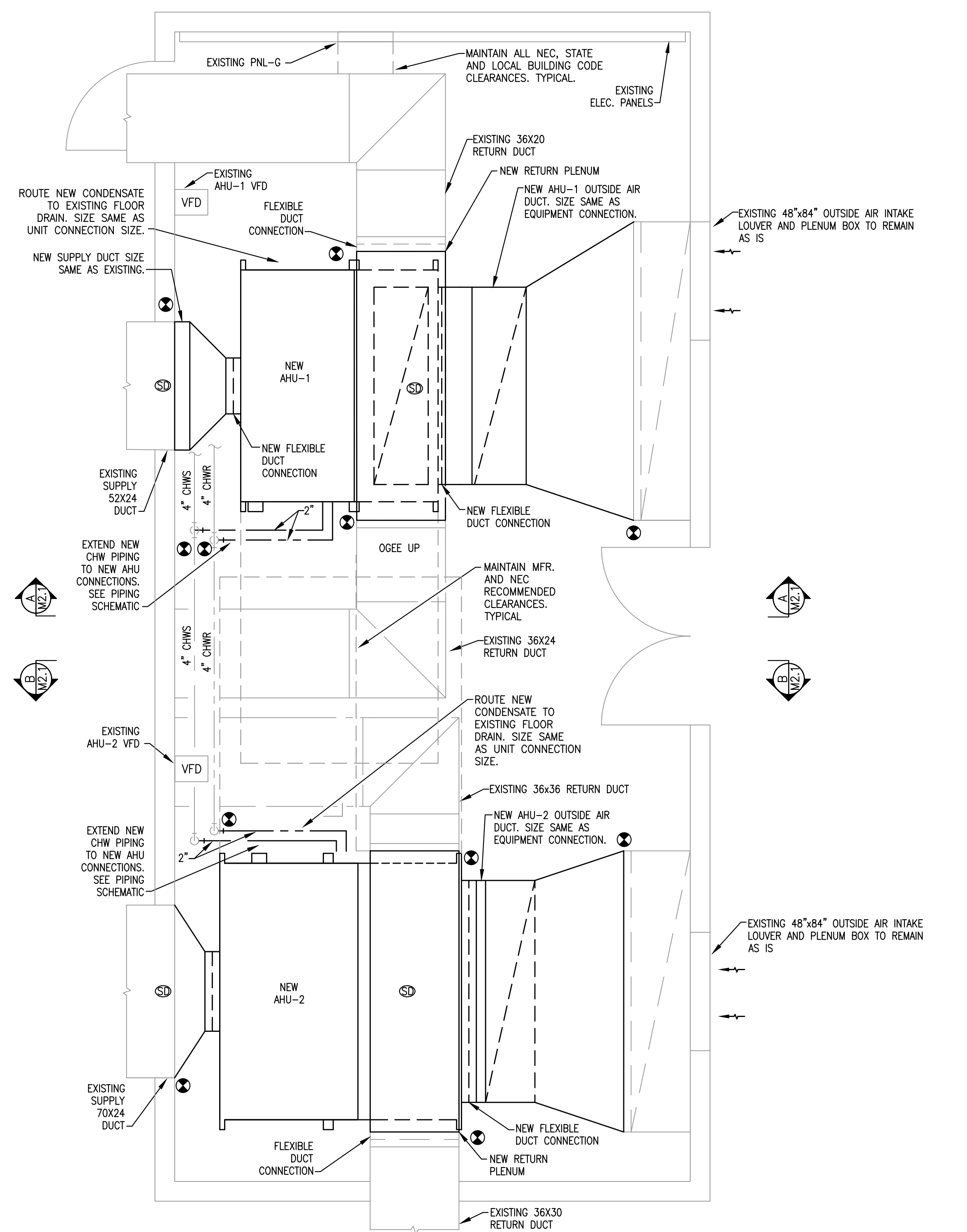
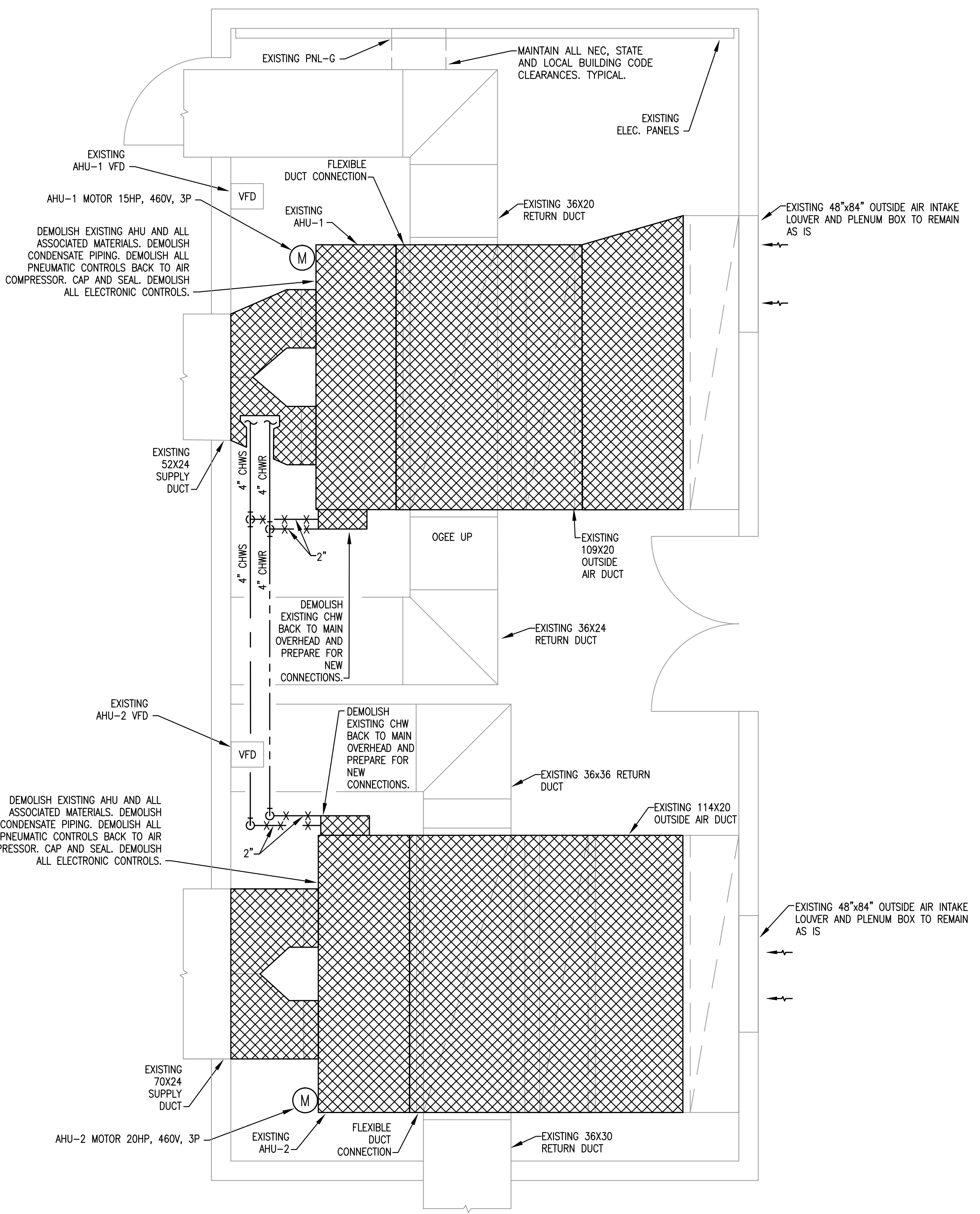


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2 FIRST FLOOR HVAC PLAN
SCALE: 3/8" = 1'-0"



1 FIRST FLOOR HVAC DEMO PLAN
SCALE: 3/8" = 1'-0"

DEMOLITION NOTES

- COORDINATE ALL DEMOLITION WITH OWNER PRIOR TO COMMENCING WORK.
- M.C. SHALL COORDINATE VERY CLOSELY WITH ALL TRADES, EACH SHEET OF CONSTRUCTION DOCUMENTS, AND SPECIFICATIONS BEFORE PERFORMING ANY DEMOLITION WORK TO AVOID REMOVING MATERIAL WHICH IS TO REMAIN AND/OR BE REUSED.
- DEMOLITION INDICATED IS DIAGRAMMATIC ONLY. M.C. SHALL FIELD VERIFY EXACT LOCATION AND QUANTITY OF MATERIAL TO BE DEMOLISHED BEFORE SUBMITTING BID. COORDINATE WITH ENGINEER AND OWNER.
- MECHANICAL CONTRACTOR SHALL PROVIDE SUITABLE PROTECTION FOR ADJACENT AREAS AND EQUIPMENT NOT SUBJECT TO DEMOLITION.
- M.C. SHALL BE RESPONSIBLE FOR DAILY CLEAN UP OF WORK AREA AND LEGAL DISPOSAL OF ALL MATERIALS SUBJECT TO DEMOLITION.
- E.C. SHALL BE RESPONSIBLE FOR DISCONNECTING EXISTING WIRING TO ALL ELECTRICAL COMPONENTS ASSOCIATED WITH EXISTING EQUIPMENT AS REQUIRED TO REMOVE/RELOCATE EXISTING EQUIPMENT PER CONSTRUCTION SCHEDULE.
- M.C. SHALL DEMOLISH EXISTING AHUS, INDICATED DUCT WORK, AND ALL ASSOCIATED MATERIALS PER CONSTRUCTION SCHEDULE.
- PATCH ALL WALL PENETRATIONS AFTER DEMOLITION OF MECHANICAL ITEMS.

