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Report: USACE Reset (Winterville, NC) TAB REPORT

Function: Test, Adjust, & Balance

Date: 12/13/2023

PROJECT
USACE Reset (Winterville, NC)

81ST NC026

Winterville, NC

Client

TEAM CONSTRUCTION

825 GUM BRANCH RD

STE 128

JACKSONVILLE, NC 28540

National TAB

Project: USACE Reset (Winterville, NC)

Table Of Contents

Section	Page #
Certification	3
Equipment Calibrations	4
Abbreviations	5
GRD Layout	6



CERTIFICATION

PROJECT: USACE Reset (Winterville, NC)

The data presented in this report is a record of system measurements and final adjustments that have been obtained in accordance with the current edition of the NEBB *Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems*. Any variances from design quantities, which exceed NEBB tolerances, are noted in the Test-Adjust-Balance Report Project Summary.

The air distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM: National TAB-Southeast

REGISTRATION NO: 3755

CERTIFIED BY: J. Scott Springer 23312

DATE: 12/13/2023

The hydronic distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM: National TAB-Southeast

REGISTRATION NO: 3086

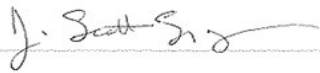
CERTIFIED BY: J. Scott Springer 23312

DATE: 12/13/2023

Submitted and Certified by:

NEBB TAB FIRM: National TAB-Southeast

TAB PROFESSIONAL: J. Scott Springer

SIGNATURE: 

REGISTRATION NO: 3755 (NTAB) / 23312

CERTIFICATION EXP: 12/31/2024





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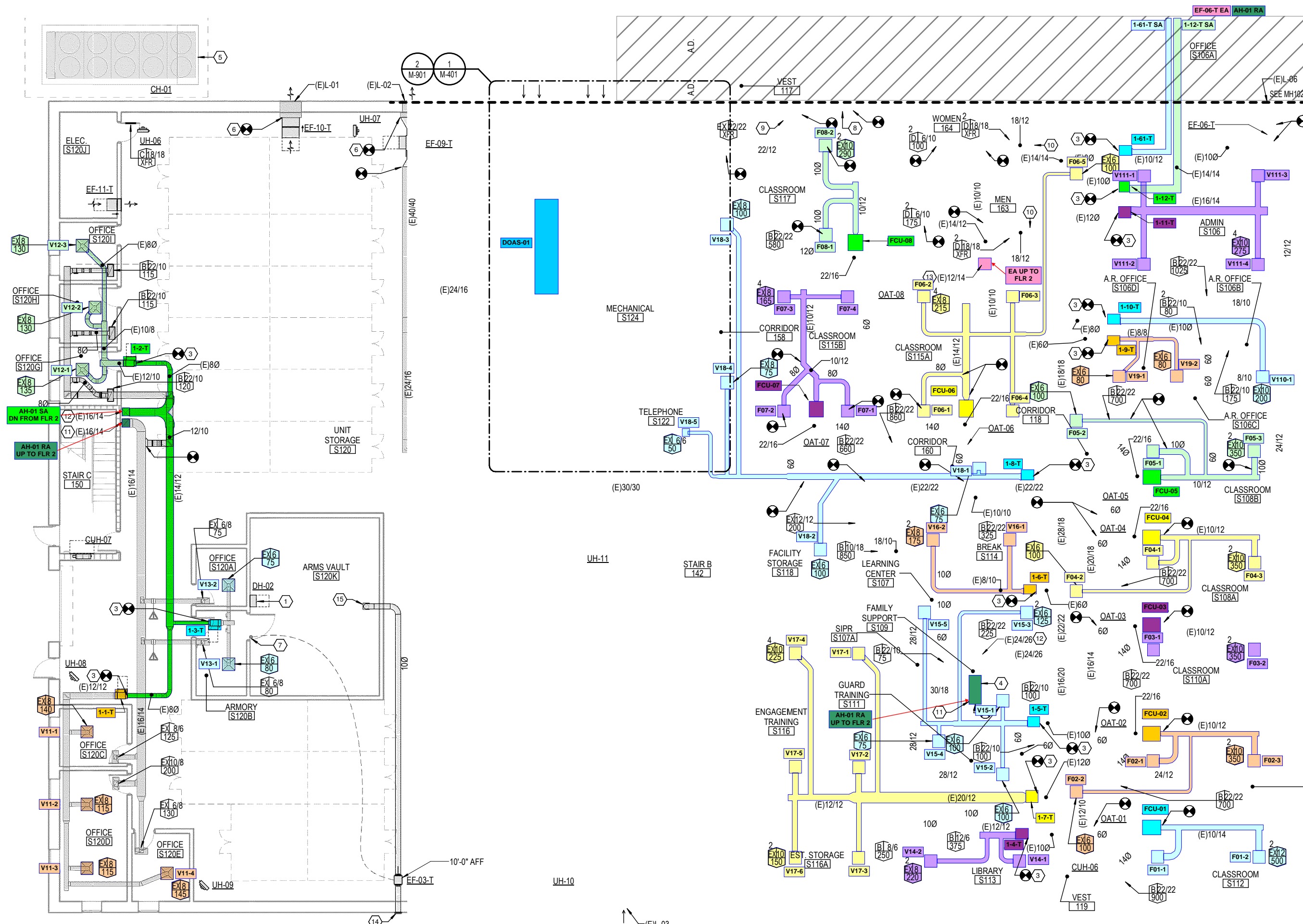
Testing, Adjusting, and Balancing Equipment



