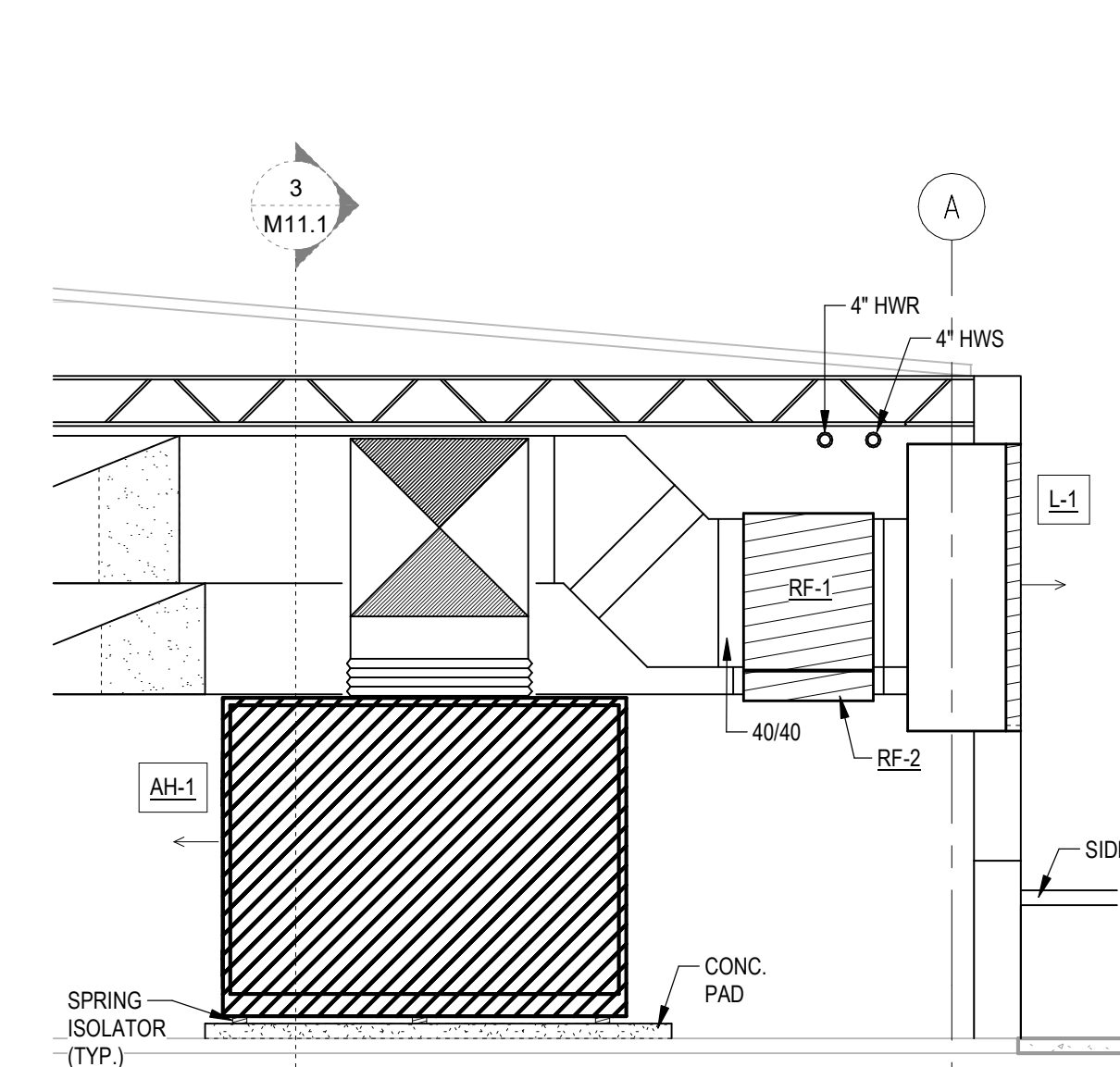
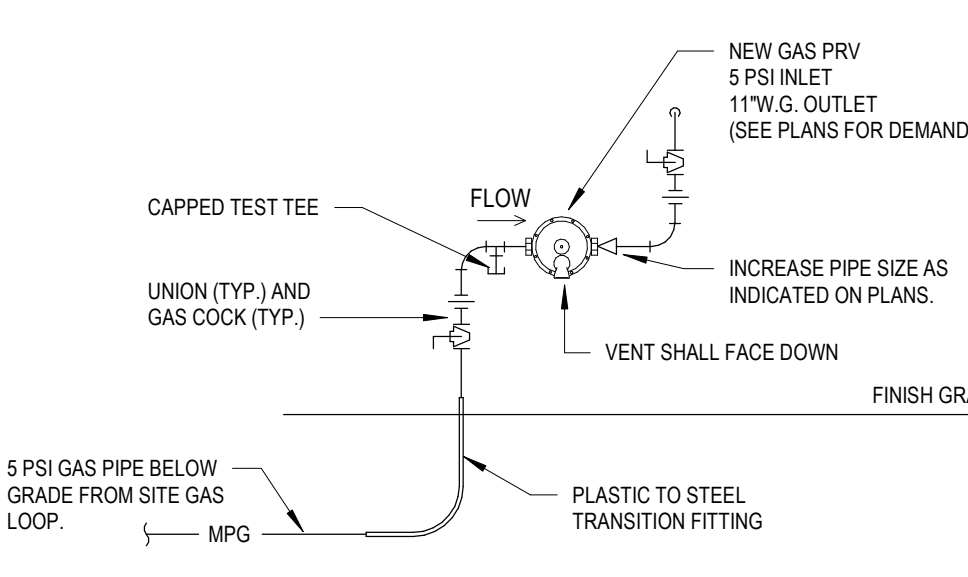


