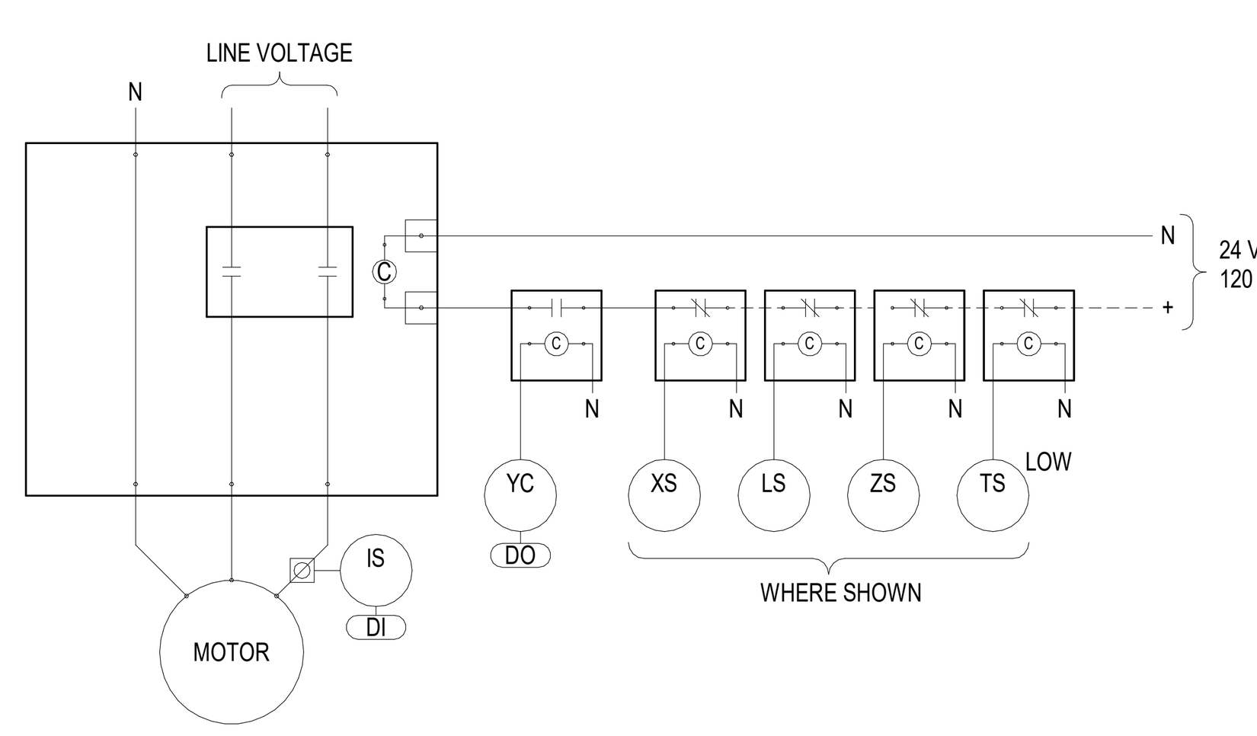
FIRESTOP SCHEDULE OF THROUGH PENETRATION SYSTEMS. BASIS OF DESIGN: HILTI, INC.

TYPE OF PENETRANT	F-RATING (HR)	CONCRETE FLOORS	CONCRETE OR BLOCK WALLS	GYPSUM WALLS	HILTI PRODUCTS
		BASIS OF DESIGN UL SYSTEM			
CIRCULAR BLANK OPENINGS (0000-0999)	1	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	CP 680, CP 618, FS-ONE MAX, CFS- BL
	2	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	
METAL PIPES OR CONDUIT (1000-1999)	1	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020	W-L-1054, W-L-1058, W-L-1164, W-L-1506	CP 680, FS-ONE MAX, CP 606, CFS-S SIL GG, CFS-D, MINERAL WOOL
	2	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020, W-J-1248	W-L-1054, W-L-1058, W-L-1164, W-L-1506	
NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT) (2000-2999)	1	F-A-2053, F-A-2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	CP 680, CP 643N, MINERAL WOOL, CP 644, FS-ONE MAX, CFS-S SIL SL, CFS-S SIL CG, CP 648
	2	F-A 2053, F-A 2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2371, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	
SINGLE OR BUNDLED CABLES (3000-3999)	1	F-A-3007, C-AJ-3095, C-AJ-3180, C-AJ-3283	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	CP 680, CP 653, FS-ONE MAX, CP 618, CP 606, CFS-D, CFS-CC
	2	F-A-3007, C-AJ-3095, C-AJ-3334, F-A-3060	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167, W-J-3189	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	
CABLE TRAY (4000-4999)	1	C-AJ-4034, C-AJ-4035	W-J-4027, C-AJ-4034, C-AJ-4035	W-L-4011, W-L-4019, W-L-4081	CFS-BL, FS-ONE MAX, CP 620, CP 618
	2	C-AJ-4034, C-AJ-4035	W-J-4027, C-AJ-4034, C-AJ-4035	W-L-4011, W-L-4019, W-L-4081	
MIXED PENETRANTS (8000-8999)	1	C-AJ-8099, C-AJ-8056, C-AJ-8143	C-AJ-8099, C-AJ-8056, W-J-8007, C-AJ-8143	W-L-1095, W-L-8013	FS-ONE MAX, CFS-BL, CP 620, CP 618
	2	C-AJ-8099, C-AJ-8056, C-AJ-8143, C-AJ-8252	C-AJ 8099, C-AJ-8056, W-J-8007, C-AJ-8143, C-AJ-8252	W-L-1095, W-L-8013	

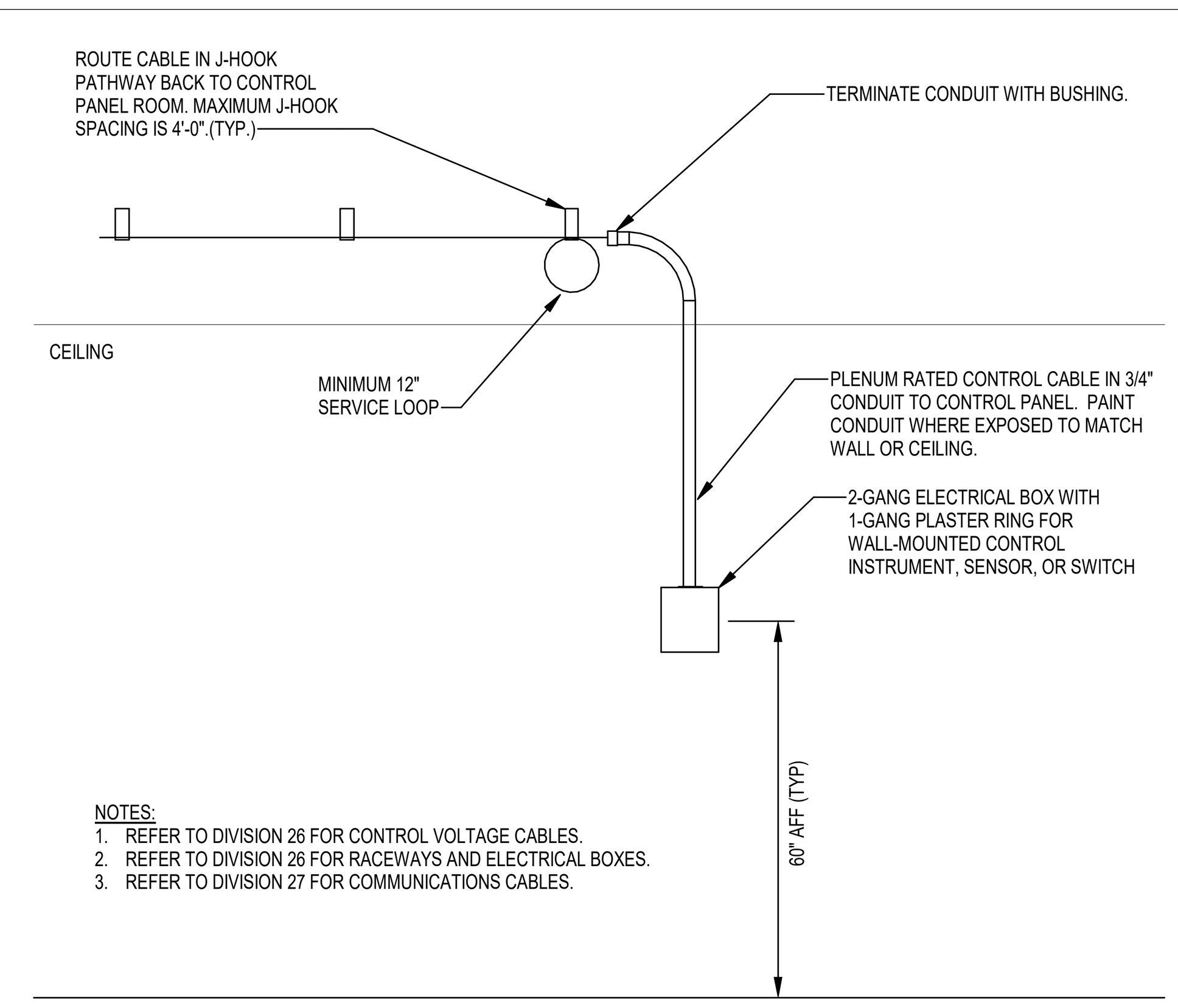
NOTES:

1. JOBSITE CONDITIONS OF EACH THROUGH-PENETRATION FIRESTOP SYSTEM MUST MEET ALL DETAILS OF THE UL-CLASSIFIED SYSTEM SELECTED.
2. IF JOBSITE CONDITIONS DO NOT MATCH ANY UL-CLASSIFIED SYSTEMS IN THE SCHEDULES ABOVE, CONTACT FIRESTOP MANUFACTURER FOR ALTERNATIVE SYSTEMS OR ENGINEER JUDGMENT DRAWINGS.
3. WHERE MORE THAN ONE APPLICABLE UL-CLASSIFIED SYSTEM IS LISTED IN THE SCHEDULES, CHOOSE THE UL SYSTEM WHICH IS MOST ECONOMICAL FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM.
4. COORDINATE WORK WITH OTHER TRADES TO ENSURE THAT PENETRATION OPENING SIZES ARE APPROPRIATE FOR PENETRANT LOCATIONS, AND VICE-VERSA.
5. ALL THROUGH-PENETRATION FIRESTOPS SHALL BE PROVIDED BY ONE MANUFACTURER. APPROVED MANUFACTURERS: HILTI, RECTORSEAL, 3M, STL.



NOTES:
1. FIELD VERIFY ALL WIRING TERMINATIONS.
2. FIELD VERIFY ALL CONNECTIONS.
3. ELECTRICAL POWER CONNECTIONS TO MOTOR BY DIVISION 26.
4. MOTOR RATED CONTACTOR, AND CONTROL COMPONENTS, AND ASSOCIATED WIRING BY DIVISION 25.

A MOTOR RATED CONTACTOR - WIRING DETAIL



NOTES:
1. REFER TO DIVISION 26 FOR CONTROL VOLTAGE CABLES.
2. REFER TO DIVISION 26 FOR RACEWAYS AND ELECTRICAL BOXES.
3. REFER TO DIVISION 27 FOR COMMUNICATIONS CABLES.

B WALL-MOUNTED CONTROL DEVICE ROUGH-IN

SYMBOLS, NOTES, ABBREVIATIONS, ETC.

IDENTIFICATION LETTERS

	FIRST - LETTER	SUCCEEDING - LETTERS	
	MEASURED OR INITIATING VARIABLE	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION
A	ANALYSIS	ALARM	.
B	BURNER, COMBUSTION	USER'S CHOICE (*)	USER'S CHOICE (*)
C	USER'S CHOICE (*)	.	CONTROL
D	USER'S CHOICE (*)	DIFFERENTIAL	.
E	VOLTAGE	SENSOR (PRIMARY ELEMENT)	.
F	FLOW RATE, FLOW	.	.
G	GAS	GLASS, VIEWING DEVICE	.
H	HAND (MANUAL)	.	.
I	CURRENT (ELECTRICAL)	INDICATE	.
J	POWER	.	.
K	TIME, SCHEDULE	.	.
L	LEVEL	LIGHT (PILOT)	.
M	MOISTURE, HUMIDITY	.	.
N	USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
O	USER'S CHOICE (*)	ORIFICE, RESTRICTION	.
P	PRESSURE, VACUUM	POINT (TEST) CONNECTION	.
Q	QUANTITY	INTEGRATE / TOTALIZE	.
R	RADIATION	RECORD	.
S	SPEED, FREQUENCY	.	SWITCH
T	TEMPERATURE	.	TRANSMIT
U	MULTIVARIABLE	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS	.	VALVE, DAMPER, LOUVER
W	WEIGHT, FORCE	WELL, PROBE	.
X	SMOKE, FIRE	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE	.	RELAY, COMPUTE, CONVERT
Z	POSITION, DIMENSION	.	DRIVER, ACTUATOR, UNCLASS - IFIED FINAL CONTROL ELEMENT

(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL.

