MECHANICAL ABBREVIATIONS

A	AIR	KW	KILOWATT
ABV	ABOVE	KWH	KILOWATT HOUR
ACC	AIR COOLED CONDENSER		
ACCU	AIR COOLED CONDENSING UNIT	LAT	LEAVING AIR TEMPERATURE
ADJ	ADJUSTABLE	LBS	POUNDS
AFF	ABOVE FINISHED FLOOR	LF	LINEAR FEET (FOOT)
AFMS	AIR FLOW MONITORING STATION	LRA	LOCKED ROTOR AMPS
AHU	AIR HANDLING UNIT	LV	LOUVER
ALT	ALTERNATE	LWT	LEAVING WATER TEMPERATURE
AMP	AMPERE		
APD	AIR PRESSURE DROP	MAINT	MAINTENANCE
APPD	APPROVED	MAU	MAKE UP AIR UNIT
APPROX	APPROXIMATE	MAX	MAXIMUM
ARCH	ARCHITECT / ARCHITECTURAL	MBH	THOUSAND BTU PER HOUR
AS	AIR SEPARATOR	MCA	MINIMUM CIRCUIT AMPS
ASSY	ASSEMBLY	MD	MOTORIZED CONTROL DAMPER
ATT	ATTENUATOR	MED	MEDIUM
AUTO	AUTOMATIC	MECH	MECHANICAL
AUX	AUXILIARY	MEZZ	MEZZANINE
AVG	AVERAGE	MFG	MANUFACTURING
		MFR	MANUFACTURER
BAS	BUILDING AUTOMATION SYSTEM	MIN	MINIMUM
BD	BOILER BLOWDOWN	MOD	MODULATING
BDD	BACKDRAFT DAMPER	MS	MILLISECOND
BFP	BACKFLOW PREVENTER	MW	MILLIWATT
BAL	BALANCE		
BFF	BELOW FINISHED FLOOR	N/A	NOT APPLICABLE
BFW	BOILER FEEDWATER	NAT	NATURAL
BFP	BOILER FEEDWATER PUMP	NC	NOISE CRITERIA
BHP	BRAKE HORSEPOWER	NEG	NEGATIVE
BLR	BOILER	NIC	NOT IN CONTRACT
BLW	BELOW	NO	NUMBER
BOP	BOTTOM OF PIPE	NOM	NOMINAL
BOT	BOTTOM	NTS	NOT TO SCALE
BTU	BRITISH THERMAL UNIT	NPSH	NET POSITIVE SUCTION HEAD
BTUH	BRITISH THERMAL UNIT PER HOUR		
BYP	BYPASS	OA	OUTSIDE AIR
		OBD	OPPOSED BLADE DAMPER
CAP	CAPACITY	OD	OUTSIDE DAMPER
CC	COOLING COIL	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
CD	CONDENSATE DRAIN	OPT	OPTION / OPTIONAL
CFM	CUBIC FEET PER MINUTE	ORIG	ORIGINAL
CF*	CHEMICAL FEED		
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	OZ	OUNCE
CH	CHILLER		
CHEM	CHEMICAL	PD	PRESSURE DROP
CL	CENTER LINE	PN	PART NUMBER
CLG	CEILING / COOLING	PRELIM	PRELIMINARY
CO	CLEANOUT	PRV	PRESSURE REDUCING VALVE
COMP	COMPRESSOR	PS	PRESSURE SWITCH
CONT	CONTINUE / CONTINUOUS	PSI	POUNDS PER SQUARE INCH
CONN	CONNECT	PSIA	PSI ABSOLUTE
COORD	COORDINATE	PSIG	PSI GAGE
CORR	CORRIDOR	PVC	POLYVINYL CHLORIDE
CTRL	CONTROL		
CUP	CENTRAL UTILITY PLANT	QA	QUALITY ASSURANCE
		QTY	QUANTITY
DA	DEAERATOR		
Db	DECIBEL	R	THERMAL RESISTANCE
DB	DRY BULB	RA	RETURN AIR
DDC	DIRECT DIGITAL CONTROL	RAT	RETURN AIR TEMPERATURE
DEG (°)	DEGREE	RAF	RETURN AIR FAN
DEMO	DEMOLITION / DEMOLISH	RAH	RELIEF AIR HOOD
DEPT	DEPARTMENT	REF	REFERENCE
DIV	DIVISION	REQD	REQUIRED
DN	DOWN	RET	RETURN
DP	DEW POINT	REV	REVISE / REVISION
DPS	DIFFERENTIAL PRESSURE SWITCH	RF	RETURN FAN
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	RH	RELATIVE HUMIDITY
		RHC	REHEAT COIL
EA	EACH / EXHAUST AIR	RL	REFRIGERANT LIQUID
EAT	ENTERING AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
ECON	ECONOMIZER	RS	REFRIGERANT SUCTION
EER	ENERGY EFFICIENCY RATIO	RV	RELIEF VALVE / RELIEF VENT
EF	EXHAUST FAN		
EFF	EFFICIENCY	SA	SUPPLY AIR
EL	ELEVATION	SAT	SUPPLY AIR TEMPERATURE
ELEC	ELECTRIC	SD	SMOKE DAMPER
ESP	EXTERNAL STATIC PRESSURE	SECT	SECTION
EST	ESTIMATE	SF	SQUARE FEET
ET	EXPANSION TANK	SF	SUPPLY FAN
EVAP	EVAPORATE / EVAPORATIVE	SPEC	SPECIFICATION
EWT	ENTERING WATER TEMPERATURE	SPLY	SUPPLY
EXH	EXHAUST	SPRV	STEAM PRESSURE REDUCING CONTROL VALVE
EXIST	EXISTING	SRV	SAFETY VALVE OR SAFETY RELIEF VALVE
EXT	EXTERIOR / EXTERNAL	SQ	SQUARE
		SS	SANITARY SEWER / STAINLESS STEEL
F	FAHRENHEIT	ST	STEAM TRAP
FF	FINISHED FLOOR	SP	STATIC PRESSURE
FC	FAIL CLOSED	STD	STANDARD
FCU	FAN COIL UNIT	STOR	STORAGE
FD	FIRE DAMPER / FLOOR DRAIN	STRU	STRUCTURAL
FFA	FROM FLOOR ABOVE	SUT	SURGE TANK
FFB	FROM FLOOR BELOW	SYS	SYSTEM
FG	FLUE GAS EXHAUST		
FL	FAIL LAST	TD	TEMPERATURE DIFFERENCE
FIP	FAIL IN PLACE	TDH	TOTAL DYNAMIC HEAD
FLA	FULL LOAD AMPS	TEMP	TEMPERATURE
FLEX	FLEXIBLE	TFA	TO FLOOR ABOVE
FLR	FLOOR	TFB	TO FLOOR BELOW
FO	FAIL OPEN	TFD	TO FLOOR DRAIN
FM	FLOW METER	THRU	THROUGH
FPM	FEET PER MINUTE	TK	TANK
FPS	FEET PER SECOND	TP	TOTAL PRESSURE
FREQ	FREQUENCY	TR	TEMPERATURE RISE
FS	FLOW SWITCH / FLOOR SINK	TSTAT	THERMOSTAT
FSTAT	FREEZESTAT	TYP	TYPICAL
FT	FOOT / FEET		
		UH	UNIT HEATER
G	GAS	UNO	UNLESS NOTED OTHERWISE
GA	GAGE / GAUGE		
GAL	GALLON	V	VOLT
GALV	GALVANIZED	VAR	VARIES
GPH	GALLONS PER HOUR	VAV	VARIABLE AIR VOLUME
GPM	GALLONS PER MINUTE	VD	VOLUME DAMPER
GV	GRAVITY VENTILATOR	VEL	VELOCITY
		VENT	VENTILATION / VENTILATOR
HB	HOSE BIBB	VERT	VERTICAL
HC	HEATING COIL	VF	VENTILATION FAN
HORZ	HORIZONTAL	VFD	VARIABLE FREQUENCY DRIVE
HP	HORSEPOWER	VOL	VOLUME
HR	HOUR	VP	VELOCITY PRESSURE
HT	HEIGHT		
HVAC	HEATING, VENTILATING, AND AIR-CONDITIONING	W	WATT
HW	HOT WATER / HEATING WATER	W/	WITH
HWP	HEATING WATER PUMP	W/O	WITHOUT
HWR	HEATING WATER RETURN	WB	WET BULB
HWS	HEATING WATER SUPPLY	WC	WATER COLUMN
Hz	HERTZ	WG	WATER GAUGE
		WT	WEIGHT
I/O	INPUT/OUTPUT		
IAH	INTAKE AIR HOOD		
ID	INSIDE DIAMETER		
IH	INTAKE HOOD		
IN	INCH / INCHES		
IN WC	INCHES WATER COLUMN		
INFO	INFORMATION		
IPLV	INTEGRATED PART LOAD VALUE		
ISO	ISOMETRIC		

MECHANICAL LEGEND

SYSTEM ABBREVIATIONS

- CF — CHEMICAL FEED
- CHS — CHILLED WATER SUPPLY
- CHR — CHILLED WATER RETURN
- CA — COMPRESSED AIR
- CD — CONDENSATE DRAIN
- PC — STEAM CONDENSATE - PUMPED
- CWS — CONDENSER WATER SUPPLY
- CWR — CONDENSER WATER RETURN
- DCW — DOMESTIC COLD WATER
- DHW — DOMESTIC HOT WATER
- DHW (140F) — DOMESTIC HOT WATER - 140F
- DHWR — DOMESTIC HOT WATER RETURN
- HWS — HEATING WATER SUPPLY
- HWR — HEATING WATER RETURN
- G — NATURAL GAS
- NPW — NON-POTABLE WATER
- LPG — PROPANE (VAPOR)
- LPG (L) — PROPANE (LIQUID)
- SS — SANITARY
- GW — SANITARY - GREASE
- V — SANITARY - VENT
- S(#) — STEAM - # INDICATES PRESSURE
- SC — STEAM CONDENSATE - # INDICATES PRESSURE
- SD — STORM DRAIN
- OSD — STORM DRAIN OVERFLOW