LEGEND

- | | | | |
|--|-------------------------------|--|--|
| | SUPPLY AIR DIFFUSER | | MANUAL VOLUME DAMPER |
| | RETURN AIR DIFFUSER | | GRILLE TYPE - SEE SCHEDULE |
| | EXHAUST AIR DIFFUSER | | AIR QUANTITY - CFM |
| | HUMIDISTAT ± 0.5% RH ACCURACY | | FAN CONTROL SWITCH BY E.C. |
| | CONNECT TO EXISTING | | THERMOSTAT ± 0.5° F ACCURACY |
| | DUCT DEMOLITION | | PIPE ELBOW |
| | DEMOLITION AREA | | PIPE ELBOW DOWN |
| | MOTOR | | PIPE TEE |
| | | | BALL VALVE |
| | | | (SIZE) COLD WATER |
| | | | DUCT SMOKE DETECTOR MOUNTED ON SIDE OF DUCT, ACCESS DOOR, AND ACCESSIBILITY THROUGH CEILING (IF APPLICABLE), INTERLOCKED WITH RESPECTIVE AIR HANDLING UNIT |
| | | | EMERGENCY SHUTDOWN BUTTON INTERLOCKED WITH FAN CONTROLS ON ALL SUPPLY, RETURN, AND EXHAUST FANS VIA 24V CONTROL RELAYS BY M.C. MOUNT 42" A.F.F. |
| | | | TEMPERATURE SENSOR, MOUNT 48" A.F.F., ± 0.5° F ACCURACY, ± 2° F ADJUSTABLE. |
| | | | MOTOR OPERATED DAMPER, OPEN WHEN RESPECTIVE AHU IS ON, CLOSE WHEN RESPECTIVE AHU IS OFF. |

ANY ASBESTOS ABATEMENT SHALL BE BY OWNER.

M.C. SHALL SUBCONTRACT A LICENSED ELECTRICAL CONTRACTOR WHO SHALL PROVIDE ALL NECESSARY LOCAL DISCONNECTS, 480/3/60 AND 120/1/60 POWER WIRING IN EMT METALLIC CONDUIT. FIELD VERIFY EXACT LOCATION OF EXISTING PANELS WITH SPARE CIRCUITS PRIOR TO SUBMITTING BID. PROVIDE ENGRAVED PLASTIC LABELS FOR DISCONNECTS, LOAD SUMMARY, AND TYPED REVISED PANEL SCHEDULE. ALL WORK SHALL MEET OR EXCEED LOCAL AND STATE BUILDING CODES. ELECTRICAL PERMIT BY E.C. ALL WIRING SHALL BE THIN COPPER CONDUCTORS.

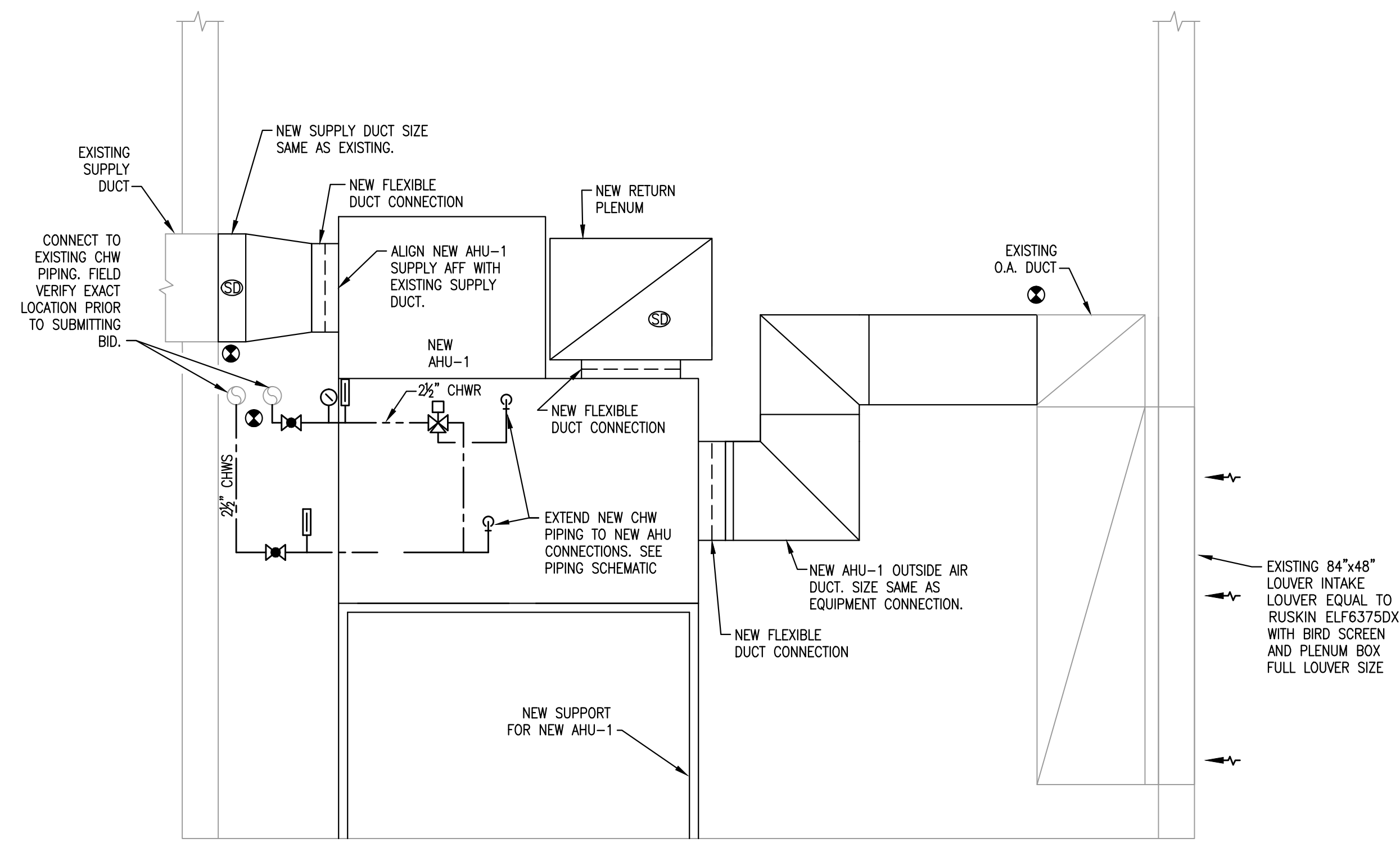
GENERAL NOTES

- MECHANICAL CONTRACTOR (M.C.) SHALL INSTALL MANUAL VOLUME DAMPERS AT BRANCH DUCTS AND AS SHOWN IN BRANCH DUCT DETAILS.
- M.C. SHALL FIELD VERIFY DUCT ROUTING AND NOTIFY ENGINEER OF RECORD OF ANY CONFLICTS IMMEDIATELY.
- ALL DUCT SIZES ARE INSIDE CLEAR.
- M.C. SHALL USE FOIL GRIP AFG-1403-3 DUCT TAPE ON ALL LONGITUDINAL SEAMS AND TRANSVERSE DUCT JOINTS OF CONCEALED DUCT.
- LONGITUDINAL SEAMS SHALL BE PITTSBURGH LOCK. BUTTON PUNCH SNAP LOCK IS NOT ALLOWED. TRANSVERSE JOINTS ON RECTANGULAR DUCTS SHALL BE DUCTIMATE. ALL MEDIUM PRESSURE DUCT SHALL BE DUCTIMATE OR TDL.
- DUCT PRESSURE CLASSIFICATION IS BASED ON THE MAXIMUM VELOCITY AND STATIC PRESSURE THROUGH THE SUPPLY AND RETURN DUCT SYSTEMS. ALL SEAMS, JOINTS, FASTENER PENETRATIONS AND CONNECTIONS ARE TO BE SEALED PER SMACNA STANDARDS BASED ON DUCT CLASSIFICATION.
- HOLD ALL DUCT WORK LEVEL AND TIGHT AGAINST BOTTOM OF STRUCTURE UNLESS OTHERWISE INDICATED. CLOSELY COORDINATE WITH LIGHTING/ELECTRICAL CONTRACTOR BEFORE ANY DUCT IS FABRICATED. M.C. SHALL BE RESPONSIBLE FOR COORDINATED DETAILED MECHANICAL SHOP DRAWINGS OF EXACT DUCT AND PIPE ROUTING AND LOCATIONS.
- M.C. SHALL COORDINATE WITH ALL TRADES AND PROVIDE OFFSETS AND TRANSITIONS AS NECESSARY TO CORRECT ANY INTERFERENCES.
- ALL SUPPLY, RETURN AND EXHAUST DUCT, HOT, COLD AND CONDENSATE WATER, DRAIN PIPING AND EQUIPMENT SHALL MEET OR EXCEED THE REQUIREMENTS OF ALL STATE AND LOCAL BUILDING CODES REGARDING SEISMIC CONSIDERATIONS IN RELATION TO THEIR INSTALLATION.
- PROVIDE AN NEBB OR AABC CERTIFIED TEST AND BALANCE OF EACH AHU SUPPLY, RETURN AND OUTSIDE AIR. NO TAB WORK OUTSIDE MECHANICAL ROOM.
- PROVIDE 1" ANTI-MICROBIAL NEOPRENE DUCT LINER ON OUTSIDE AIR/SUPPLY DUCTS TO/FROM AIR HANDLING UNITS. INCREASE INDICATED DUCT SIZE 1" ON ALL SIDES WHERE LINER IS INSTALLED.
- ALL CONDENSATE LINES SHALL BE INSULATED WITH 1" FIBERGLASS INSULATION WITH VAPOR BARRIER AND PREFORMED FITTINGS.
- ALL THERMOMETERS AND PRESSURE GAUGES IN MECHANICAL ROOMS SHALL BE LOCATED NEAR EYE LEVEL FOR READING.

