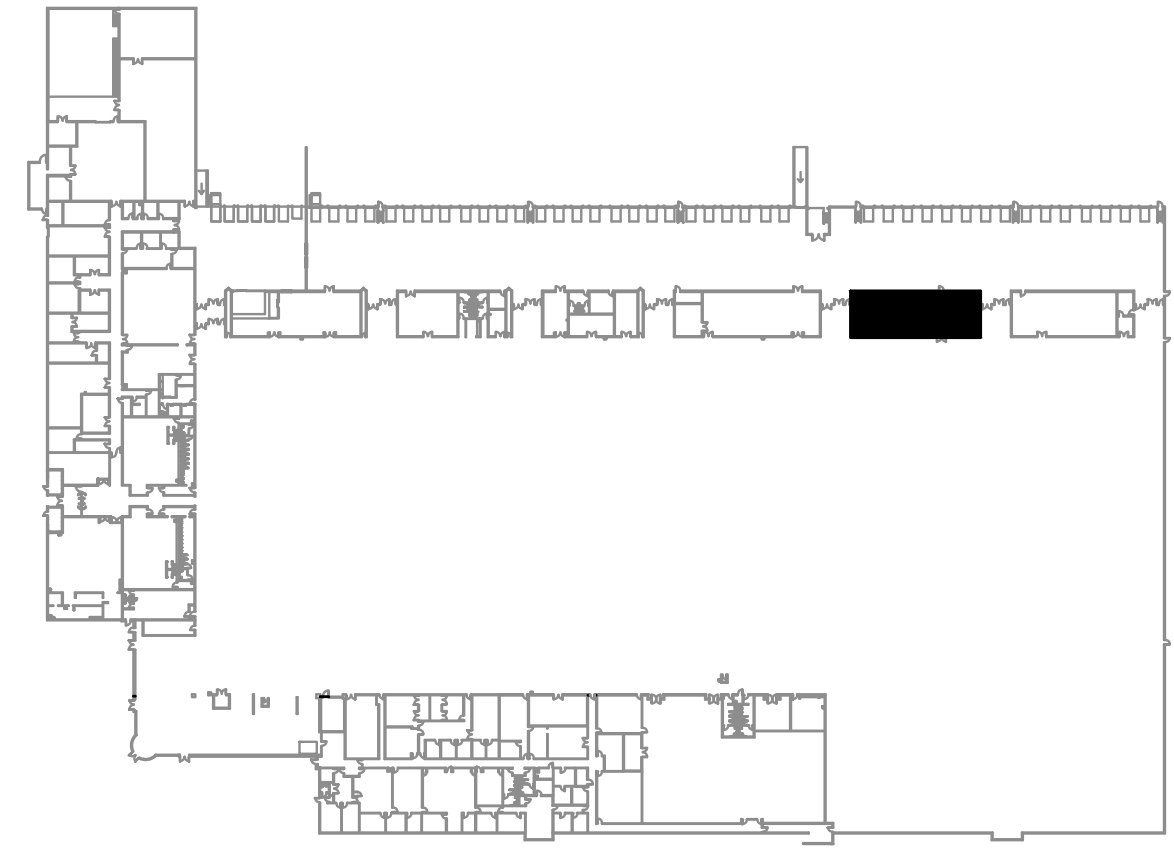
Vertical sidebar containing project information: consultant (CEA), project name (FT MYERS P&DC SECURITY UPGRADES), issue date (2022.03.03), sheet name (HVAC LEGEND, NOTES, AND SYMBOLS), sheet number (m0.1), and sheet total (1 of 5). Includes logos for FT MYERS P&DC and MAG.



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



HVAC RENOVATION PLAN
 SCALE: 1/8" = 1'-0"



KEY PLAN
 SCALE: NOT TO SCALE

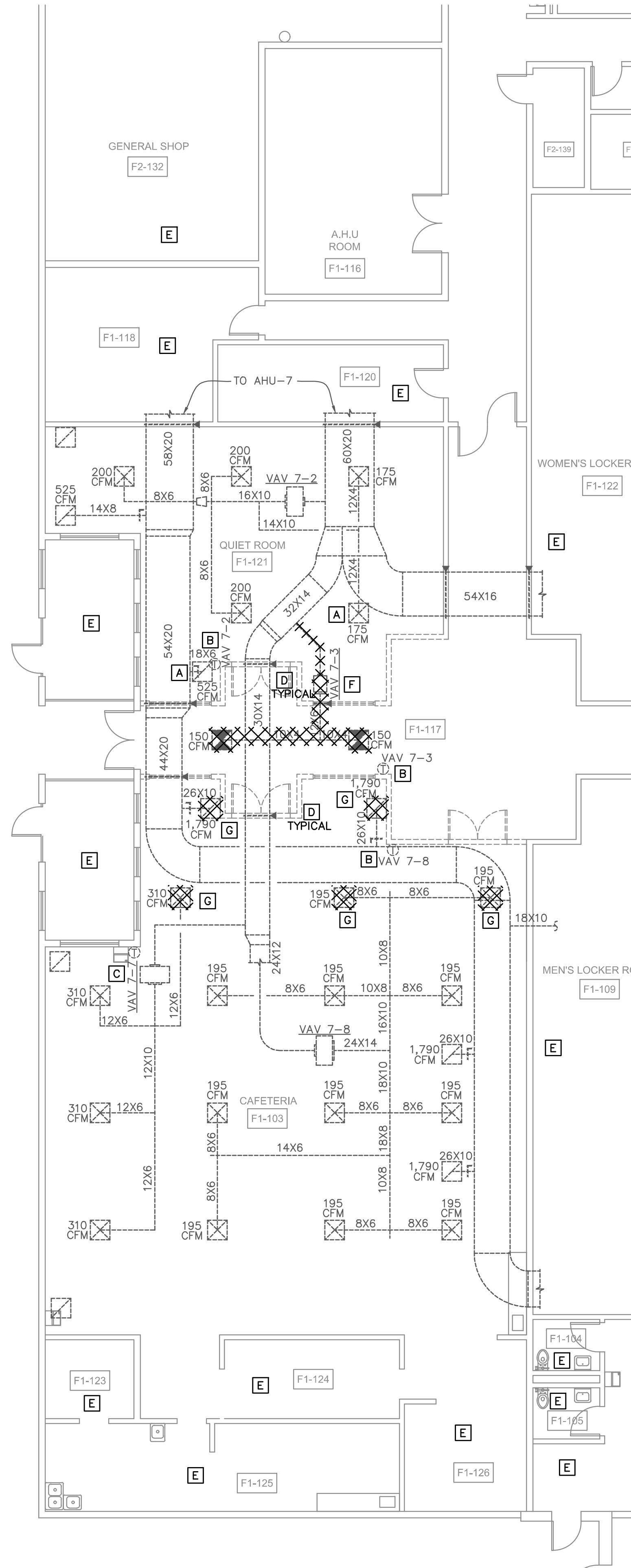
 MAG 4 INC 8000 North 45th St., Suite 505 Tampa, FL 33635 813.264.4441 Admin@mag4inc.com 866.601.0162	title K65332	consultant CEA CONSULTING ENGINEERING ASSOCIATES, INC. 14080 JETPORT LOOP FT MYERS, FL 33913 PHONE: (813) 448-0225 PROJECT NUMBER: 21033
	project phase 19013 issue date 2022.03.03	sheet name HVAC DEMOLITION AND RENOVATION PLAN