GENERAL INSTRUMENT / FUNCTION SYMBOLS

CONTROL DEVICE / INSTRUMENT

XX ## YY

XX = VARIABLE OR FUNCTION
YY = MODIFIER OR SETPOINT
= INSTRUMENT NUMBER

INPUT / OUTPUT PARAMETER

XY

X = ANALOG (A) OR DIGITAL (D)
Y = INPUT (I) OR OUTPUT (O)

EXAMPLES:

TS 01 LOW — LOW TEMPERATURE SWITCH

GTE 01 CO2 — GAS TRANSMITTER & ELEMENT FOR CO2

MODIFIERS:

AVG	AVERAGE
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
DPT	DEWPOINT TEMPERATURE
ENT	ENTHALPY
EX	EXISTING
FC	FAIL CLOSED
FO	FAIL OPEN
FTL	FAIL TO LAST POSITION
HIGH	HIGH LIMIT
HUM	RELATIVE HUMIDITY
LOW	LOW LIMIT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
O2	OXYGEN
SCR	SILICONE CONTROLLED RECTIFIER
VOC	VOLATILE ORGANIC COMPOUND
WBT	WET BULB TEMPERATURE
X	KEY NOTE

SEQUENCE OF OPERATION DEFINITIONS

ENABLE	ALLOW AN OPERATION TO START
START	REQUIRE AN OPERATION TO START
DISABLE	PREVENT AN OPERATION FROM STARTING
STOP	REQUIRE AN OPERATION TO STOP
PROVE	COMMAND EQUALS STATUS
100%	MAXIMUM COMMAND OR FULLY OPEN
0%	MINIMUM COMMAND OR FULLY CLOSED

MECHANICAL COMPONENTS (SHOWN IN DIAGRAMS)

	FAN
	PUMP

ELECTRICAL COMPONENTS & CONTROLLER (SHOWN IN DIAGRAMS)

CNT	MOTOR STARTER (PROVIDED BY OTHERS) - SEE WIRING DETAIL A/IC0.1
	RELAY (NORMALLY OPEN)
	RELAY (NORMALLY CLOSED)
	TRANSFORMER
LAN	NETWORK COMMUNICATION LINK TO BAS
M	ELECTRIC MOTOR

AIR DISTRIBUTION

	NEW DUCT

ELECTRICAL AND CONTROL WIRING

	120 VAC WIRING
	24 VAC WIRING
	CONTROL SIGNAL VDC WIRING

PIPING AND FITTINGS

	DOMESTIC HOT WATER RETURN

CONTROL DEVICES (SHOWN ON FLOOR PLANS)

T	ROOM THERMOSTAT/TEMPERATURE SENSOR - SEE DETAIL B/IC0.1
H	ROOM HUMIDISTAT/HUMIDITY SENSOR - SEE DETAIL B/IC0.1
DDC	DIRECT DIGITAL CONTROL PANEL

MISCELLANEOUS

	1 HOUR FIRE RATED WALL
	2 HOUR FIRE RATED WALL

INSTRUMENTATION AND CONTROL NOTES

1. THE INTENT OF THE INSTRUMENTATION AND CONTROL DRAWINGS IS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM IN ACCORDANCE WITH THE SEQUENCE(S) OF OPERATION. THE DIAGRAMS, POINTS LISTS, AND SEQUENCES OF OPERATION INCLUDED HEREIN DESCRIBE THE INTENDED SEQUENCES OF OPERATION FOR SYSTEMS AND MAJOR COMPONENTS BUT DO NOT DEFINE IN DETAIL THE OPERATION OF MINOR COMPONENTS, RELAYS, SWITCHES, WIRING, OR OTHER SMALL DEVICES REQUIRED FOR THE PROPER OPERATION OF THE CONTROL SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS AND/OR WIRING TO ACHIEVE THE SEQUENCE OF OPERATION.
2. PROVIDE ALL CONTROL WIRING, CONDUIT, RELAYS, AND ELECTRICAL WORK REQUIRED AS INTEGRAL PART OF THE INSTRUMENTATION AND CONTROL SYSTEM UNLESS NOTED OTHERWISE. WORK SHALL COMPLY WITH REQUIREMENTS OF DIVISIONS 26, 27, AND 28 DRAWINGS AND SPECIFICATIONS.
3. ALL BAS CONFIGURATIONS (SETPOINTS, TIME DELAYS, RESET LIMITS, TUNING PARAMETERS, ETC) SHALL BE ADJUSTABLE BY THE OPERATOR THROUGH BAS WORKSTATION OR PORTABLE OPERATOR TERMINAL WITHOUT ANY HARDWARE OR SOFTWARE REVISIONS.
4. COORDINATE ALL WORK WITH OTHER TRADES INVOLVED. INTERFACE EQUIPMENT AND WIRING SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
5. COORDINATE BUILDING OCCUPANCY SCHEDULES (OCCUPIED AND UNOCCUPIED) WITH BUILDING OWNER.
6. COORDINATE INSTALLATION LOCATION OF ALL CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO: SENSORS, METERS, SWITCHES, VALVES, DAMPERS, ETC. COORDINATE AND ENSURE CONTROL DEVICES ARE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS, INCLUDING UPSTREAM AND DOWNSTREAM DIAMETERS FOR FLOW METERS, PROPER ORIENTATION TO PREVENT MOISTURE INTRUSION, AND DISTANCES FROM AIR OUTLETS TO ENSURE PROPER TEMPERATURE READINGS.
7. LOCATE THERMOSTATS AND OTHER WALL-MOUNTED CONTROL DEVICES REQUIRING OCCUPANCY MONITORING OR ADJUSTMENT AT AN ELEVATION 4'-0" ABOVE FINISHED FLOOR, IN ACCORDANCE WITH ADA REGULATIONS.
8. IF FIELD ADJUSTMENTS ARE MADE TO THE BAS CONFIGURATIONS DURING FINAL TESTING / VERIFICATION /COMMISSIONING, SET THE FACTORY DEFAULT VALUES IN THE CONTROLLERS TO MATCH FINAL VALUES.
9. PROVIDE ACCESS PANEL AT EACH LOCATION WHERE A VALVE, DAMPER, OR OTHER DEVICE REQUIRING SERVICE IS LOCATED ABOVE AN INACCESSIBLE CEILING OR INSIDE A WALL. ACCESS PANELS IN RATED CONSTRUCTION SHALL BEAR UL LABEL. COORDINATE ACCESS PANEL LOCATION WITH ARCHITECT/ENGINEER PRIOR TO INSTALLATION.
10. PROVIDE DUCT ACCESS DOOR AT EACH AIRFLOW MEASURING STATION.
11. CONTROLLED SYSTEMS SHALL AUTOMATICALLY RESET ON EMERGENCY POWER AND RESTORATION OF NORMAL POWER, UNLESS NOTED OTHERWISE. PROVIDE TIME DELAYS ON RESTART, AS NECESSARY, TO STAGGER THE START OF EQUIPMENT SO THAT ALL MOTORS DO NOT ATTEMPT TO START AT THE SAME TIME.
12. SAFETIES SHALL BE HARDWIRED UNLESS NOTED OTHERWISE.
13. WHERE VFD'S ARE LOCATED DIRECTLY UNDER PIPING, PROVIDE GALVANIZED SHEET METAL DRIP SHIELDING AT 18" ABOVE VFD'S SLOPED 1% FROM THE MOUNTING SURFACE TOWARD THE FRONT OF THE DRIVES, AND EXTENDING TO 12" BEYOND EACH DRIVE FACE.

COMMISSIONING NOTES

1. THE BUILDING MECHANICAL SYSTEMS SHALL BE COMMISSIONED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE – ENERGY CONSERVATION, SECTION C408 "SYSTEMS COMMISSIONING".
2. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR PROVIDING THE SERVICES OF AN APPROVED COMMISSIONING PROVIDER FROM ONE OF THE FOLLOWING PROVIDERS:
   1. H2ENGINEERING
   2. MOSES ENGINEERING
   3. MITCHELL GULLEDGE ENGINEERING
3. MECHANICAL SYSTEM TESTING SHALL ENSURE THAT COMPONENTS, EQUIPMENT, SYSTEMS, AND SYSTEM-TO-SYSTEM INTERFACING RELATIONSHIPS ARE CALIBRATED, ADJUSTED, AND OPERATE IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS. TESTING SHALL INCLUDE ALL MODES AND SEQUENCES OF OPERATION, INCLUDING UNDER FULL-LOAD, PART-LOAD, AND EMERGENCY CONDITIONS.
4. A COMMISSIONING PLAN SHALL BE DEVELOPED BY THE COMMISSIONING PROVIDER AND SHALL INCLUDE THE FOLLOWING ITEMS: (1) A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES; (2) A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES, OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED; (3) FUNCTIONS TO BE TESTED, INCLUDING BUT NOT LIMITED TO, CALIBRATIONS AND CONTROLS; (4) CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED, INCLUDING BUT NOT LIMITED TO, AFFIRMING WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS; (5) MEASURABLE CRITERIA FOR PERFORMANCE.
5. PRIOR TO PASSING THE FINAL INSPECTIONS, THE COMMISSIONING PROVIDER SHALL PROVIDE EVIDENCE OF SYSTEMS COMMISSIONING AND COMPLETION. A COMPLETED PRELIMINARY REPORT THE COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE PROVIDED TO THE OWNER, CERTIFIED BY THE COMMISSIONING PROVIDER. THE REPORT SHALL BE IDENTIFIED AS "PRELIMINARY COMMISSIONING REPORT" AND SHALL IDENTIFY: (1) ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING THAT HAVE NOT BEEN CORRECTED AT THE TIME OF THE REPORT PREPARATION; (2) DEFERRED TESTS THAT CANNOT BE PERFORMED DUE TO CLIMATIC CONDITIONS; AND (3) CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF DEFERRED TESTS. THE PRELIMINARY COMMISSIONING REPORT SHALL BE MADE AVAILABLE TO THE CODE OFFICIAL AT THEIR REQUEST.
6. WITHIN 90 DAYS OF CERTIFICATE OF OCCUPANCY, PROVIDE THE FINAL COMMISSIONING REPORT TO OWNER. THE REPORT SHALL BE IDENTIFIED AS "FINAL COMMISSIONING REPORT" AND SHALL INCLUDE (1) RESULTS OF FUNCTIONAL PERFORMANCE TESTS; (2) DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED; (3) FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS, INCLUDING MEASURED CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY. EXCEPTION: DEFERRED TESTS WHICH CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION FOR CLIMATIC CONDITIONS.
7. HVAC, CONTROLS AND TAB CONTRACTORS SHALL ASSIST WITH COMMISSIONING EFFORTS INCLUDING (NOT LIMITED TO) PERFORMING PRE-TESTING OF FUNCTIONAL PERFORMANCE TEST (TEST CRITERIA PROVIDED BY COMMISSIONING AUTHORITY) PRIOR TO COMMISSIONING AUTHORITY PERFORMING FUNCTION PERFORMANCE TEST VERIFICATION WITH AFOREMENTIONED CONTRACTORS.

APPLICABLE CODES

PERFORM WORK IN ACCORDANCE WITH THE FOLLOWING CODES AND ANY APPLICABLE STATUTES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.

1. ASHRAE
   - a. STANDARD 15 — SAFETY STANDARD FOR REFRIGERATION SYSTEMS - 2019
   - b. STANDARD 55 — THERMAL ENVIRONMENTAL CONDITIONS FOR HUMAN OCCUPANCY - 2017
   - c. STANDARD 62.1 — VENTILATION STANDARD FOR ACCEPTABLE INDOOR AIR QUALITY - 2019
   - d. STANDARD 90.1 — ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS - 2019
   - e. STANDARD 170 — VENTILATION OF HEALTH CARE FACILITIES - 2017
2. ASME
   - a. ASME A17.1 — SAFETY CODE FOR ELEVATORS AND ESCALATORS - 2019
3. OCCUPATIONAL SAFETY AND HEALTH REGULATIONS (OSHA).
4. NATIONAL FIRE CODES
   - a. NFPA 1 — FIRE CODE - 2021 (FLORIDA EDITION)
   - b. NFPA 13 — STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEM - 2019
   - c. NFPA 25 — STANDARD FOR THE INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS - 2020
   - d. NFPA 70 — NATIONAL ELECTRICAL CODE - 2020
   - e. NFPA 72 — NATIONAL FIRE ALARM AND SIGNALING CODE - 2019
   - f. NFPA 90A — STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATION SYSTEMS - 2021
   - g. NFPA 90B — STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS - 2021
   - h. NFPA 91 — STANDARD FOR THE INSTALLATION OF BLOWER AND EXHAUST SYSTEMS - 2020
   - i. NFPA 101 — LIFE SAFETY CODE - 2021 (FLORIDA EDITION)
5. FLORIDA BUILDING CODE, 2023 8TH EDITION
   - a. BUILDING CODE
   - b. ENERGY CONSERVATION CODE
   - c. MECHANICAL CODE
   - d. PLUMBING CODE
   - e. ACCESSIBILITY CODE
6. FLORIDA STATUTES
   - a. CHAPTER 471 — ENGINEERING
   - b. CHAPTER 533.80 — BUILDING CONSTRUCTION STANDARDS; FLORIDA BUILDING CODE - ENFORCEMENT
7. FLORIDA ADMINISTRATIVE CODE
   - a. CHAPTER 9B-7 — FLORIDA BUILDING COMMISSION HANDICAPPED ACCESSIBILITY STANDARDS
   - b. CHAPTER 61C-5 — FLORIDA ELEVATOR SAFETY CODE
   - c. CHAPTER 61G15-34 — RESPONSIBILITY RULES OF PROFESSIONAL ENGINEERS CONCERNING THE DESIGN OF MECHANICAL SYSTEMS
   - d. CHAPTER 69A-3 — FIRE PREVENTION - GENERAL PROVISIONS
   - e. CHAPTER 69A-47 — UNIFORM FIRE SAFETY STANDARDS FOR ELEVATORS
   - f. CHAPTER 69A-60 — THE FLORIDA FIRE PREVENTION CODE

RESOLVE, IN WRITING, ANY CODE VIOLATION DISCOVERED IN CONTRACT DOCUMENTS WITH THE ENGINEER PRIOR TO BIDDING. AFTER AWARD OF THE CONTRACT, MAKE ANY CORRECTION OR ADDITITION NECESSARY FOR COMPLIANCE WITH APPLICABLE CODES AT NO ADDITIONAL COST TO OWNER.