DUCT SYSTEM ABBREVIATIONS

- SA — SUPPLY AIR DUCT
- RA — RETURN AIR DUCT
- OA — OUTDOOR AIR DUCT (UNCONDITIONED OA)
- EA — EXHAUST AIR DUCT

DEMOLITION SYMBOLS

- EXISTING TO REMAIN
- DEMOLISHED IN CURRENT PHASE
- NEW IN CURRENT PHASE
- CONNECT TO EXISTING
- EXTENT OF DEMOLITION (DEMOLISH BETWEEN / BEYOND)

TEXT SYMBOLS

- ∠ — ANGLE
- ° — DEGREE
- ⌀ — DIAMETER
- ϕ — PHASE
- Ø — ROUND
- % — PERCENT

DUCTWORK SYMBOLS

- RECTANGULAR DUCT, BEVELED TAP (3" MIN.)
- RECTANGULAR DUCT, ROUND HIGH EFFICIENCY TAKE-OFF (HETO) TAP (HETO TAP)
- RECTANGULAR DUCT, ROUND CONICAL TAP (3" MIN.)
- ROUND DUCT, ROUND LOW-LOSS TAP
- ROUND DUCT, ROUND CONICAL TAP
- ROUND DUCT, ROUND PRESSURE TAP
- RECTANGULAR, ROUND AND OVAL END CAP

MECHANICAL CALLOUTS

DIFFUSERS, REGISTERS & GRILLES:

A-1 / 888 — DEVICE TYPE, REFER TO SCHEDULE FOR FACE AND INLET/OUTLET SIZE; DEVICE AIRFLOW (CFM); NO ARROWS INDICATE 4-WAY FLOW PATTERN

DUCT & PIPE TYPES:

OVAL DUCT	ROUND DUCT OR PIPE
IN/IN	IN ⌀
RECTANGULAR DUCT	FLEXIBLE DUCT
IN/IN	

DAMPER TYPES:

FIRE & SMOKE CONTROL DEVICES

— ACCESS DOOR

- FD — FIRE DAMPER
- FSD — FIRE AND SMOKE DAMPER
- SD — SMOKE DAMPER

AUTOMATIC & MANUALLY ACTUATED DEVICES

— ACCESS DOOR

- CD — CONTROL DAMPER
- BDD — BACK DRAFT DAMPER

CONTROL DEVICES

#

- AMS — AIRFLOW MEASURING STATION
- C — CONTROLLER
- CO_2 — ZONE CARBON DIOXIDE SENSOR
- D — DAMPER MOTOR
- DM — ELECTRICAL DEMAND METER
- DPS — DIFFERENTIAL PRESSURE SHEET
- DPT — DIFFERENTIAL PRESSURE TRANSMITTER
- EPB — EMERGENCY PUSH BUTTON SWITCH
- FS — FLOW SENSING SWITCH
- FM — FLOW METER
- H — DUCT HUMIDITY SENSOR
- HC — ZONE HUMIDITY
- M — ELECTRIC MOTOR
- MS — MOTOR STARTER
- PT — PRESSURE TRANSMITTER
- S — SWITCH
- SD — SMOKE DETECTOR
- SPT — DUCT STATIC PRESSURE TRANSMITTER
- T — DUCT TEMPERATURE SENSOR
- TC — ZONE THERMOSTAT
- TS — ZONE TEMPERATURE SENSOR
- TS — TIMER SWITCH
- TT — TEMPERATURE TRANSMITTER
- V — VIBRATION SWITCH
- VFD — VARIABLE FREQUENCY DRIVE
- W — WATT TRANSDUCER
- WB — DEW POINT (WET BULB)

SINGLE LINE PIPE SYMBOLS

- ELBOW, 90°
- ELBOW, RISER DOWN
- ELBOW, RISER UP
- ELBOW, RISE OR DROP
- ELBOW, 45° RISER OR DROP
- TEE UP
- TEE DOWN
- TEE TOP CONNECTION
- TEE BOTTOM CONNECTION
- TEE SIDE CONNECTION
- CROSS
- DIRECTION OF FLOW
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- UNION
- BLIND FLANGE
- PIPE CAP
- FLEXIBLE CONNECTOR
- EXPANSION JOINT
- ANCHOR
- PIPE SLEEVE THROUGH WALL
- AIR SEPARATOR (AS)
- BALL VALVE
- BUTTERFLY VALVE
- CALIBRATED MANUAL BALANCING VALVE
- CHECK VALVE
- GLOBE VALVE
- 3-WAY GLOBE VALVE
- PLUG VALVE
- NEEDLE VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- AUTOMATIC FLOW LIMITING VALVE (A)
- SOLENOID VALVE (S)
- ANGLE PATTERN GATE VALVE
- PILOT-OPERATED PRESSURE REGULATOR
- SELF-CONTAINED PRESSURE REGULATOR
- WYE STRAINER
- WYE BLOWDOWN STRAINER W/GATE VALVE
- DOUBLE CHECK BACK FLOW PREVENTER
- REDUCED PRESSURE BACKFLOW PREVENTER W/STRAINER
- COMBINATION VALVE INCLUDING: ISOLATION VALVE, STRAINER, DIELECTRIC UNION, P/T PORT & DRAIN
- COMBINATION VALVE INCLUDING: DIELECTRIC UNION, AIR VENT & P/T PORT
- COMBINATION VALVE INCLUDING: ISOLATION VALVE, UNION, P/T PORT, AND AUTOMATIC FLOW LIMITING VALVE
- AUTOMATIC AIR VENT
- AUTOMATIC CONDENSATE DRAIN, COMPRESSED AIR
- PUMP
- PUMP SUCTION DIFFUSER WITH INTERGRAL STRAINER
- TRIPLE DUTY VALVE
- PRESSURE GAUGE (WITH GAUGE COCK)
- TEST PLUG
- THERMOMETER
- THERMOWELL
- MANUAL AIR VENT PLUG
- MANUAL AIR VENT VALVE

GENERAL NOTES

A. MECHANICAL PLANS AND SECTIONS ARE INTENDED TO ILLUSTRATE THE SCOPE OF WORK ACCURATELY; HOWEVER, THEY ARE STILL DIAGRAMMATIC IN NATURE. REPRESENTATIONS OF EQUIPMENT, VALVES, FITTINGS, ETC. SHOWN ON THESE DRAWINGS MAY NOT REFLECT THE LOOK OR SIZE OF THE ACTUAL MATERIALS SPECIFIED.

B. MECHANICAL DRAWINGS DO NOT SHOW ALL MINOR ITEMS THAT MUST BE INSTALLED. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED FOR A FULLY FUNCTIONING SYSTEM COMPLIANT WITH ALL APPLICABLE CODES AND REGULATIONS.

C. PLAN AND SECTION DRAWINGS DO NOT SHOW ALL REQUIRED BRANCH PIPING OR VALVES AND ACCESSORIES. REFER TO FLOW DIAGRAMS, DETAILS, AND PROJECT SPECIFICATIONS FOR REQUIRED PIPING, VALVES, AND ACCESSORIES.

D. SECTION DRAWINGS DO NOT SHOW ALL REQUIRED WORK IN THE AREA THEY ARE CUT. SECTION DRAWINGS ARE PROVIDED TO ILLUSTRATE ONLY CERTAIN CONDITIONS THAT MAY BE TOO CONGESTED TO SUFFICIENTLY ILLUSTRATE IN A PLAN VIEW.

E. MECHANICAL DRAWINGS DO NOT SHOW ALL REQUIRED OFFSETS IN PIPING AND DUCTWORK REQUIRED FOR INSTALLATION COORDINATED WITH ALL OTHER DISCIPLINES SUCH AS STRUCTURAL STEEL. THE CONTRACTOR SHALL PROVIDE ELBOWS IN PIPING AND DUCTWORK, ONLY WHEN ABSOLUTELY REQUIRED, TO AVOID CONFLICT WITH OTHER MECHANICAL COMPONENTS OR WORK OF OTHER TRADES. OFFSETS SHALL USE ELBOWS OF LEAST DEGREE TURN AS POSSIBLE.

F. COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO PERMIT SERVICE ACCESS FOR DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION.

G. ALL DUCT SIZES INDICATED REPRESENT INSIDE CLEAR DIMENSIONS. CONTRACTOR SHALL ADJUST SHEET METAL SIZE TO ACCOUNT FOR LINER THICKNESS WHEN LINER IS REQUIRED PER THE CONTRACT DOCUMENTS.

H. MODIFY ROUTING OF PIPING AT EQUIPMENT CONNECTION POINTS FROM THAT SHOWN TO MATCH ACTUAL LOCATION OF CONNECTION POINTS FOR SPECIFIC EQUIPMENT PURCHASED. CONNECT ALL EQUIPMENT IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

I. PIPING, DUCTWORK, AND EQUIPMENT HANGERS AND SUPPORTS SHALL NOT INTERFERE WITH OPERATION AND MAINTENANCE OF EQUIPMENT.

J. ALL DEMOLISHED MATERIALS SHALL BE OFFERED TO THE OWNER FOR FIRST RIGHT OF REFUSAL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. ANY MATERIAL NOT SELECTED BY THE OWNER SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.

K. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, BACKDRAFT DAMPERS, COILS, AND OTHER ITEMS LOCATED IN THE DUCTWORK THAT REQUIRE SERVICE AND/OR INSPECTION.

L. PROVIDE ALL 90-DEGREE RECTANGULAR ELBOWS WITH TURNING VANES UNLESS OTHERWISE INDICATED. TURNING VANES SHALL BE SINGLE WALL FOR DUCTS UP TO 48 INCHES WIDE OR 2,500 FPM AND DOUBLE WALL FOR DUCTS WITH LARGER DIMENSIONS OR HIGHER VELOCITY.