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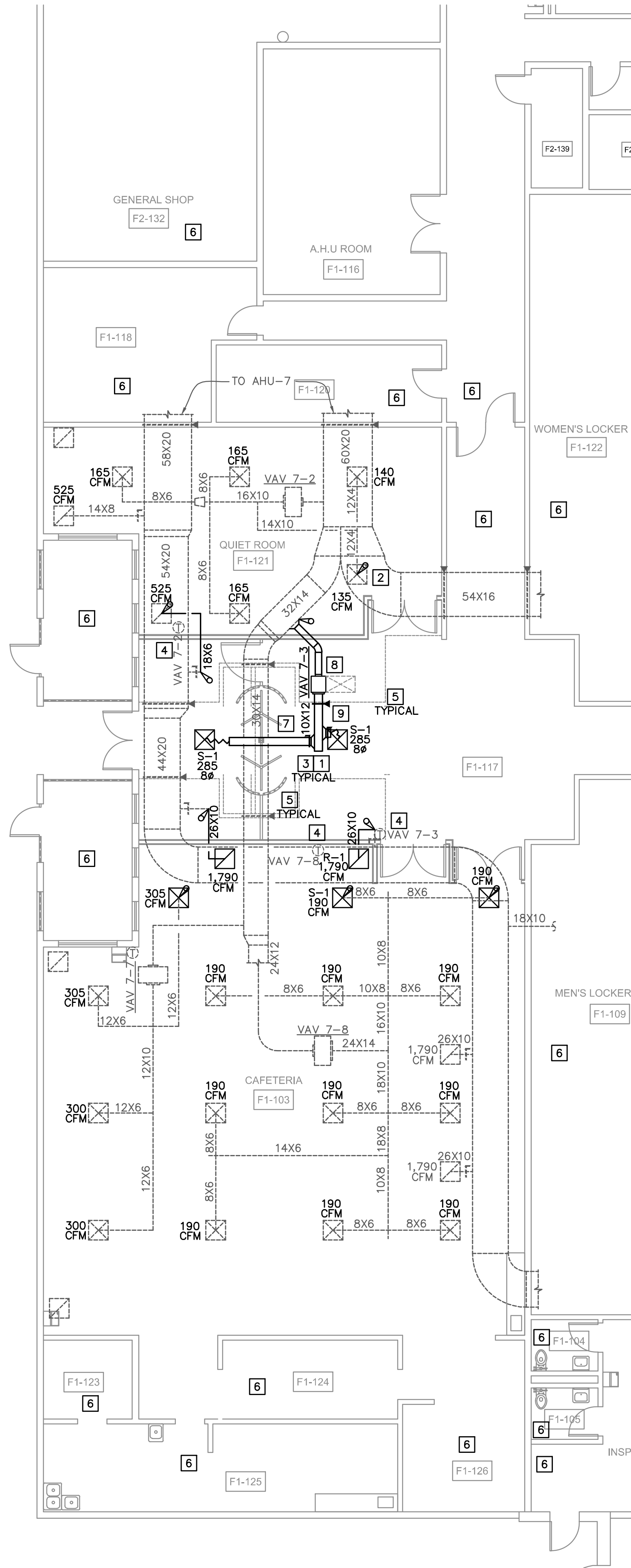
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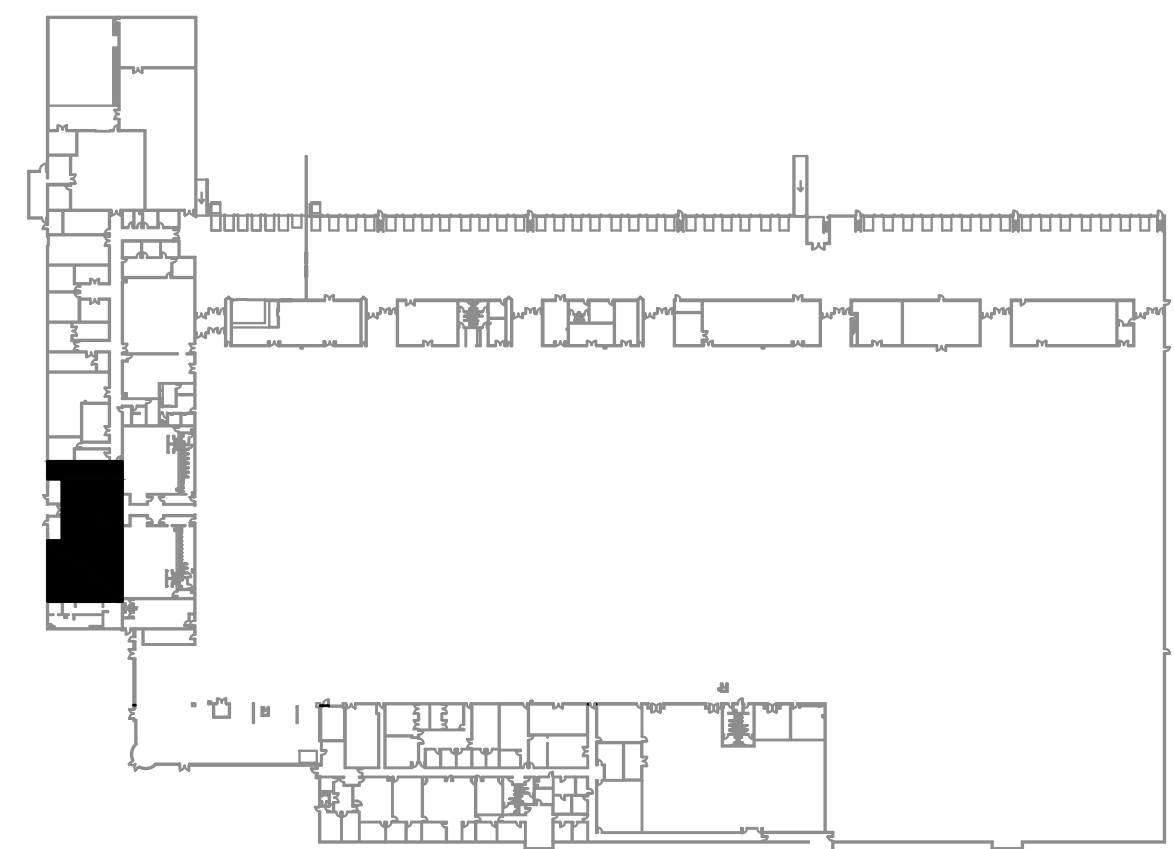
HVAC DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"



HVAC RENOVATION PLAN
 SCALE: 1/8" = 1'-0"

- HVAC DEMOLITION CODED NOTES:**
- A** DISCONNECT EXISTING AIR DEVICE FROM DUCTWORK. PREPARE FOR RELOCATION.
 - B** EXISTING TEMPERATURE SENSOR TO REMAIN AND BE RELOCATED. REFER TO HVAC RENOVATION PLAN.
 - C** EXISTING TEMPERATURE SENSOR TO REMAIN.
 - D** EXISTING FIRE RATED PARTITION TO REMAIN ABOVE CEILING SPACE. MAINTAIN FIRE RATING OF DUCT PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS.
 - E** NO NEW WORK IN THIS AREA.
 - F** DEMOLISH EXISTING VAV BOX, DUCTWORK, AIR DEVICES, AND ASSOCIATED SUPPORTS AND HANGERS. CAP MAIN DUCTWORK AND INSULATE TO MATCH EXISTING.
 - G** DEMOLISH EXISTING AIR DEVICE. PREPARE DUCTWORK FOR NEW AIR DEVICE.

- HVAC RENOVATION CODED NOTES:**
- 1** CLEAN ALL EXISTING AIR DEVICES IN CAFETERIA F1-103 AND QUIET ROOM F1-121.
 - 2** RELOCATE EXISTING AIR DEVICE AS SHOWN. EXTEND OR TRIM DUCTWORK AS NEEDED.
 - 3** REBALANCE ALL SUPPLY AND RETURN AIR DEVICES TO THE AIRFLOWS SHOWN.
 - 4** RELOCATE EXISTING TEMPERATURE SENSOR TO NEW LOCATION SHOWN. RECALIBRATE AND VERIFY PROPER OPERATION.
 - 5** EXISTING FIRE RATED PARTITION TO REMAIN ABOVE CEILING SPACE. MAINTAIN FIRE RATING OF DUCT PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS.
 - 6** NO NEW WORK IN THIS AREA.
 - 7** PROVIDE DUCTWORK, AIR DEVICES, VOLUME DAMPERS, ETC. COORDINATE EXACT ROUTING WITH EXISTING CONDITIONS AND PROVIDE ALL DUCTWORK OFFSETS NECESSARY AND RELOCATE OBSTRUCTIONS AS MAY BE REQUIRED.
 - 8** PROVIDE VAV BOX AND ASSOCIATED CONTROLS. COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS AND PROVIDE ALL DUCTWORK OFFSETS NECESSARY.
 - 9** ROUTE DUCT THROUGH EXISTING WALL OPENING AND PROVIDE FIRE DAMPER.



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 3 of 5



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 HVAC DEMOLITION AND RENOVATION PLAN