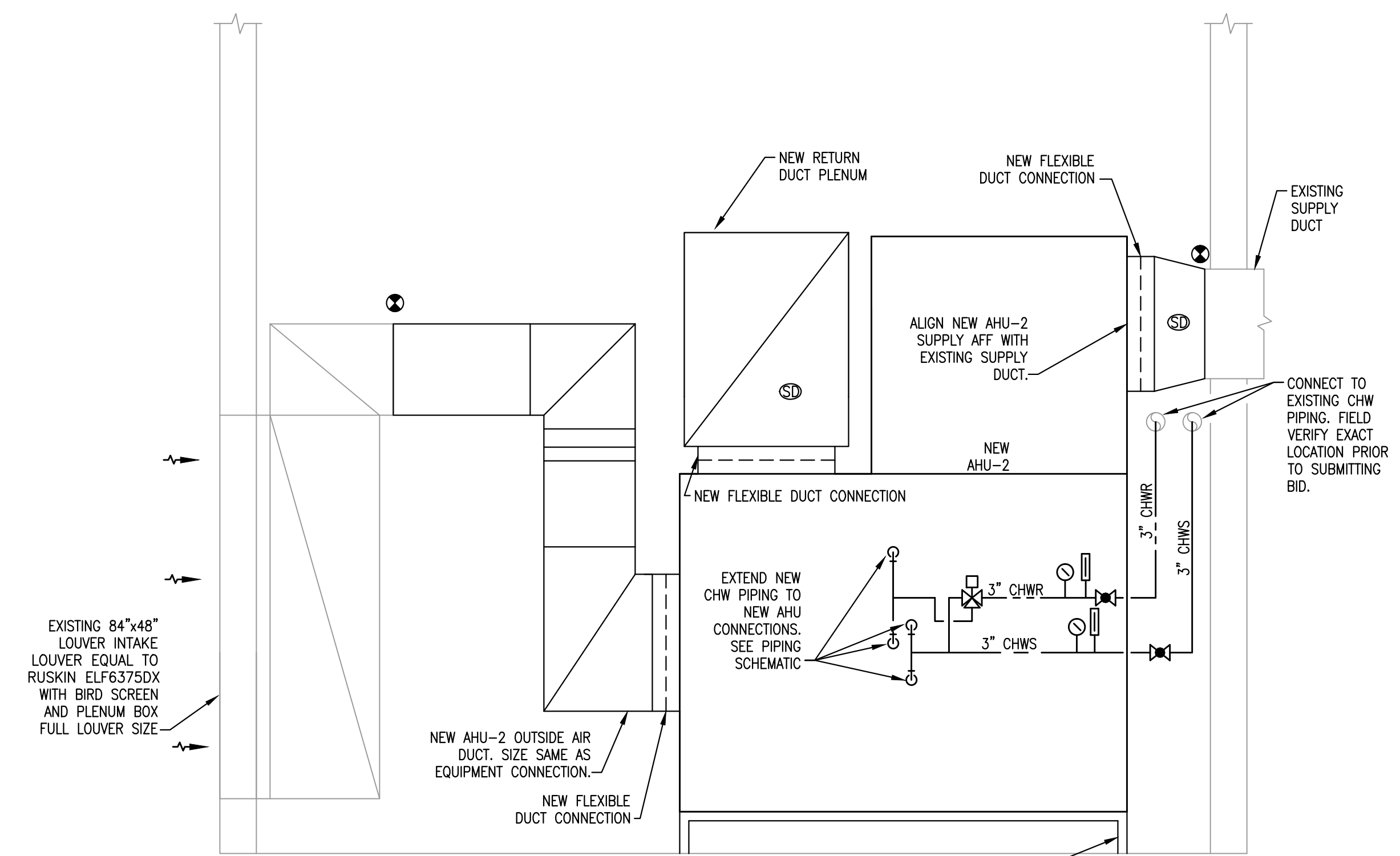
ABBREVIATIONS

AD	ACCESS DOOR	HP	HORSEPOWER
AF	AIRFOIL FAN WHEEL	HRS	HOT ROLL STEEL
AFF	ABOVE FINISHED FLOOR	IN.W.G.	INCHES OF WATER GAUGE
AHU	AIR HANDLING UNIT	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER MINUTE	MAX.	MAXIMUM
CH	WATER COOLED CHILLER	MC	MECHANICAL CONTRACTOR
CHWS	CHILLED WATER SUPPLY	MBH	BTU/HR x 1000
CHWR	CHILLED WATER RETURN	MFR	MANUFACTURER
CT	COOLING TOWER	MIN.	MINIMUM
CWS	CONDENSER WATER SUPPLY	NOM.	NOMINAL
CWR	CONDENSER WATER RETURN	O.A.	OUTSIDE AIR
db	DRY BULB TEMPERATURE, DEGREES FAHRENHEIT	O.C.	ON CENTER
Dp	DEW POINT TEMPERATURE, DEGREES FAHRENHEIT	O.D.	OUTSIDE DIAMETER
DIA.	DIAMETER	PAC	PACKAGED AIR CONDITIONING UNIT
EF	EXHAUST FAN	PC	PLUMBING CONTRACTOR
EC	ELECTRICAL CONTRACTOR	PD	PRESSURE DROP
EFF.%	MOTOR EFFICIENCY-PERCENT	QTY.	QUANTITY
EWT	ENTERING WATER TEMPERATURE	R.A.	RETURN AIR
FLA	FULL LOAD AMPS	RAF	RETURN AIR FAN
FM	WATER FLOW METER DEVICE	RH	REHEAT COIL
FPI	FINS PER INCH	RPM	REVOLUTIONS PER MINUTE
FPM	FEET PER MINUTE	S.A.	SUPPLY AIR
FT.W.G.	FEET OF WATER GAUGE	SF	SUPPLY FAN
GPM	GALLONS PER MINUTE	SP	STATIC PRESSURE (INCHES OF WATER)
HWS	HEATING HOT WATER SUPPLY	UH	UNIT HEATER
HHWR	HEATING HOT WATER RETURN	VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
		Wb	WET BULB TEMPERATURE, DEGREES FAHRENHEIT

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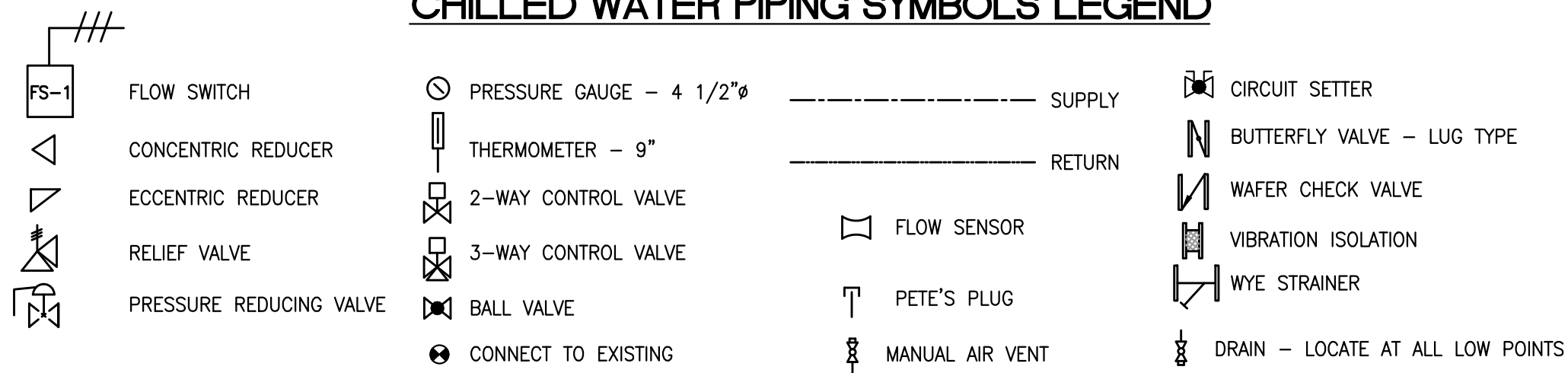


1 A-A HVAC SECTION
M2.1 SCALE: 1/2" = 1'-0"



2 B-B HVAC SECTION
M2.1 SCALE: 1/2" = 1'-0"

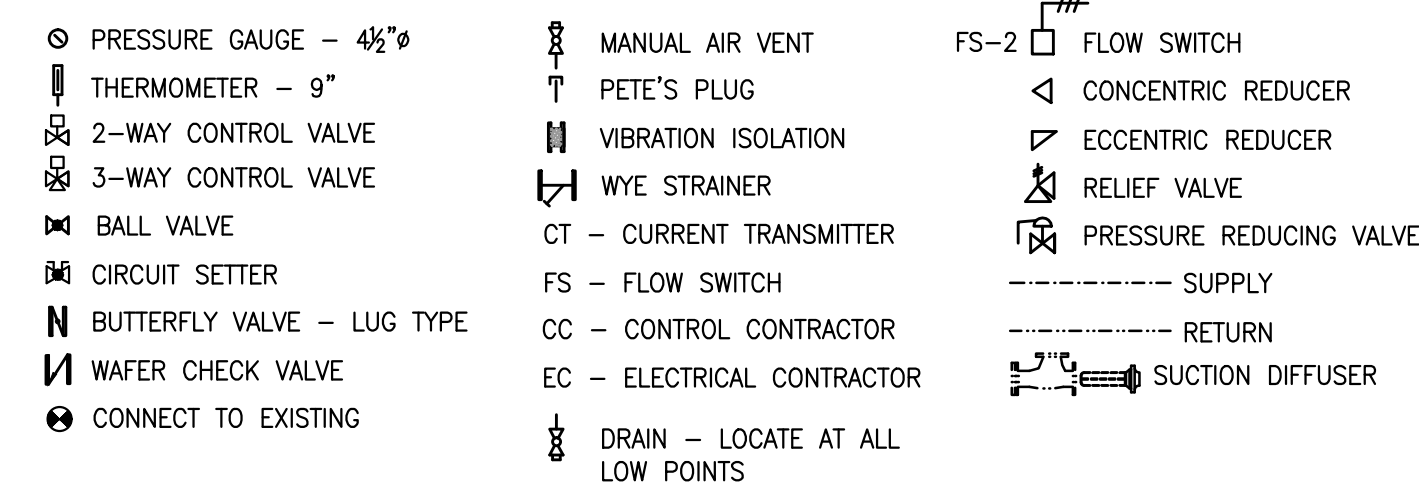
CHILLED WATER PIPING SYMBOLS LEGEND



ABBREVIATIONS

- TT - TEMPERATURE TRANSMITTER
- TE - TEMPERATURE ELEMENT
- FT - FLOW TRANSMITTER
- FS - FLOW SWITCH
- CC - CONTROL CONTRACTOR
- EC - ELECTRICAL CONTRACTOR
- MC - MECHANICAL CONTRACTOR
- PC - PLUMBING CONTRACTOR
- ⊞ - CONNECT TO EXISTING