M. RUNS OF FLEXIBLE DUCT SHALL ONLY BE USED BETWEEN GRILLE/REGISTER/DIFFUSER (GRD) CONNECTIONS AND ITS ASSOCIATED BRANCH DUCT. INLET DUCT CONNECTED TO GRILLES, REGISTERS, AND DIFFUSERS SHALL MAINTAIN MINIMUM 3 EQUIVALENT DIAMETER STRAIGHT RUN WHERE FEASIBLE UNLESS INDICATED OTHERWISE. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 3 FT.

N. LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.

O. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS, HUMIDISTATS, AND OTHER WALL-MOUNTED CONTROLLERS 4'-0" (CENTERLINE) ABOVE THE FINISHED FLOOR. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE SPECIFIED LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.

P. ALL HEAT PUMP SPLIT SYSTEMS WITH REVERSING VALVES SHALL HAVE BOTH THE REFRIGERANT SUCTION AND REFRIGERANT LIQUID LINES INSULATED.

Q. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UPSTREAM AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR MINIMUM ACCEPTABLE ACCURACY. NOTIFY ENGINEER IN ADVANCE OF ANY SUCH DEVICES WHOSE PROPOSED LOCATION DOES NOT MEET THE MANUFACTURER'S MINIMUM REQUIREMENTS.

R. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' APPROVED SUBMITTALS. COORDINATE AND PROVIDE ALL PIPING AND DUCT TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL PIPING AND DUCT DIMENSIONS BEFORE FABRICATION.

S. INSTALL PIPING SO ALL VALVES, PIPING SPECIALTIES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.

T. ALL SERVICE ISOLATION VALVES SHALL BE SUITABLE FOR DEAD-END SERVICE AND INSTALLED SUCH THAT VALVE MAY REMAIN IN SERVICE WHEN EQUIPMENT PIPING IS EVACUATED OR REMOVED.

U. WHERE CONCRETE HOUSEKEEPING PADS ARE INDICATED, PADS SHALL BE MINIMUM 4-INCHES TALL AND EXTEND HORIZONTALLY ON ALL SIDES BEYOND THE OUTER PERIMETER OF EQUIPMENT A DISTANCE NO LESS THAN THE PAD HEIGHT UNLESS NOTED OTHERWISE.

V. ALL FLUE PIPES FROM GAS-FIRED EQUIPMENT AND ASSOCIATED DIRECT VENT COMBUSTION AIR PIPES (IF USED) SHALL BE SIZED BY THE GAS-FIRED EQUIPMENT MANUFACTURER BASED ON THE SPECIFIC PIPE ROUTING AND ELEVATIONS FOR THIS PROJECT. LIKEWISE, THE MATERIALS OF ALL FLUE PIPING AND DIRECT VENT COMBUSTION AIR PIPING SHALL BE AS REQUIRED BY THE MANUFACTURER OF THE GAS-FIRED EQUIPMENT THE PIPING IS CONNECTED TO. FLUE PIPING SHALL BE INSTALLED PER CODE.

W. MANUFACTURERS' NAMES, MODEL NUMBERS, OR SPECIFIC PRODUCT LINES LISTED IN THE DRAWINGS ARE GIVEN ONLY TO INDICATE THE BASIS OF DESIGN. UNLESS OTHERWISE INDICATED IN SPECIFICATIONS, ANY PRODUCT MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS MAY BE SUBMITTED FOR APPROVAL.

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FLORIDA STATE UNIVERSITY
FSU INSPIRE
PANAMA CITY, FLORIDA

REVISION HISTORY

△	DESCRIPTION	DATE

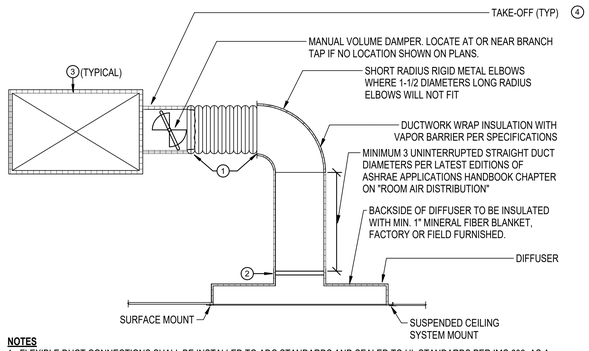
PROJECT INFORMATION

DESIGNED BY: CCJ	REVIEWED BY: CLF
DRAWN BY: CCJ	PROJECT MANAGER: LL

PROJECT NUMBER: FSB2026-176-00
SHEET TITLE: **LEGEND & ABBREVIATIONS**
ISSUE DATE: AUGUST 6,2026
SHEET NUMBER: M-001

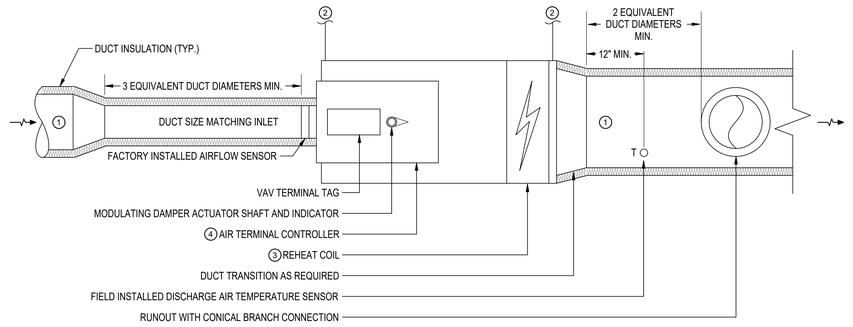
50% CONSTRUCTION DOCUMENTS

1 1/2" = 1'-0" | 1" = 1'-0" | 3/4" = 1'-0" | 1/2" = 1'-0" | 3/8" = 1'-0" | 1/4" = 1'-0" | 3/16" = 1'-0" | 1/8" = 1'-0" | 3/32" = 1'-0" | 1/16" = 1'-0"



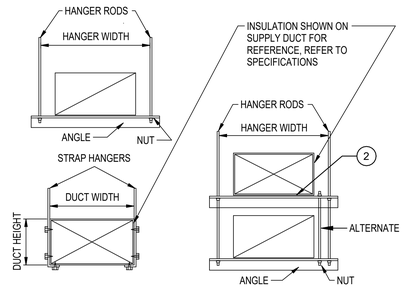
NOTES
1. FLEXIBLE DUCT CONNECTIONS SHALL BE INSTALLED TO ADC STANDARDS AND SEALED TO UL STANDARDS PER IMC 603. AS A MINIMUM, THE CONTRACTOR SHALL SECURE THE FLEXIBLE DUCT TO ENDS OF METAL DUCT WITH DRAWBANDS, AND WRAP 3" WIDE ALUMINUM TAPE AROUND DRAWBAND AND EXPOSED END OF FLEXIBLE DUCT INSULATION. FLEXIBLE DUCT SHALL BE LIMITED TO 5'0" MAX LENGTH AND INSTALLED FULLY EXTENDED.
2. PROVIDE SQUARE AND ROUND TRANSITIONS AS REQUIRED AT DIFFUSER NECKS.
3. ALL DISCONTINUITIES CREATED IN INSULATION AS A RESULT OF CONSTRUCTION SHALL BE SEALED TO MAINTAIN COMPLETE VAPOR BARRIER INTEGRITY.
4. REFER TO SPECIFICATIONS FOR TYPE OF TAKE-OFF REQUIRED.

1 TYPICAL CEILING DIFFUSER INSTALLATION DETAIL
SCALE: NTS



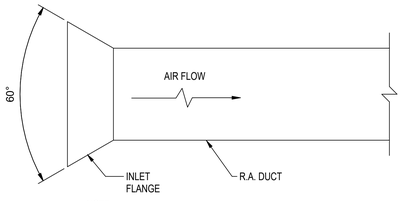
NOTES:
1. REFER TO FLOOR PLANS FOR DUCT SIZES UPSTREAM AND DOWNSTREAM OF AIR TERMINAL UNIT.
2. SUPPORT VAV TERMINAL UNIT INDEPENDENTLY OF DUCTWORK PER MANUFACTURER'S INSTRUCTIONS.
3. ELECTRIC SCR REHEAT COIL.
4. MAINTAIN MINIMUM 30" CLEARANCE IN FRONT OF CONTROL PANEL ENCLOSURE.

2 ELECTRIC VAV TERMINAL UNIT INSTALLATION DETAIL
SCALE: NTS



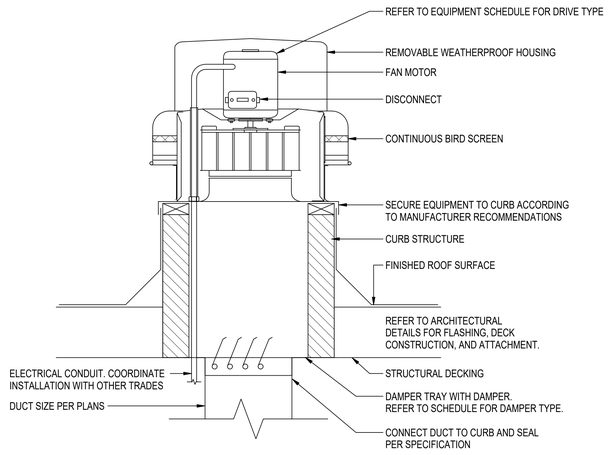
NOTES:
1. INSTALL ALL DUCT HANGERS PER THE MOST RECENT SMACNA DUCT CONSTRUCTION STANDARDS.
2. PROVIDE HIGH DENSITY INSERT AT TRAPEZE FOR INSULATED DUCTS.