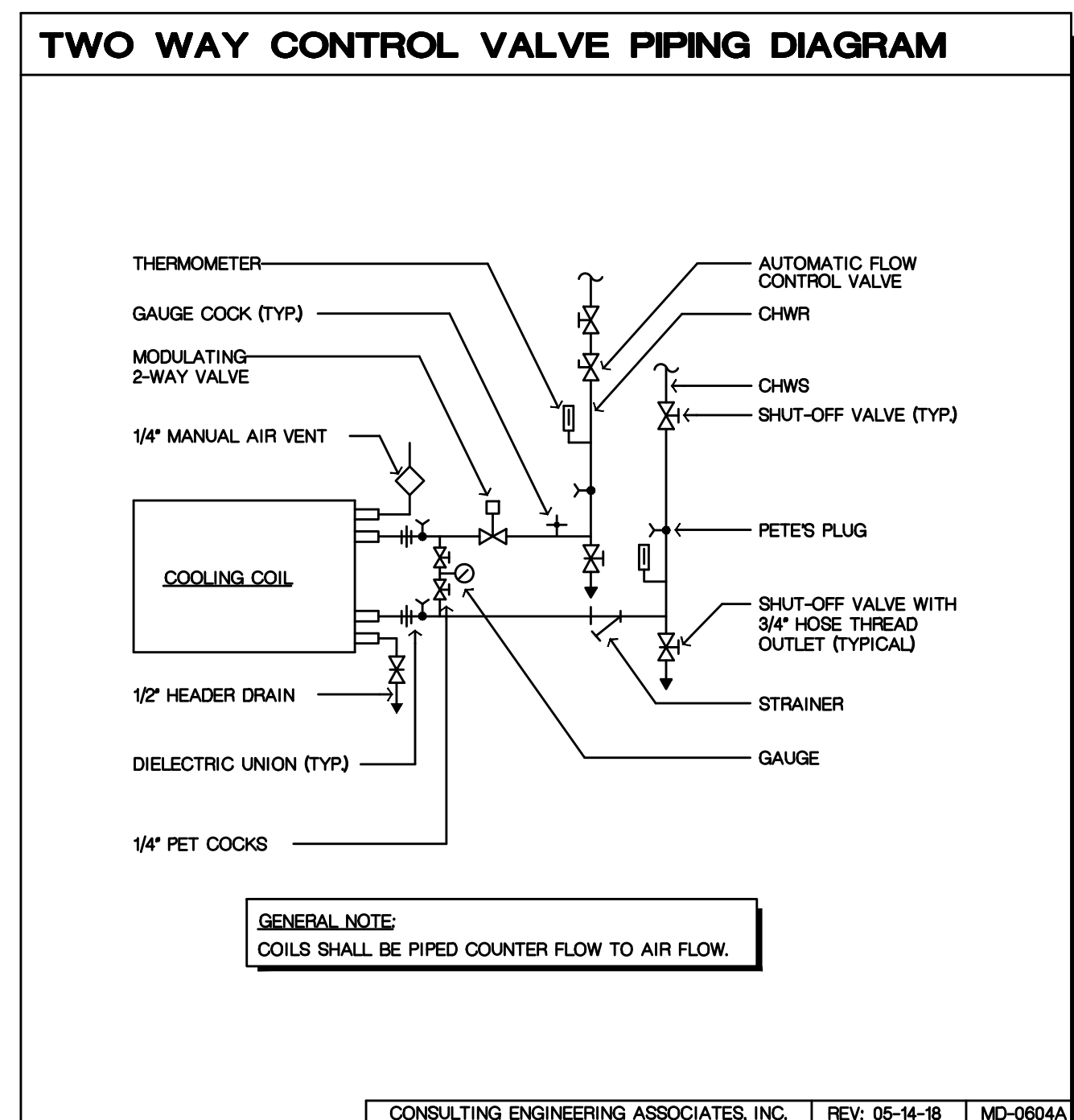
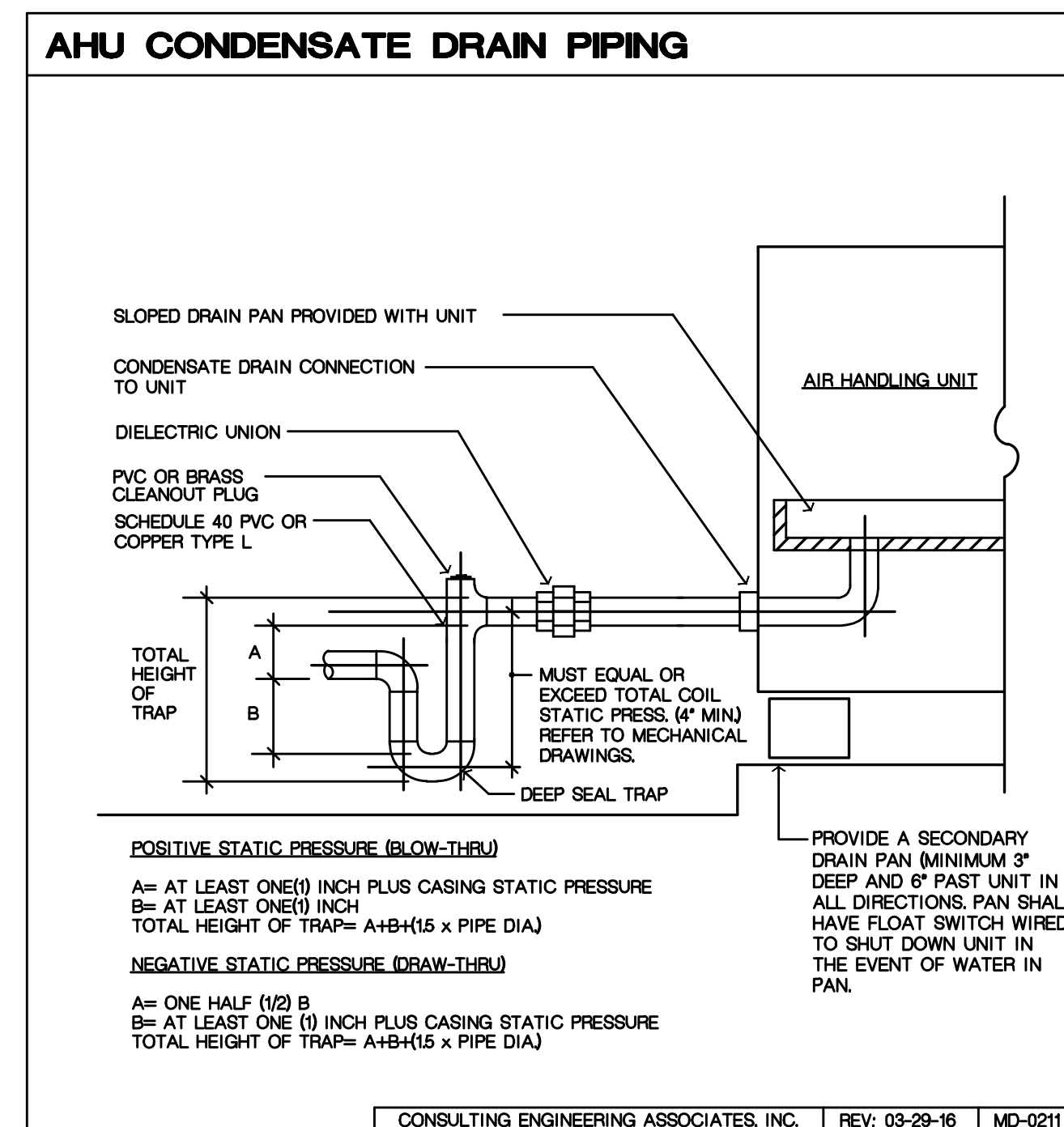
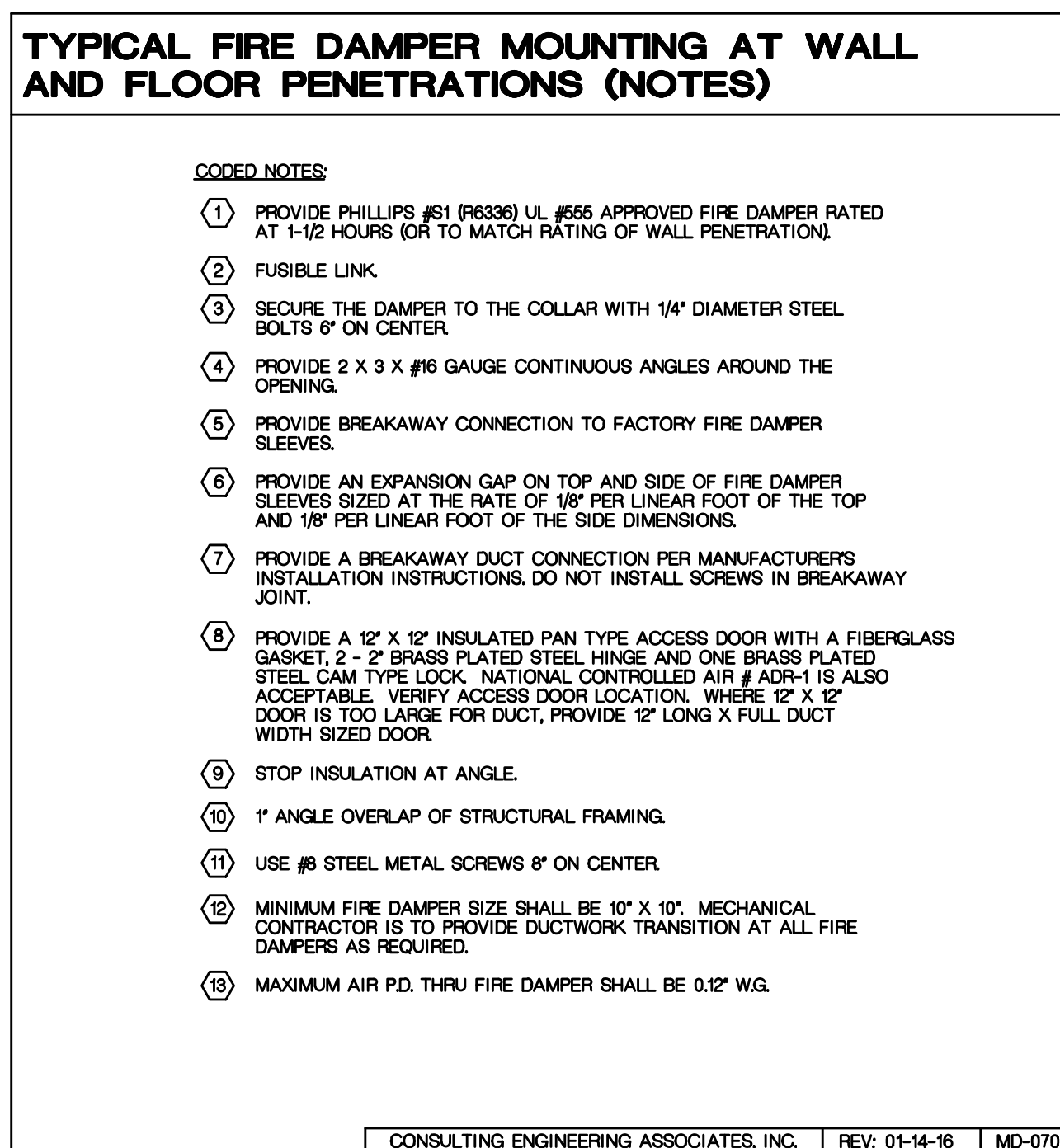
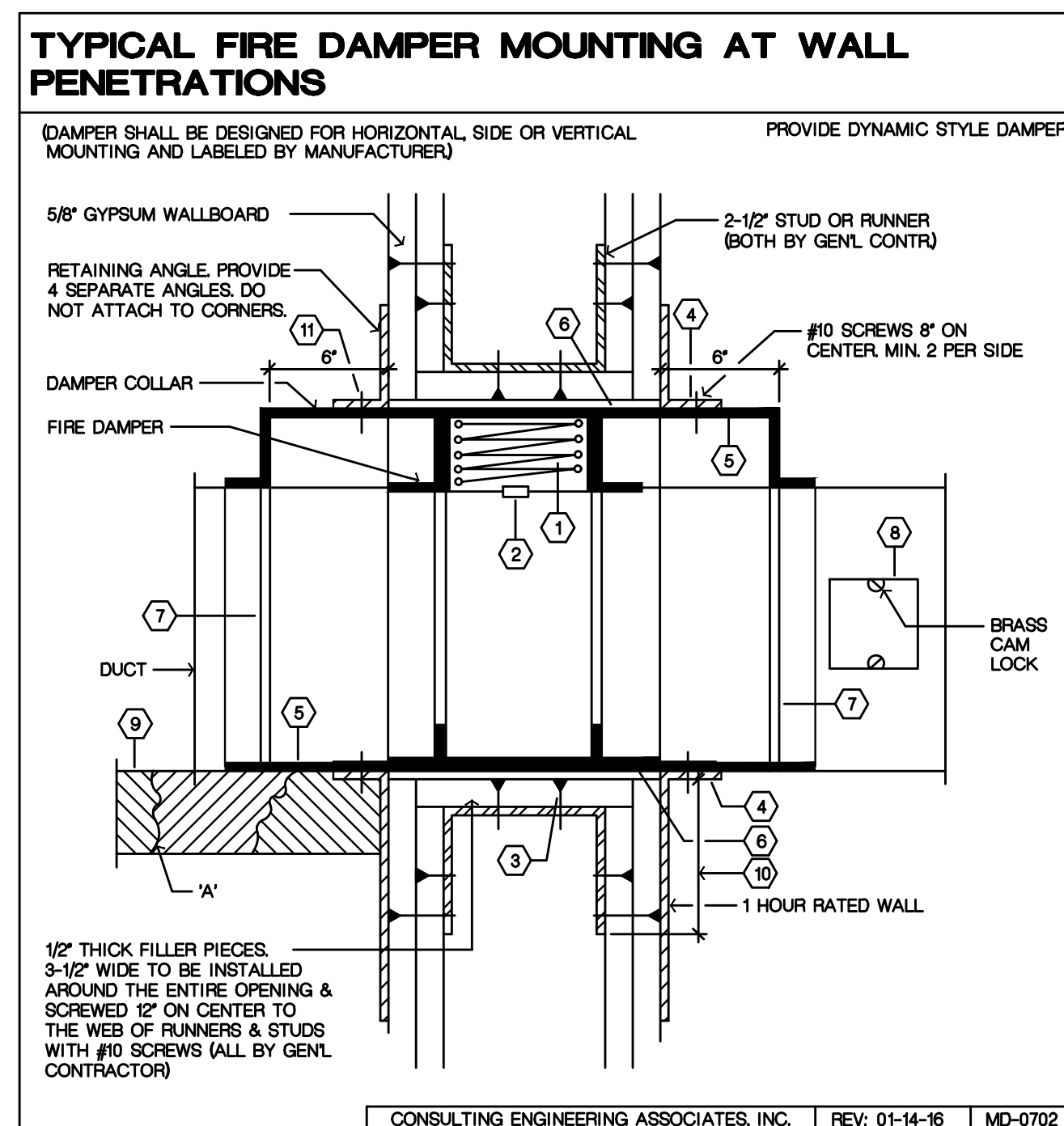
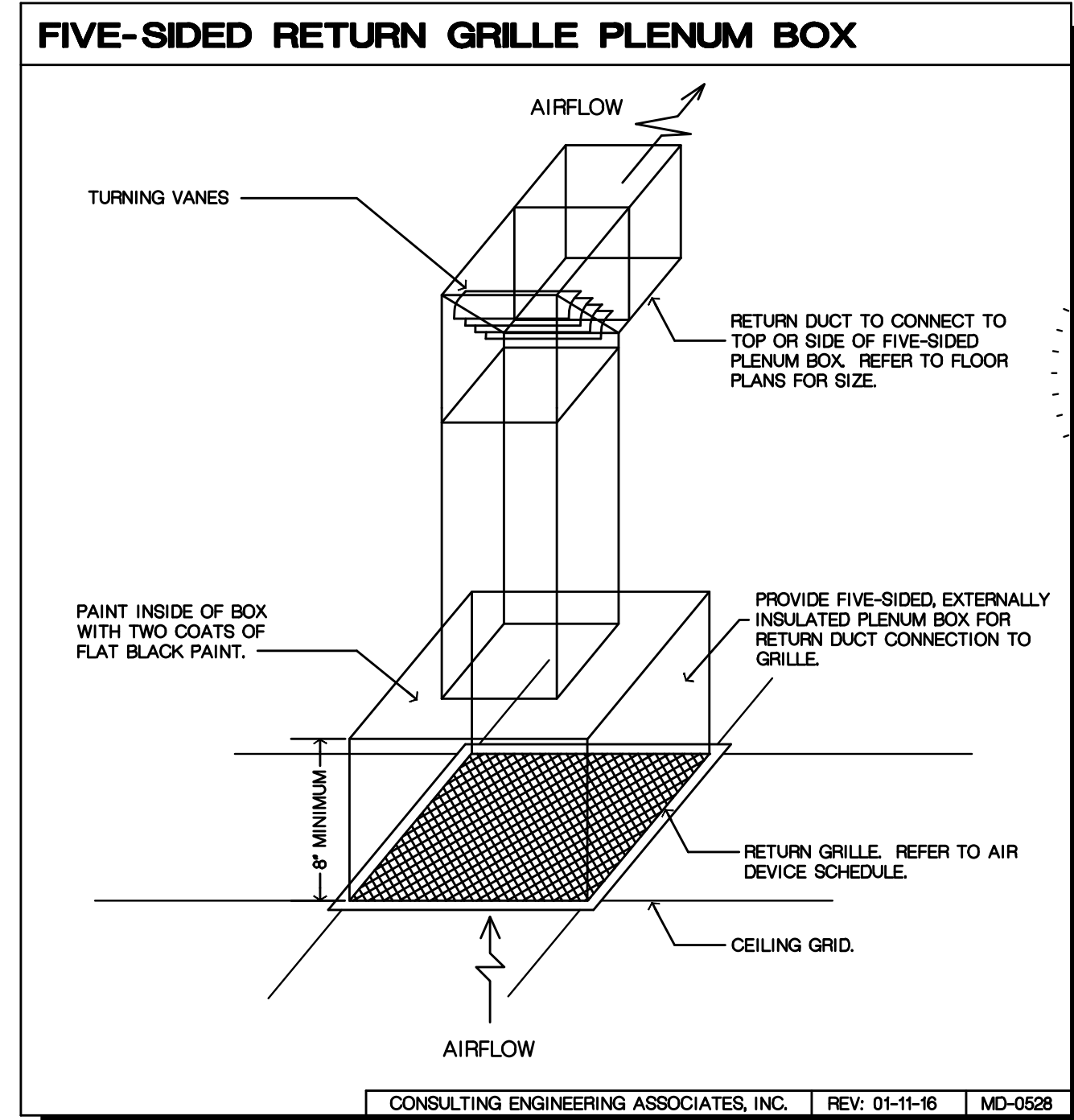
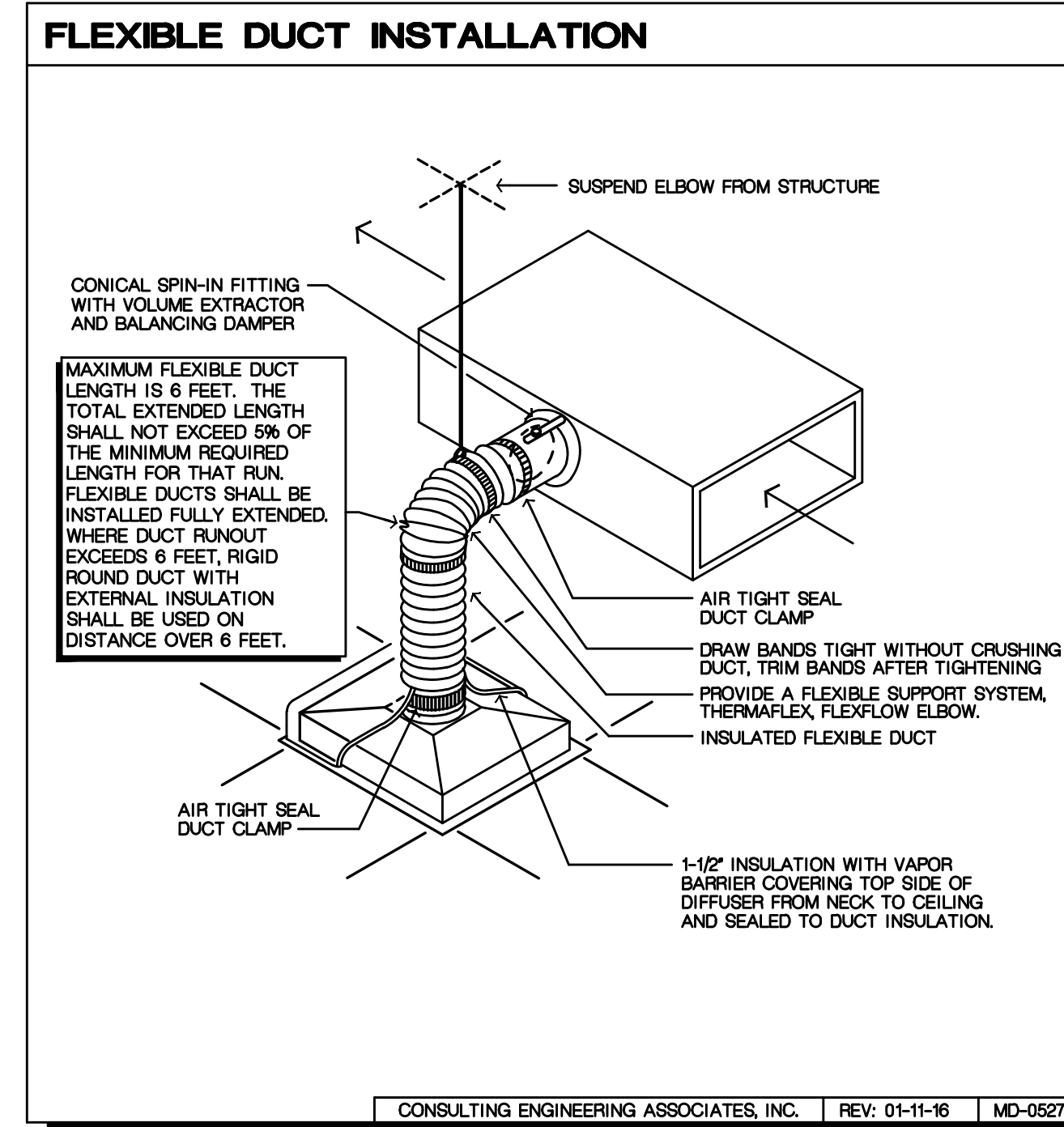