Function		Range	Minimum Accuracy	Instrument Information	Calibration Date	Date Due
AIR	AIR PRESSURE	0 in wg to 10 in wg	2% +/- 0.001 in wg	Shortridge ADM-860C S/N M19547	10/17/2023	10/16/2024
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Shortridge ADM-860C S/N M19548	10/17/2023	10/16/2024
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 3 % +/- 7 cfm	Shortridge Flow Hood	10/17/2023	10/16/2024
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/20/2023	10/19/2024
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	10/20/2023	10/19/2024
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/20/2023	10/19/2024
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	10/20/2023	10/19/2024
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/20/2023	10/19/2024
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	10/20/2023	10/19/2024
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 090315046	10/20/2023	10/19/2024
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/16/2023	10/15/2024
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/16/2023	10/15/2024
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Dwyer TAC-L - S/N S1100123	10/16/2023	10/15/2024
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Dwyer 490W-6 - S/N 01L6NK	6/21/2023	6/20/2024
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Dwyer 490W-6 - S/N 01L6NK	6/21/2023	6/20/2024
DALT	DUCT LEAKAGE	-10" - +10" wc	±1% of reading +/- 0.004" wc	Kanomax DALT 6900 S/N: 080439	5/2023	5/2024

Abbreviation List

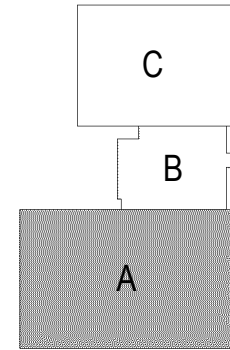
A = Area (ft ²)	S.F. = Service Factor
AHU = Air Handling Unit	SF = Supply Fan
A _k = Effective Area	SP = Static Pressure
BHP = Brake Horsepower (IP) HP	SR = Supply Register
Btu = British Thermal Unit	T = Temperature
Btu/h = Btuh = BTUH = BTU/Hour	T _{ma} = Mixed Air Temperature
CL = Center Distance (used in belt formula)	T _{oa} = Outside Air Temperature
CD = Ceiling Diffuser	T _{ra} = Return Air Temperature
CF = Correction Factor	H = Head (in wc, ft wc, psi)
CFM = Volumetric Flow: Cubic Feet Per Minute	h = Enthalpy
CO ₂ = Carbon Dioxide	HP = Horsepower
CO = Carbon Monoxide	hr = Hour
C _v = Flow Constant	K _v = Flow constant (SI)
d = Diameter (in.) IP	kW = Kilowatt = 1000 Watts
Δ = Difference or Change (Final - Initial)	LAT = Leaving Air Temperature
DB = Dry Bulb	lb = Pounds
EA = Exhaust Air	LWT = Leaving Water Temperature
EAT = Entering Air Temperature	ma = Mixed Air
EF = Exhaust Fan	MIN = Minimum
Eff = Efficiency	MAX = Maximum
EG = Exhaust Grille	N/A = Not Applicable
ESP = External Static Pressure	NA = No Access
EWT = Entering Water Temperature	NL = Not Listed
°F = Degrees Fahrenheit, °F	NPSHA = Net Positive Suction Head Available
FPB = Fan Powered Box	NS = Not Specified
FLA = Full Load Amps	OA = Outside Air
fpm = Feet per Minute (fpm)	OAT = Outside Air Temperature
ft = Foot	PD = Sheave Pitch Diameter
gal = Gallons	P.D. = Pressure Drop
GPM = Gallons Per Minute (GPM)	PF = Power Factor
h = Enthalpy (BTU/lb dry air)	SG = Supply Grille
P = Pressure	SR = Supply Register
ppm = parts per million	TP = Total Pressure
psi = Pounds Per Square Inch	T _{ra} = Return Air Temperature
psid = PSI Differential	TS = Tip Speed (fpm) IP, (m/s) SI
r = Radius (in)	TSP = Total Static Pressure
% _{ra} = % of Return Air	V = Velocity
RA = Return Air	VAV = Variable Air Volume
RAT = Return Air Temperature	VD = Volume Damper
RF = Return Fan	VFD = Variable Frequency Drive
RG = Return Grille	W = Watt
RH = Relative Humidity	WB = Wet Bulb
RPM = Revolutions Per Minute	wg = wc = water gauge = water column
RTU = Roof Top Unit	WHP = Water Horsepower (IP)
SA = Supply Air	ω = Humidity Ratio