THE CONTRACTOR SHALL INCLUDE IN THE WORK, WITHOUT EXTRA COST TO THE OWNER, ANY LABOR, MATERIALS, SERVICES, APPARATUS, AND DRAWINGS REQUIRED TO COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, AND REGULATIONS.

WHERE THERE IS CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, THE CODES SHALL GOVERN, EXCEPT WHERE THE REQUIREMENTS OF THE CONTRACT DOCUMENTS ARE MORE STRINGENT.

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC, INDICATIVE OF WORK TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DIMENSIONS.
2. FIELD VERIFY DIMENSIONS AND CONDITIONS. IF THE CONTRACTOR IS UNABLE TO INTERPRET THE CONTRACT DOCUMENTS, HE IS RESPONSIBLE TO REQUEST CLARIFICATION IN WRITING TO THE ARCHITECT. IF HE PROCEEDS WITH ANY WORK BEFORE OBTAINING CLARIFICATION, HE SHALL BE HELD RESPONSIBLE FOR DEFICIENCIES ASSOCIATED THEREWITH.
3. BEFORE SUBMITTING FOR THE WORK, EACH BIDDER WILL BE RESPONSIBLE TO EXAMINE THE PREMISES AND SATISFY HIMSELF AS TO THE EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE AND COMPLETE THE WORK UNDER THIS CONTRACT. NO ALLOWANCE WILL SUBSEQUENTLY BE MADE IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR OMISSION ON HIS PART.
4. THE CONTRACTOR SHALL PAY FOR INSPECTION PERMITS, CERTIFICATES, CONNECTION FEES, SYSTEM DEMAND CHARGES AND LICENSE FEES IN CONNECTION WITH HIS WORK.
5. CONSTRUCTION MANAGER/GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK OF SUBCONTRACTORS TO AVOID INTERFERENCES.
6. WORK SHALL COMPLY WITH APPLICABLE O.S.H.A. AND E.P.A. REGULATIONS AND GUIDELINES.
7. ERECT AND MAINTAIN REASONABLE PRECAUTIONS FOR SAFETY AND HEALTH INCLUDING POSTING DANGER SIGNS AND OTHER WARNINGS AGAINST HAZARDS INCLUDING PROMULGATING SAFETY REGULATIONS. PROVIDE SAFETY PRECAUTIONS AND BARRICADES FOR PEDESTRIANS AT CONSTRUCTION VEHICLE ACCESS AND EGRESS LOCATIONS.
8. COORDINATE AND SEQUENCE DEMOLITION, CLEANING AND CONSTRUCTION WORK. SUBMIT A COMPLETELY DETAILED CONSTRUCTION SCHEDULE PRIOR TO PRE-CONSTRUCTION CONFERENCE.
9. THE CONTRACTOR SHALL STRICTLY BE HELD TO THE PROJECT SCHEDULE. HE SHALL PROVIDE SUFFICIENT MANPOWER AND EQUIPMENT TO FULLY MOBILIZE, PROCEED WITH AND COMPLETE THE WORK.
10. THE CONTRACTOR SHALL BE RESTRICTED TO AREAS SPECIFIED BY THE OWNER FOR ON-SITE STORAGE OF CONSTRUCTION MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SECURITY OF EQUIPMENT AND MATERIALS.
11. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK ENVIRONMENT AT ALL TIMES AND SHALL CLEAN CONSTRUCTION SITE OF DEBRIS AT COMPLETION OF THE JOB AND BEFORE FINAL PAYMENT IS MADE.
12. THE CONTRACTOR SHALL FURNISH "AS-BUILT" DRAWINGS TO THE ARCHITECT AT COMPLETION OF CONSTRUCTION.
13. CONTRACTOR'S USE OF AN APPROVAL STAMP ON DOCUMENTS SUBMITTED AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS CERTIFIES THAT THE CONTRACTOR HAS COMPLIED WITH THE CONTRACT DOCUMENT REQUIREMENTS RELATED TO "SHOP DRAWINGS, PRODUCT DATA AND SAMPLES".
14. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE ARCHITECT/ ENGINEER'S APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT/ENGINEER IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMITTAL AND THE ARCHITECT/ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS BY THE ARCHITECT/ENGINEER'S APPROVAL THEREOF.
15. PRIOR TO INSTALLATION, COORDINATE AND ADJUST THE FINAL LOCATION OF WALL MOUNTED DEVICES AND EQUIPMENT WITH ALL CASEWORK, SHELVING, MARKER BOARDS, BULLETIN BOARDS OR OTHER WALL MOUNTED FURNISHINGS.
16. SUPPORTS AND HANGERS SHALL PRESENT A NEAT, ORDERLY APPEARANCE.
17. ROOF MOUNTED EQUIPMENT SHALL BE SECURED TO STRUCTURE TO RESIST A 130 MPH WIND LOAD.
18. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL FIRE, SMOKE, AND ACOUSTICAL WALL ASSEMBLIES.
19. BEAM AND FLOOR PENETRATIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. BEAM SLEEVES AND BEAM REINFORCING APPROVED BY STRUCTURAL ENGINEER SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.
20. CONTRACTOR SHALL FURNISH U.L. APPROVED DRAWINGS FOR EACH TYPE OF FIRE RATED ASSEMBLY PENETRATION BY DUCTS, PIPES OR CONDUITS. THESE DRAWINGS SHALL BE DISPLAYED ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. SEE SPECIFICATIONS.
21. CONTRACTOR SHALL GUARANTEE THE WORK AND MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE IN ADDITION TO THE WARRANTIES PROVIDED BY MATERIAL SUPPLIERS AND MANUFACTURERS.
22. EXIT WAYS SHALL BE KEPT CLEAR. IF AN EXIT MUST BE TEMPORARILY BLOCKED, PROVIDE THE REQUIRED BARRICADE AND DIRECTIONAL SIGNS FOR TEMPORARY EXITING AND SAFETY.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	LAN	LOCAL AREA NETWORK
AHAP	AS HIGH AS POSSIBLE	N/A	NOT APPLICABLE
CU	CONDENSING UNIT	OA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL PANEL	P	PUMP
DSSI	DUCTLESS SPLIT SYSTEM INDOOR UNIT	RA	RETURN AIR
DSSO	DUCTLESS SPLIT SYSTEM OUTDOOR UNIT	RPM	REVOLUTIONS PER MINUTE
EA	EXHAUST AIR	SA	SUPPLY AIR
EF	EXHAUST FAN	SQ FT	SQUARE FEET
°Fdb	DEGREES FAHRENHEIT DRY BULB	TYP	TYPICAL
°Fwb	DEGREES FAHRENHEIT WET BULB	UNO	UNLESS NOTED OTHERWISE
FPM	FEET PER MINUTE	V	VALVE
FSD	COMBINATION FIRE/SMOKE DAMPER	WG	WATER GAUGE
FT	FEET		

DRAWING INDEX

H2 ENGINEERING
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Florida Registry #2485
Robert D. Richards, P.E. #90648

FLORIDA SHERIFFS YOUTH LEARNING CENTER AND BLACKBURN-HUNT BUILDING

MAHAN DRIVE
TALLAHASSEE, FL.

CRA ARCHITECTS

Clemons,Rutherford, & Associates, Inc.
Architects
Planners
Interior Designers
Construction Managers
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phone 850-385-6153
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Submittal

Phase	Date	Drw	Chk
DESIGN DEVELOPMENT	02-28-25	MAW	RDR
50% CD	04-15-25	MAW	RDR
100% CD	07-18-25	MAW	RDR

Revision

#	Description	Date

CRA Project # 24029

Phase: CONSTRUCTION DOCUMENTS

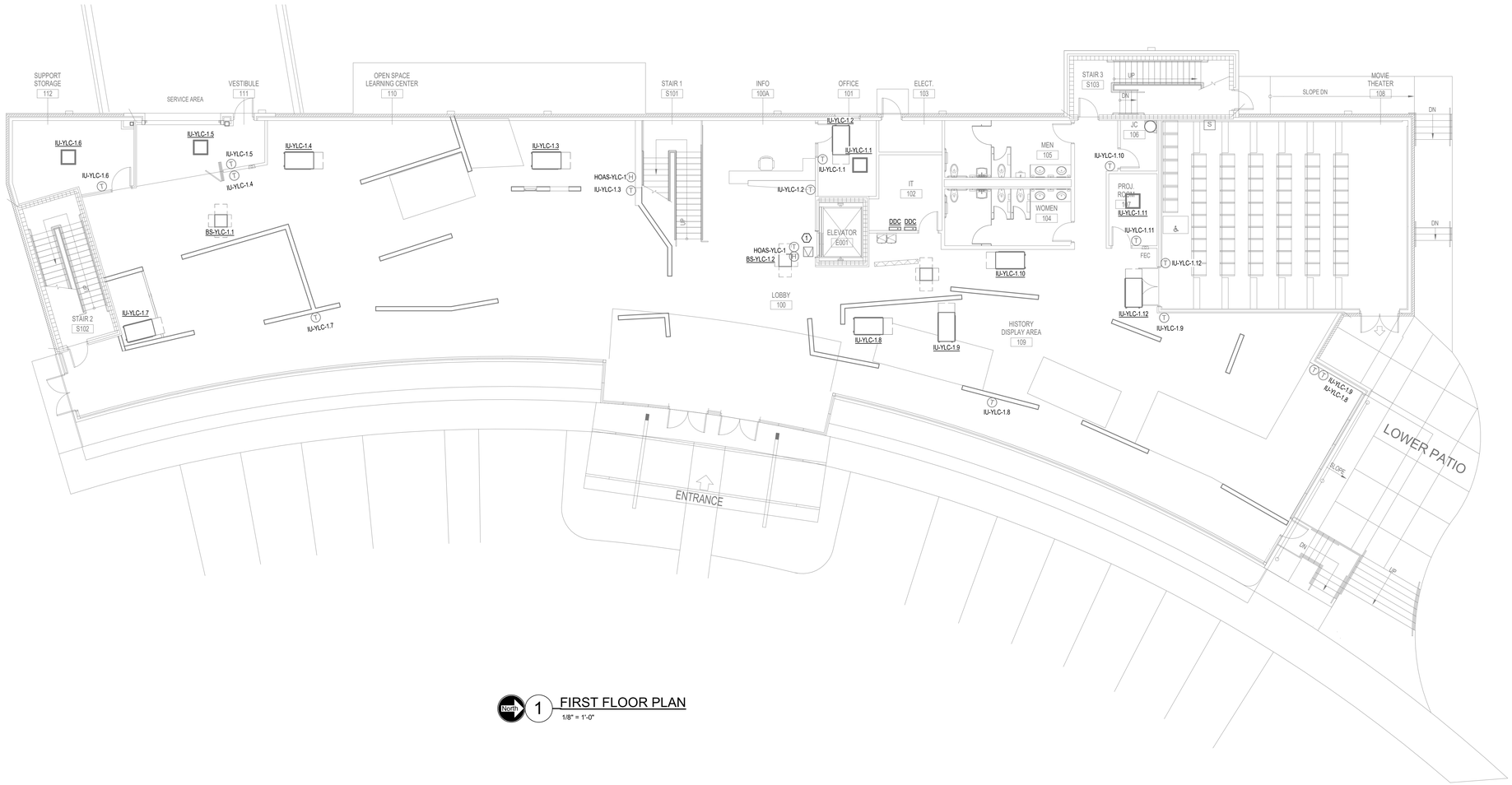
SHEET TITLE

GENERAL NOTES, LEGENDS & SCHEDULES

MC0.1

KEYED NOTES:

1. INSTALL TEMPERATURE AND HUMIDITY SENSOR(S) IN SUPPLY DUCT DROP FROM HOAS DUCTWORK IN THIS VICINITY. SEE SHEET M1.5.



North 1 FIRST FLOOR PLAN

1/8" = 1'-0"

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CRA Project # 24029

Phase: CONSTRUCTION DOCUMENTS

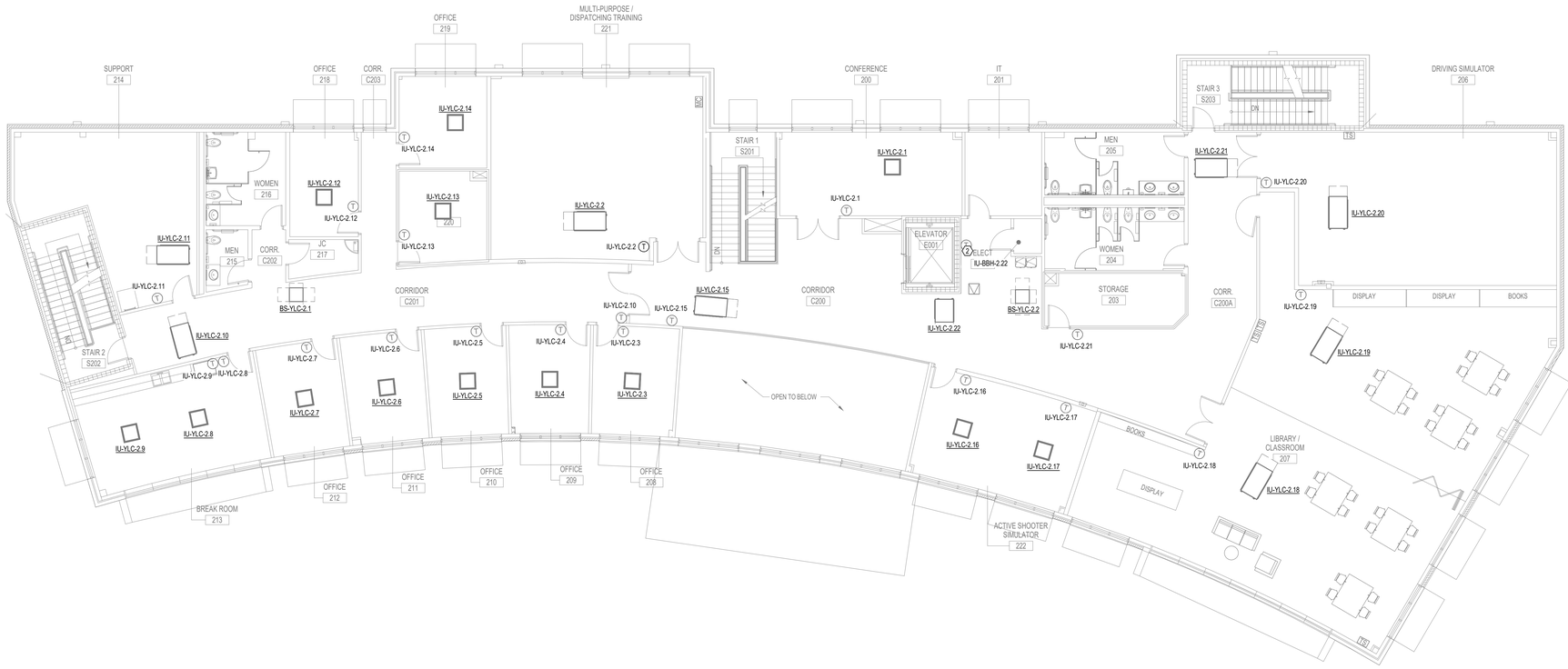
SHEET TITLE

YOUTH LEARNING CENTER - 1ST FLOOR PLAN

MC1.1

KEYED NOTES:

(2) MOUNT THERMOSTAT IN RETURN AIR DUCTWORK FROM ELEVATOR SHAFT. SEE SHEET M1.5



North 1 SECOND FLOOR PLAN

1/8" = 1'-0"

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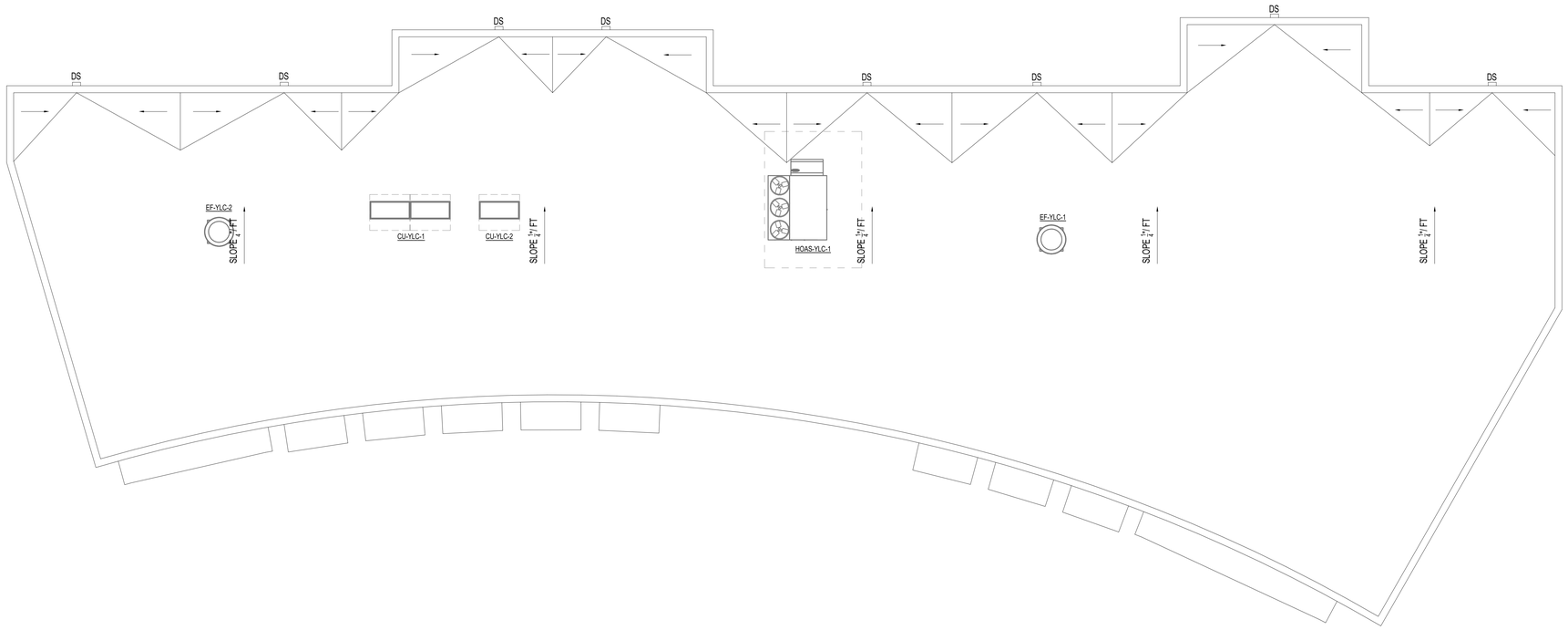
Phase: CONSTRUCTION DOCUMENTS

SHEET TITLE

YOUTH LEARNING CENTER - 2ND FLOOR PLAN

MC1.2



North 1 YOUTH LEARNING CENTER - ROOF PLAN

1/8" = 1'-0"

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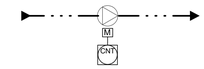
Phase: CONSTRUCTION DOCUMENTS

SHEET TITLE

YOUTH LEARNING CENTER - ROOF PLAN

MC1.5

MISCELLANEOUS

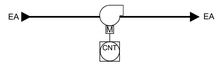


DOMESTIC HOT WATER CIRCULATION PUMPS

HOT WATER CIRCULATION PUMPS (CP-YLC-1)

A. CONTROLLED BY AN AQUASTAT WIRED IN SERIES WITH AN ELECTRONIC, PROGRAMMABLE TIMECLOCK, PROVIDED BY THE PLUMBING CONTRACTOR. PROVIDE AN OCCUPIED TIME SCHEDULE (MON-FRI: 7:00 AM – 6:00 PM / SAT-SUN: OFF). THE CIRCULATION PUMPS SHALL BE CONTROLLED AS FOLLOWS:

1. SCHEDULE OFF: PUMP OFF.
2. SCHEDULE ON / AQUASTAT > 120°F: PUMP OFF.
3. SCHEDULE ON / AQUASTAT < 110°F: PUMP ON.



FANS (EF-YLC-1, 2):

A. START / STOP: START / STOP OF THE EXHAUST FAN SHALL BE CONTROLLED THROUGH A MOTOR CONTACTOR. FAN SHALL BE INTERLOCKED WITH DESIGNATED HOAS UNIT AND OPERATE AS FOLLOWS:

1. EF-YLC-1 AND EF-YLC-2 INTERLOCKED WITH HOAS-YLC-1

A. HOAS ON: FAN(S) ON.
B. HOAS OFF: FAN(S) OFF.

HIGH PERCENTAGE OUTSIDE AIR DX SYSTEM (HOAS-YLC-1)

1. GENERAL
   A. THE HIGH PERCENTAGE OUTSIDE AIR UNIT SHALL BE CONTROLLED BY A SEPARATE, STAND-ALONE APPLICATION SPECIFIC CONTROLLER (ASC) PROVIDED AND CONFIGURED BY THE EQUIPMENT MANUFACTURER. THE ASC SHALL MONITOR AND CONTROL THE UNIT IN A STAND-ALONE MODE.

2. RUN CONDITIONS
   A. TEMPERATURE AND HUMIDITY SET-POINTS:
      1. PROVIDE OCCUPIED TEMPERATURE COOLING (74°F, ADJ) AND HEATING (70°F, ADJ) SET-POINTS. PROVIDE UNOCCUPIED TEMPERATURE COOLING (80°F, ADJ) AND HEATING (65°F, ADJ) SET-POINTS.
      2. PROVIDE AN OCCUPIED HUMIDITY SET-POINT (55%, ADJ), PROVIDE AN UNOCCUPIED HUMIDITY SET-POINT (60%, ADJ).

   B. OCCUPIED MODE: ENABLE THE UNIT BASED ON AN OCCUPIED TIME SCHEDULE (MON-FRI = 7:00 AM – 6:00 PM / SAT – SUN = OFF, ADJ.)
      1. COOLING MODE: IF THE OUTSIDE AIR TEMPERATURE RISES ABOVE THE COOLING ENABLE SET-POINT (75°F, ADJ) PLUS A DEAD-BAND, THEN INITIATE COOLING MODE. DISABLE COOLING MODE IF THE OUTSIDE AIR TEMPERATURE IS BELOW THE COOLING LOCKOUT SET-POINT (50°F, ADJ).
      2. HEATING MODE: IF THE OUTSIDE AIR TEMPERATURE FALLS BELOW THE HEATING ENABLE SET-POINT (55°F, ADJ) MINUS A DEAD-BAND, THEN INITIATE HEATING MODE. DISABLE HEATING MODE IF THE OUTSIDE AIR TEMPERATURE IS ABOVE THE HEATING LOCKOUT SET-POINT (70°F, ADJ).
      3. DEHUMIDIFICATION MODE: IF THE RETURN AIR HUMIDITY RISES ABOVE THE RETURN AIR HUMIDITY SET-POINT (55%, AD), THEN ENABLE DEHUMIDIFICATION MODE.
      4. VENT MODE: IF THE UNIT IS OPERATING IN OCCUPIED MODE AND THERE IS NO DEMAND FOR COOLING, HEATING, OR DEHUMIDIFICATION, THEN INITIATE VENT MODE.

   C. UNOCCUPIED MODE: THE UNIT IS OFF EXCEPT AS FOLLOWS:
      1. TEMPERATURE CONTROL: DURING UNOCCUPIED HOURS, RESET THE COOLING AND HEATING TEMPERATURE SET-POINTS EQUAL TO THE RESPECTIVE UNOCCUPIED TEMPERATURE SET-POINTS. ENABLE COOLING AND HEATING MODES OF OPERATION TO MAINTAIN THE UNOCCUPIED TEMPERATURE SET-POINTS.
      2. HUMIDITY CONTROL: DURING UNOCCUPIED HOURS, RESET THE DEHUMIDIFICATION SET-POINT TO UNOCCUPIED SET-POINT. IF THE SPACE HUMIDITY RISES ABOVE SET-POINT, THEN INITIATE DEHUMIDIFICATION MODE UNTIL SPACE HUMIDITY IS BELOW SET-POINT MINUS A DEAD-BAND.
      3. TENANT OVERRIDE: IF THE OVERRIDE BUTTON IS ACTIVATED AT THE SPACE SENSOR, THEN INITIATE AN OCCUPIED MODE OF OPERATION FOR A MINIMUM TIME DELAY (2 HOURS, ADJ).

3. SUPPLY FAN
   A. OCCUPIED MODE: THE SUPPLY FAN OPERATES CONTINUOUSLY . PROGRAM A MINIMUM SPEED (30%) AND A RAMP TIME (60 SEC) INTO THE AFD.
   B. UNOCCUPIED MODE: THE SUPPLY FAN IS OFF UNLESS THERE IS A CALL FOR ANY MODE.