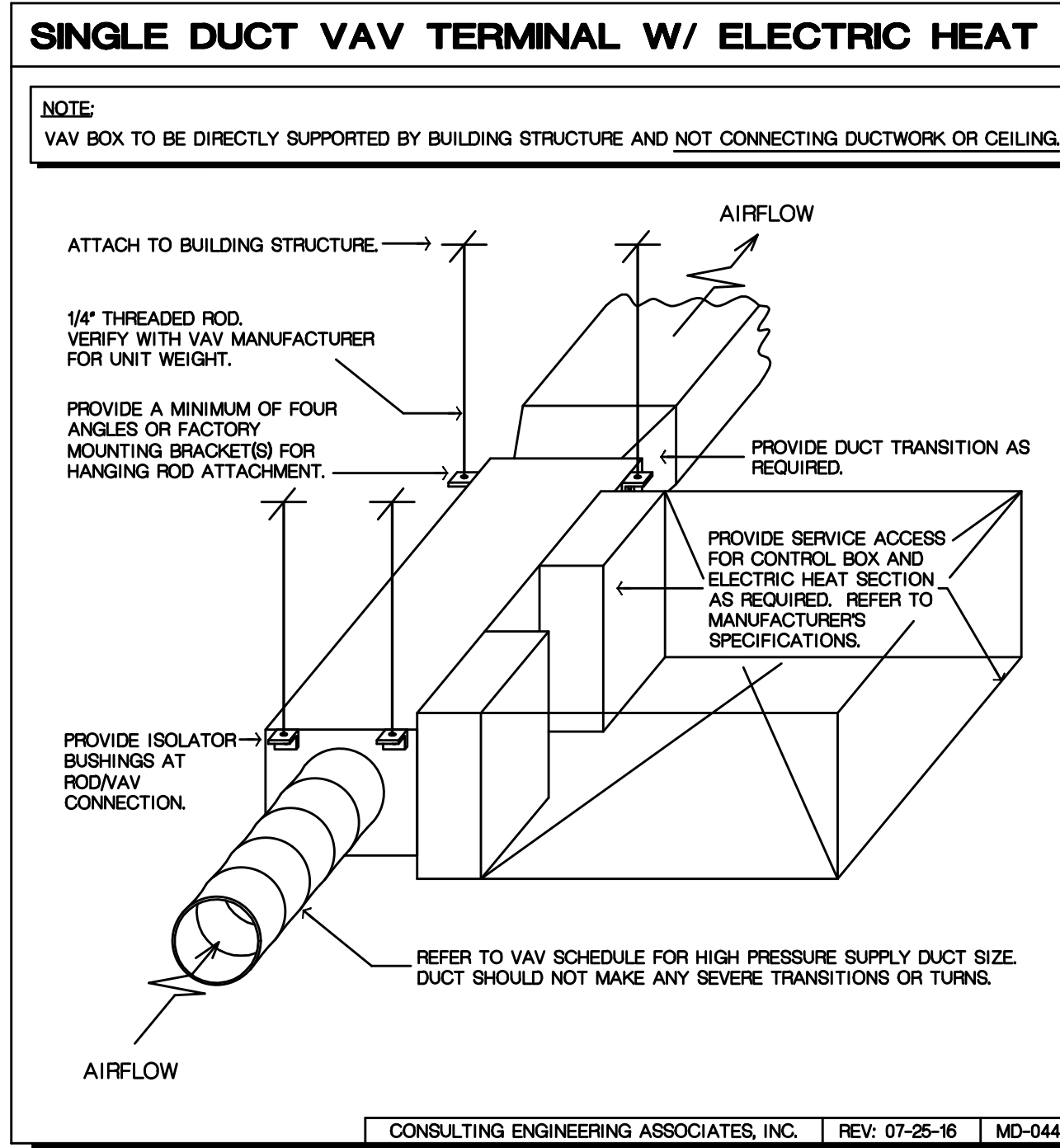
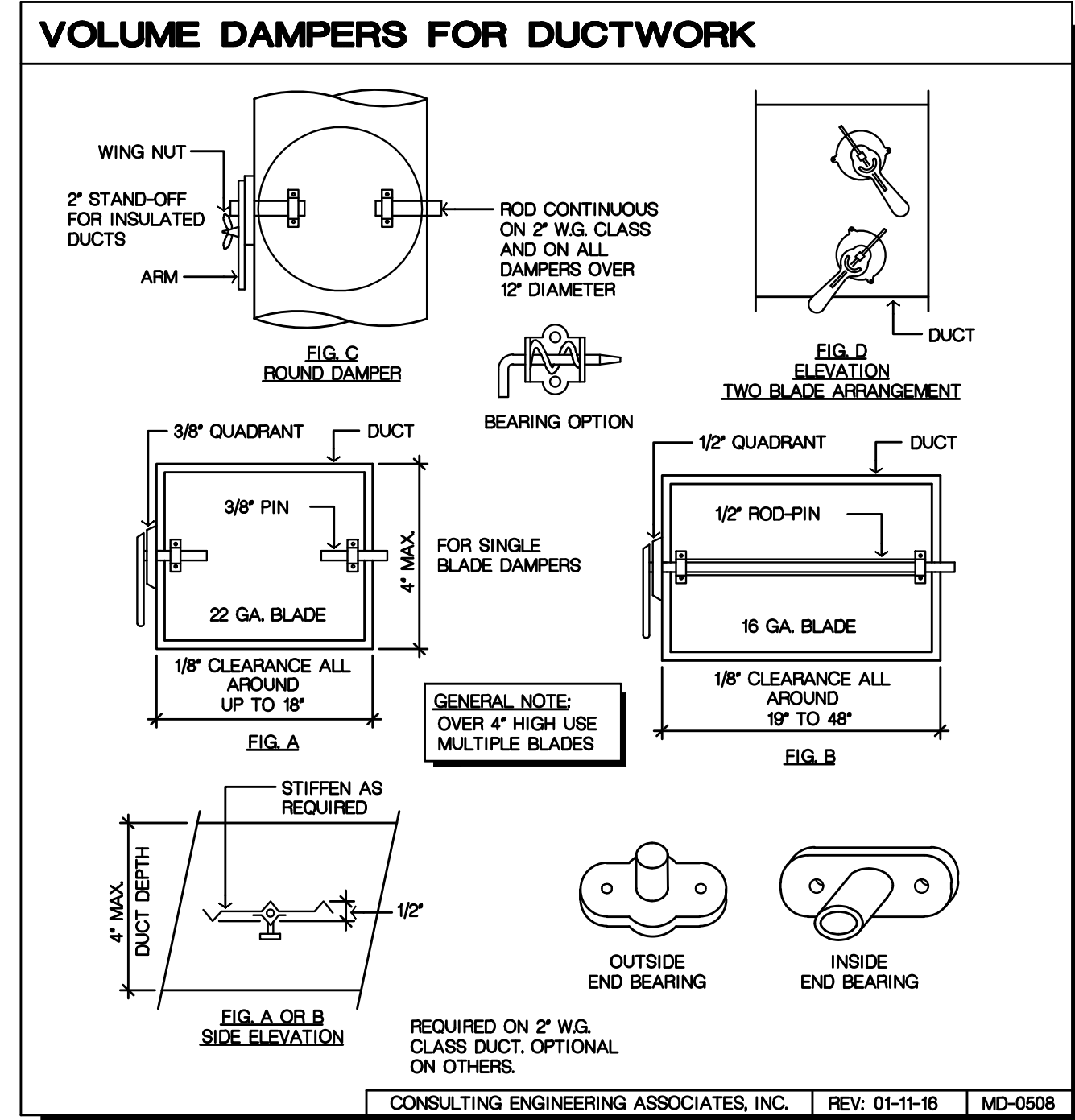
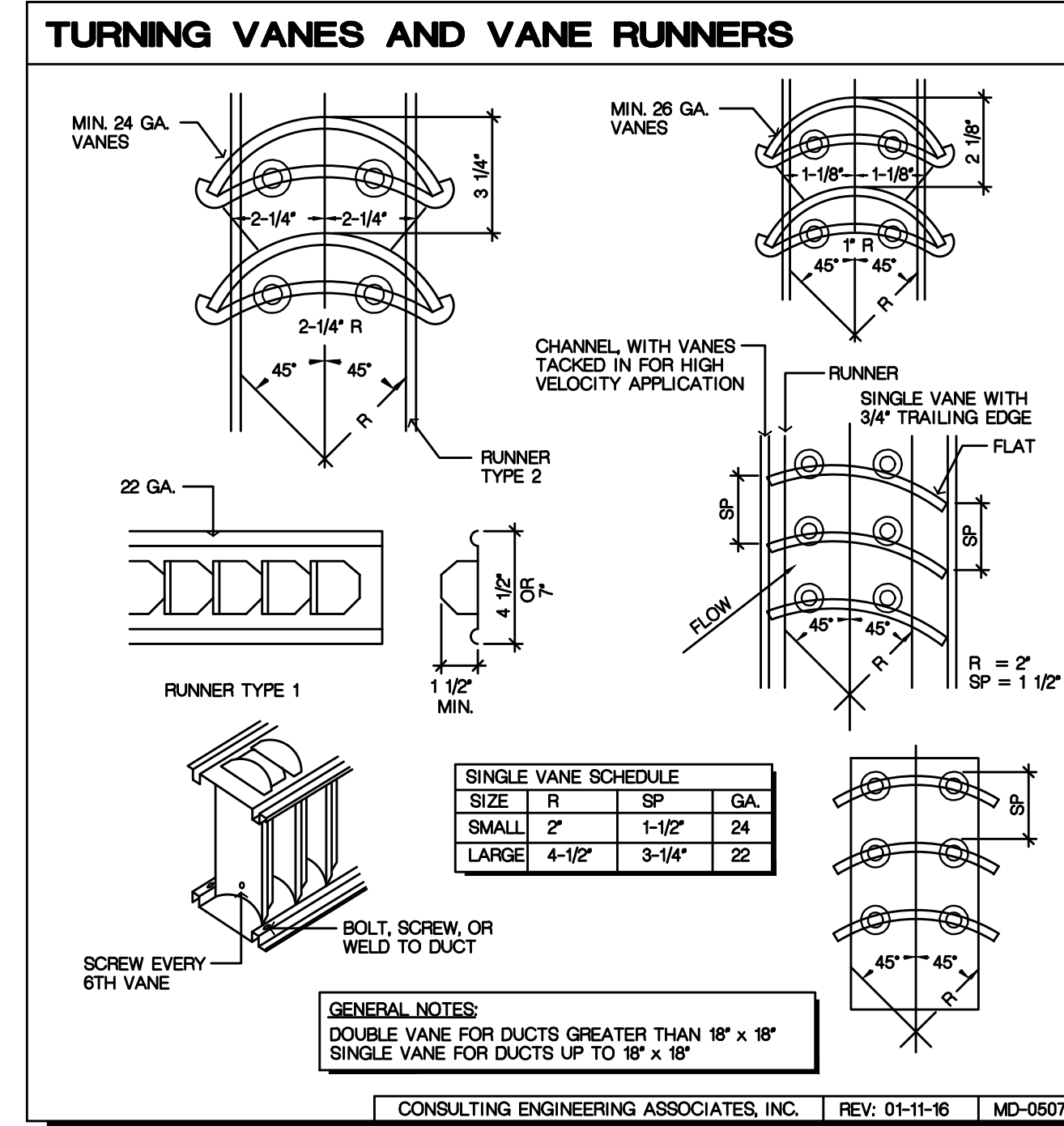
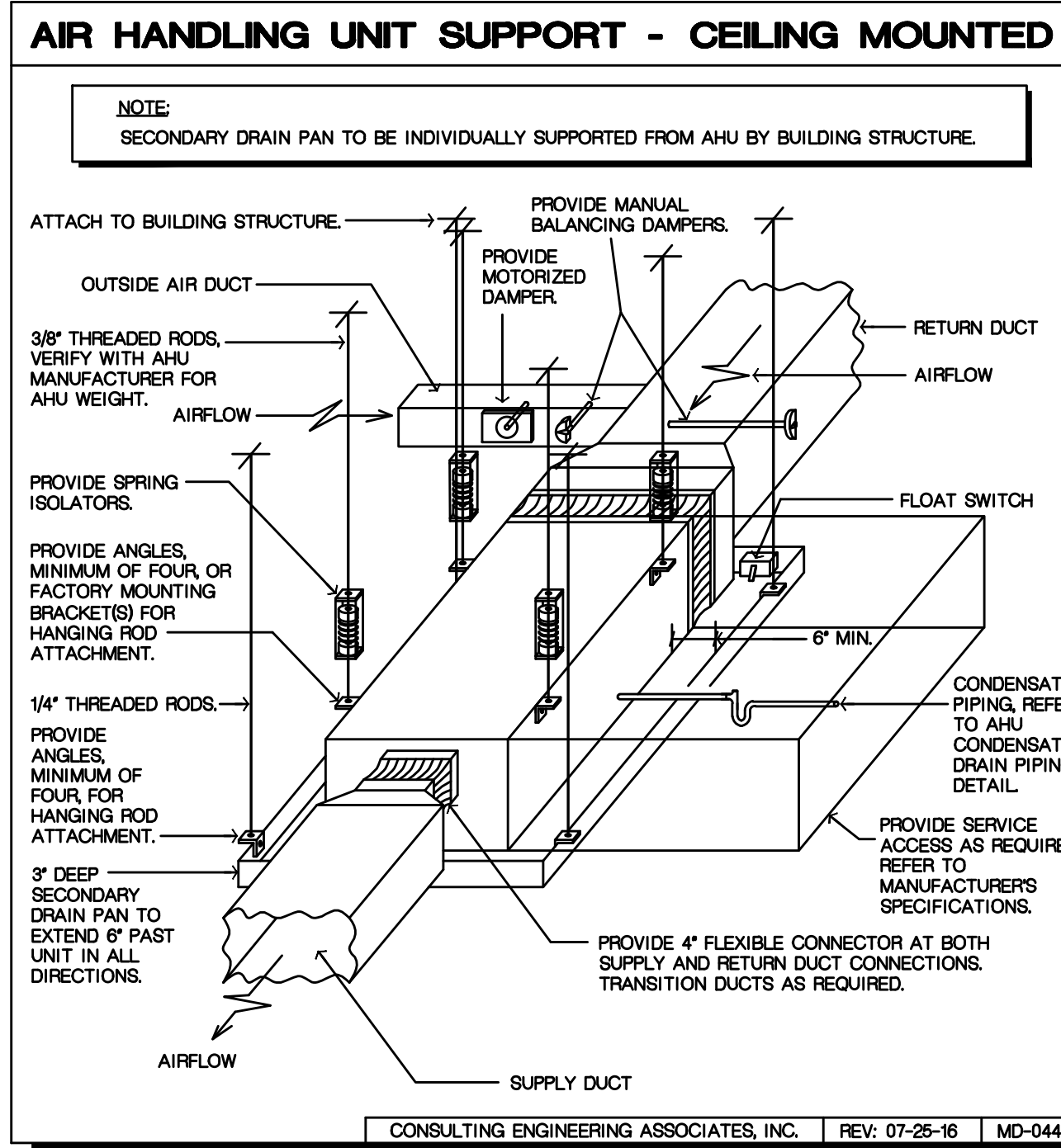
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 3 of 5