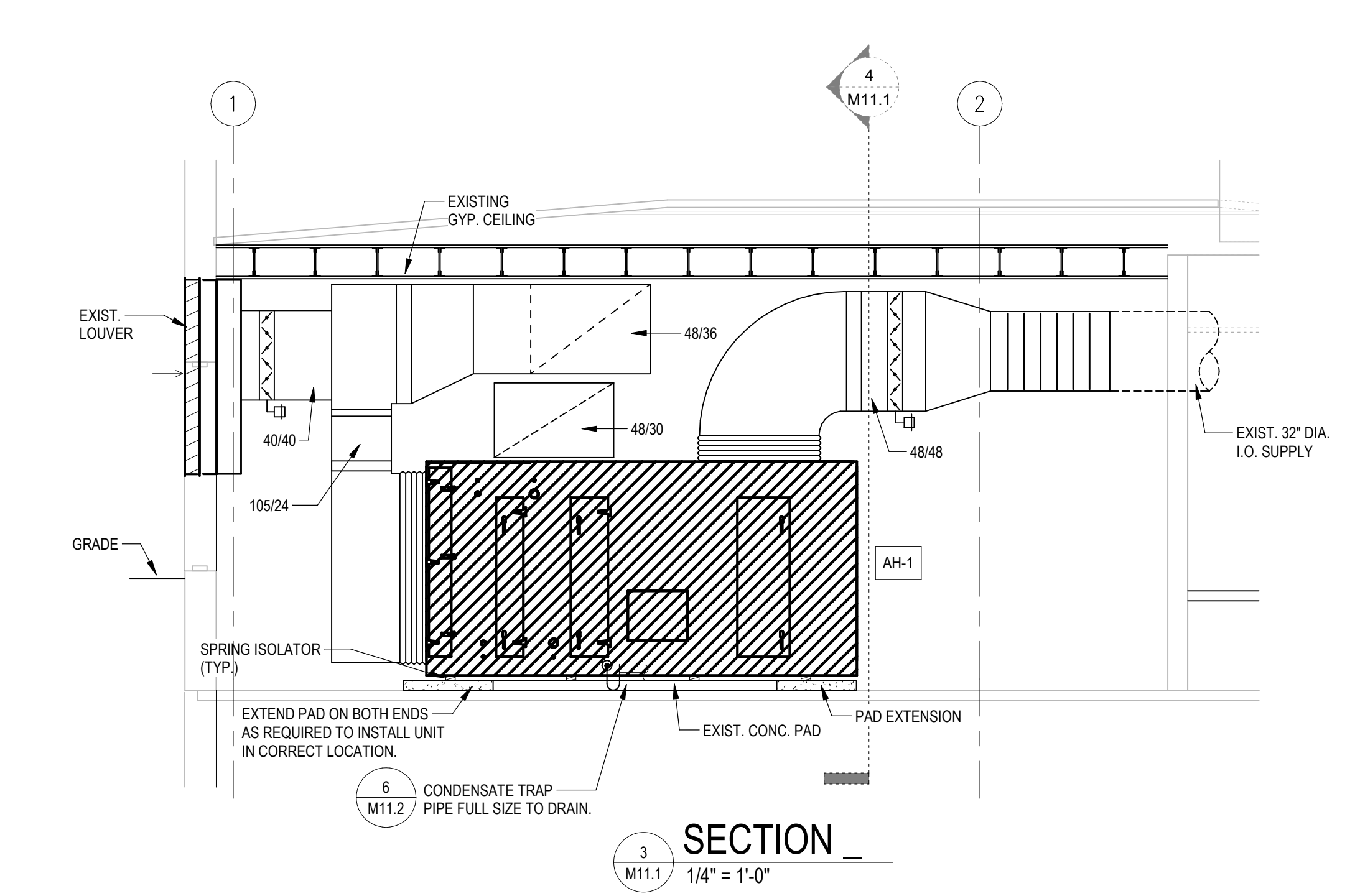
PARTIAL FLOOR PLAN - AREA A - MAIN LEVEL - HVAC
 1/8" = 1'-0"
 NORTH