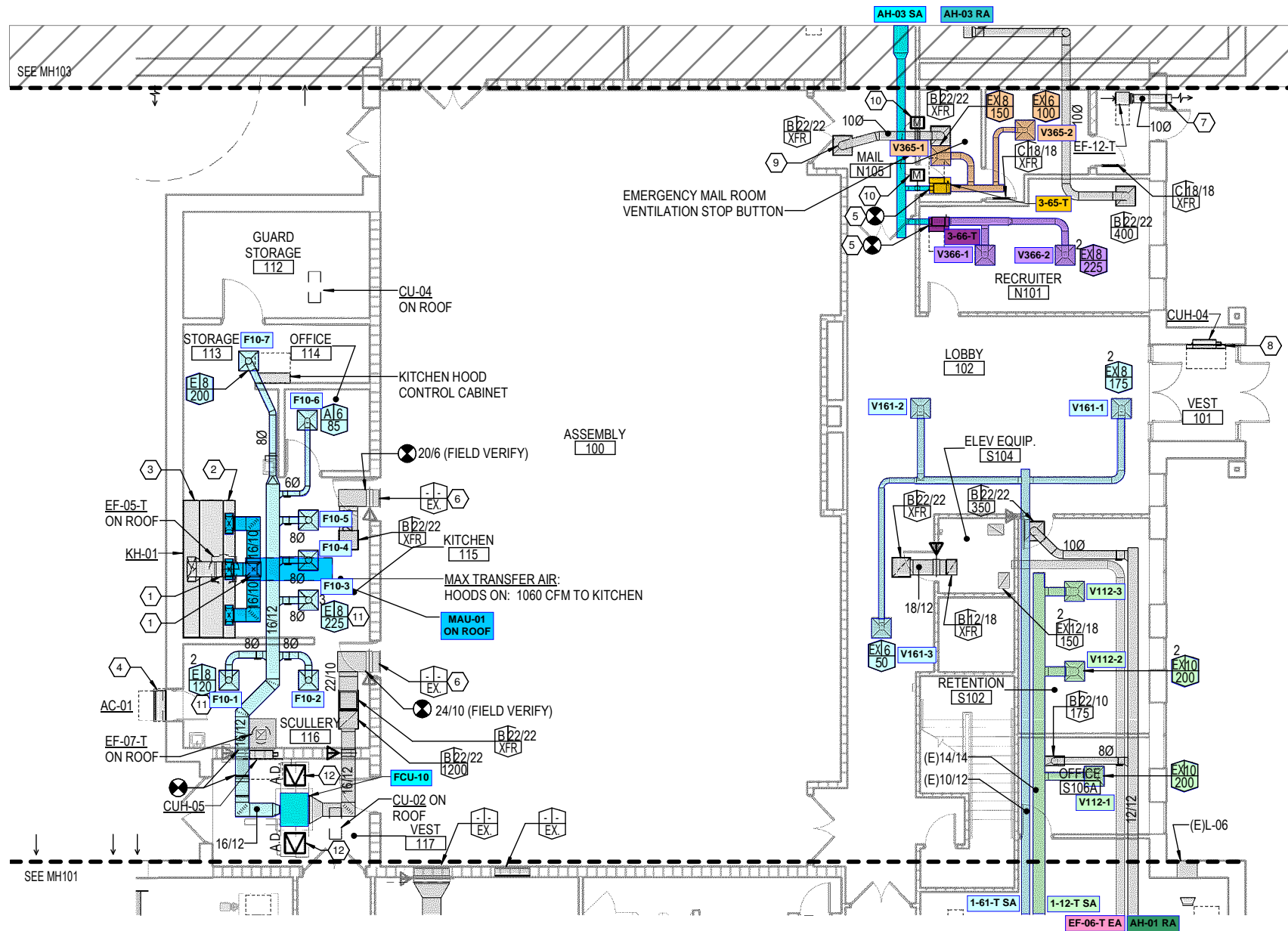


KEYED NOTES

- 1 LOCATE DEHUMIDIFIER ON WALL. PROVIDE MOUNTING BRACKETS. RUN CONDENSATE TO EXISTING FLOOR DRAIN.
- 2 EXISTING RETURN DUCT UP TO 2ND FLOOR.
- 3 PROVIDE NEW VAV BOX WITH TERMINAL CONTROLLER, ACTUATOR, SUPPLY TEMPERATURE SENSOR AND PIPING PACKAGE. CONNECT TO EXISTING INLET AND OUTLET DUCTWORK, PROVIDE TRANSITIONS AS REQUIRED. REFER TO "MP" SHEETS FOR THERMOSTAT LOCATIONS.
- 4 CONNECT NEW 55/24 RETURN DUCT TO EXISTING FIRE/SMOKE DAMPER AT THE FLOOR DECK.
- 5 EXTEND EXISTING EQUIPMENT PAD AS INDICATED TO SUPPORT NEW EQUIPMENT.
- 6 CONNECT TO EXISTING PLENUM ON BACK OF LOUVER.
- 7 DOOR SWITCH FOR VAULT VENTILATION FAN.
- 8 CAP EXISTING TRANSFER DUCT.
- 9 CONNECT TO EXISTING FIRE/SMOKE DAMPER. OFFSET TRANSITION AS REQUIRED TO AVOID EXISTING CHILLED WATER PIPING.
- 10 PROVIDE FIRE/SMOKE DAMPER WHERE IN NECK OF AIR DEVICE.
- 11 RETURN DUCT UP TO SECOND FLOOR.
- 12 SUPPLY DUCT DOWN FROM SECOND FLOOR.
- 13 EXHAUST DUCT UP TO SECOND FLOOR.
- 14 10" DIA. DISCHARGE WITH HOOD AND INSECT SCREEN. LOCATE 10"-A FF.
- 15 CORE DRILL A 10" DIA. PENETRATION THROUGH THE VAULT CONCRETE LID FOR EXHAUST AND PROTECT THE OPENING PER DETAIL "5"/G-002. PROVIDE TRANSITION FITTING TO COVER OPENINGS AND TIE TO 10" DIA. EXHAUST DUCT.