3 TYPICAL RECTANGULAR DUCT HANGERS DETAIL
SCALE: NTS

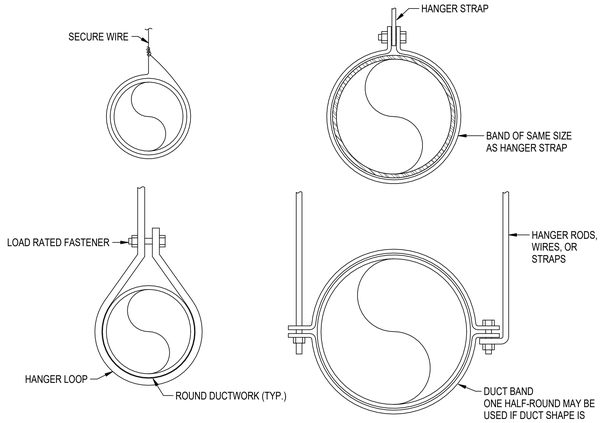


NOTE:
TYPICAL FOR ALL RETURN AIR INLETS NOT EQUIPPED WITH RETURN AIR GRILLES OR REGISTERS.

4 TYPICAL BELLMOUTH INLET DETAIL
SCALE: NTS

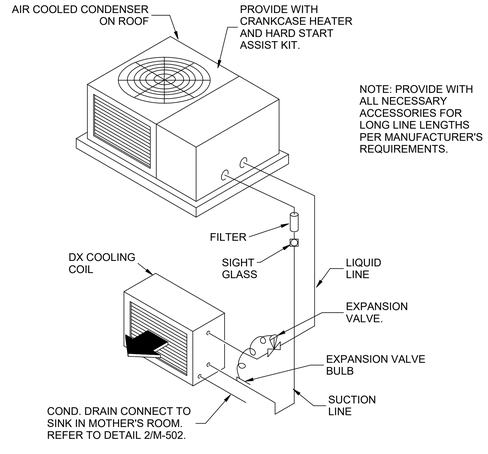


5 DOWNBLAST POWERED ROOF VENTILATOR INSTALLATION DETAIL
SCALE: NTS



NOTES:
1. STRAPS ARE GALV. STEEL; RODS ARE GALV. STEEL; WIRE IS GALV. STEEL; ALL ARE ALTERNATIVES.
2. INSTALL ALL DUCT HANGERS PER THE MOST RECENT SMACNA DUCT CONSTRUCTION STANDARDS.
3. HANGERS MUST NOT DEFORM DUCT SHAPE.
4. PROVIDE HANGER BANDS OF LARGER SIZE OR RODS WITH ENOUGH ADJUSTMENT LENGTH TO ALLOW INSERTION OF HIGH DENSITY INSULATION FOR INSULATED DUCTS AND CONTINUITY OF VAPOR BARRIER WHERE APPLICABLE AT EACH HANGER SUPPORT.

6 TYPICAL ROUND DUCT HANGER
SCALE: NTS



7 TYPICAL SPLIT DX UNIT PIPING DETAIL
SCALE: NTS

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FLORIDA STATE UNIVERSITY
FSU INSPIRE
PANAMA CITY, FLORIDA

REVISION HISTORY

△	DESCRIPTION	DATE

PROJECT INFORMATION

DESIGNED BY:	REVIEWED BY:
CCJ	CLF
DRAWN BY:	PROJECT MANAGER:
CCJ	LL

PROJECT NUMBER: FSB2026-176-00
SHEET TITLE: **MECHANICAL DETAILS**
ISSUE DATE: AUGUST 6,2026
SHEET NUMBER: M-501

50% CONSTRUCTION DOCUMENTS

1: 0 3" 6" 9" — 3" = 1'-0"
2: 0 6" 1' 1'-6" — 1 1/2" = 1'-0"
2: 0 6" 1' 2' — 1" = 1'-0"
2: 0 1' 2' 3' — 3/4" = 1'-0"
3: 0 1' 2' 4' — 1/2" = 1'-0"
3: 0 2' 4' 6' — 3/8" = 1'-0"
4: 0 2' 4' 8' — 1/4" = 1'-0"
4: 0 4' 8' 12' — 3/16" = 1'-0"
5: 0 4' 8' 16' — 1/8" = 1'-0"
5: 0 8' 16' 24' — 3/32" = 1'-0"
5: 0 8' 16' 32' — 1/16" = 1'-0"

CFCI - AIR HANDLING UNIT SCHEDULE

MARK	TONNAGE	REFRIGERANT	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	ESP (IN. W.C.)	BHP	EAT BD/WB	LAT DB/WB	TOTAL GROSS CAP.	MIN. SENSIBLE CAP.	EFFICIENCY	REHEAT TYPE	REHEAT CAP.	INPUT GAS HEAT (MBH)	OUTPUT GAS HEAT (MBH)	V/ϕ/HZ	MCA	MOCP	MANUFACTURER	MODEL	NOTES
AHU-1																					
AHU-2																					
AHU-3																					
AHU-4																					

MINI-SPLIT INDOOR UNIT SCHEDULE

MARK	LOCATION	COOLING CAPACITY (KW)	HEATING CAPACITY (MBH)	MAX CFM	ELECTRICAL DATA		BASIS OF DESIGN		NOTES
					V / Φ / HZ	MOCP	MFT	MODEL	
		7.0	N/A	1177	208/1/60	15	VERTIV	WLM070A	ALL

NOTES:
1. CONTRACTOR SHALL VERIFY UNIT WIRE SIZING AMPS (MCA) AND FULL LOAD AMPS (FLA) WITH LISTED MANUFACTURER.
2. REFRIGERANT TYPE : R-32.
3. PROVIDE FIELD INSTALLED DISCONNECT SWITCH.
4. POWERED INDEPENDENT OF OUTDOOR UNIT.
5. NOT USED.
6. PROVIDE INTEGRAL SNMP COMM CARD FOR MONITORING UNIT.

MINI-SPLIT OUTDOOR UNIT SCHEDULE

MARK	LOCATION	SERVICE	ELECTRICAL DATA			BASIS OF DESIGN		NOTES
			V / Φ / HZ	FLA	MCA	MFT	MODEL	
	ROOF	IDU-1	208 / 1 / 60	23	28	VERTIV	CUL070-E000A	ALL

NOTES:
1. PROVIDE FIELD INSTALLED DISCONNECT SWITCH.
2. PROVIDE LONG LENGTH LINE KIT.
3. PROVIDE LOW AMBIENT KIT.

VAV AIR TERMINAL SCHEDULE

MARK	INLET SIZE	MAX AIRFLOW (CFM)	MIN. AIRFLOW (CFM)	LAT (°F)	ELECTRICAL DATA				BASIS OF DESIGN		NOTES
					KW	MCA	MOCP	V / Ø / Hz	MFT	MODEL	

NOTES:
1. EXISTING VAV TERMINAL UNIT. SCHEDULED FOR REFERENCE ONLY.
2. DOUBLE WALL VAV BOX CONSTRUCTION
3. FACTORY INSTALLED DISCONNECT SWITCH
4. MAX RADIATED NOISE LEVEL SHALL BE 30 NC
5. SCR ELECTRIC HEATING COIL

AIR TERMINAL SCHEDULE

MARK	SERVICE	TYPE	MAX CFM	FACE SIZE (IN.)	NECK SIZE (IN.)	NC	BASIS OF DESIGN
							MFT
	SUPPLY	PLAQUE DIFFUSER	120	24"X24"	6"	<30	TITUS
	SUPPLY	PLAQUE DIFFUSER	400	24"X24"	10"	<30	TITUS
	SUPPLY	LINEAR SLOT	45 CFM/FT	36"X2.75" - 1" SLOT	6"	<20	TITUS
	SUPPLY	DUCT MOUNTED	425	12"X10"	PER MFT	<30	TITUS
	SUPPLY	WALL MOUNTED	425	12"X10"	PER MFT	<30	TITUS
	RETURN	EGG CRATE	650	24"X12"	N/A	<30	TITUS
	RETURN	LINEAR SLOT	70 CFM/FT	48"X4.75" SLOT	N/A	<30	TITUS
	EXHAUST	WALL MOUNTED	300	12"X12"	N/A	<30	TITUS
	SUPPLY	WALL MOUNTED	850	14"X14"	PER MFT	<30	TITUS
	RETURN	EGG CRATE	3000	24"X24"	N/A	<30	TITUS
	TRANSFER	WALL MOUNTED	1500	PER MFT	20"X20"	<30	TITUS
	TRANSFER	WALL MOUNTED	2500	30"X18"	N/A	<30	TITUS

NOTES:
1. PROVIDE INSULATION BLANKET ON TOP OF DIFFUSER.
2. MATERIAL IS STEEL. ALUMINUM MAY BE SUBSTITUTED.
3. FINISH SHALL MATCH CEILING GRID COLOR.
4. PROVIDE MANUFACTURER'S INSULATED PLENUM BOX ABOVE LINEAR SLOT SUPPLY DIFFUSER.
5. RETURN HOOD/LIGHT SHIELD FOR RETURN AIR LINEAR SLOT DIFFUSERS
6. FINISH SHALL MATCH WALL COLOR. IF A CLOSE MATCH TO THE WALL COLOR IS UNAVAILABLE, CONTACT EOR.