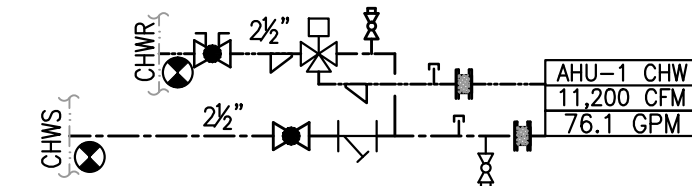
HOT WATER PIPING SYMBOLS LEGEND



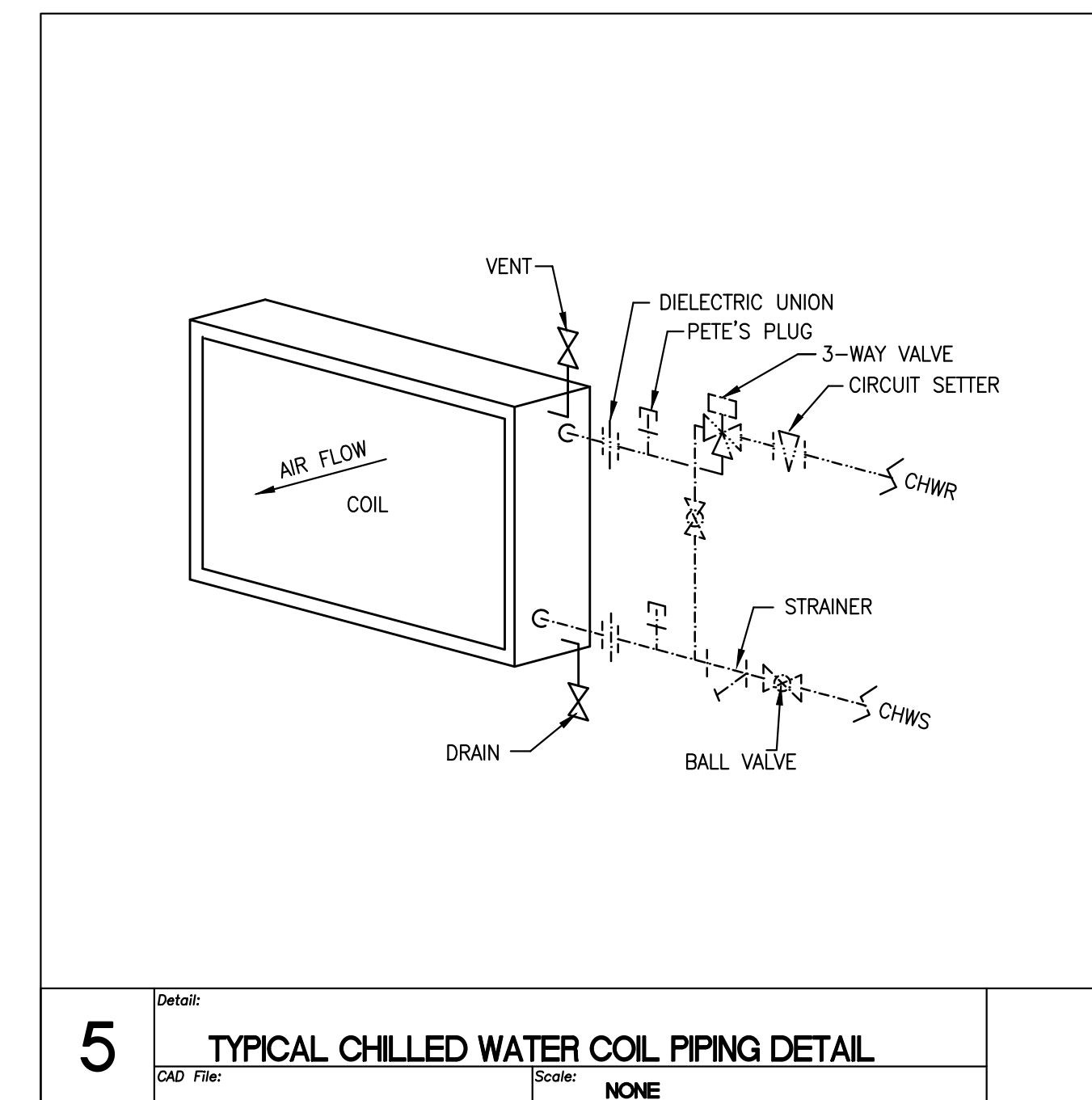
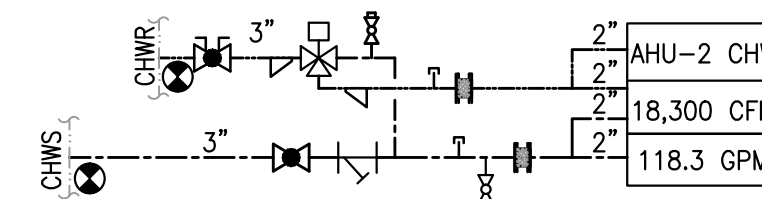
PIPING NOTES

1. CHILLED WATER PIPING SHALL BE SCHEDULE 40 BLACK STEEL A-53 FOR 2 1/2" AND LARGER.
2. CHILLED WATER PIPING SHALL BE TYPE-L HARD COPPER FOR 2" AND SMALLER.
3. INTERIOR EXPOSED CHILLED WATER PIPING SHALL HAVE 2" FIBERGLASS INSULATION WITH VINYL JACKET WITH PREFORMED FITTINGS. SEE DETAIL SHEET FOR LABELING.
4. PROVIDE VIBRATION ISOLATION AND FLEX CONNECTIONS AS INDICATED ON SCHEMATICS. PROVIDE ELASTOMERIC VIBRATION ISOLATION.
5. ALL EQUIPMENT AND MAJOR COMPONENTS SUCH AS BUTTERFLY VALVES SHALL BE INSTALLED WITH FLANGE CONNECTIONS.
6. SEE SCHEMATIC FOR EXACT TRIM REQUIRED ON ALL PIPING.

3 AHU-1 CHILLED WATER PIPING SCHEMATIC
M2.1 SCALE: NO SCALE

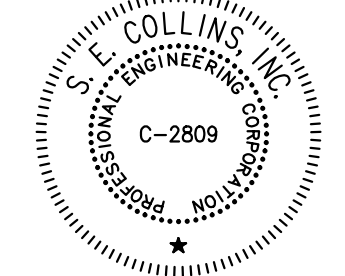
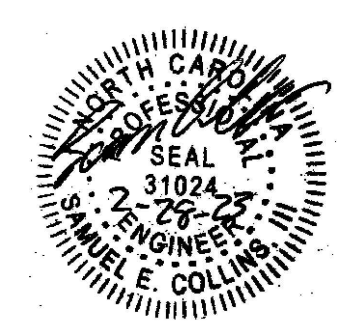