FAN COIL UNIT WITH ELECTRIC HEAT SCHEDULE		
MARK	UNIT LOCATION	UNIT
---	---	AHU-16
---	---	STOCK ROOM 109
COOLING		
TOTAL CAPACITY	BTUH	8,734
SENSIBLE CAPACITY	BTUH	7,334
TOTAL AIR FLOW	CFM	310
OUTSIDE AIR FLOW	CFM	25
EXTERNAL STATIC PRESSURE	IN WG	0.5
TOTAL STATIC PRESSURE	IN WG	---
ENT. AIR TEMP (DB/WB)	DEG F/DEG F	76.4/64
LVG. AIR TEMP (DB/WB)	DEG F/DEG F	54.8/54.6
COOLING COIL (MIN/MAX)	ROWS/FINS PER INCH	4 / 12
COOLING COIL MAX FACE VEL.	FPM	217
COOLING COIL MAX PRESS. DROP	IN WG	---
CHILLED WATER FLOW	G.P.M.	1.6
CHILLED WATER TEMP (ENT./LVG.)	DEG F/DEG F	45/57
MAX WATER PRESS. DROP	FT WG	2.24
HEATING		
LOCATION	---	UNIT
TOTAL CAPACITY	KW/STEPS	2.0/1
UNIT		
DRIVE	---	DIRECT DRIVE ECM
FAN TYPE	---	FORWARD CURVED
FAN MOTOR	HP/BHP	0.125 / ---
FAN FLA	AMPS	2.4
TOTAL UNIT MCA	AMPS	12.4
TOTAL UNIT MOCP	AMPS	15
ELECTRICAL	V/PH/HZ	277/1/60
FILTER	TYPE/EFFICIENCY	2' MERV 8
WEIGHT	LBS	108
MANUFACTURER	---	DAIKIN
MODEL	---	FCHC204
NOTES	---	ALL