1 FIRST FLOOR HVAC PLAN - AREA A





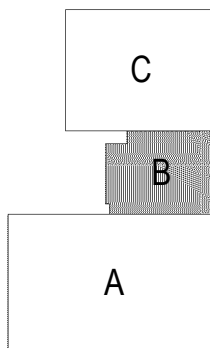
MAIL ROOM SEQUENCE

- EXHAUST FAN EF-12-T SHALL RUN CONTINUOUSLY TO MAINTAIN NEGATIVE PRESSURE IN THE MAIL AREA.
- UPON ACTIVATION OF THE MAIL ROOM VENTILATION STOP BUTTON, THE LOW-LEAK DAMPERS IN THE VAV 3-65-T INLET DUCT AND IN THE TRANSFER DUCT SHALL BE CLOSED. AN ALARM SHALL BE REPORTED THROUGH THE BAS.

KEYED NOTES

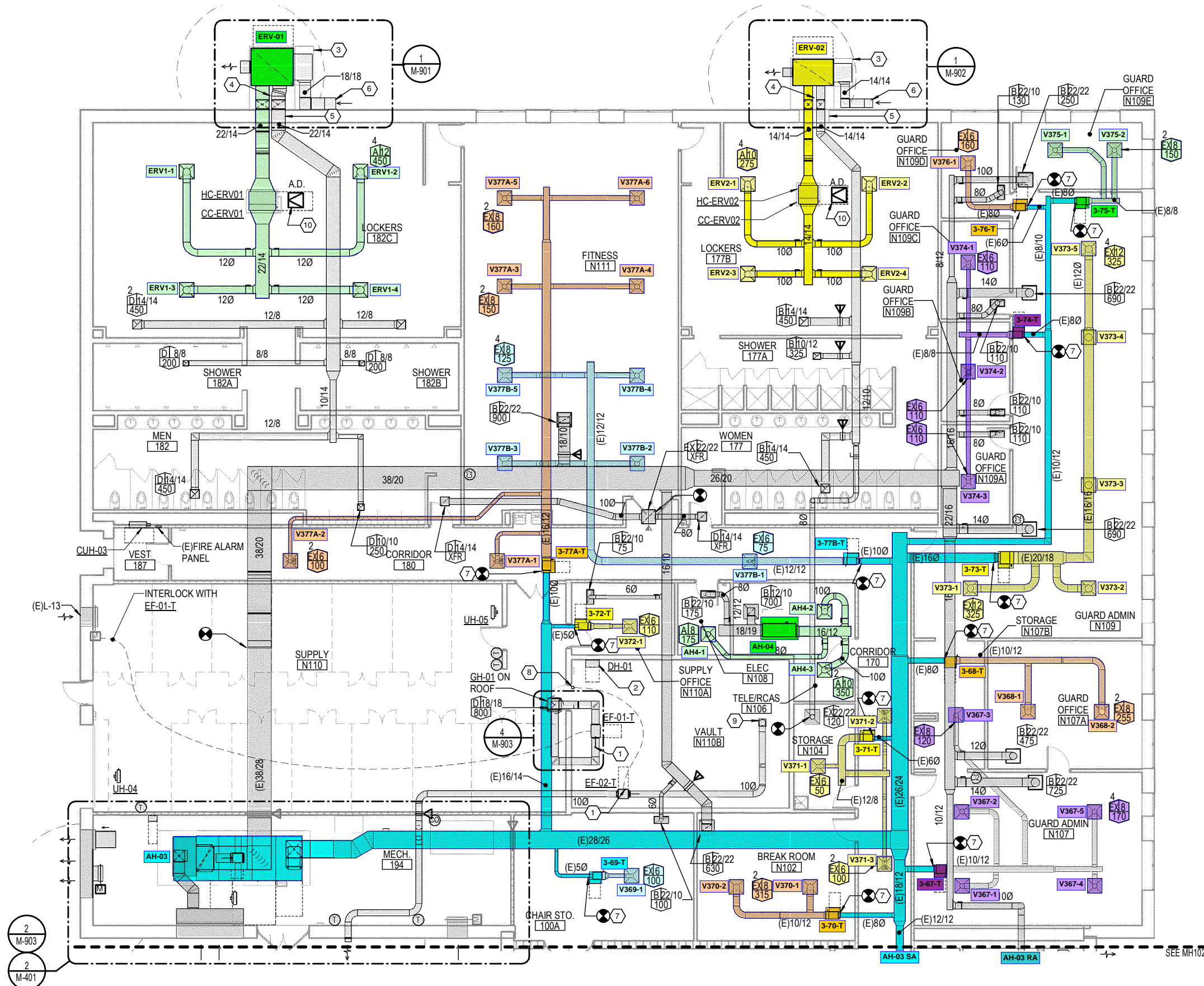
- RE-USE EXISTING ROOF OPENING.
- DOWNFLOW PERFORATED FACE MAKE-UP AIR PLENUM.
- PROVIDE GREASE HOOD FIRE SUPPRESSION SYSTEM.
- LOCATE NEW AIR CURTAIN OVER KITCHEN ACCESS DOOR. PROVIDE AUTOMATIC DOOR SWITCH.
- PROVIDE NEW VAV BOX WITH TERMINAL CONTROLLER, ACTUATOR, SUPPLY TEMPERATURE SENSOR AND PIPING PACKAGE. CONNECT TO EXISTING INLET AND OUTLET DUCTWORK, PROVIDE TRANSITIONS AS REQUIRED. REFER TO "MP" SHEETS FOR THERMOSTAT LOCATIONS.
- CONNECT TO EXISTING TRANSFER GRILLE.
- 10" DIA. DISCHARGE WITH HOOD AND INSECT SCREEN. LOCATE 10'-0" AFF.
- CABINET UNIT HEATER ENCLOSURE PANEL FOR OUT OF WALL MOUNTING.
- PROVIDE FIRE/SMOKE DAMPER WHERE DUCT PENETRATES RATED "LID".
- PROVIDE LOW-LEAK MOTORIZED DAMPER IN DUCT.
- ADJUST BLADE PATTERN TO AVOID SUPPLY AIRFLOW INTERFERENCE WITH KITCHEN HOOD EXHAUST CAPTURE.
- PROVIDE A MINIMUM 24/24 ACCESS DOOR. ACCESS DOOR RATING TO MATCH CEILING.