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DRAWN BY:	PROJECT MANAGER:
CCJ	LL

PROJECT NUMBER: FSB2026-176-00

SHEET TITLE: MECHANICAL SCHEDULES

ISSUE DATE: AUGUST 6,2026

SHEET NUMBER: M-701

50% CONSTRUCTION DOCUMENTS

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ANALOG INPUT DEVICES

- T — DUCT TEMPERATURE SENSOR (PROBE TYPE)
- T — DUCT TEMPERATURE SENSOR (AVERAGING TYPE)
- T — AMBIENT (OUTSIDE) AIR TEMPERATURE SENSOR
- TC — ZONE THERMOSTAT (TEMPERATURE CONTROLLER)
- TS — ZONE TEMPERATURE SENSOR
- H — DUCT RELATIVE HUMIDITY SENSOR
- HC — ZONE HUMIDISTAT (HUMIDITY CONTROLLER)
- HS — ZONE HUMIDITY SENSOR
- SPT — DUCT STATIC PRESSURE TRANSMITTER
- DPT — DIFFERENTIAL PRESSURE TRANSMITTER
- AMS — AIRFLOW MEASURING STATION FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED BY SHEETMETAL CONTRACTOR.
- CO — ZONE CARBON MONOXIDE SENSOR
- CO_2 — DUCT CARBON DIOXIDE SENSOR
- CO_2 — ZONE CARBON DIOXIDE SENSOR
- T — PIPE TEMPERATURE SENSOR FURNISHED, WIRED, AND INSTALLED BY THE BAS CONTRACTOR, THERMAL WELL INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.
- DPT — DIFFERENTIAL PRESSURE TRANSMITTER FOR WET MEDIA FURNISHED, WIRED, AND INSTALLED BY THE BAS CONTRACTOR MECHANICAL CONTRACTOR TO PROVIDE ISOLATION VALVES AND PIPE/TUBING.
- FM — HYDRONIC FLOW METER (INSERTION TYPE) FURNISHED, WIRED AND INSTALLED BY THE BAS CONTRACTOR, MECHANICAL CONTRACTOR TO PROVIDE ISOLATION VALVE AND TAP IN PIPING.
- FM — HYDRONIC FLOW METER (INLINE TYPE) FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR.
- REF — ZONE REFRIGERANT SENSOR
- LT — LIQUID LEVEL TRANSMITTER (PROBE TYPE)
- LT — LIQUID LEVEL TRANSMITTER (ULTRASONIC TYPE)
- VT — VIBRATION TRANSMITTER FURNISHED BY EQUIPMENT MANUFACTURER, INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY THE BAS CONTRACTOR.
- LC — LEVEL CONTROLLER (FLOAT TYPE)

DIGITAL INPUT DEVICES

- LLT — LOW LIMIT TEMPERATURE SWITCH (FREEZE STAT) WITH MANUAL RESET
- A LLT — LOW LIMIT TEMPERATURE SWITCH (FREEZE STAT) WITH AUTOMATIC RESET
- HSP — HIGH LIMIT STATIC PRESSURE SWITCH WITH MANUAL RESET
- LSP — LOW LIMIT STATIC PRESSURE SWITCH WITH MANUAL RESET
- OCC — OCCUPANCY SENSOR (LIGHTING CIRCUIT) FURNISHED, AND WIRED BY THE BAS CONTRACTOR, INSTALLED BY THE ELECTRICAL CONTRACTOR
- CS — CURRENT SWITCH
- ES — END SWITCH FURNISHED, INSTALLED, AND WIRED BY THE BAS CONTRACTOR UNLESS SPECIFIED
- DPS — FILTER DIFFERENTIAL PRESSURE SWITCH FURNISHED, INSTALLED, AND WIRED BY THE BAS CONTRACTOR
- W DPS — DIFFERENTIAL PRESSURE SWITCH FOR WET MEDIA FURNISHED, WIRED, AND INSTALLED BY THE BAS CONTRACTOR; MECHANICAL CONTRACTOR TO PROVIDE PRESSURE TUBING AND ISOLATION VALVES
- FS — AIRFLOW FLOW SWITCH
- FS — HYDRONIC FLOW SWITCH
- OCC — WALL MOUNTED ROOM OCCUPANCY SWITCH
- MS — MOISTURE SENSOR (ROPE TYPE)
- OS — DRAIN PAN OVERFLOW SWITCH (FLOAT TYPE)
- VS — VIBRATION SWITCH FURNISHED BY EQUIPMENT MANUFACTURER, INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY THE BAS CONTRACTOR
- EPB — EMERGENCY PUSH BUTTON SWITCH
- LS — LEVEL SWITCH (FLOAT TYPE)

OUTPUT DEVICES

- MA — ELECTRIC (MOTORIZED) ACTUATOR FOR DAMPERS & VALVES
- MA — 2-WAY GLOBE CONTROL VALVE WITH ELECTRIC ACTUATOR FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED IN PIPING BY THE MECHANICAL CONTRACTOR
- MA — 3-WAY GLOBE CONTROL VALVE WITH ELECTRIC ACTUATOR FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED IN PIPING BY THE MECHANICAL CONTRACTOR
- MA — 2-WAY BALL VALVE WITH ELECTRONIC ACTUATOR FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED IN PIPING BY THE MECHANICAL CONTRACTOR
- MA — 3-WAY BALL VALVE WITH ELECTRONIC ACTUATOR FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED IN PIPING BY THE MECHANICAL CONTRACTOR
- MA — 2-WAY BUTTERFLY CONTROL VALVE WITH ELECTRONIC ACTUATOR FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED IN PIPING BY THE MECHANICAL CONTRACTOR
- MA — 3-WAY MECHANICALLY LINKED BUTTERFLY CONTROL VALVE WITH ELECTRIC ACTUATOR FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED IN PIPING BY THE MECHANICAL CONTRACTOR
- S MA — SMOKE DAMPER ACTUATOR FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR, WIRED BY THE BAS CONTRACTOR
- F/S MA — COMBINATION FIRE/SMOKE DAMPER ACTUATOR FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR, WIRED BY THE BAS CONTRACTOR
- AMS — AIRFLOW MEASURING STATION WITH INTEGRAL CONTROL DAMPER FURNISHED AND WIRED BY THE BAS CONTRACTOR, INSTALLED BY THE MECHANICAL CONTRACTOR
- H — AUDIBLE HORN FURNISHED AND INSTALLED BY THE BAS CONTRACTOR
- STR — VISUAL STROBE FUNISHED AND INSTALLED BY THE BAS CONTRACTOR

OTHER CONTROL DEVICES

- DDC — DIRECT DIGITAL CONTROL (DDC) PANEL FURNISHED AND INSTALLED BY THE BAS CONTRACTOR. POWER WIRING TO DDC PANEL BY ELECTRICAL CONTRACTOR
- RT — REMOTE TRANSMITTER

PNEUMATIC CONTROL LEGEND AND DEVICES

- PNEUMATIC CONTROL TUBING
- PA — PNEUMATIC ACTUATOR FOR DAMPERS & VALVES
- EP — ELECTRO-PNEUMATIC SWITCH

LEGEND

- CONTROL AND INTERLOCK WIRING
- BAS COMMUNICATION WIRING
- THREE PHASE POWER WIRING; FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- SINGLE PHASE POWER WIRING; FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- FAIL CLOSED (POWER TO OPEN) CONTACT RELAY
- FAIL OPEN (POWER TO CLOSED) CONTACT RELAY
- FC — FAIL SAFE POSITION CLOSED (POWER TO OPEN)
- FO — FAIL SAFE POSITION OPEN (POWER TO CLOSE)
- FL — FAIL LAST POSITION
- NC — NORMALLY CLOSED (E.G. CONTACT STATUS)
- NO — NORMALLY OPEN (E.G. CONTACT STATUS)
- E-PWR — EMERGENCY ELECTRICAL POWER
- ILK — INTERLOCK

DIRECT DIGITAL CONTROL (DDC) POINT TYPES

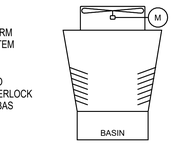
- AI — ANALOG INPUT
- DI — DIGITAL INPUT
- AO — ANALOG OUTPUT
- DO — DIGITAL OUTPUT

CONTROL DEVICES BY OTHERS

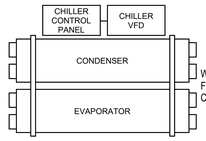
- PARALLEL BLADE CONTROL DAMPER FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
- OPPOSED BLADE CONTROL DAMPER FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
- PLENUM FAN INLET BELL HOUSING AIRFLOW MEASURING STATION (PIEZOMETER RINGS) FURNISHED AND INSTALLED BY FAN MANUFACTURER
- FAR — FIRE ALARM PROGRAMMABLE RELAY (FAR) FURNISHED, INSTALLED, AND PROGRAMMED BY FIRE ALARM CONTRACTOR. FAR SHALL BE LOCATED IN SAME ROOM AS HVAC EQUIPMENT SERVED PER NFPA. ALL WIRING FROM FAR TO FIRE ALARM SYSTEM BY FIRE ALARM CONTRACTOR. INTERLOCK WIRING FROM FAR TO DDC PANEL BY BAS CONTRACTOR
- DSD — DUCT MOUNTED SMOKE DETECTOR FURNISHED, INSTALLED, AND WIRED BY FIRE ALARM CONTRACTOR AS PART OF THE FIRE ALARM SYSTEM
- VFD — VARIABLE FREQUENCY DRIVE REFER TO SCHEDULE'S FOR RESPONSIBILTIES TO FURNISH AND INSTALL DRIVE, CONTROL AND INTERLOCK WIRING TO DDC PANEL AND OTHER DEVICES BY BAS CONTRACTOR
- MS — MOTOR STARTER REFER TO SCHEDULE'S FOR RESPONSIBILITIES TO FURNISH AND INSTALL STARTER, CONTROL AND INTERLOCK WIRING WIRING TO DDC PANEL BY BAS CONTRACTOR