4 AHU-2 CHILLED WATER PIPING SCHEMATIC
M2.1 SCALE: NO SCALE



5 TYPICAL CHILLED WATER COIL PIPING DETAIL
M2.1 SCALE: NONE

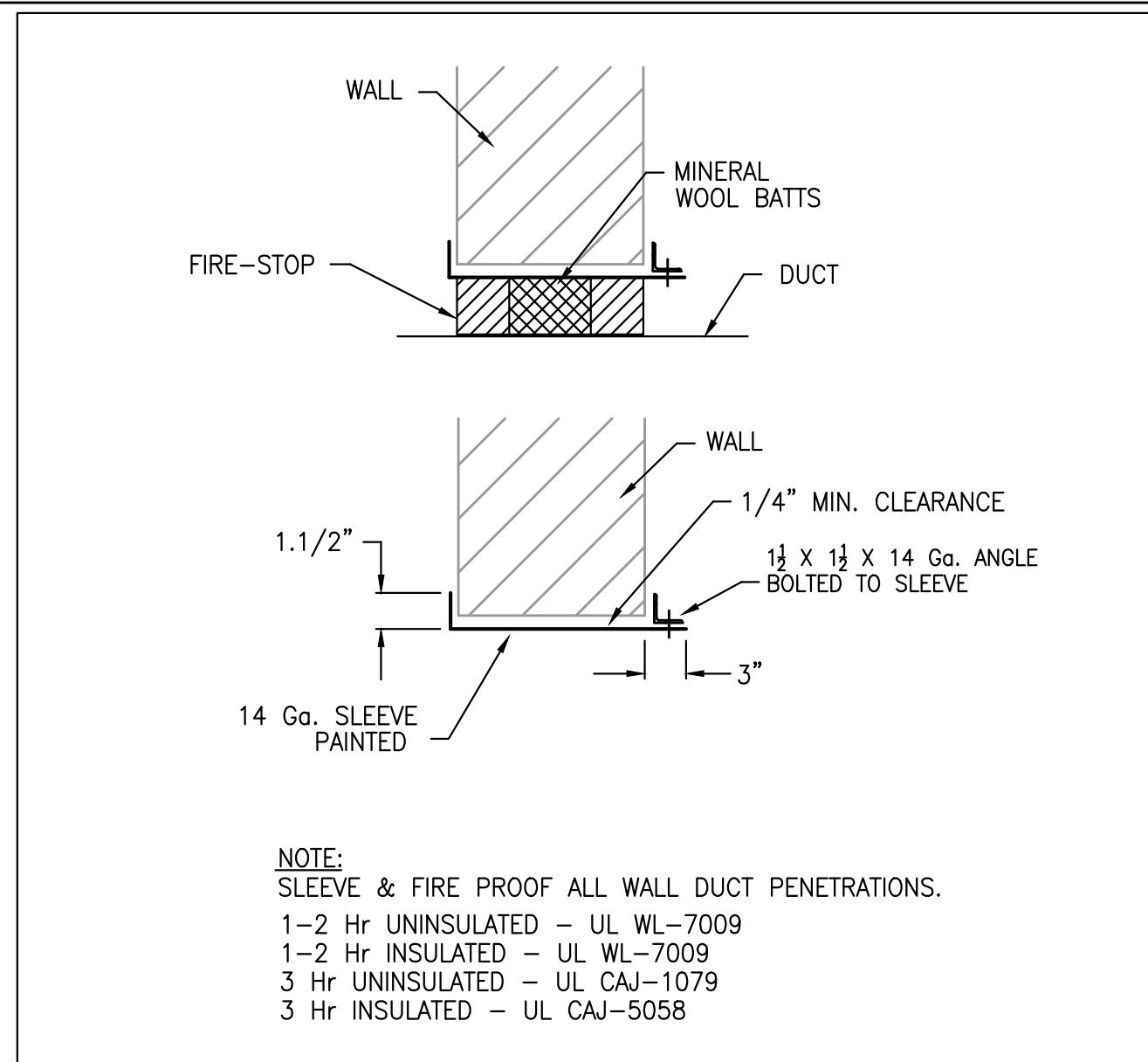
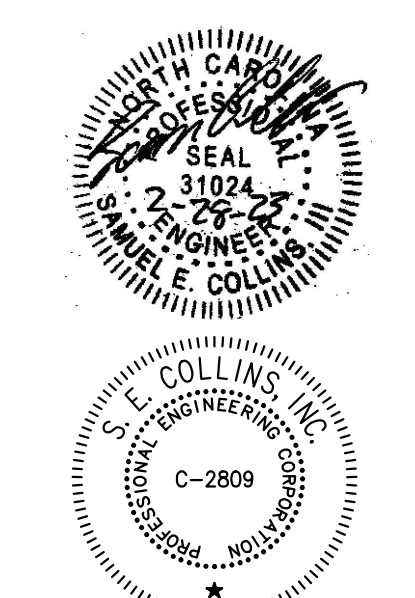
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FILE:



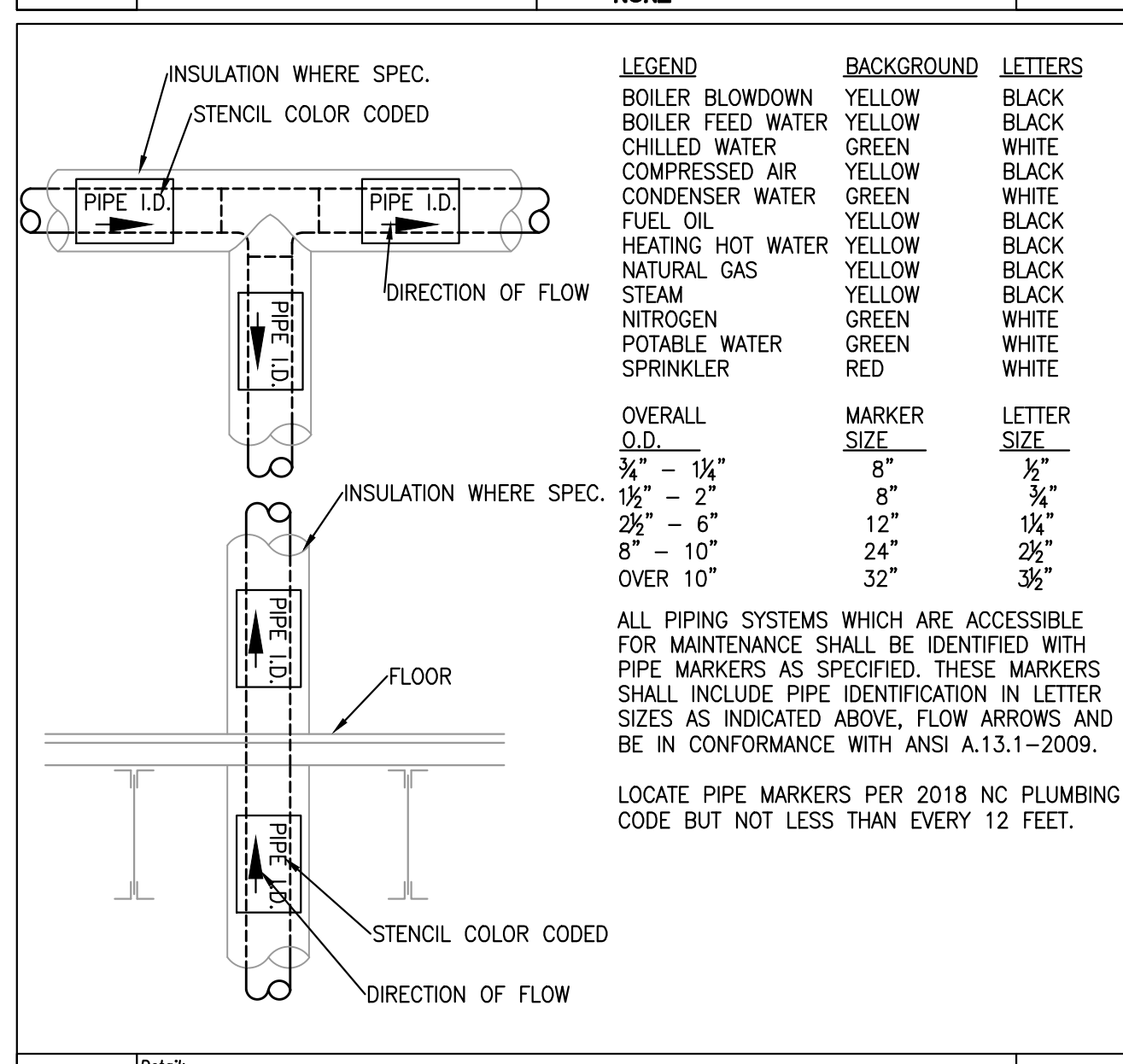
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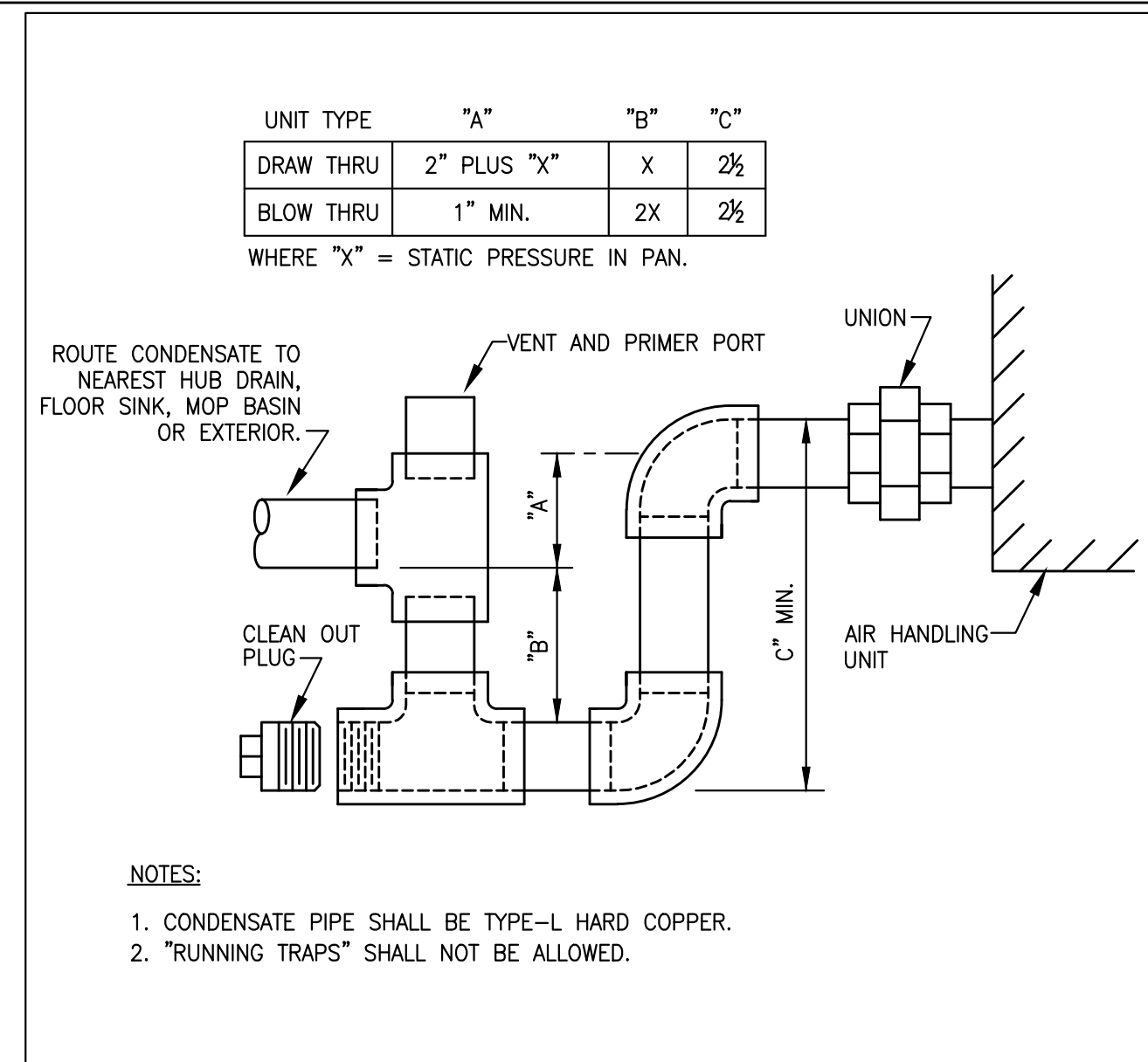
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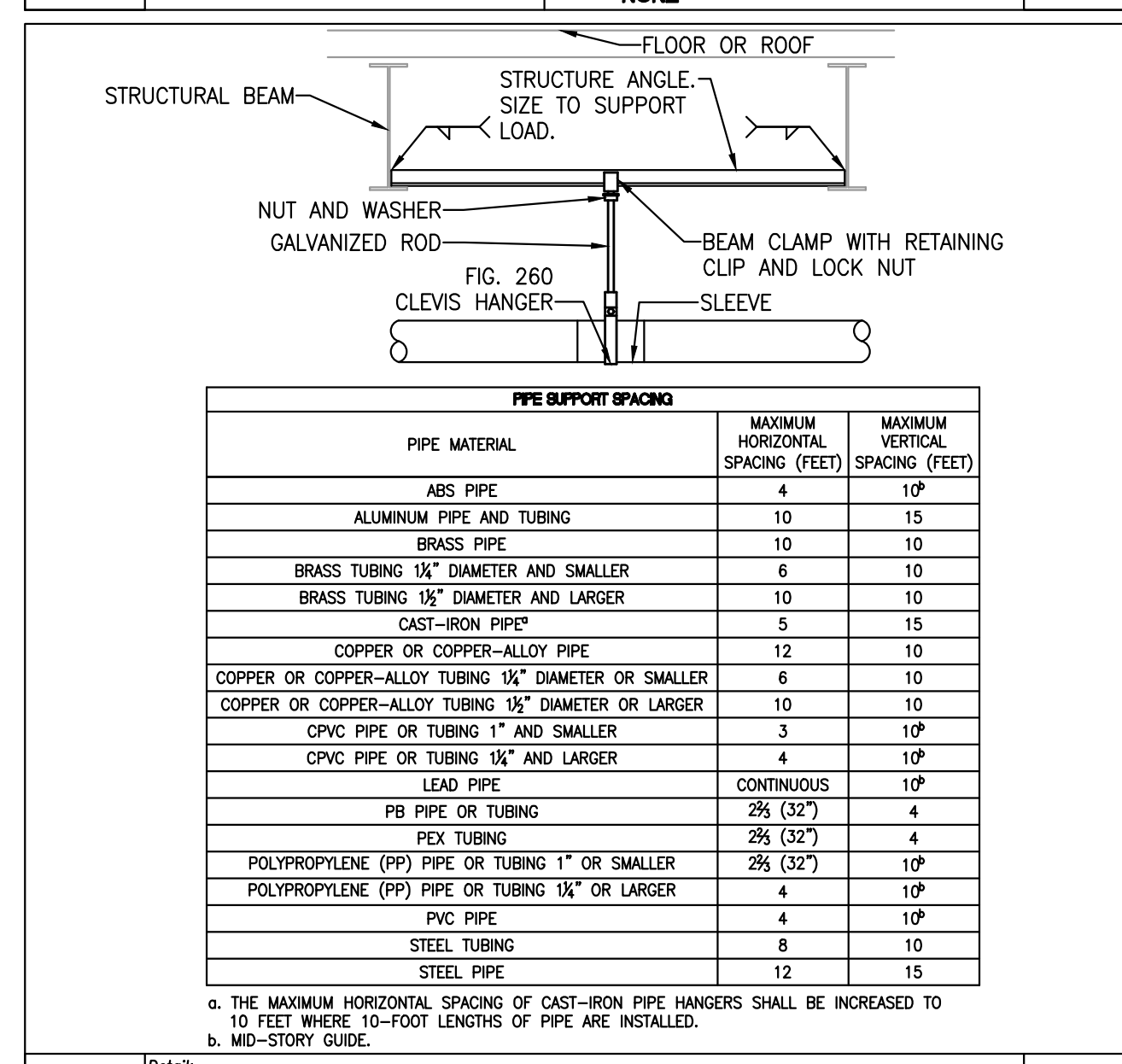
1 SLEEVE DETAILS
Scale: NONE