1 FIRST FLOOR HVAC PLAN - AREA B

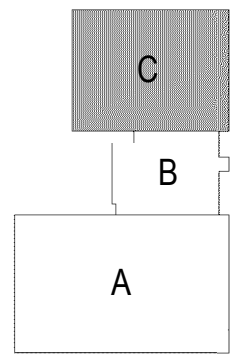


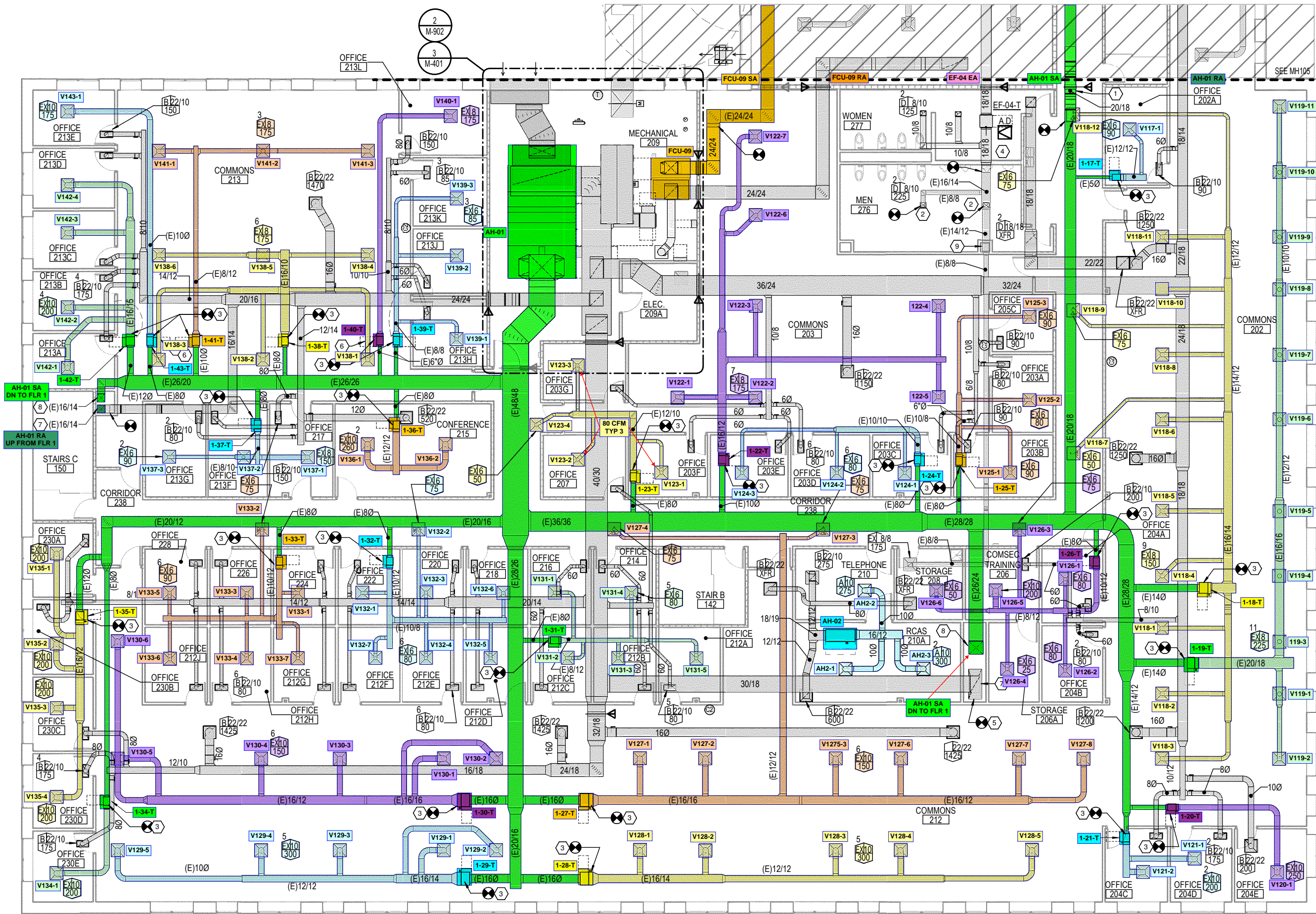
KEYED NOTES

- 1 LOCATE NEW EXHAUST FAN ON TOP OF VAULT FOR ACCESSIBILITY.
- 2 LOCATE DEHUMIDIFIER ON WALL. PROVIDE MOUNTING BRACKETS. RUN CONDENSATE TO EXISTING FLOOR DRAIN.
- 3 NEW CONCRETE EQUIPMENT PAD.
- 4 SUPPLY AND EXHAUST DUCTS SERVING ENERGY RECOVERY UNITS SHALL BE DOUBLE WALL INSULATED WHILE EXTERNAL TO THE BUILDING. TRANSITION TO SINGLE WALL EXTERNALLY INSULATED DUCT WHERE THE DUCTS ENTER THE BUILDING.
- 5 IN-FILL UNUSED PORTION OF EXISTING LOUVER OPENING. REFERENCE ARCHITECTURAL DETAIL 2/G-004 FOR MORE INFORMATION.
- 6 EXTEND OUTSIDE AIR INTAKE TO A MINIMUM 10'-0" ABOVE GRADE AND TURN HORIZONTAL. PROVIDE 45-DEGREE CUT AND INSECT SCREEN OVER OPENING.
- 7 PROVIDE NEW VAV BOX WITH TERMINAL CONTROLLER, ACTUATOR, SUPPLY TEMPERATURE SENSOR AND PIPING PACKAGE. CONNECT TO EXISTING INLET AND OUTLET DUCTWORK. PROVIDE TRANSITIONS AS REQUIRED. REFER TO "MP" SHEETS FOR THERMOSTAT LOCATIONS.
- 8 DOOR SWITCH FOR VAULT VENTILATION FAN.
- 9 CORE DRILL A 10" DIA. PENETRATION THROUGH THE VAULT CONCRETE LID FOR EXHAUST AND PROTECT THE OPENING PER DETAIL "5"/G-002. PROVIDE TRANSITION FITTING TO COVER OPENINGS AND TIE TO 10" DIA. EXHAUST DUCT.
- 10 PROVIDE A MINIMUM 24/24 ACCESS DOOR. ACCESS DOOR RATING TO MATCH CEILING.