MECHANICAL EQUIPMENT AND SYSTEMS

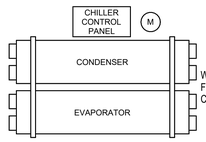
- SUPPLY/RELIEF/EXHAUST AIR DUCTWORK FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
- RETURN/OUTDOOR AIR DUCTWORK FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
- HTG — HYDRONIC HEATING COIL FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AS PART OF EQUIPMENT
- CLG — HYDRONIC COOLING COIL FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AS PART OF EQUIPMENT
- EH — ELECTRIC DUCT HEATING COIL FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
- DX — DIRECT EXPANSION REFRIGERANT COOLING COIL FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AS PART OF EQUIPMENT
- FIL — AIR FILTER BANK FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AS PART OF EQUIPMENT
- M — ELECTRIC MOTOR FURNISHED BY EQUIPMENT MANUFACTURER AND INSTALLED BY MECHANICAL CONTRACTOR AS PART OF EQUIPMENT
- M — PLENUM FAN FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AS PART OF EQUIPMENT
- M — BLOWER FAN FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AS PART OF EQUIPMENT
- M — EXHAUST FAN (DOWNBLAST) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
- M — EXHAUST FAN (UPBLAST) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
- M — PUMP FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR



EVAPORATIVE COOLING TOWER (INDUCED DRAFT) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE



WATER COOLED CHILLER (PACKAGED VFD) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE



WATER COOLED CHILLER (REMOTE STARTER / VFD) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE

GENERAL NOTES APPLICABLE TO ALL CONTROL DIAGRAMS

1. ALL CONTROL DEVICES SHOWN ON THE CONTROL DIAGRAMS ARE FURNISHED, INSTALLED, AND WIRED BY THE BAS CONTRACTOR UNLESS OTHERWISE SPECIFIED OR NOTED.
2. ALL COMPONENTS, MATERIALS, AND LABOR REQUIRED FOR A FULLY FUNCTIONING SYSTEM AS DEFINED BY THE SEQUENCES OF OPERATION, SHOWN ON THE CONTROL DIAGRAMS, AND DESCRIBED IN THE SPECIFICATIONS SHALL BE PROVIDED BY THE BAS CONTRACTOR UNLESS OTHERWISE NOTED, SHOWN, OR SPECIFIED.
3. BAS CONTRACTOR IS RESPONSIBLE FOR FURNISHING, INSTALLING, AND WIRING ALL COMPONENTS REQUIRED FOR INTEGRATION OF INFORMATION SHOWN TO BE ACCESSED BY THE BAS FROM OTHER SYSTEMS AND EQUIPMENT UNLESS OTHERWISE NOTED OR SPECIFIED.
4. ALL POWER WIRING AND TRANSFORMERS FOR SENSORS, ACTUATORS, AND OTHER CONTROL COMPONENTS AS REQUIRED FOR THE BAS TO FUNCTION PROPERLY, SHALL BE FURNISHED AND INSTALLED BY THE BAS CONTRACTOR UNLESS OTHERWISE SHOWN, NOTED, OR SPECIFIED. COORDINATE WITH ELECTRICAL CONTRACTOR.
5. ALL POWER WIRING FOR SENSORS, ACTUATORS, AND OTHER CONTROL DEVICES SHALL BE FROM THE DDC PANEL OR THE EQUIPMENT PANEL OF THE ASSOCIATED SYSTEM. BAS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING/COORDINATING POWER WIRING TO DEVICES FROM DDC PANELS AND EQUIPMENT PANELS.
6. POWER WIRING (PWR) FROM POWER SOURCE TO DDC AND EQUIPMENT PANELS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED ON DRAWINGS.
7. ALL CONTROL, INTERLOCK, AND POWER WIRING SHALL BE INSTALLED PER THE ELECTRICAL SPECIFICATION, LOCAL, STATE, AND NATIONAL CODES. RACEWAY AND CONDUIT SHALL BE INSTALLED PER THE ELECTRICAL SPECIFICATION.
8. ALL CONTROL AND INTERLOCK WIRING SHALL BE RAN INSIDE OF CONDUIT OR OTHER RACEWAY. ENSURE CONDUIT'S AND RACEWAY'S LOCATED IN PLENUMS ARE PLENUM RATED.
9. ALL CONTROL POINTS SHOWN ON THE CONTROL DIAGRAMS SHALL BE PROVIDED AND INTEGRATED INTO A BAS SYSTEM GRAPHIC REPRESENTATIVE OF THE CONTROL DIAGRAMS.
10. ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, ALARM LIMITS, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE BAS AND THE SYSTEM SHALL BE COMMISSIONED BY THE BAS CONTRACTOR.
11. SPACE SETPOINTS SHALL BE ADJUSTABLE FROM THE ROOM SENSOR UNLESS OTHERWISE SHOWN ON DRAWINGS OR SPECIFIED.
12. THE BAS GRAPHICS SHALL BE LINKED WITH ASSOCIATED BUILDING FLOOR PLANS FROM THE SPACE SENSOR OR AREA SERVED.
13. ALL GRAPHICS SHALL CONTAIN A LINK TO THEIR ASSOCIATED WRITTEN SEQUENCE OF OPERATIONS.
14. WHERE ONE SYSTEM IS ASSOCIATED WITH ANOTHER SYSTEM, THE SYSTEM GRAPHIC SHALL BE LINKED TO THE ASSOCIATED GRAPHIC AS WELL AS THE BUILDING FLOOR PLAN GRAPHIC, E.G. AN AIR HANDLING UNIT SYSTEM GRAPHIC SHALL BE LINKED TO THE CHILLED WATER SYSTEM GRAPHIC IN ADDITION TO BOTH BEING LINKED TO THE BUILDING FLOOR PLAN.
15. THE BUILDING FLOOR PLAN SHALL DISPLAY THE SPACE TEMPERATURE AT EACH SPACE SENSOR LOCATION WITH AREA SERVED DISPLAYED IN SEPARATE COLORS BASED ON THE CONDITION OF THE ZONE, E.G. ALARM, NORMAL, HIGH OR LOW TEMPERATURE, HIGH OR LOW HUMIDITY, ETC.
16. ALL BUILDING FLOOR PLANS AND SYSTEM GRAPHICS SHALL DISPLAY OUTSIDE AIR TEMPERATURE AND HUMIDITY.
17. ALL GRAPHICS SHALL BE SUBMITTED IN COLOR. GRAPHICS SUBMITTAL PACKAGE MAYBE SEPARATE FROM PRODUCT DATA, SEQUENCES, AND DIAGRAMS SUBMITTAL. FOR EXAMPLE, A STAGE ONE SUBMITTAL MAY OCCUR EARLY DURING CONSTRUCTION THAT CONTAINS PRODUCT DATA, SEQUENCES, DIAGRAMS, ETC. AND A STAGE 2 SUBMITTAL THAT CONTAINS GRAPHICS FOR EACH PIECE OF EQUIPMENT / SYSTEM MAY OCCUR AFTER EQUIPMENT AND BAS SYSTEM'S ARE INSTALLED AND OPERABLE. FAILURE TOO INCLUDE ALL GRAPHICS IN SUBMITTAL SHALL BE CAUSE FOR REJECTION OF COMPLETE SUBMITTAL.
18. PRIOR TO FINAL CLOSEOUT DOCUMENTS BEING ISSUED, THE BAS CONTRACTOR SHALL BE REQUIRED TO COORDINATE WITH THE OWNER AND ARCHITECT/ENGINEER TO REVIEW BAS FUNCTIONALITY AND GRAPHICS.
19. SYMBOLS USED IN THE LEGEND ARE INCLUDED FOR REFERENCE AND MAY NOT ALL BE USED ON THIS SPECIFIC PROJECT.
20. GLOBAL DDC SYSTEM POINTS ARE DEFINED AS SINGLE POINT USED IN ALL SYSTEMS IN A BUILDING OR CAMPUS TO MAINTAIN CONSISTENCY OF CONTROL ACTIONS THROUGHOUT THE BUILDING OR CAMPUS. EXAMPLE - OUTSIDE AIR TEMPERATURE POINT SAMPLED ON THE NORTH SIDE OF A BUILDING USED TO ENABLE/DISABLE AIRSIDE ECONOMIZER OPERATION THROUGHOUT THE BUILDING OR CAMPUS.
21. ALL GRAPHICS SHALL CONTAIN VISUAL INDICATORS FOR ALARMS AND OPERATOR OVERRIDES. A DAILY REPORT OF ALL OPERATOR OVERRIDES SHALL BE AUTOMATICALLY RAN AT 6:00 A.M. AND LOGGED WITH A LINK TO THE LOG ON THE HOME GRAPHIC SCREEN.

INSPIRE

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DESIGNED BY: CCJ	REVIEWED BY: CLF
DRAWN BY: CCJ	PROJECT MANAGER: LL

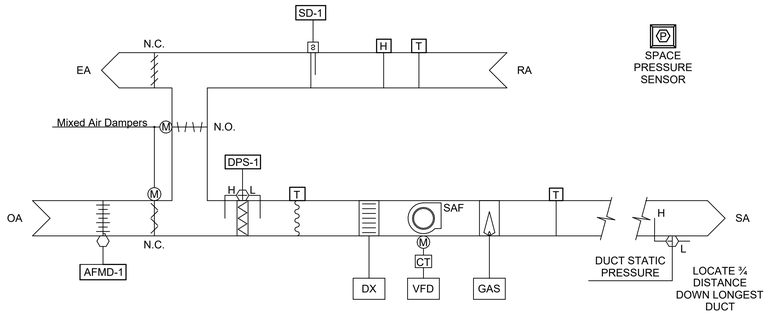
PROJECT NUMBER: FSB2026-176-00

SHEET TITLE: **MECHANICAL CONTROLS**

ISSUE DATE: AUGUST 6,2026

SHEET NUMBER: M-801

50% CONSTRUCTION DOCUMENTS



SEQUENCE OF CONTROL (RTU-03, RTU-04, RTU-06)

GENERAL: UNITARY CONTROLS SHALL BE ENABLED BY THE DDC CONTROL SYSTEM. RTU SHALL OPERATE AS REQUIRED BY THE UNITARY CONTROL SYSTEM. STATUS OF RTU SHALL BE MONITORED BY THE DDC CONTROL SYSTEM FROM THE DDC CONTROL PANEL.