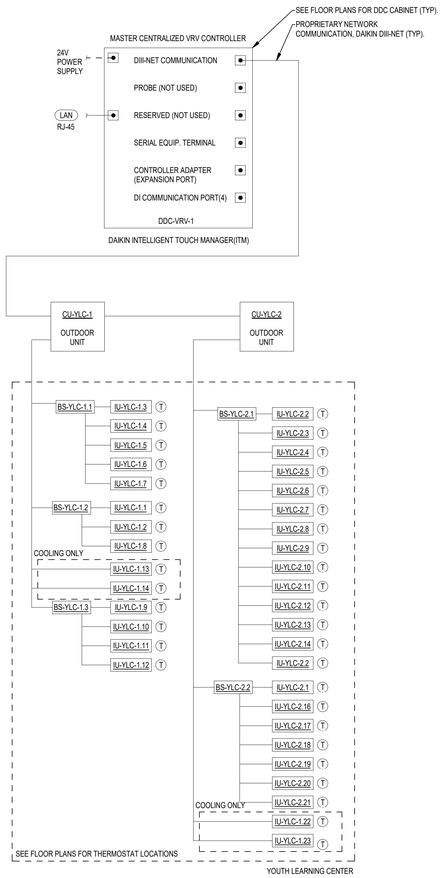
4. ECONOMIZER DAMPER
   A. OCCUPIED MODE: MODULATE DAMPER TO MAINTAIN AN OUTSIDE AIRFLOW SET-POINT. SEE MECHANICAL SCHEDULES.
   B. UNOCCUPIED MODE: CLOSE DAMPER.

5. COMPRESSORS
   A. SUPPLY FAN OFF: COMPRESSORS OFF.
   B. COOLING MODE: STAGE/MODULATE COMPRESSORS IN SEQUENCE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET-POINT (54°F, ADJ).SEE MECHANICAL SCHEDULES.
   C. HEATING MODE: COMPRESSORS OFF.
   D. DEHUMIDIFICATION MODE: STAGE/MODULATE COMPRESSORS IN SEQUENCE TO MAINTAIN THE EVAPORATOR COIL SUCTION TEMPERATURE SET-POINT (52°F, ADJ).
   E. VENT MODE: COMPRESSORS OFF.
   F. COMPRESSOR SEQUENCING:
      1. COMPRESSOR ADD: IF THE VARIABLE SPEED COMPRESSOR IS OPERATING AT MAXIMUM SPEED AND THE TEMPERATURE IS ABOVE OR BELOW SETPOINT (BASED ON OPERATING MODE), THEN STAGE THE LAG COMPRESSOR ON. MODULATE THE VARIABLE SPEED COMPRESSOR TO MAINTAIN THE TEMPERATURE SETPOINT.
      2. COMPRESSOR SUBTRACT: IF MORE THAN ONE COMPRESSOR IS OPERATING, THE VARIABLE SPEED COMPRESSOR IS AT MINIMUM SPEED, AND THE TEMPERATURE IS ABOVE OR BELOW SETPOINT (BASED ON OPERATING MODE), THEN STAGE THE LAG COMPRESSOR OFF. MODULATE THE VARIABLE SPEED COMPRESSOR TO MAINTAIN THE TEMPERATURE SETPOINT.

6. HOT GAS REHEAT VALVE
   A. SUPPLY FAN OFF: HOT GAS REHEAT VALVE CLOSED.
   B. DEHUMIDIFICATION MODE: MODULATE HOT GAS REHEAT VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET-POINT (70°F, ADJ).
   C. ALL OTHER MODES: HOT GAS REHEAT VALVE CLOSED.

7. ELECTRIC HEAT
   A. SUPPLY FAN OFF: HEATER OFF.
   B. HEATING MODE: MODULATE ELECTRIC HEAT TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET-POINT (70°F, ADJ).
   C. ALL OTHER MODES: HEATER OFF.

VARIABLE REFRIGERANT VOLUME



VARIABLE REFRIGERANT VOLUME (VRV) SYSTEMS:

1. GENERAL
   A. VRV SYSTEMS SHALL BE CONTROLLED BY SEPARATE, STAND-ALONE, APPLICATION SPECIFIC CONTROLLERS (ASC) PROVIDED AND CONFIGURED BY THE EQUIPMENT MANUFACTURER TO OPERATE AND CONTROL THE SYSTEMS IN STAND-ALONE MODE.

2. OPERATING CONDITIONS
   A. VRV SYSTEMS SHALL OPERATE PER THE OWNER'S OCCUPIED/UNOCCUPIED SCHEDULE. COORDINATE SCHEDULE WITH OWNER.
   B. VRV FAN AND COIL UNITS SHALL BE CONTROLLED BY 7-DAY PROGRAMMABLE THERMOSTATS LOCATED AS INDICATED ON THE CONTROLS DRAWINGS. SET TEMPERATURES AS FOLLOWS:
      1. OCCUPIED MODE:
         A. COOLING: 74 DEGREES F.
         B. HEATING: 70 DEGREES F.
      2. UNOCCUPIED MODE:
         A. COOLING: 78 DEGREES F.
         B. HEATING: 68 DEGREES F.

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CRA Project # 24029

Phase: CONSTRUCTION DOCUMENTS

SHEET TITLE
CONTROLS

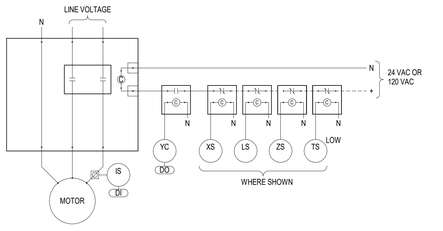
MC2.1

FIRESTOP SCHEDULE OF THROUGH PENETRATION SYSTEMS. BASIS OF DESIGN: HILTI, INC.

TYPE OF PENETRANT	F-RATING (HR)	CONCRETE FLOORS	CONCRETE OR BLOCK WALLS	GYPSUM WALLS	HILTI PRODUCTS
		BASIS OF DESIGN UL SYSTEM			
CIRCULAR BLANK OPENINGS (0000-0999)	1	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	CP 680, CP 618, FS-ONE MAX, CFS- BL
	2	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	
METAL PIPES OR CONDUIT (1000-1999)	1	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020	W-L-1054, W-L-1058, W-L-1164, W-L-1506	CP 680, FS-ONE MAX, CP 606, CFS-S SIL GG, CFS-D, MINERAL WOOL
	2	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020, W-J-1248	W-L-1054, W-L-1058, W-L-1164, W-L-1506	
NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT) (2000-2999)	1	F-A-2053, F-A-2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	CP 680, CP 643N, MINERAL WOOL, CP 644, FS-ONE MAX, CFS-S SIL SL, CFS-S SIL CG, CP 648
	2	F-A 2053, F-A 2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2371, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	
SINGLE OR BUNDLED CABLES (3000-3999)	1	F-A-3097, C-AJ-3095, C-AJ-3180, C-AJ-3283	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	CP 680, CP 653, FS-ONE MAX, CP 618, CP 606, CFS-D, CFS-CC
	2	F-A-3007, C-AJ-3095, C-AJ-3334, F-A-3060	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167, W-J-3189	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	
CABLE TRAY (4000-4999)	1	C-AJ-4034, C-AJ-4035	W-J-4027, C-AJ-4034, C-AJ-4035	W-L-4011, W-L-4019, W-L-4081	CFS-BL, FS-ONE MAX, CP 620, CP 618
	2	C-AJ-4034, C-AJ-4035	W-J-4027, C-AJ-4034, C-AJ-4035	W-L-4011, W-L-4019, W-L-4081	
MIXED PENETRANTS (8000-8999)	1	C-AJ-8099, C-AJ-8056, C-AJ-8143	C-AJ-8099, C-AJ-8056, W-J-8007, C-AJ-8143, C-AJ-8252	W-L-1095, W-L-8013	FS-ONE MAX, CFS-BL, CP 620, CP 618
	2	C-AJ-8099, C-AJ-8056, C-AJ-8143, C-AJ-8252	C-AJ-8099, C-AJ-8056, W-J-8007, C-AJ-8143, C-AJ-8252	W-L-1095, W-L-8013	

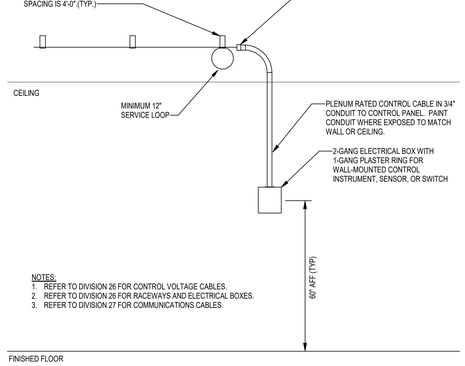
NOTES:

1. JOBSITE CONDITIONS OF EACH THROUGH-PENETRATION FIRESTOP SYSTEM MUST MEET ALL DETAILS OF THE UL-CLASSIFIED SYSTEM SELECTED.
2. IF JOBSITE CONDITIONS DO NOT MATCH ANY UL-CLASSIFIED SYSTEMS IN THE SCHEDULES ABOVE, CONTACT FIRESTOP MANUFACTURER FOR ALTERNATIVE SYSTEMS OR ENGINEER JUDGMENT DRAWINGS.
3. WHERE MORE THAN ONE APPLICABLE UL-CLASSIFIED SYSTEM IS LISTED IN THE SCHEDULES, CHOOSE THE UL SYSTEM WHICH IS MOST ECONOMICAL FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM.
4. COORDINATE WORK WITH OTHER TRADES TO ENSURE THAT PENETRATION OPENING SIZES ARE APPROPRIATE FOR PENETRANT LOCATIONS, AND VICE-VERSA.
5. ALL THROUGH-PENETRATION FIRESTOPS SHALL BE PROVIDED BY ONE MANUFACTURER. APPROVED MANUFACTURERS: HILTI, RECTORSEAL, 3M, STI.



NOTES:
1. FIELD VERIFY ALL WIRING TERMINATIONS.
2. FIELD VERIFY ALL CONNECTIONS.
3. ELECTRICAL POWER CONNECTIONS TO MOTOR BY DIVISION 26.
4. MOTOR RATED CONTACTOR, AND CONTROL COMPONENTS, AND ASSOCIATED WIRING BY DIVISION 25.

A MOTOR RATED CONTACTOR - WIRING DETAIL



NOTES:
1. REFER TO DIVISION 26 FOR CONTROL VOLTAGE CABLES.
2. REFER TO DIVISION 26 FOR RACEWAYS AND ELECTRICAL BOXES.
3. REFER TO DIVISION 27 FOR COMMUNICATIONS CABLES.

B WALL-MOUNTED CONTROL DEVICE ROUGH-IN

SYMBOLS, NOTES, ABBREVIATIONS, ETC.

IDENTIFICATION LETTERS

	FIRST - LETTER	SUCCEEDING - LETTERS	
	MEASURED OR INITIATING VARIABLE	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION
A	ANALYSIS	ALARM	.
B	BURNER, COMBUSTION	USER'S CHOICE (*)	USER'S CHOICE (*)
C	USER'S CHOICE (*)	.	CONTROL
D	USER'S CHOICE (*)	DIFFERENTIAL	.
E	VOLTAGE	SENSOR (PRIMARY ELEMENT)	.
F	FLOW RATE, FLOW	.	.
G	GAS	GLASS, VIEWING DEVICE	.
H	HAND (MANUAL)	.	.
I	CURRENT (ELECTRICAL)	INDICATE	.
J	POWER	.	.
K	TIME, SCHEDULE	.	.
L	LEVEL	LIGHT (PILOT)	.
M	MOISTURE, HUMIDITY	.	.
N	USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
O	USER'S CHOICE (*)	ORIFICE, RESTRICTION	.
P	PRESSURE, VACUUM	POINT (TEST) CONNECTION	.
Q	QUANTITY	INTEGRATE / TOTALIZE	.
R	RADIATION	RECORD	.
S	SPEED, FREQUENCY	.	SWITCH
T	TEMPERATURE	.	TRANSMIT
U	MULTIVARIABLE	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS	.	VALVE, DAMPER, LOUVER
W	WEIGHT, FORCE	WELL, PROBE	.
X	SMOKE, FIRE	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE	.	RELAY, COMPUTE, CONVERT
Z	POSITION, DIMENSION	.	DRIVER, ACTUATOR, UNCLASS - IFIED FINAL CONTROL ELEMENT

(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL.