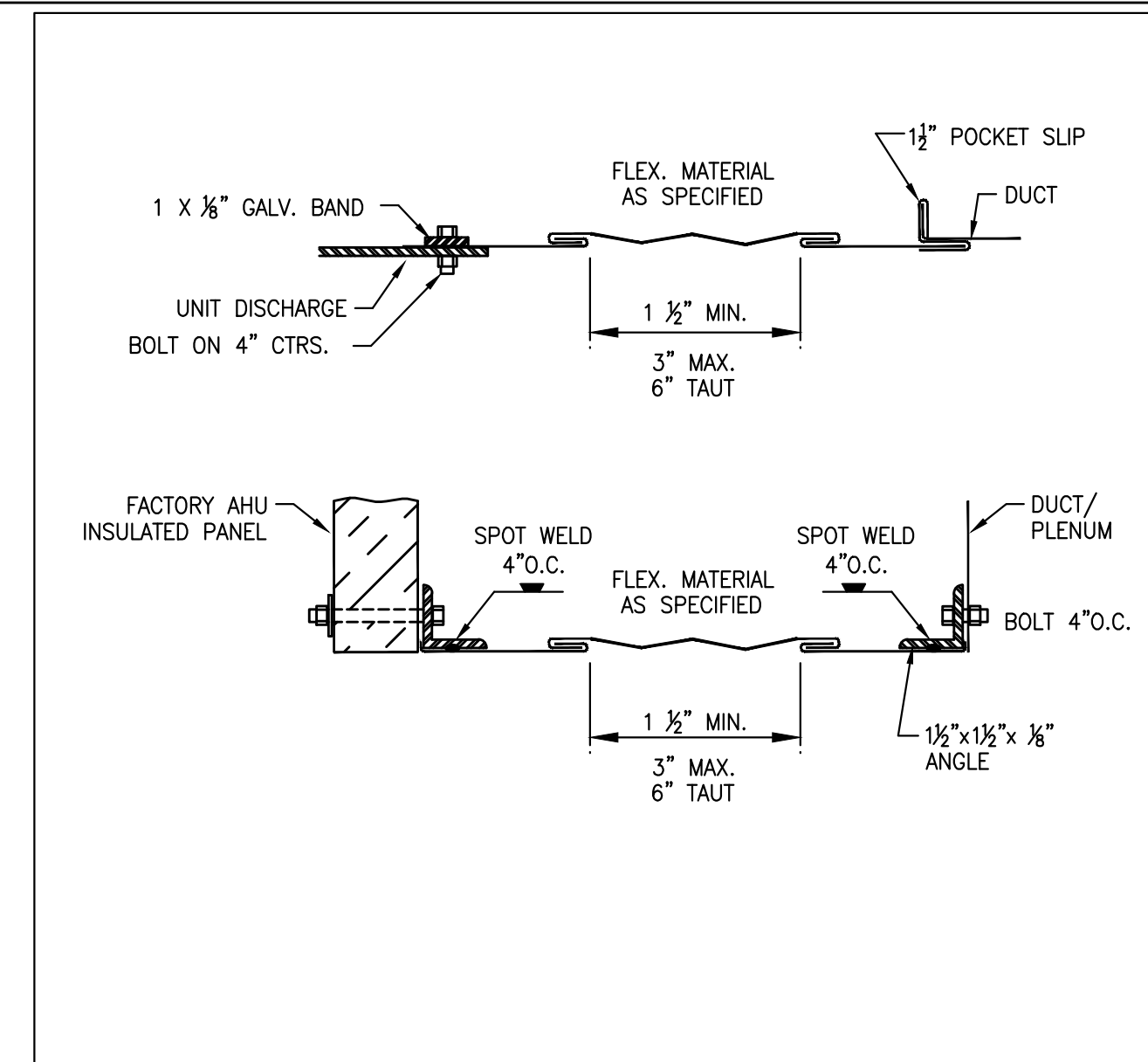
5 PIPE LABELING
Scale: NONE



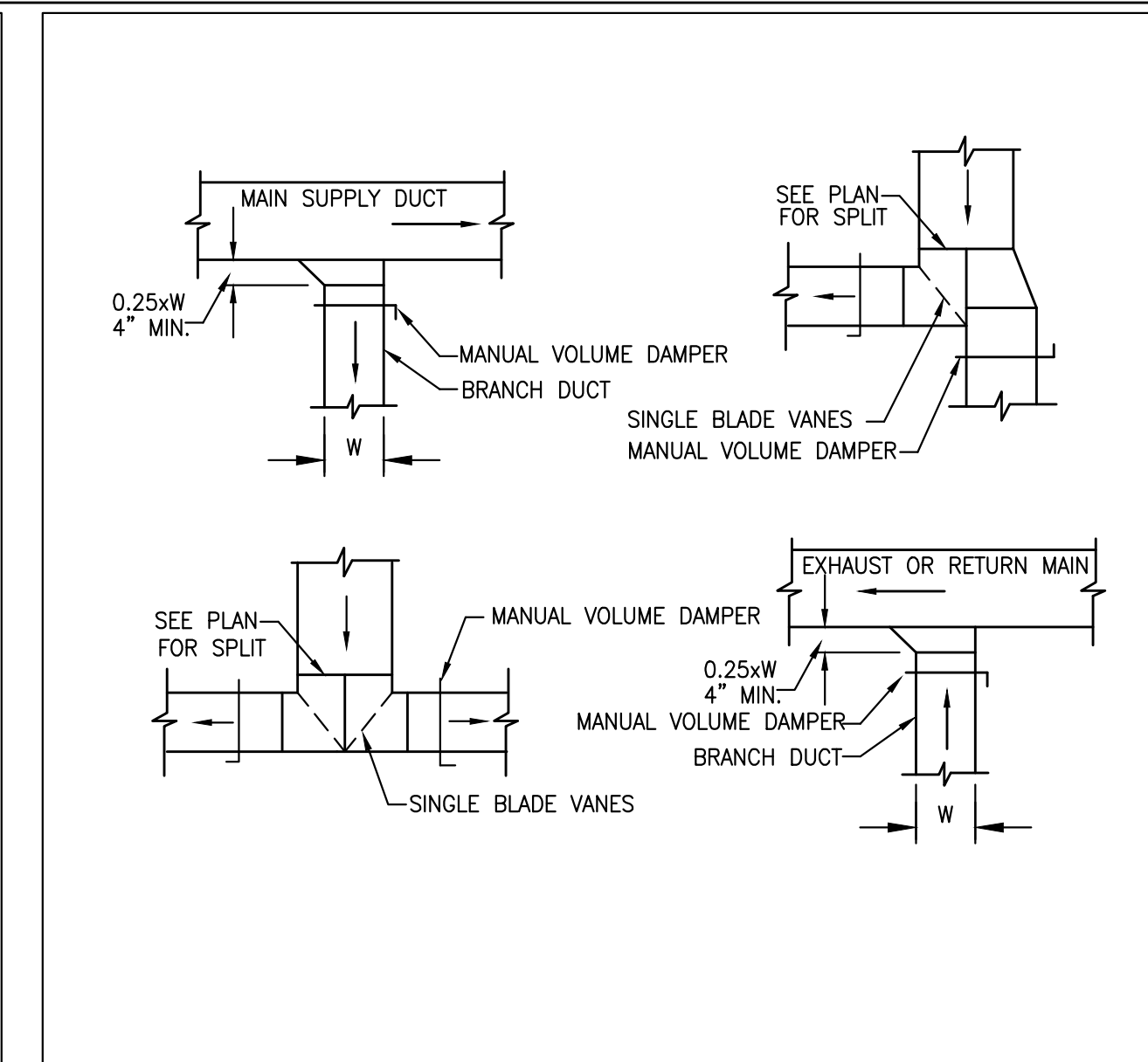
2 CONDENSATE DRAIN DETAIL
Scale: NONE



6 TYPICAL PIPE HANGER DETAIL
Scale: NONE



3 TYPICAL FLEX CONNECTION
Scale: NONE



4 TYPICAL DUCT FITTINGS
Scale: NONE

FULL-LOAD MINIMUM EFFICIENCIES OF ENERGY EFFICIENT MOTORS

HP	OPEN MOTORS			ENCLOSED MOTORS		
	2-POLE	4-POLE	6-POLE	2-POLE	4-POLE	6-POLE
1.0	---	80.0	77.0	72.0	80.0	77.0
1.5	80.0	81.5	81.5	80.0	81.5	82.5
2.0	81.5	81.5	82.5	81.5	81.5	84.0
3.0	81.5	84.0	84.0	82.5	85.5	85.5
5.0	82.5	85.5	85.5	85.5	85.5	85.5
7.5	85.5	86.5	86.5	86.5	87.5	87.5
10.0	86.5	87.5	88.5	87.5	87.5	87.5
15.0	87.5	89.5	88.5	88.5	89.5	88.5
20.0	88.5	89.5	89.5	88.5	89.5	88.5
25.0	89.5	90.2	90.2	89.5	91.0	90.2
30.0	89.5	91.0	91.0	89.5	91.0	90.2
40.0	90.2	91.7	91.7	90.2	91.7	91.7
50.0	91.0	91.7	91.7	91.0	91.7	91.7
60.0	91.7	92.4	92.4	91.7	92.4	92.4
75.0	91.7	93.0	92.4	91.7	93.0	92.4
100.0	91.7	93.0	93.0	92.4	93.6	93.0
125.0	92.4	93.6	93.0	93.6	93.6	93.0
150.0	92.4	94.1	93.6	93.6	94.1	94.1
200.0	93.6	94.1	93.6	94.1	94.1	94.1
250.0	93.6	94.3	94.5	94.5	94.1	94.1
300.0	94.1	94.5	94.5	94.5	94.5	94.1
350.0	94.1	94.5	94.5	94.5	94.5	94.1
400.0	94.5	94.5	---	94.5	94.5	---
450.0	95.0	95.0	---	94.5	94.5	---
500.0	95.0	95.0	---	94.5	95.0	---

FOR SINGLE-SPEED POLYPHASE MOTORS MINIMUM ACCEPTABLE NOMINAL FULL-LOAD EFFICIENCY