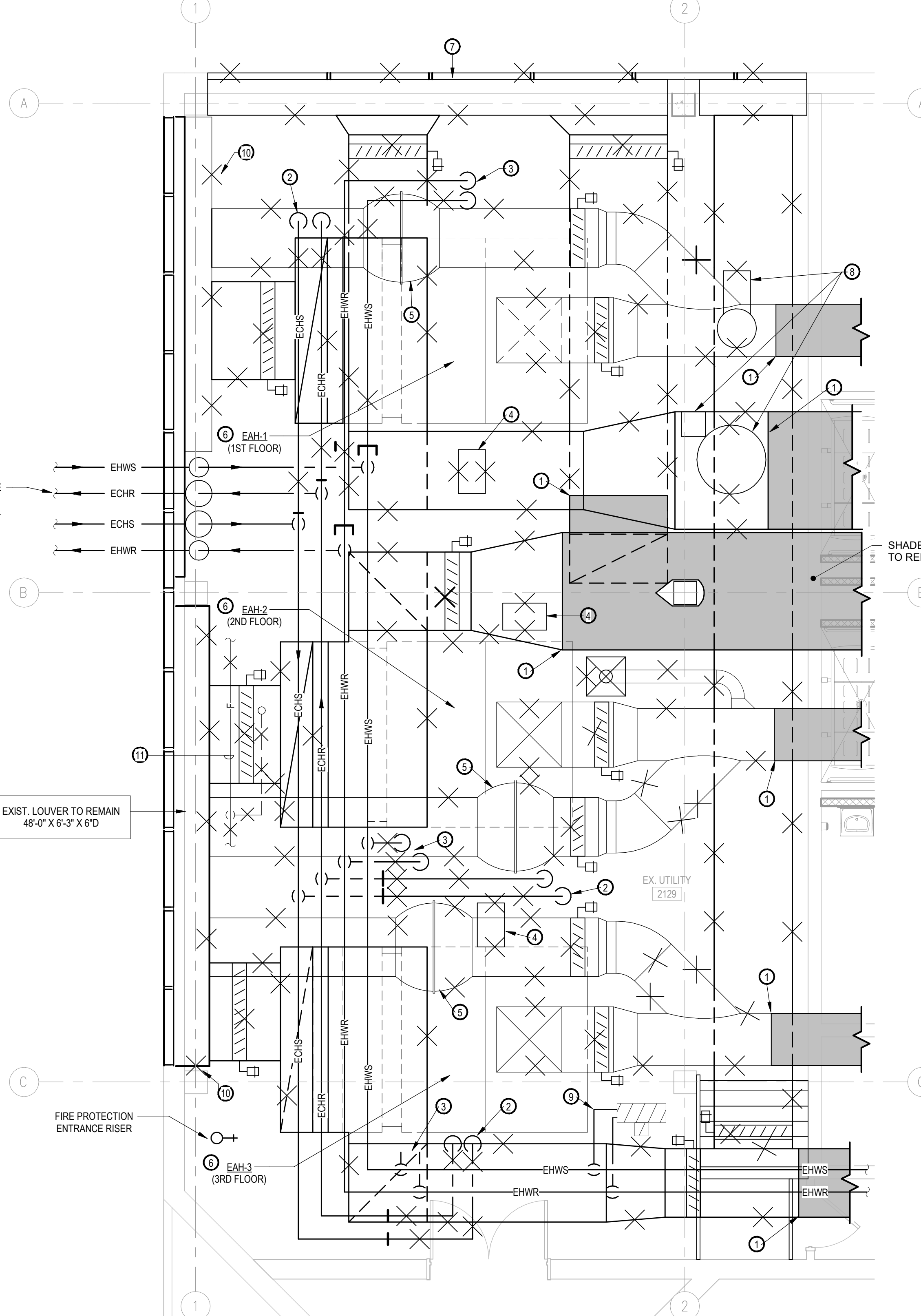
SECTION 4
 1/4" = 1'-0"