GENERAL INSTRUMENT / FUNCTION SYMBOLS

CONTROL DEVICE / INSTRUMENT: XX ## / YY

XX = VARIABLE OR FUNCTION
YY = MODIFIER OR SETPOINT
= INSTRUMENT NUMBER

INPUT / OUTPUT PARAMETER: XY

X = ANALOG (A) OR DIGITAL (D)
Y = INPUT (I) OR OUTPUT (O)

EXAMPLES:
- TS 01 — LOW TEMPERATURE SWITCH
- GTE CO2 01 — GAS TRANSMITTER & ELEMENT FOR CO2

MODIFIERS:

AVG	AVERAGE
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
DPT	DEWPOINT TEMPERATURE
ENT	ENTHALPY
EX	EXISTING
FC	FAIL CLOSED
FO	FAIL OPEN
FTL	FAIL TO LAST POSITION
HIGH	HIGH LIMIT
HUM	RELATIVE HUMIDITY
LOW	LOW LIMIT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
O2	OXYGEN
SCR	SILICONE CONTROLLED RECTIFIER
VOC	VOLATILE ORGANIC COMPOUND
WBT	WET BULB TEMPERATURE

X — KEY NOTE

SEQUENCE OF OPERATION DEFINITIONS

ENABLE	ALLOW AN OPERATION TO START
START	REQUIRE AN OPERATION TO START
DISABLE	PREVENT AN OPERATION FROM STARTING
STOP	REQUIRE AN OPERATION TO STOP
PROVE	COMMAND EQUALS STATUS
100%	MAXIMUM COMMAND OR FULLY OPEN
0%	MINIMUM COMMAND OR FULLY CLOSED

MECHANICAL COMPONENTS (SHOWN IN DIAGRAMS)

	FAN
	PUMP

ELECTRICAL COMPONENTS & CONTROLLER (SHOWN IN DIAGRAMS)

CNT	MOTOR STARTER (PROVIDED BY OTHERS) - SEE WIRING DETAIL A/IC0.1
-Ⓒ-	RELAY (NORMALLY OPEN)
-Ⓒ-	RELAY (NORMALLY CLOSED)
	TRANSFORMER
LAN	NETWORK COMMUNICATION LINK TO BAS
M	ELECTRIC MOTOR

AIR DISTRIBUTION

	NEW DUCT

ELECTRICAL AND CONTROL WIRING

	120 VAC WIRING
	24 VAC WIRING
	CONTROL SIGNAL VDC WIRING

PIPING AND FITTINGS

	DOMESTIC HOT WATER RETURN

CONTROL DEVICES (SHOWN ON FLOOR PLANS)

T	ROOM THERMOSTAT/TEMPERATURE SENSOR - SEE DETAIL B/IC0.1
H	ROOM HUMIDISTAT/HUMIDITY SENSOR - SEE DETAIL B/IC0.1
DDC	DIRECT DIGITAL CONTROL PANEL

MISCELLANEOUS

	1 HOUR FIRE RATED WALL
	2 HOUR FIRE RATED WALL

INSTRUMENTATION AND CONTROL NOTES

1. THE INTENT OF THE INSTRUMENTATION AND CONTROL DRAWINGS IS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM IN ACCORDANCE WITH THE SEQUENCE(S) OF OPERATION. THE DIAGRAMS, POINTS LISTS, AND SEQUENCES OF OPERATION INCLUDED HEREIN DESCRIBE THE INTENDED SEQUENCES OF OPERATION FOR SYSTEMS AND MAJOR COMPONENTS BUT DO NOT DEFINE IN DETAIL THE OPERATION OF MINOR COMPONENTS, RELAYS, SWITCHES, WIRING, OR OTHER SMALL DEVICES REQUIRED FOR THE PROPER OPERATION OF THE CONTROL SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS AND/OR WIRING TO ACHIEVE THE SEQUENCE OF OPERATION.
2. PROVIDE ALL CONTROL WIRING, CONDUIT, RELAYS, AND ELECTRICAL WORK REQUIRED AS INTEGRAL PART OF THE INSTRUMENTATION AND CONTROL SYSTEM UNLESS NOTED OTHERWISE. WORK SHALL COMPLY WITH REQUIREMENTS OF DIVISIONS 26, 27, AND 28 DRAWINGS AND SPECIFICATIONS.
3. ALL BAS CONFIGURATIONS (SETPOINTS, TIME DELAYS, RESET LIMITS, TUNING PARAMETERS, ETC) SHALL BE ADJUSTABLE BY THE OPERATOR THROUGH BAS WORKSTATION OR PORTABLE OPERATOR TERMINAL WITHOUT ANY HARDWARE OR SOFTWARE REVISIONS.
4. COORDINATE ALL WORK WITH OTHER TRADES INVOLVED. INTERFACE EQUIPMENT AND WIRING SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
5. COORDINATE BUILDING OCCUPANCY SCHEDULES (OCCUPIED AND UNOCCUPIED) WITH BUILDING OWNER.
6. COORDINATE INSTALLATION LOCATION OF ALL CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO: SENSORS, METERS, SWITCHES, VALVES, DAMPERS, ETC. COORDINATE AND ENSURE CONTROL DEVICES ARE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS, INCLUDING UPSTREAM AND DOWNSTREAM DIAMETERS FOR FLOW METERS, PROPER ORIENTATION TO PREVENT MOISTURE INTRUSION, AND DISTANCES FROM AIR OUTLETS TO ENSURE PROPER TEMPERATURE READINGS.
7. LOCATE THERMOSTATS AND OTHER WALL-MOUNTED CONTROL DEVICES REQUIRING OCCUPANCY MONITORING OR ADJUSTMENT AT AN ELEVATION 4'-0" ABOVE FINISHED FLOOR, IN ACCORDANCE WITH ADA REGULATIONS.
8. IF FIELD ADJUSTMENTS ARE MADE TO THE BAS CONFIGURATIONS DURING FINAL TESTING / VERIFICATION COMMISSIONING, SET THE FACTORY DEFAULT VALUES IN THE CONTROLLERS TO MATCH FINAL VALUES.
9. PROVIDE ACCESS PANEL AT EACH LOCATION WHERE A VALVE, DAMPER, OR OTHER DEVICE REQUIRING SERVICE IS LOCATED ABOVE AN INACCESSIBLE CEILING OR INSIDE A WALL. ACCESS PANELS IN RATED CONSTRUCTION SHALL BEAR UL LABEL. COORDINATE ACCESS PANEL LOCATION WITH ARCHITECT/ENGINEER PRIOR TO INSTALLATION.
10. PROVIDE DUCT ACCESS DOOR AT EACH AIRFLOW MEASURING STATION.
11. CONTROLLED SYSTEMS SHALL AUTOMATICALLY RESET ON EMERGENCY POWER AND RESTORATION OF NORMAL POWER, UNLESS NOTED OTHERWISE. PROVIDE TIME DELAYS ON RESTART, AS NECESSARY, TO STAGGER THE START OF EQUIPMENT SO THAT ALL MOTORS DO NOT ATTEMPT TO START AT THE SAME TIME.
12. SAFETIES SHALL BE HARDWIRED UNLESS NOTED OTHERWISE.
13. WHERE VFD'S ARE LOCATED DIRECTLY UNDER PIPING, PROVIDE GALVANIZED SHEET METAL DRIP SHIELDING AT 18" ABOVE VFD'S SLOPED 1% FROM THE MOUNTING SURFACE TOWARD THE FRONT OF THE DRIVES, AND EXTENDING TO 12" BEYOND EACH DRIVE FACE.

COMMISSIONING NOTES

1. THE BUILDING MECHANICAL SYSTEMS ARE EXEMPT FROM COMMISSIONING REQUIREMENTS IN ACCORDANCE WITH THE FLORIDA BUILDING CODE – ENERGY CONSERVATION, SECTION C408 "SYSTEMS COMMISSIONING". THE TOTAL MECHANICAL EQUIPMENT CAPACITY IS LESS THAN 480 MBH COOLING CAPACITY AND 600 MBH HEATING CAPACITY.

APPLICABLE CODES

PERFORM WORK IN ACCORDANCE WITH THE FOLLOWING CODES AND ANY APPLICABLE STATUTES, ORDINANCES, CODES, AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.

1. ASHRAE
   a. STANDARD 15 — SAFETY STANDARD FOR REFRIGERATION SYSTEMS - 2019
   b. STANDARD 55 — THERMAL ENVIRONMENTAL CONDITIONS FOR HUMAN OCCUPANCY - 2017
   c. STANDARD 62.1 — VENTILATION STANDARD FOR ACCEPTABLE INDOOR AIR QUALITY - 2019
   d. STANDARD 90.1 — ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS - 2019
   e. STANDARD 170 — VENTILATION OF HEALTH CARE FACILITIES - 2017
2. ASME
   a. ASME A17.1 — SAFETY CODE FOR ELEVATORS AND ESCALATORS - 2019
3. OCCUPATIONAL SAFETY AND HEALTH REGULATIONS (OSHA).
4. NATIONAL FIRE CODES
   a. NFPA 1 — FIRE CODE - 2021 (FLORIDA EDITION)
   b. NFPA 13 — STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEM - 2019
   c. NFPA 25 — STANDARD FOR THE INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS - 2020
   d. NFPA 70 — NATIONAL ELECTRICAL CODE - 2020
   e. NFPA 72 — NATIONAL FIRE ALARM AND SIGNALING CODE - 2019
   f. NFPA 90A — STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATION SYSTEMS - 2021
   g. NFPA 90B — STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS - 2021
   h. NFPA 91 — STANDARD FOR THE INSTALLATION OF BLOWER AND EXHAUST SYSTEMS - 2020
   i. NFPA 101 — LIFE SAFETY CODE - 2021 (FLORIDA EDITION)
5. FLORIDA BUILDING CODE, 2023 8TH EDITION
   a. BUILDING CODE
   b. ENERGY CONSERVATION CODE
   c. MECHANICAL CODE
   d. PLUMBING CODE
   e. ACCESSIBILITY CODE
6. FLORIDA STATUTES
   a. CHAPTER 471 — ENGINEERING
   b. CHAPTER 533.80 — BUILDING CONSTRUCTION STANDARDS; FLORIDA BUILDING CODE - ENFORCEMENT
7. FLORIDA ADMINISTRATIVE CODE
   a. CHAPTER 9B-7 — FLORIDA BUILDING COMMISSION HANDICAPPED ACCESSIBILITY STANDARDS
   b. CHAPTER 61C-5 — FLORIDA ELEVATOR SAFETY CODE
   c. CHAPTER 61G15-34 — RESPONSIBILITY RULES OF PROFESSIONAL ENGINEERS CONCERNING THE DESIGN OF MECHANICAL SYSTEMS
   d. CHAPTER 69A-3 — FIRE PREVENTION - GENERAL PROVISIONS
   e. CHAPTER 69A-47 — UNIFORM FIRE SAFETY STANDARDS FOR ELEVATORS
   f. CHAPTER 69A-60 — THE FLORIDA FIRE PREVENTION CODE

RESOLVE, IN WRITING, ANY CODE VIOLATION DISCOVERED IN CONTRACT DOCUMENTS WITH THE ENGINEER PRIOR TO BIDDING. AFTER AWARD OF THE CONTRACT, MAKE ANY CORRECTION OR ADDITION NECESSARY FOR COMPLIANCE WITH APPLICABLE CODES AT NO ADDITIONAL COST TO OWNER.

THE CONTRACTOR SHALL INCLUDE IN THE WORK, WITHOUT EXTRA COST TO THE OWNER, ANY LABOR, MATERIALS, SERVICES, APPARATUS, AND DRAWINGS REQUIRED TO COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, AND REGULATIONS.

WHERE THERE IS CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, THE CODES SHALL GOVERN, EXCEPT WHERE THE REQUIREMENTS OF THE CONTRACT DOCUMENTS ARE MORE STRINGENT.