- NOTES:
- PROVIDE SINGLE POINT POWER CONNECTION.
 - PROVIDE CLOSED CELL FOAM INSULATION.
 - PROVIDE INSULATED STAINLESS STEEL DRAIN PAN, POSITIVELY SLOPED IN TWO DIRECTIONS.
 - PROVIDE STAINLESS STEEL COIL CASINGS AND SUPPORTS.
 - PROVIDE EXPOSED HORIZONTAL UNIT WITH PAINTED STEEL ENCLOSURE, FRONT DUCTED SUPPLY AIR DISCHARGE, AND REAR DUCTED RETURN AIR INLET.
 - PROVIDE FACTORY MOUNTED PIPING PACKAGE INCLUDING UNIONS, FULL PORT BALL VALVES, MODULATING 2-WAY CONTROL VALVE, P/T PORTS, AUTOMATIC FIXED FLOW CONTROL, MANUAL AIR VENT, AND Y STRAINER WITH BLOWDOWN.
 - PROVIDE FOUR POINT HANGER MOUNTING BRACKETS.
 - PROVIDE A SECONDARY DRAIN CONNECTION ON THE PRIMARY DRAIN PAN WITH A FLOAT SWITCH WIRED TO DE-ENERGIZE THE UNIT IF THE PRIMARY DRAIN BECOMES OBSTRUCTED.
 - DISCONNECT PROVIDED BY DIVISION 26.
 - PROVIDE FACTORY 24V FAN RELAY CONTROL INTERFACE.