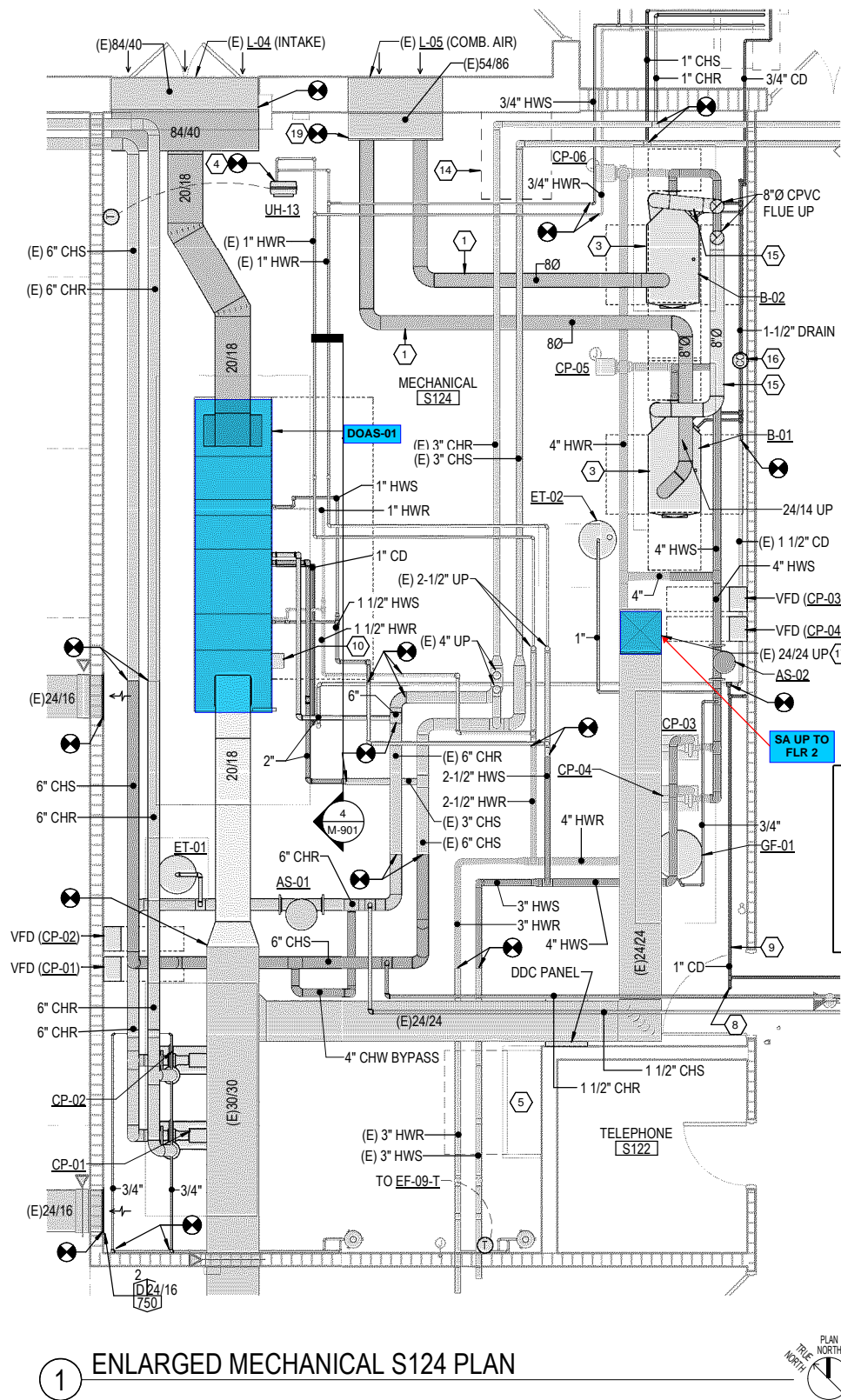


1 FIRST FLOOR HVAC PLAN - AREA C

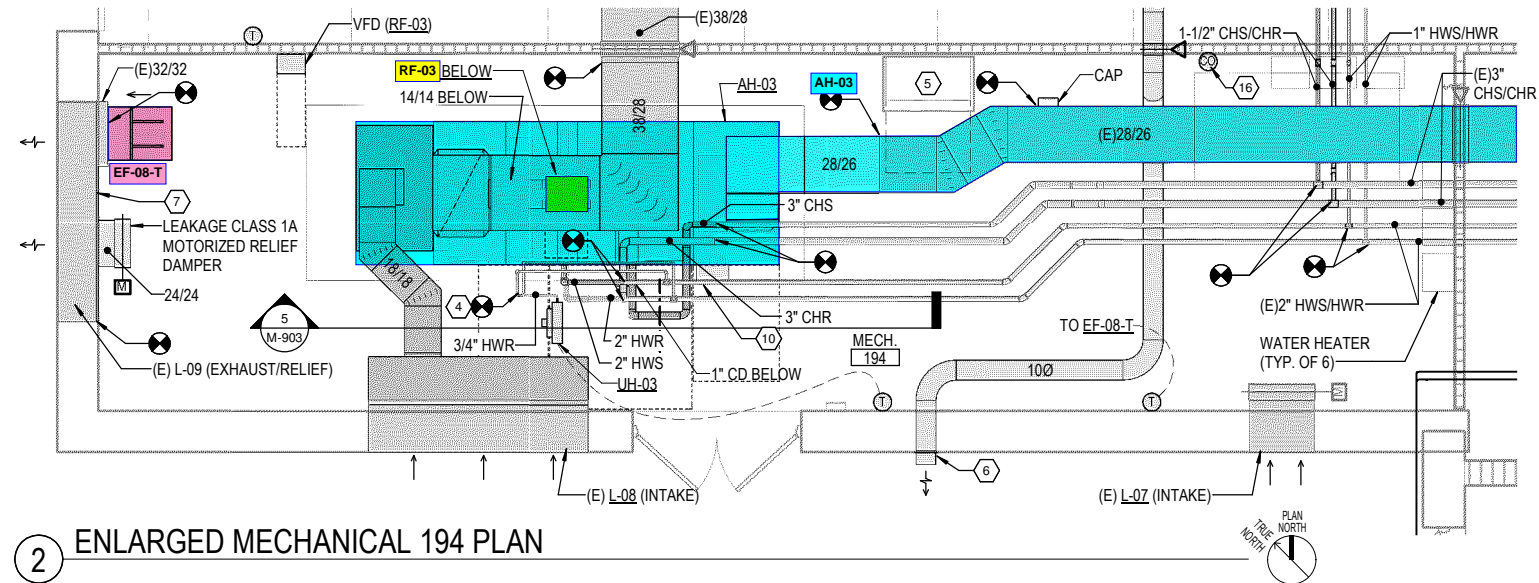




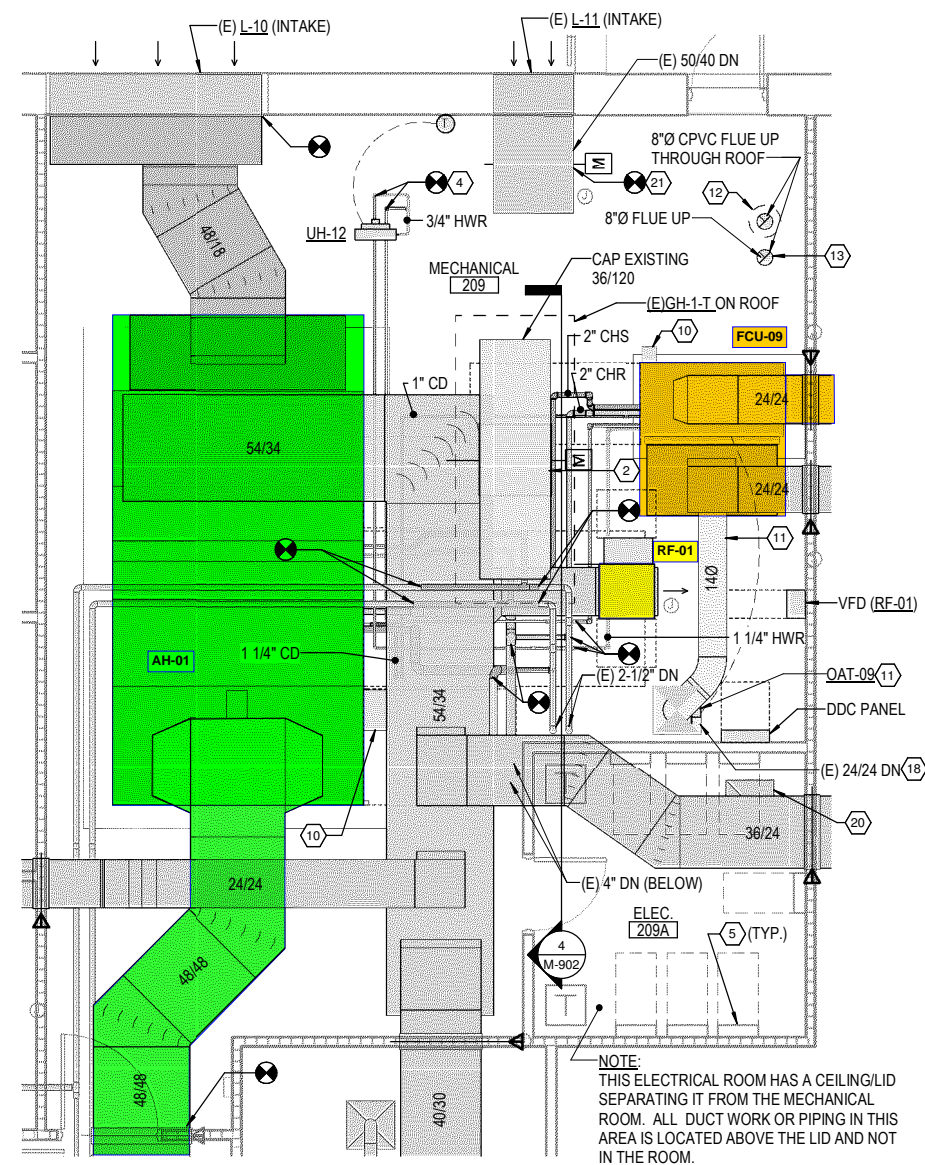
1 SECOND FLOOR HVAC PLAN - AREA A



1 ENLARGED MECHANICAL S124 PLAN



2 ENLARGED MECHANICAL 194 PLAN



3 ENLARGED MECHANICAL 209 PLAN

GENERAL NOTES
(ALL ENLARGED PLANS)

- REFER TO THE ISOMETRIC DRAWINGS ON SHEETS M-901 THROUGH M-903 FOR ADDITIONAL INFORMATION INCLUDING PIPE AND DUCTS SIZES NOT INCLUDED ON THE ENLARGED PLANS.

KEYED NOTES

- PVC COMBUSTION AIR DUCT.