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC, INDICATIVE OF WORK TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DIMENSIONS.
2. FIELD VERIFY DIMENSIONS AND CONDITIONS. IF THE CONTRACTOR IS UNABLE TO INTERPRET THE CONTRACT DOCUMENTS, HE IS RESPONSIBLE TO REQUEST CLARIFICATION IN WRITING TO THE ARCHITECT. IF HE PROCEEDS WITH ANY WORK BEFORE OBTAINING CLARIFICATION, HE SHALL BE HELD RESPONSIBLE FOR DEFICIENCIES ASSOCIATED THEREWITH.
3. BEFORE SUBMITTING FOR THE WORK, EACH BIDDER WILL BE RESPONSIBLE TO EXAMINE THE PREMISES AND SATISFY HIMSELF AS TO THE EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE AND COMPLETE THE WORK UNDER THIS CONTRACT. NO ALLOWANCE WILL SUBSEQUENTLY BE MADE IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR OMISSION ON HIS PART.
4. CONTRACTOR SHALL PAY FOR INSPECTION PERMITS, CERTIFICATES, CONNECTION FEES, SYSTEM DEMAND CHARGES AND LICENSE FEES IN CONNECTION WITH HIS WORK.
5. CONSTRUCTION MANAGER/GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK OF SUBCONTRACTORS TO AVOID INTERFERENCES.
6. WORK SHALL COMPLY WITH APPLICABLE O.S.H.A. AND E.P.A. REGULATIONS AND GUIDELINES.
7. ERECT AND MAINTAIN REASONABLE PRECAUTIONS FOR SAFETY AND HEALTH INCLUDING POSTING DANGER SIGNS AND OTHER WARNINGS AGAINST HAZARDS INCLUDING PROMULGATING SAFETY REGULATIONS. PROVIDE SAFETY PRECAUTIONS AND BARRICADES FOR PEDESTRIANS AT CONSTRUCTION VEHICLE ACCESS AND EGRESS LOCATIONS.
8. COORDINATE AND SEQUENCE DEMOLITION, CLEANING AND CONSTRUCTION WORK. SUBMIT A COMPLETELY DETAILED CONSTRUCTION SCHEDULE PRIOR TO PRE-CONSTRUCTION CONFERENCE.
9. THE CONTRACTOR SHALL STRICTLY BE HELD TO THE PROJECT SCHEDULE. HE SHALL PROVIDE SUFFICIENT MANPOWER AND EQUIPMENT TO FULLY MOBILIZE, PROCEED WITH AND COMPLETE THE WORK.
10. THE CONTRACTOR SHALL BE RESTRICTED TO AREAS SPECIFIED BY THE OWNER FOR ON-SITE STORAGE OF CONSTRUCTION MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SECURITY OF EQUIPMENT AND MATERIALS.
11. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK ENVIRONMENT AT ALL TIMES AND SHALL CLEAN CONSTRUCTION SITE OF DEBRIS AT COMPLETION OF THE JOB AND BEFORE FINAL PAYMENT IS MADE.
12. THE CONTRACTOR SHALL FURNISH "AS-BUILT" DRAWINGS TO THE ARCHITECT AT COMPLETION OF CONSTRUCTION.
13. CONTRACTOR'S USE OF AN APPROVAL STAMP ON DOCUMENTS SUBMITTED AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS CERTIFIES THAT THE CONTRACTOR HAS COMPLIED WITH THE CONTRACT DOCUMENT REQUIREMENTS RELATED TO "SHOP DRAWINGS, PRODUCT DATA AND SAMPLES".
14. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE ARCHITECT/ ENGINEER'S APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT/ENGINEER IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMITTAL AND THE ARCHITECT/ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS BY THE ARCHITECT/ENGINEER'S APPROVAL THEREOF.
15. PRIOR TO INSTALLATION, COORDINATE AND ADJUST THE FINAL LOCATION OF WALL MOUNTED DEVICES AND EQUIPMENT WITH ALL CASEWORK, SHELVING, MARKER BOARDS, BULLETIN BOARDS OR OTHER WALL MOUNTED FURNISHINGS.
16. SUPPORTS AND HANGERS SHALL PRESENT A NEAT, ORDERLY APPEARANCE.
17. ROOF MOUNTED EQUIPMENT SHALL BE SECURED TO STRUCTURE TO RESIST A 130 MPH WIND LOAD.
18. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL FIRE, SMOKE, AND ACOUSTICAL WALL ASSEMBLIES.
19. BEAM AND FLOOR PENETRATIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. BEAM SLEEVES AND BEAM REINFORCING APPROVED BY STRUCTURAL ENGINEER SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.
20. CONTRACTOR SHALL FURNISH U.L. APPROVED DRAWINGS FOR EACH TYPE OF FIRE RATED ASSEMBLY PENETRATION BY DUCTS, PIPES OR CONDUITS. THESE DRAWINGS SHALL BE DISPLAYED ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. SEE SPECIFICATIONS.
21. CONTRACTOR SHALL GUARANTEE THE WORK AND MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE IN ADDITION TO THE WARRANTIES PROVIDED BY MATERIAL SUPPLIERS AND MANUFACTURERS.
22. EXIT WAYS SHALL BE KEPT CLEAR. IF AN EXIT MUST BE TEMPORARILY BLOCKED, PROVIDE THE REQUIRED BARRICADE AND DIRECTIONAL SIGNS FOR TEMPORARY EXITING AND SAFETY.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	LAN	LOCAL AREA NETWORK
AHAP	AS HIGH AS POSSIBLE	N/A	NOT APPLICABLE
CU	CONDENSING UNIT	OA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL PANEL	P	PUMP
DSSI	DUCTLESS SPLIT SYSTEM INDOOR UNIT	RA	RETURN AIR
DSSO	DUCTLESS SPLIT SYSTEM OUTDOOR UNIT	RPM	REVOLUTIONS PER MINUTE
EA	EXHAUST AIR	SA	SUPPLY AIR
EF	EXHAUST FAN	SQ FT	SQUARE FEET
°Fdb	DEGREES FAHRENHEIT DRY BULB	TYP	TYPICAL
°Fwb	DEGREES FAHRENHEIT WET BULB	UNO	UNLESS NOTED OTHERWISE
FPM	FEET PER MINUTE	V	VALVE
FSD	COMBINATION FIRE/SMOKE DAMPER	WG	WATER GAUGE
FT	FEET		

DRAWING INDEX

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H2E PROJECT No: 24179

Florida Registry #1445
Robert D. Richards, P.E. #90648

FLORIDA SHERIFFS YOUTH LEARNING CENTER AND BLACKBURN-HUNT BUILDING

MAHAN DRIVE
TALLAHASSEE, FL.

CRA ARCHITECTS

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Submittal

Phase	Date	Drw	Chk
DESIGN DEVELOPMENT	02-28-25	MAW	RDR
50% CD	04-15-25	MAW	RDR
100% CD	07-18-25	MAW	RDR

Revision

#	Description	Date

CRA Project # 24029

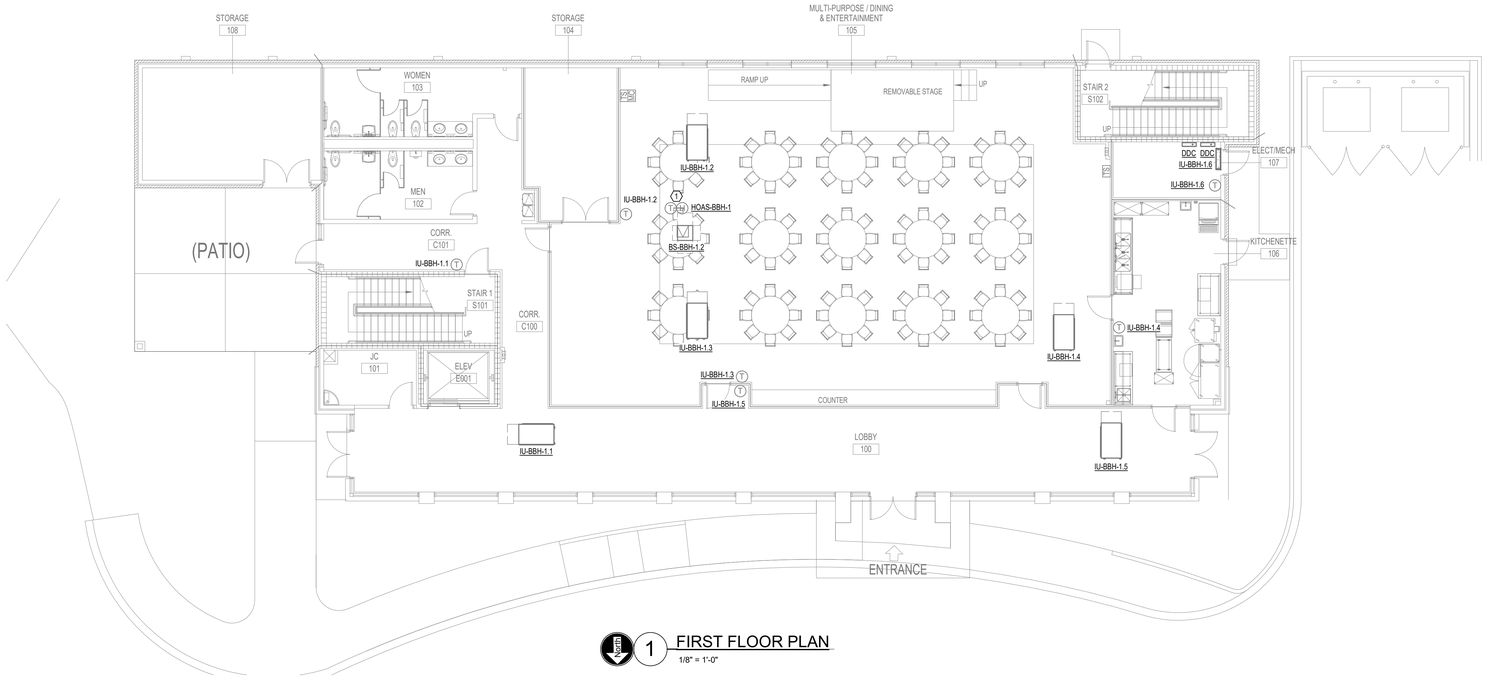
Phase: CONSTRUCTION DOCUMENTS

SHEET TITLE
GENERAL NOTES, LEGENDS & SCHEDULES

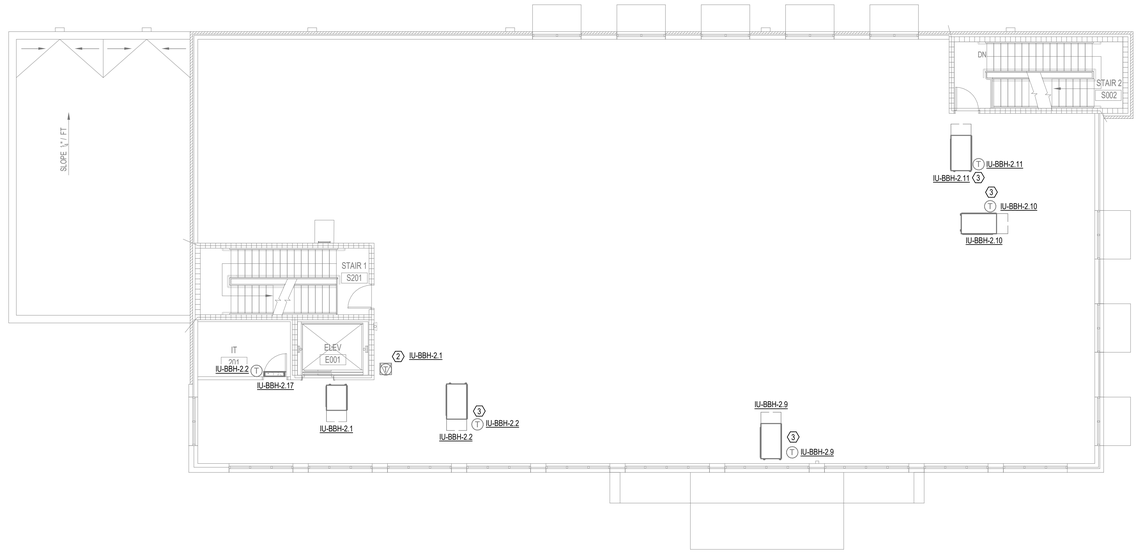
MC0.1

KEYED NOTES:

1. INSTALL TEMPERATURE AND HUMIDITY SENSOR(S) IN SUPPLY DUCT DROP FROM HOAS DUCTWORK IN THIS VICINITY. SEE SHEET M1.5.
2. MOUNT THERMOSTAT IN RETURN AIR DUCTWORK FROM ELEVATOR SHAFT. SEE SHEET M1.5
3. PROVIDE THERMOSTAT WITH FIFTY (50) FEET OF CONTROL CABLE. NEATLY COIL AND LOOSELY STORE THERMOSTAT IN RETURN AIR DUCTWORK FOR FUTURE FINISH OUT.