GAS PRV
 1/8" = 1'-0"

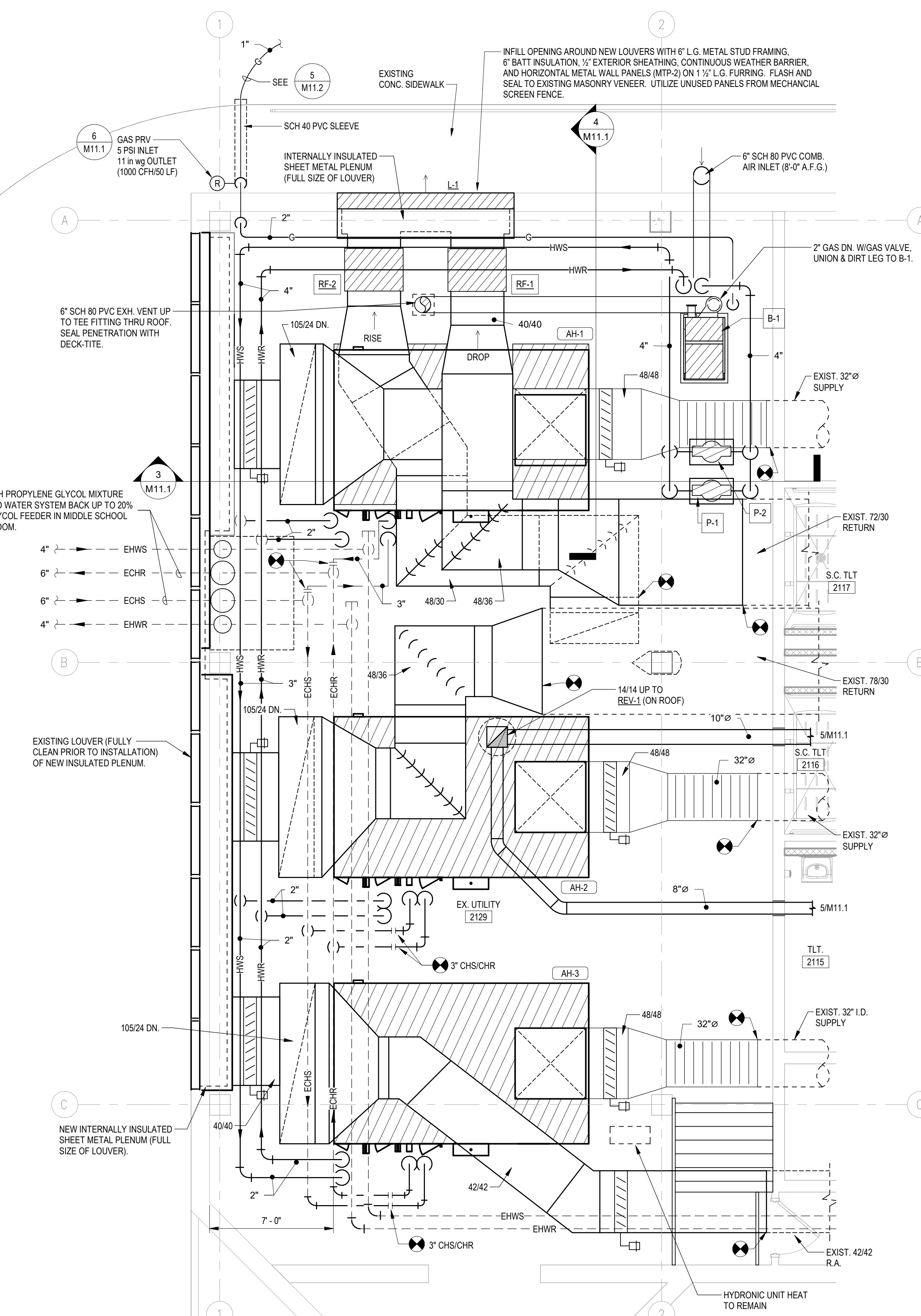


SECTION 3
 1/4" = 1'-0"



PARTIAL FLOOR PLAN - MAIN LEVEL - AREA A - DEMO
 1/4" = 1'-0"
 NORTH

- DEMOLITION KEYED NOTES**
- REMOVE DUCTWORK & DAMPERS INSIDE UTILITY RM. TO THIS LOCATION. DUCTWORK ENTERING/EXITING THIS ROOM SHALL REMAIN AND CONNECTED TO NEW DUCTWORK.
 - DISCONNECT AND REMOVE CHILLED WATER PIPING, INCLUDING CONTROL VALVES, GATE VALVES, ETC. UP TO ELEVATED LOCATION AND INSTALL ISOLATION VALVE FOR CONNECTION TO NEW EQUIPMENT.
 - DISCONNECT AND REMOVE HEATING WATER PIPING, INCLUDING CONTROL VALVES, GATE VALVES, ETC. TO TEE CONNECTION ON MAIN LINES AND CAP.
 - DISCONNECT AND REMOVE STEAM HUMIDIFIER AND PIPING. CAP COLD WATER SUPPLY LINE AT SOURCE.
 - REMOVE ATRIUM SMOKE CONTROL IN-LINE SUPPLY FAN AND SUPPORT SYSTEM.
 - DISASSEMBLE AND REMOVE AIR HANDLING UNIT AND SPRING ISOLATORS.
 - REMOVE WALL LOUVER AND PLENUM. USE OPENING FOR EQUIPMENT REMOVAL AND INSTALLATION.
 - REMOVE FOUNTAIN PUMPS, PIPING AND FILTRATION SYSTEM. INSTALL BLANK FLANGES AT WALL.
 - HYDRONIC UNIT HEATER AND CONTROLS TO REMAIN.
 - REMOVE PLENUM BOX.
 - LICENSED FIRE PROTECTION CONTRACTOR SHALL SHUTDOWN, REMOVE AND REPLACE FIRE SPRINKLER SYSTEM MAIN BRANCH LINES AND HEADS AS REQUIRED TO DEMO AND INSTALL NEW EQUIPMENT. (TYPICAL FOR ENTIRE ROOM).