EXISTING VARIABLE AIR VOLUME BOX SCHEDULE				
MARK	---	VAV 7-2	VAV 7-7	VAV 7-8
MAXIMUM AIRFLOW	CFM	770	1,210	2,090
MINIMUM AIRFLOW	CFM	310	485	835
MAX BOX SP.	IN W.G.	0.30	0.30	0.30
INLET SIZE	IN DIA.	10	12	14
MANUFACTURER	---	TRANE	TRANE	TRANE
MODEL	---	VCE10	VCE12	VCE14
NOTES	---	ALL	ALL	ALL

NOTES:

- BALANCE AIRFLOWS AS SHOWN. SCHEDULE PRODUCED IN REFERENCE TO CONSTRUCTION DOCUMENTS BY CHARLOTTE ENGINEERING & SURVEYING, INC., DATED 1/19/1990.

VARIABLE AIR VOLUME BOX WITH ELECTRIC HEAT SCHEDULE		
MARK	UNIT LOCATION	UNIT
---	---	VAV 7-3
COOLING		
MAX COOLING	CFM	565
MIN COOLING	CFM	200
HEATING	CFM	285
ADP AT MAX COOLING	IN WG	0.19
MAX DIS NC	NC	20
MAX RAD NC	NC	---
INLET DUCT CONNECTION SIZE	IN DIAMETER	8
OUTLET DUCT CONNECTION SIZE	IN X IN	12"x10"
ELECTRIC STRIP HEAT	KW/STEPS	3/1
ELECTRICAL	V/PH/HZ	277/1/60
MANUFACTURER	---	PRICE
MODEL	---	SDV
NOTES	---	ALL

- NOTES:
- ALL VAV BOXES TO BE SELECTED AT A MAXIMUM INLET STATIC PRESSURE OF 0.30 IN WG.
 - ALL VAV BOXES TO BE PRESSURE INDEPENDENT.
 - NOISE CRITERIA (NC) ESTIMATE CALCULATED USING THE FOLLOWING TRANSFER FUNCTIONS:
DISCHARGE: ARI 885-2008;
RADIATED: ARI 885-2008 MINERAL FIBER.
 - CONTROLS CONTRACTOR TO PROVIDE CONTROLLER TO VAV BOX MANUFACTURER FOR FACTORY MOUNTING.
 - VAV BOX MANUFACTURER TO PROVIDE FACTORY 24 VOLT STEPDOWN TRANSFORMER INSIDE VAV BOX FOR CONTROLS POWER CONNECTION.
 - PROVIDE FACTORY MOUNTED NON-FUSED DOOR INTERLOCKING DISCONNECT.
 - ELECTRICAL FEED TO BE PROVIDED BY DIVISION 26.
 - PROVIDE CERTIFIED LOW LEAKAGE CONSTRUCTION WITH LEAKAGE LESS THAN 1% AT 4 IN. W.G.
 - PROVIDE 1 INCH FIBER FREE FOAM INSULATION.

AIR DEVICE SCHEDULE					
NO.	DESCRIPTION	PRICE INDUSTRIES CODE	TITUS	METALAIRE	NOTES
S-1	SQUARE 3 CONE CEILING DIFFUSER	SCD	TMS	5700	M-1, F-1, A-1, NOTE 1
R-1	1/2"x1/2" EGG GRATE GRILLE	80	50F	CCS	M-1, F-1, NOTE 1