1 FIRST FLOOR PLAN
1/8" = 1'-0"



2 SECOND FLOOR PLAN
1/8" = 1'-0"

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Revision

#	Description	Date

CRA Project # 24029

Phase: CONSTRUCTION DOCUMENTS

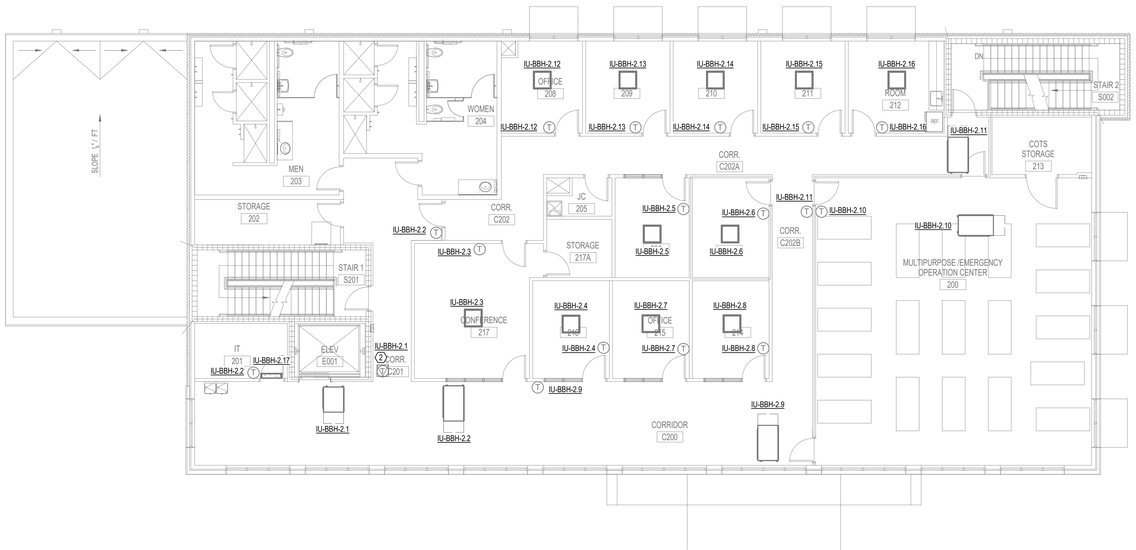
SHEET TITLE

BLACKBURN-HUNT BUILDING

MC1.3

KEYED NOTES:

(2) MOUNT THERMOSTAT IN RETURN AIR DUCTWORK FROM ELEVATOR SHAFT. SEE SHEET M1.5



1 SECOND FLOOR PLAN - ADD ALTERNATE

1/8" = 1'-0"

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DESIGN DEVELOPMENT	02-28-25	MAW	RDR
50% CD	04-15-25	MAW	RDR
100% CD	07-18-25	MAW	RDR

Revision

#	Description	Date

CRA Project # 24029

Phase: CONSTRUCTION DOCUMENTS

SHEET TITLE

BLACKBURN-HUNT BUILDING - SECOND FLOOR

MC1.3A

2 BLACKBURN-HUNT BUILDING - ROOF PLAN

1/8" = 1'-0"

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Revision

#	Description	Date

CRA Project # 24029

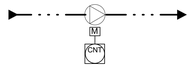
Phase: CONSTRUCTION DOCUMENTS

SHEET TITLE

BLACKBURN-HUNT BUILDING - ROOF PLAN

MC1.5

MISCELLANEOUS

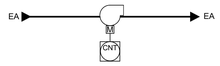


DOMESTIC HOT WATER CIRCULATION PUMPS

HOT WATER CIRCULATION PUMPS (CP-BBH-1)

A. CONTROLLED BY AN AQUASTAT WIRED IN SERIES WITH AN ELECTRONIC, PROGRAMMABLE TIMECLOCK, PROVIDED BY THE PLUMBING CONTRACTOR. PROVIDE AN OCCUPIED TIME SCHEDULE (MON-FRI: 7:00 AM – 6:00 PM / SAT-SUN: OFF). THE CIRCULATION PUMPS SHALL BE CONTROLLED AS FOLLOWS:

1. SCHEDULE OFF: PUMP OFF.
2. SCHEDULE ON / AQUASTAT > 120°F: PUMP OFF.
3. SCHEDULE ON / AQUASTAT < 110°F: PUMP ON.



FANS (EF-BBH-2):

A. START / STOP: START / STOP OF THE EXHAUST FAN SHALL BE CONTROLLED THROUGH A MOTOR CONTACTOR. FAN SHALL BE INTERLOCKED WITH DESIGNATED HOAS UNIT AND OPERATE AS FOLLOWS:

1. EF-BBH-1 AND EF-BBH-2 INTERLOCKED WITH HOAS-BBH-1

A. HOAS ON: FAN(S) ON.
B. HOAS OFF: FAN(S) OFF.

HIGH PERCENTAGE OUTSIDE AIR DX SYSTEM (HOAS-BBH-1)

1. GENERAL
   A. THE HIGH PERCENTAGE OUTSIDE AIR UNIT SHALL BE CONTROLLED BY A SEPARATE, STAND-ALONE APPLICATION SPECIFIC CONTROLLER (ASC) PROVIDED AND CONFIGURED BY THE EQUIPMENT MANUFACTURER. THE ASC SHALL MONITOR AND CONTROL THE UNIT IN A STAND-ALONE MODE.

2. RUN CONDITIONS
   A. TEMPERATURE AND HUMIDITY SET-POINTS:
      1. PROVIDE OCCUPIED TEMPERATURE COOLING (74°F, ADJ) AND HEATING (70°F, ADJ) SET-POINTS. PROVIDE UNOCCUPIED TEMPERATURE COOLING (80°F, ADJ) AND HEATING (65°F, ADJ) SET-POINTS.
      2. PROVIDE AN OCCUPIED HUMIDITY SET-POINT (55%, ADJ), PROVIDE AN UNOCCUPIED HUMIDITY SET-POINT (60%, ADJ).

   B. OCCUPIED MODE: ENABLE THE UNIT BASED ON AN OCCUPIED TIME SCHEDULE (MON-FRI = 7:00 AM – 6:00 PM / SAT – SUN = OFF, ADJ.)
      1. COOLING MODE: IF THE OUTSIDE AIR TEMPERATURE RISES ABOVE THE COOLING ENABLE SET-POINT (75°F, ADJ) PLUS A DEAD-BAND, THEN INITIATE COOLING MODE. DISABLE COOLING MODE IF THE OUTSIDE AIR TEMPERATURE IS BELOW THE COOLING LOCKOUT SET-POINT (50°F, ADJ).
      2. HEATING MODE: IF THE OUTSIDE AIR TEMPERATURE FALLS BELOW THE HEATING ENABLE SET-POINT (55°F, ADJ) MINUS A DEAD-BAND, THEN INITIATE HEATING MODE. DISABLE HEATING MODE IF THE OUTSIDE AIR TEMPERATURE IS ABOVE THE HEATING LOCKOUT SET-POINT (70°F, ADJ).
      3. DEHUMIDIFICATION MODE: IF THE RETURN AIR HUMIDITY RISES ABOVE THE RETURN AIR HUMIDITY SET-POINT (55%, AD), THEN ENABLE DEHUMIDIFICATION MODE.
      4. VENT MODE: IF THE UNIT IS OPERATING IN OCCUPIED MODE AND THERE IS NO DEMAND FOR COOLING, HEATING, OR DEHUMIDIFICATION, THEN INITIATE VENT MODE.

   C. UNOCCUPIED MODE: THE UNIT IS OFF EXCEPT AS FOLLOWS:
      1. TEMPERATURE CONTROL: DURING UNOCCUPIED HOURS, RESET THE COOLING AND HEATING TEMPERATURE SET-POINTS EQUAL TO THE RESPECTIVE UNOCCUPIED TEMPERATURE SET-POINTS. ENABLE COOLING AND HEATING MODES OF OPERATION TO MAINTAIN THE UNOCCUPIED TEMPERATURE SET-POINTS.
      2. HUMIDITY CONTROL: DURING UNOCCUPIED HOURS, RESET THE DEHUMIDIFICATION SET-POINT TO UNOCCUPIED SET-POINT. IF THE SPACE HUMIDITY RISES ABOVE SET-POINT, THEN INITIATE DEHUMIDIFICATION MODE UNTIL SPACE HUMIDITY IS BELOW SET-POINT MINUS A DEAD-BAND.
      3. TENANT OVERRIDE: IF THE OVERRIDE BUTTON IS ACTIVATED AT THE SPACE SENSOR, THEN INITIATE AN OCCUPIED MODE OF OPERATION FOR A MINIMUM TIME DELAY (2 HOURS, ADJ).

3. SUPPLY FAN
   A. OCCUPIED MODE: THE SUPPLY FAN OPERATES CONTINUOUSLY. PROGRAM A MINIMUM SPEED (30%) AND A RAMP TIME (60 SEC) INTO THE AFD.
   B. UNOCCUPIED MODE: THE SUPPLY FAN IS OFF UNLESS THERE IS A CALL FOR ANY MODE.

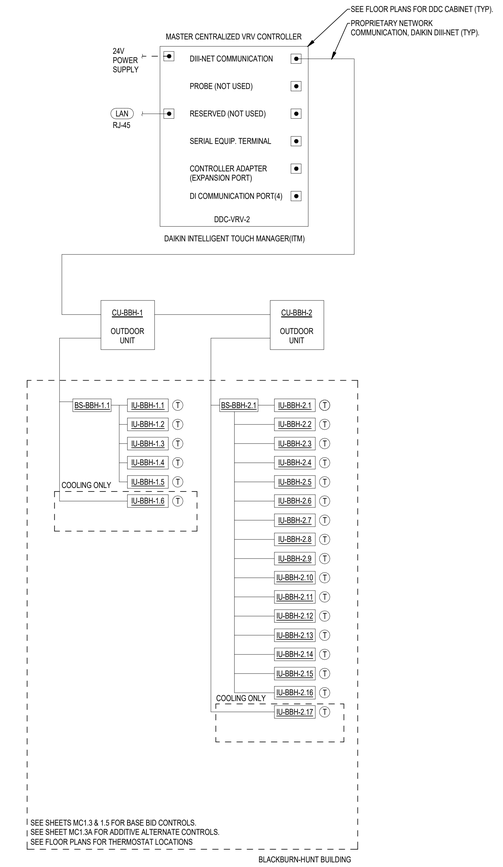
4. ECONOMIZER DAMPER
   A. OCCUPIED MODE: MODULATE DAMPER TO MAINTAIN AN OUTSIDE AIRFLOW SET-POINT. SEE MECHANICAL SCHEDULES.
   B. UNOCCUPIED MODE: CLOSE DAMPER.

5. COMPRESSORS
   A. SUPPLY FAN OFF: COMPRESSORS OFF.
   B. COOLING MODE: STAGE/MODULATE COMPRESSORS IN SEQUENCE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET-POINT (54°F, ADJ).SEE MECHANICAL SCHEDULES.
   C. HEATING MODE: COMPRESSORS OFF.
   D. DEHUMIDIFICATION MODE: STAGE/MODULATE COMPRESSORS IN SEQUENCE TO MAINTAIN THE EVAPORATOR COIL SUCTION TEMPERATURE SET-POINT (52°F, ADJ).
   E. VENT MODE: COMPRESSORS OFF.
   F. COMPRESSOR SEQUENCING:
      1. COMPRESSOR ADD: IF THE VARIABLE SPEED COMPRESSOR IS OPERATING AT MAXIMUM SPEED AND THE TEMPERATURE IS ABOVE OR BELOW SETPOINT (BASED ON OPERATING MODE), THEN STAGE THE LAG COMPRESSOR ON. MODULATE THE VARIABLE SPEED COMPRESSOR TO MAINTAIN THE TEMPERATURE SETPOINT.
      2. COMPRESSOR SUBTRACT: IF MORE THAN ONE COMPRESSOR IS OPERATING, THE VARIABLE SPEED COMPRESSOR IS AT MINIMUM SPEED, AND THE TEMPERATURE IS ABOVE OR BELOW SETPOINT (BASED ON OPERATING MODE), THEN STAGE THE LAG COMPRESSOR OFF. MODULATE THE VARIABLE SPEED COMPRESSOR TO MAINTAIN THE TEMPERATURE SETPOINT.

6. HOT GAS REHEAT VALVE
   A. SUPPLY FAN OFF: HOT GAS REHEAT VALVE CLOSED.
   B. DEHUMIDIFICATION MODE: MODULATE HOT GAS REHEAT VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET-POINT (70°F, ADJ).
   C. ALL OTHER MODES: HOT GAS REHEAT VALVE CLOSED.

7. ELECTRIC HEAT
   A. SUPPLY FAN OFF: HEATER OFF.
   B. HEATING MODE: MODULATE ELECTRIC HEAT TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET-POINT (70°F, ADJ).
   C. ALL OTHER MODES: HEATER OFF.

VARIABLE REFRIGERANT VOLUME



VARIABLE REFRIGERANT VOLUME (VRV) SYSTEMS:

1. GENERAL
   A. VRV SYSTEMS SHALL BE CONTROLLED BY SEPARATE, STAND-ALONE, APPLICATION SPECIFIC CONTROLLERS (ASC) PROVIDED AND CONFIGURED BY THE EQUIPMENT MANUFACTURER TO OPERATE AND CONTROL THE SYSTEMS IN STAND-ALONE MODE.

2. OPERATING CONDITIONS
   A. VRV SYSTEMS SHALL OPERATE PER THE OWNER'S OCCUPIED/UNOCCUPIED SCHEDULE. COORDINATE SCHEDULE WITH OWNER.
   B. VRV FAN AND COIL UNITS SHALL BE CONTROLLED BY 7-DAY PROGRAMMABLE THERMOSTATS LOCATED AS INDICATED ON THE CONTROLS DRAWINGS. SET TEMPERATURES AS FOLLOWS:
      1. OCCUPIED MODE:
         A. COOLING: 74 DEGREES F.
         B. HEATING: 70 DEGREES F.
      2. UNOCCUPIED MODE:
         A. COOLING: 78 DEGREES F.
         B. HEATING: 68 DEGREES F.

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FLORIDA SHERIFFS YOUTH LEARNING CENTER AND BLACKBURN-HUNT BUILDING

MAHAN DRIVE
TALLAHASSEE, FL.

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Submittal

Phase	Date	Drw	Chk
DESIGN DEVELOPMENT	02-28-25	MAW	RDR
50% CD	04-15-25	MAW	RDR
100% CD	07-18-25	MAW	RDR

Revision

#	Description	Date

CRA Project # 24029

Phase: CONSTRUCTION DOCUMENTS

SHEET TITLE
CONTROLS

MC2.1