HORSEPOWER	MIN. EFFICIENCY %
1 - 4	78.5
5 - 9	84.0
10 - 19	85.5
20 - 49	88.5
50 - 99	90.2
100 - 124	91.7
125 OR GREATER	92.4

NEW AIR HANDLING UNIT SCHEDULE

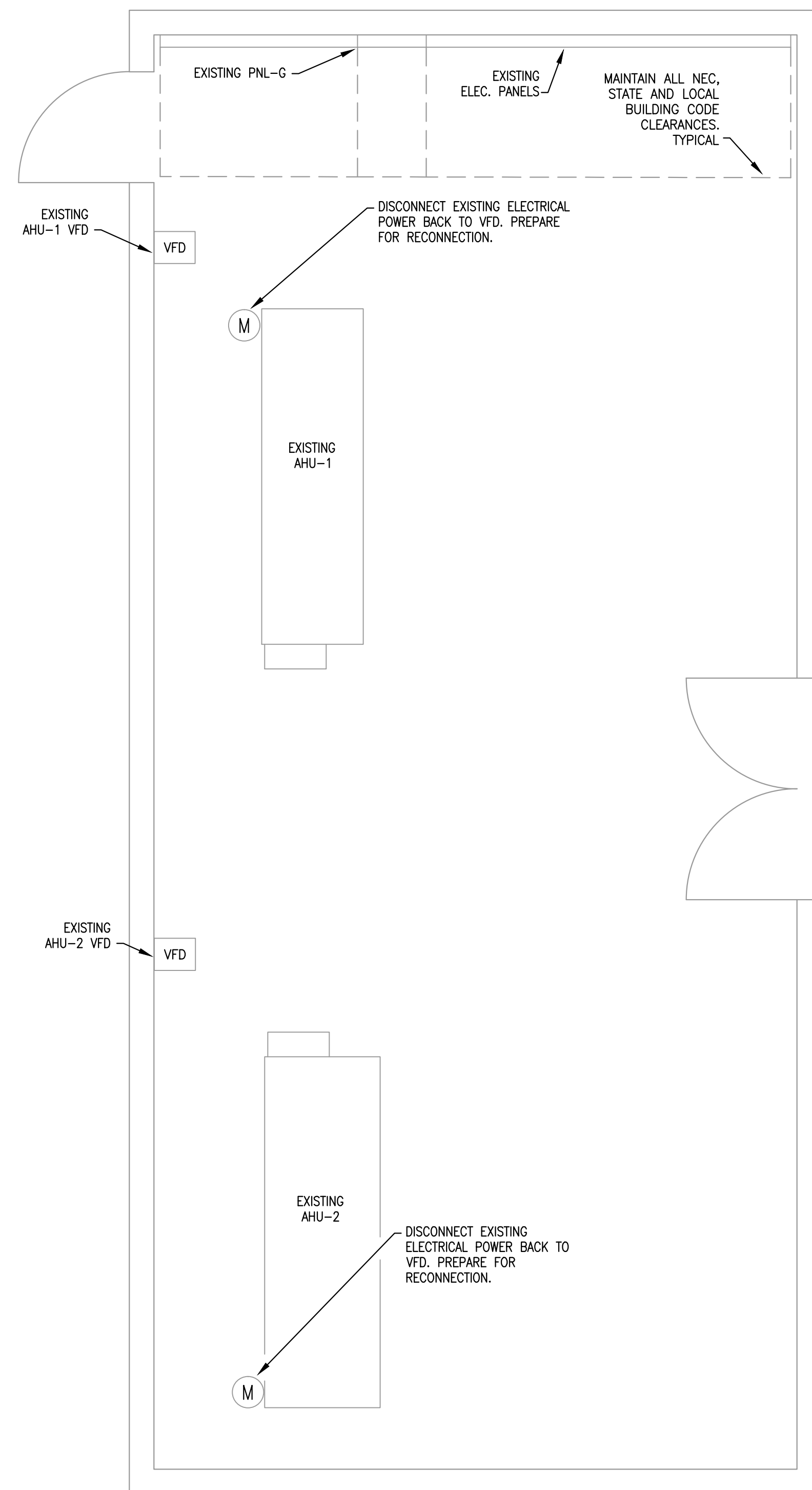
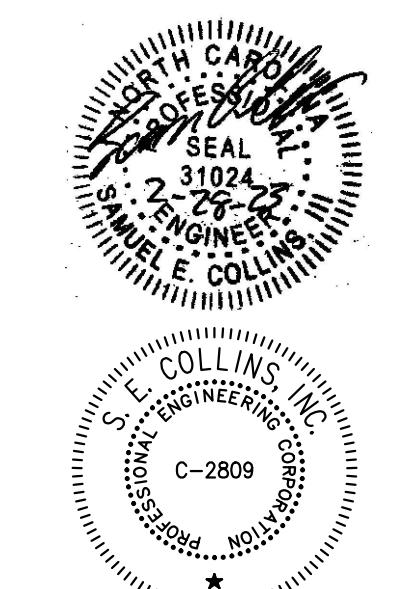
EQUIPMENT NUMBER	MFR	MODEL	SUPPLY CFM	MIN. O.A.	SUPPLY MOTOR HP	RETURN MOTOR HP	EXTERNAL STATIC PRESSURE	CHILLED WATER COIL PERFORMANCE						HOT WATER COIL PERFORMANCE						ELECTRICAL																
								FLUID	MIN. TOTAL MBH	MIN. SENSIBLE MBH	ENTERING AIR		LEAVING AIR		MAX. COIL FACE VELOCITY	COILS ROWS/FPI	ENTERING WATER DEG. F	LEAVING WATER DEG. F	FLOW RATE GPM	FLOW VELOCITY FPS	PRESSURE DROP FTWG	EAT DRY BULB DEG. F	LAT DRY BULB DEG. F	MAX. COIL FACE VELOCITY	TOTAL CAPACITY MBH	FLOW RATE GPM	ENTERING WATER		LEAVING WATER		MAX. PRESSURE DROP FTWG	SUPPLY FAN MTR.		RETURN FAN MTR.		TOTAL WEIGHT lbs.
											DRY BULB DEG. F	WET BULB DEG. F	DRY BULB DEG. F	WET BULB DEG. F													DEG. F	DEG. F	DEG. F	DEG. F		DEG. F	DEG. F	FLA	MOCP	
AHU-1	DAIKIN	CAH024GDAM	11,200	1,120	15.0	---	3.1" WC	WATER	389.98	340.26	80.0	67.0	53.9	52.9	500	4/12	44.0	54.3	76.1	4.2	0.83	---	---	---	---	---	---	---	18.0	35.0	---	---	460/3/60	2,458		
AHU-2	DAIKIN	CAH042GDAM	18,300	1,830	20.0	---	3.0" WC	WATER	588.72	506.89	80.0	67.0	54.8	53.4	500	4/10	44.0	54.0	118.3	4.2	0.67	---	---	---	---	---	---	---	24.0	50.0	---	---	460/3/60	4,112		