WHEN RTU IS ENABLED, UNIT CONTROLS SHALL MODULATE UNIT COOLING AND HEATING AS REQUIRED TO MAINTAIN 55°F LEAVING AIR TEMPERATURE, WITH A 2°F DEADBAND BETWEEN HEATING AND COOLING OPERATION. SUPPLY FAN SHALL OPERATE BASED ON DUCT STATIC PRESSURE.

BUILDING PRESSURE: RELIEF DAMPERS SHALL MODULATE TO MAINTAIN SPACE PRESSURE SENSOR AT +0.04" WC

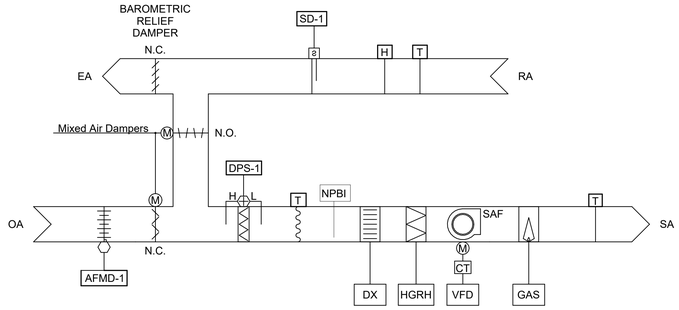
ECONOMIZER CONTROL: RTU PACKAGED CONTROLS SHALL MONITOR OUTSIDE AIR TEMPERATURE AS SENSED BY TS-2 AND RELATIVE HUMIDITY AS SENSED BY HS-1 FOR COMPARATIVE ENTHALPY CALCULATION. WHEN THE OUTDOOR AIR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY, THE OUTSIDE AIR DAMPER WILL MODULATE IN ACCORDANCE WITH THE OPERATION OF THE COOLING COIL TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT AS REQUIRED BY THE PACKAGED UNIT CONTROLLER. WHEN THE OUTDOOR ENTHALPY IS GREATER THAN THE RETURN AIR ENTHALPY, THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE MINIMUM REQUIRED OUTSIDE AIR FLOW AS SENSED BY AIRFLOW MEASURING DEVICE, AMD-1

DIRTY FILTER MONITORING: UNIT FILTER SHALL BE MONITORED BY RTU-02 PACKAGED CONTROLS. A SIGNAL SHALL BE SENT TO THE DDC CONTROL SYSTEM UPON A CALL FOR FILTER CHANGE.

SMOKE DETECTOR SHUTDOWN: THE UNIT SHALL SHUT DOWN IN RESPONSE TO A SIGNAL FROM THE SMOKE DETECTOR INDICATING THE PRESENCE OF SMOKE. THE SMOKE DETECTOR SHALL BE INTERLOCKED TO THE UNIT. UPON SHUTDOWN DUE TO SMOKE, A SIGNAL SHALL NOTIFY THE FIRE ALARM PANEL. A MANUAL RESET OF THE SMOKE DETECTOR SHALL BE REQUIRED TO RESTART THE UNIT.

1 RTU CONTROL DIAGRAM - MULTIZONE VAV UNIT

SCALE: 12" = 1'-0"



SEQUENCE OF CONTROL

GENERAL: UNITARY CONTROLS SHALL BE ENABLED BY THE DDC CONTROL SYSTEM. RTU SHALL OPERATE AS REQUIRED BY THE UNITARY CONTROL SYSTEM. STATUS OF RTU SHALL BE MONITORED BY THE DDC CONTROL SYSTEM FROM THE DDC CONTROL PANEL.

PACKAGED UNIT CONTROLLER SHALE COTROL HEATING AND COOLING IN SEQUENCE TO MAINTAIN THE LOCALLY ADJUSTABLE ZONE TEMPERATURE SETPOINT OF 72°F (ADJ) AS SENSED BY THE ZONE TEMPERATURE SENSOR.

DEHUMIDIFICATION: ON A RISE IN SPACE RELATIVE HUMIDTY ABOVE 60% (ADJ) AS SENSED BY THE ZONE HUMIDITY SENSOR, THE COOLING COIL OUTPUT SHALL BE INCREASED UNTIL HUMIDITY SETPOINT IS SATISIFIED. UNIT HOT GAS REHEAT VALVE SHALL MODULATE OPEN TO REHEAT COIL TO MAINTAIN ZONE TEMPERATURE SENSOR SETPOINT.

ECONOMIZER CONTROL: RTU PACKAGED CONTROLS SHALL MONITOR OUTSIDE AIR TEMPERATURE AS SENSED BY TS-2 AND RELATIVE HUMIDITY AS SENSED BY HS-1 FOR COMPARATIVE ENTHALPY CALCULATION. WHEN THE OUTDOOR AIR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY, THE OUTSIDE AIR DAMPER WILL MODULATE IN ACCORDANCE WITH THE OPERATION OF THE COOLING COIL TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT AS REQUIRED BY THE PACKAGED UNIT CONTROLLER. WHEN THE OUTDOOR ENTHALPY IS GREATER THAN THE RETURN AIR ENTHALPY, THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE MINIMUM REQUIRED OUTSIDE AIR FLOW AS SENSED BY AIRFLOW MEASURING DEVICE, AMD-1

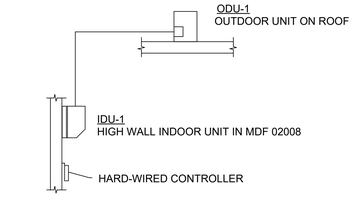
DIRTY FILTER MONITORING: UNIT FILTER SHALL BE MONITORED BY RTU-02 PACKAGED CONTROLS. A SIGNAL SHALL BE SENT TO THE DDC CONTROL SYSTEM UPON A CALL FOR FILTER CHANGE.

NEEDLEPOINT BIPOLAR IONIZATION (NPBI) UNIT SHALL OPERATE CONTINUOUSLY WHEN UNIT IS POWERED.

SMOKE DETECTOR SHUTDOWN: THE UNIT SHALL SHUT DOWN IN RESPONSE TO A SIGNAL FROM THE SMOKE DETECTOR INDICATING THE PRESENCE OF SMOKE. THE SMOKE DETECTOR SHALL BE INTERLOCKED TO THE UNIT. UPON SHUTDOWN DUE TO SMOKE, A SIGNAL SHALL NOTIFY THE FIRE ALARM PANEL. A MANUAL RESET OF THE SMOKE DETECTOR SHALL BE REQUIRED TO RESTART THE UNIT.

2 AHU CONTROL DIAGRAM - SINGLE ZONE VAV UNIT

SCALE: 12" = 1'-0"



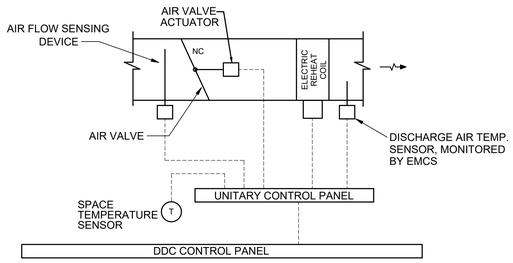
TYPICAL MINI SPLIT CONTROL SEQUENCE

CONTROL UNIT SHALL BE USED TO ENABLE/DISABLE INDOOR UNIT MICROPROCESSOR BASED CONTROL WHICH SHALL CONTROL THE OPERATION OF IDU-01.

OPERATOR MAY SELECT COOLING OPERATION, FAN ONLY OPERATION, DEHUMIDIFICATION OPERATION OR AUTO OPERATION. IN THE AUTO MODE, SYSTEM WILL AUTOMATICALLY COOL ROOM TO MEET A SELECTED SETPOINT, 75 DEG. F. (ADJ) AS SENSED BY A TEMPERATURE SENSOR LOCATED IN THE IDU.
THE CONTROLLER CAN BE UTILIZED TO ENABLE/DISABLE THE SYSTEM, SELECT OPERATING MODE, ADJUST ROOM AIR TEMPERATURE AND FAN SPEED AND SET PERIODS FOR AUTOMATIC SYSTEM OPERATION.

3 MINI-SPLIT CONTROLS

SCALE: NTS



SPACE TEMPERATURE CONTROL

ON A FALL IN SPACE TEMPERATURE BELOW SETPOINT OF 72 °F. (ADJ.), AS SENSED BY SPACE TEMPERATURE SENSOR, UNITARY CONTROLLER SHALL REDUCE UNIT SUPPLY AIR VOLUME UNTIL SETPOINT IS REACHED OR UNIT REACHES MINIMUM AIRFLOW LIMIT. ON FURTHER FALL IN SPACE TEMPERATURE BELOW SETPOINT, THE ELECTRIC REHEAT SHALL BE ENERGIZED TO MAINTAIN SPACE TEMPERATURE. ON RISE IN SPACE TEMPERATURE ABOVE SETPOINT, TERMINAL UNIT CONTROLLER SHALL INCREASE UNIT SUPPLY AIR UNTIL SETPOINT IS REACHED OR UNIT REACHES MAXIMUM AIR FLOW LIMIT.

AIRFLOW SENSING DEVICE SHALL PROVIDE PRESSURE INDEPENDENT AIR VOLUME CONTROL. WHEN AIRFLOW SENSING DEVICE INDICATES NO AIR VELOCITY, AIR VALVE SHALL CLOSE TO SUPPLY DUCT. ELECTRIC REHEAT COIL SHALL DEENERGIZE WHEN AIR VALVE IS CLOSED.

SPACE TEMPERATURE AND SENSOR SETPOINT SHALL BE MONITORED IN THE DDC CONTROL SYSTEM. SENSOR SETPOINT SHALL BE RESET BY DDC SYSTEM COMMAND. REFER TO VAV TERMINAL BOX SCHEDULE ON M-701 FOR MINIMUM AND MAXIMUM AIR CFM.