- PROVIDE NEW 36/36 LEAKAGE CLASS 1A MOTORIZED RELIEF DAMPER IN NECK OF EXISTING RELIEF HOOD.
- REFER TO PLUMBING DRAWINGS FOR NATURAL GAS PIPING.
- CONNECT NEW UNIT HEATER TO EXISTING HEATING WATER PIPING.
- ELECTRICAL PANEL.
- 10" DIA. DISCHARGE WITH HOOD AND INSECT SCREEN. LOCATE 10'-0" AFF.
- PROVIDE INSULATED BLANK-OFF OVER UNUSED PORTIONS OF LOUVER.
- PROVIDE A REMOVABLE CAP AT CHANGES IN DIRECTION FOR CLEANING OF CONDENSATE PIPING.
- RUN TO NEAREST FLOOR DRAIN.
- AIR HANDLER MOUNTED VFD OR MOTOR CONTROLLER.
- TRANSITION FROM (E) 24/24 TO 14" DIAMETER IN VERTICAL AND INSTALL OAT-09 3'-0" AFF. CONNECT OUTSIDE AIR DUCT TO THE 24/24 RETURN SERVING FCU-09 AT 8'-0" AFF.
- IN-FILL UNUSED PORTION OF (E) 16" DIAMETER FLOOR OPENING.
- NEW OPENING IN FLOOR FOR 8" DIAMETER FLUE.
- MAKE-UP AIR OPENING AT 2ND FLOOR LEVEL.
- CPVC FLUE VENT.
- CARBON MONOXIDE DETECTOR.
- SUPPLY DUCT UP TO SECOND FLOOR.
- SUPPLY DUCT DOWN TO FIRST FLOOR.
- CAP EXISTING 54/86 PLENUM FOR USE AS INLET FOR DUCTED BOILER COMBUSTION AIR.
- EXISTING TRANSFER GRILLE IN ELECTRICAL ROOM CEILING/LID TO REMAIN.
- PROVIDE NEW MOTORIZED DAMPER IN EXISTING MAKE-UP AIR DUCT.