- NOTES:**
- AIR HANDLING UNIT SCHEDULE INFORMATION IS BASED UPON DAIKIN, TRANE, VTS AND CARRIER ARE APPROVED EQUALS.
 - FAN MOTORS SHALL BE ODP AND RATED FOR VFD WITH SHAFT GROUNDING RINGS.
 - ALL COILS SHALL BE ARI TESTED, RATED, AND CERTIFIED.
 - PROVIDE TEMPERATURE SENSOR FOR EACH AHU.
 - PROVIDE TWO SETS OF DISPOSABLE 2" FLEATED MERV 8 FILTERS FOR EACH AIR HANDLING UNIT.
 - PROVIDE STAINLESS STEEL DRAIN PANS AND COIL CASING.

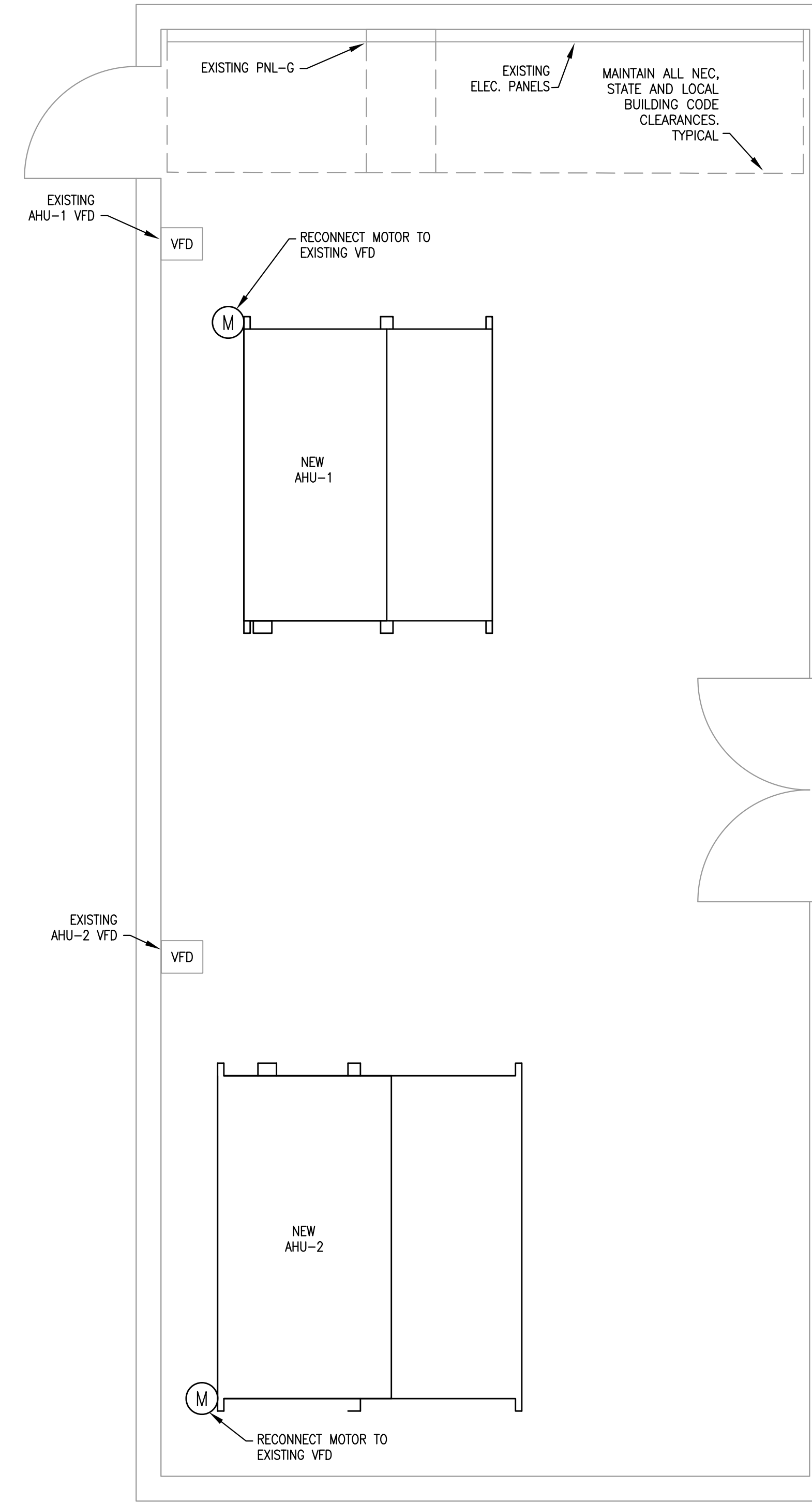
HVAC DESIGN DATA

PROJECT	LOCATION	SUMMER				WINTER			
		OUTSIDE		INSIDE		OUTSIDE		INSIDE	
		DRY BULB	WET BULB	DRY BULB	% HUMIDITY	DRY BULB	WET BULB	DRY BULB	% HUMIDITY
DAVIDSON COUNTY HEALTH DEPARTMENT AHU REPLACEMENT	LEXINGTON, NC	95°F	78°F	75°F ± 2	60% ± 10	14°F	10°F	70°F ± 2	NA

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**1
E1.1** **FIRST FLOOR POWER DEMO PLAN**
SCALE: 3/8" = 1'-0"



**2
E1.1** **FIRST FLOOR POWER PLAN**
SCALE: 3/8" = 1'-0"

A LICENSED ELECTRICAL CONTRACTOR WHO SHALL PROVIDE ALL NECESSARY LOCAL DISCONNECTS, 480/3/60 AND 120/1/60 POWER WIRING IN EMT METALLIC CONDUIT. FIELD VERIFY EXACT LOCATION OF EXISTING PANELS WITH SPARE CIRCUITS PRIOR TO SUBMITTING BID. PROVIDE ENGRAVED PLASTIC LABELS FOR DISCONNECTS, LOAD SUMMARY, AND TYPED REVISED PANEL SCHEDULE. ALL WORK SHALL MEET OR EXCEED LOCAL AND STATE BUILDING CODES. ELECTRICAL PERMIT BY E.C. ALL WIRING SHALL BE THHN COPPER CONDUCTORS.

ELECTRICAL NOTES

1. ALL WIRE SHALL BE SOLID COPPER THHN/THWN RATED FOR 75 DEGREE C.
2. 20A HOMERUN CIRCUITS ON #12 GA WIRE SHALL NOT EXCEED 60' LENGTH. IF 61'-100' USE #10 GA WIRE. IF 101'-160' USE #8 GA WIRE. IF 161'-220' USE #6 GA WIRE.
3. PROVIDE A GREEN GROUND WIRE FOR ALL CIRCUITS. METAL CONDUITS SHALL NOT BE USED AS A SOLE MEAN FOR GROUNDING.
4. PROVIDE ALL WIRING IN EMT CONDUIT WITH COMPRESSION FITTINGS.
5. PROVIDE PLASTIC ENGRAVED LABELS FOR ALL PANELS AND DISCONNECTS. LETTERS SHALL NOT BE LESS THAN 1/2" TALL.
6. HAND LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER.
7. PROVIDE PRINTED LABELS ON ALL DEVICE COVERS WITH CIRCUIT # AND PANEL.
8. PROVIDE TYPED PANEL SCHEDULE AND AFFIX TO INTERIOR OF PANEL DOOR.
9. MAINTAIN ALL NEC, STATE AND LOCAL BUILDING CODE CLEARANCES.
10. ALL WORK SHALL MEET/EXCEED NEC, STATE AND LOCAL BUILDING CODES.

ELECTRICAL LEGEND

- VFD VFD STARTER
- M MOTOR