CODE MARK:
S-SUPPLY
R-RETURN

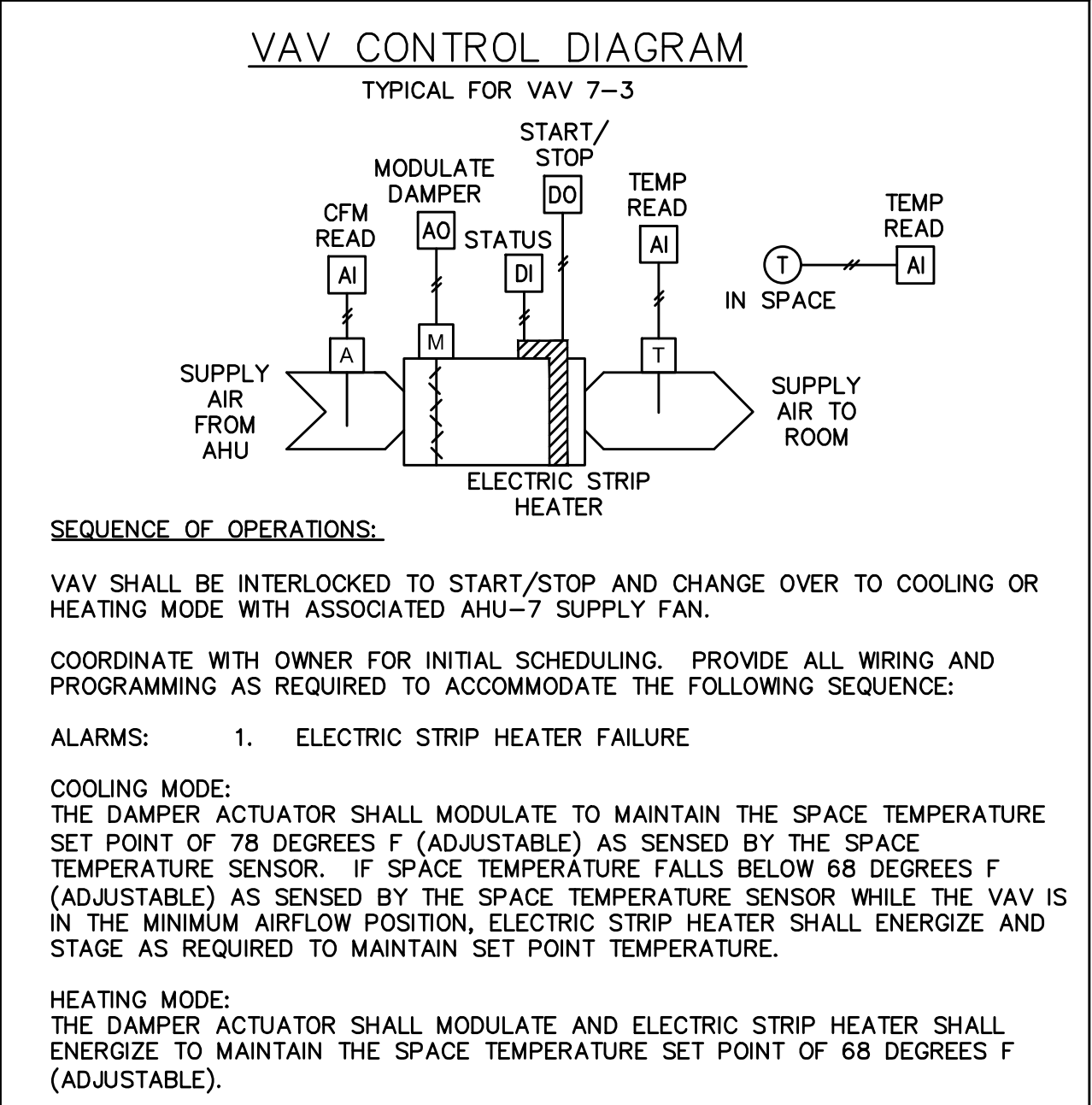
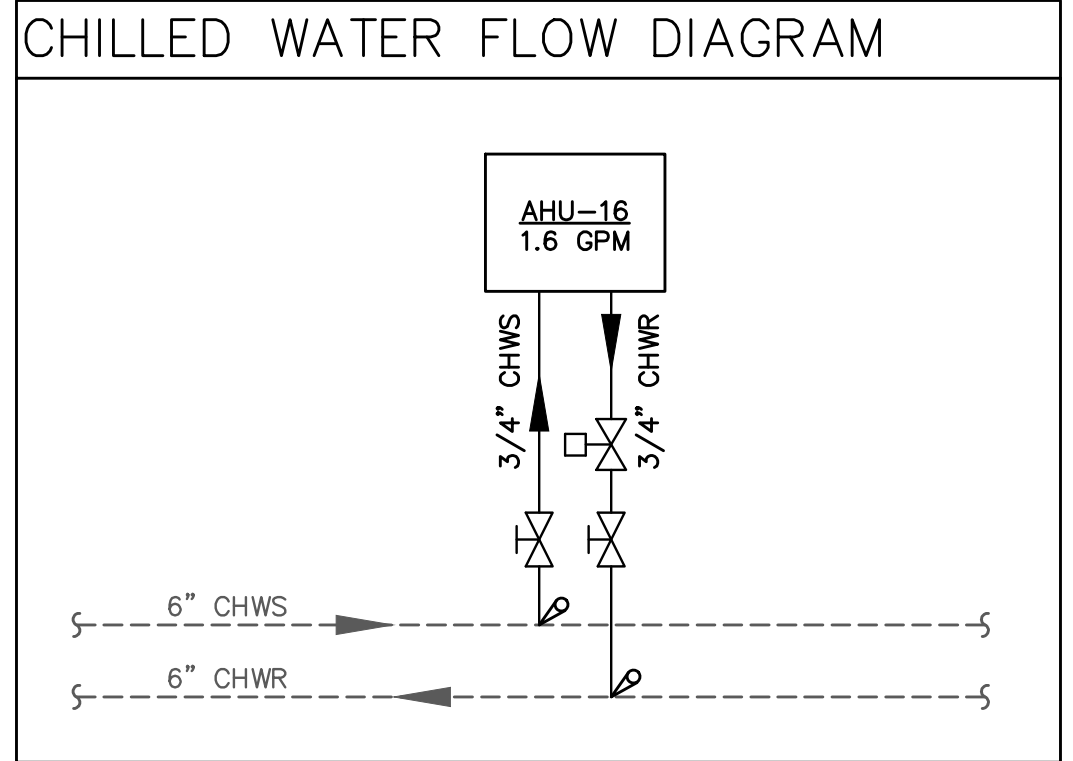
MATERIAL:
M-1 ALUMINUM

FINISH:
F-1 POWDER COATED WHITE ACRYLIC ENAMEL

ACCESSORIES:
A-1 RADIAL DAMPER

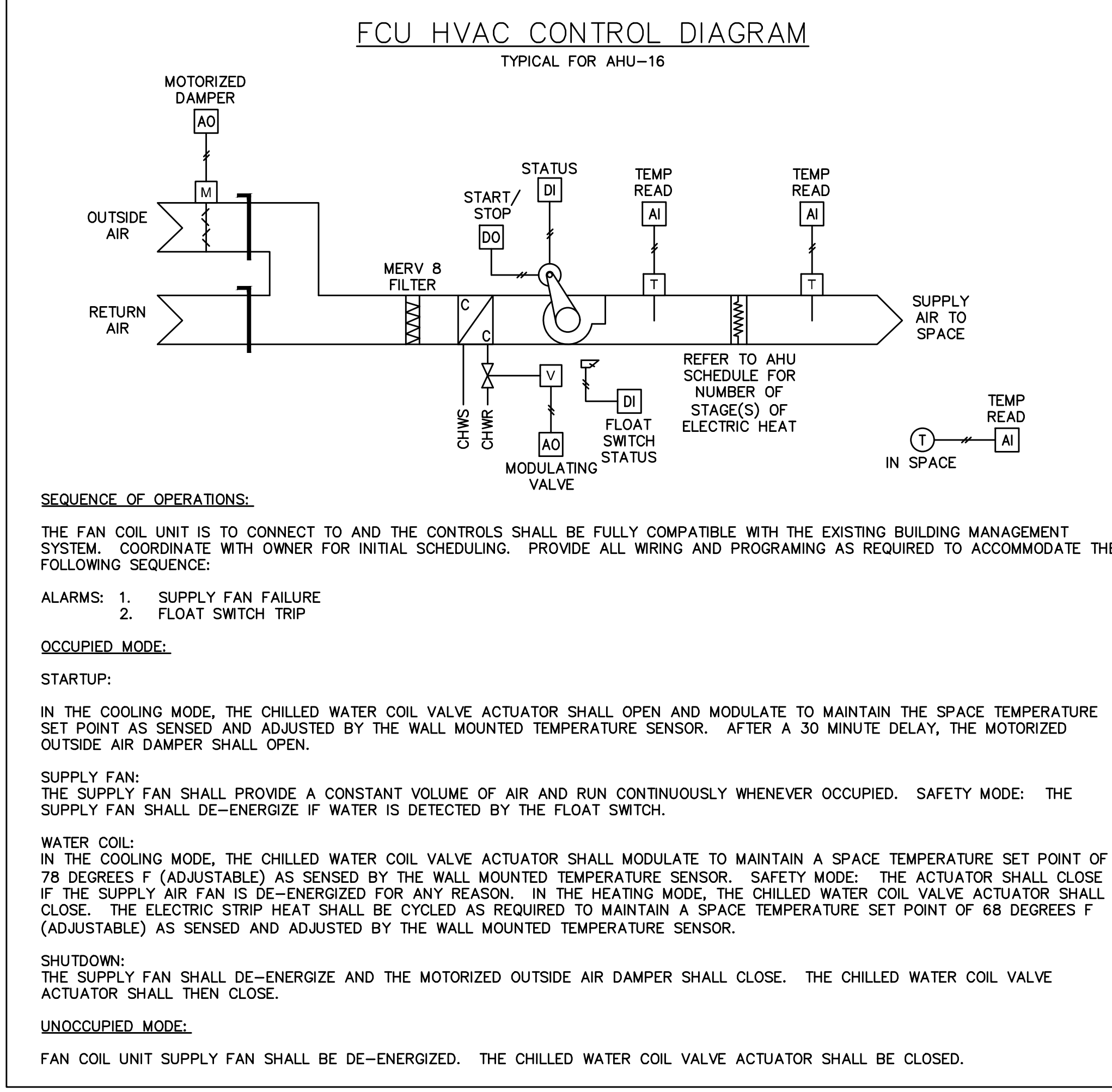
PROVIDE FRAMES AS REQUIRED BY CEILING CONSTRUCTION SHOWN ON ROOM FINISH SCHEDULE. SEE ARCHITECTURAL PLANS.

NOTES:
1. 24" X 24" CEILING MODULE



ASHRAE-62.1-2019 COMPLIANCE SCHEDULE		
Zone Name	Zone Tag	Occupancy Category
Quiet Room F1-121	2	3
Main Entry Lobby F1-117	3	4
Cafeteria F1-103	4	4
Break rooms (General)	733	870
Main entry lobbies	22	9
Cafeteria/fast-food dining	770	565
	0.80	0.80
	0.80	0.80

ASHRAE-62.1-2019 COMPLIANCE SCHEDULE		
Zone Name	Zone Tag	Occupancy Category
CIO	1	1
Computer (not printing)	180	1
	1	310
	0.80	
	CS	
	1.00	
	1.00	



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HVAC SCHEDULES, CONTROLS, AND DIAGRAMS

JOHN W. WELLS, III, PE

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