4 VAV TERMINAL BOX CONTROL DIAGRAM

SCALE: NTS

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FLORIDA STATE UNIVERSITY
FSU INSPIRE
PANAMA CITY, FLORIDA

REVISION HISTORY

△	DESCRIPTION	DATE

PROJECT INFORMATION

DESIGNED BY: CCJ	REVIEWED BY: CLF
DRAWN BY: CCJ	PROJECT MANAGER: LL

PROJECT NUMBER: FSB2026-176-00

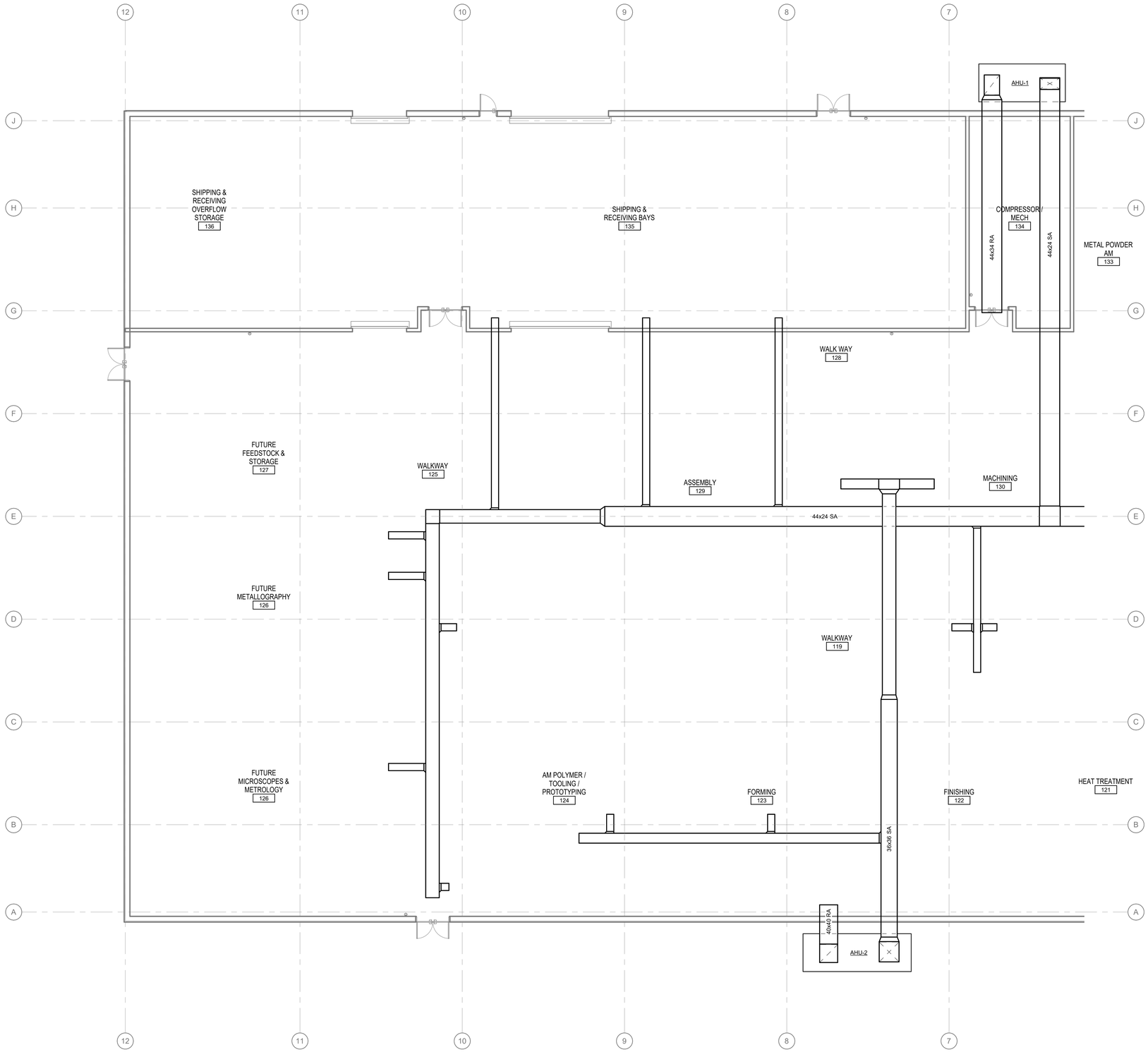
SHEET TITLE: MECHANICAL CONTROLS

ISSUE DATE: AUGUST 6,2026

SHEET NUMBER: M-802

50% CONSTRUCTION DOCUMENTS

1 3" = 1'-0" | 2 1 1/2" = 1'-0" | 3 1" = 1'-0" | 3/4" = 1'-0" | 1/2" = 1'-0" | 3/8" = 1'-0" | 1/4" = 1'-0" | 3/16" = 1'-0" | 1/8" = 1'-0" | 3/32" = 1'-0" | 1/16" = 1'-0"



1 FIRST FLOOR HVAC PLAN - SECTOR B
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

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PANAMA CITY, FLORIDA

REVISION HISTORY

△	DESCRIPTION	DATE

PROJECT INFORMATION

DESIGNED BY: CCJ	REVIEWED BY: CLF
DRAWN BY: CCJ	PROJECT MANAGER: LL

PROJECT NUMBER: FSB2026-176-00

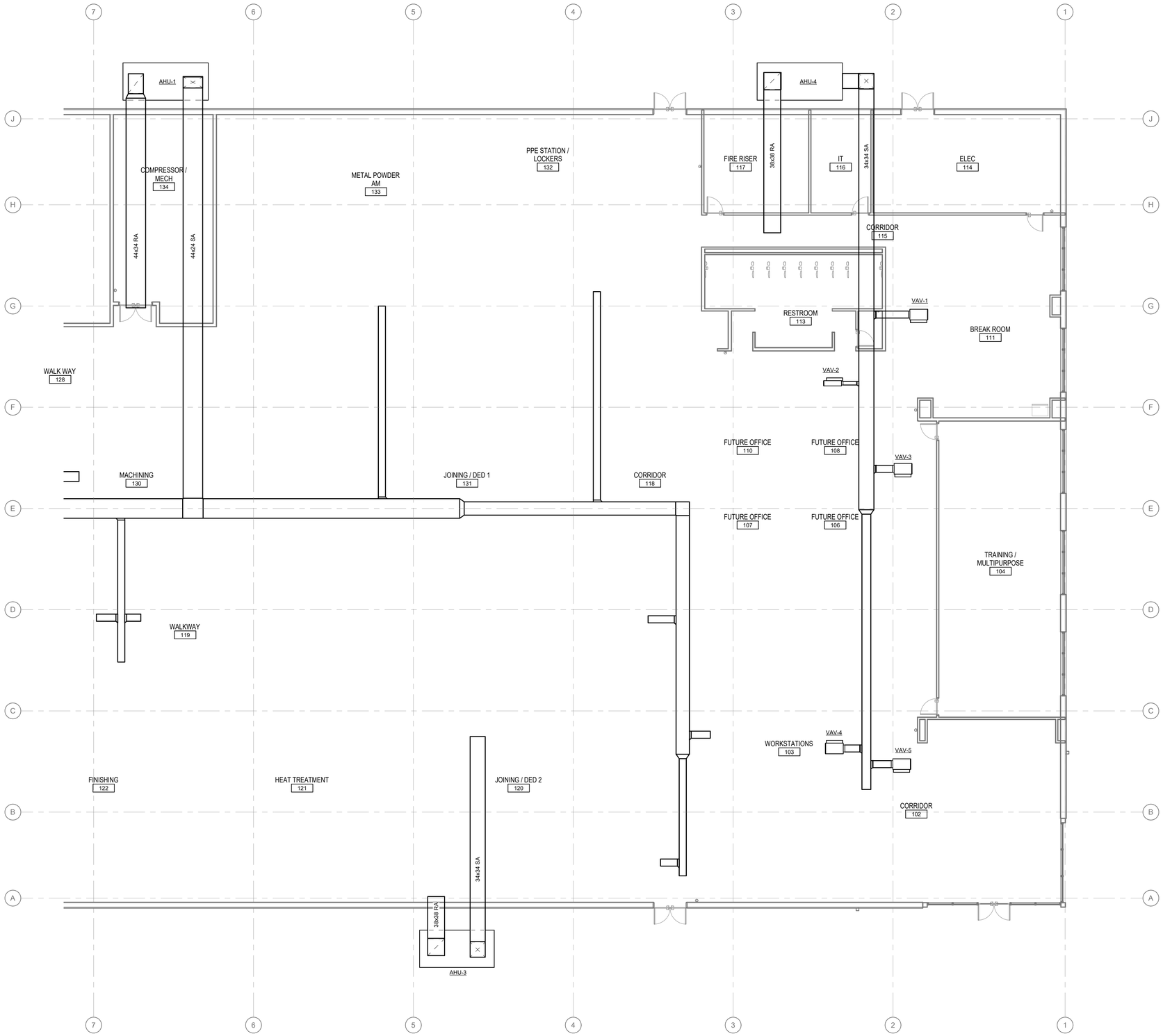
SHEET TITLE: **MECHANICAL HVAC**

ISSUE DATE: AUGUST 6,2026

SHEET NUMBER: MH101

KEYPLAN

50% CONSTRUCTION DOCUMENTS



1 FIRST FLOOR HVAC PLAN - SECTOR A
SCALE: 1/8" = 1'-0"

KEYPLAN

GENERAL SHEET NOTES

SHEET KEYNOTES

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PANAMA CITY, FLORIDA

REVISION HISTORY

△	DESCRIPTION	DATE

PROJECT INFORMATION

DESIGNED BY: CCJ	REVIEWED BY: CLF
DRAWN BY: CCJ	PROJECT MANAGER: LL

PROJECT NUMBER: FSB2026-176-00
SHEET TITLE: MECHANICAL HVAC
ISSUE DATE: AUGUST 6,2026
SHEET NUMBER: MH102

50% CONSTRUCTION DOCUMENTS