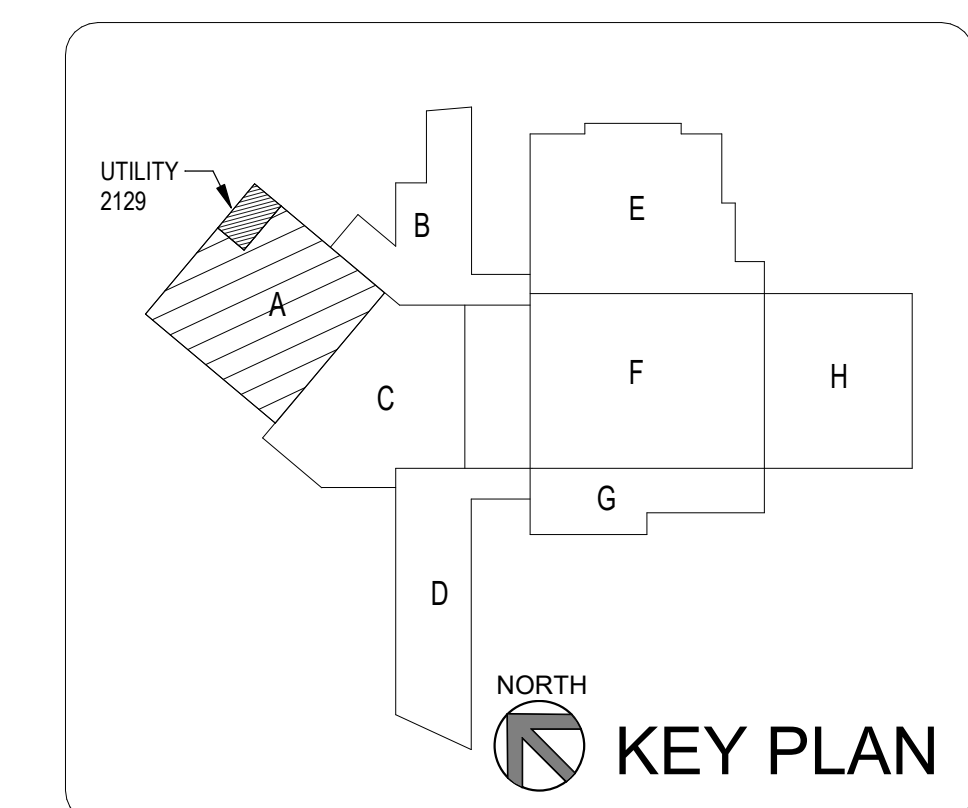


PARTIAL FLOOR PLAN - MAIN LEVEL - AREA A - HVAC
 1/4" = 1'-0"
 NORTH

MECHANICAL LEGEND

	FLEXIBLE DUCT CONNECTION
	TURNING VANES
	MOTORIZED DAMPER
	DOUBLE WALL SPIRAL DUCT WITH 1" PERFORATED INSULATION LINER (SIZE ON DRAWINGS REPRESENTS INTERNAL DIA.)
	FULL RADIUS ELBOW
	DETAIL NUMBER - TOP NUMBER INDICATES DETAIL NUMBER BOTTOM NUMBER INDICATES SHEET NUMBER

— CHS —	CHILLED WATER SUPPLY
— CHR —	CHILLED WATER RETURN
— ECHS —	EXISTING CHILLED WATER SUPPLY
— ECHR —	EXISTING CHILLED WATER RETURN
— HWS —	HOT WATER SUPPLY
— HWR —	HOT WATER RETURN
— ECHS —	EXISTING CHILLED WATER SUPPLY
— ECHR —	EXISTING CHILLED WATER RETURN
— G —	NATURAL GAS PIPING
— EG —	EXISTING GAS PIPING
— F —	FIRE SPRINKLER
— ES —	EXISTING SANITARY SEWER
— SS —	SANITARY SEWER
	CONNECT TO EXISTING
	ABOVE FINISH GRADE
	DIAMETER (DIA.)
	REDUCER / INCREASER FITTING
	PIPE TO DRAIN



KEY PLAN
 NORTH

ELLIOTT • MCMORRAN • VADEN
ARCHITECTS
ENGINEERS
 501 223 9302 • WWW.LEVVRW.COM

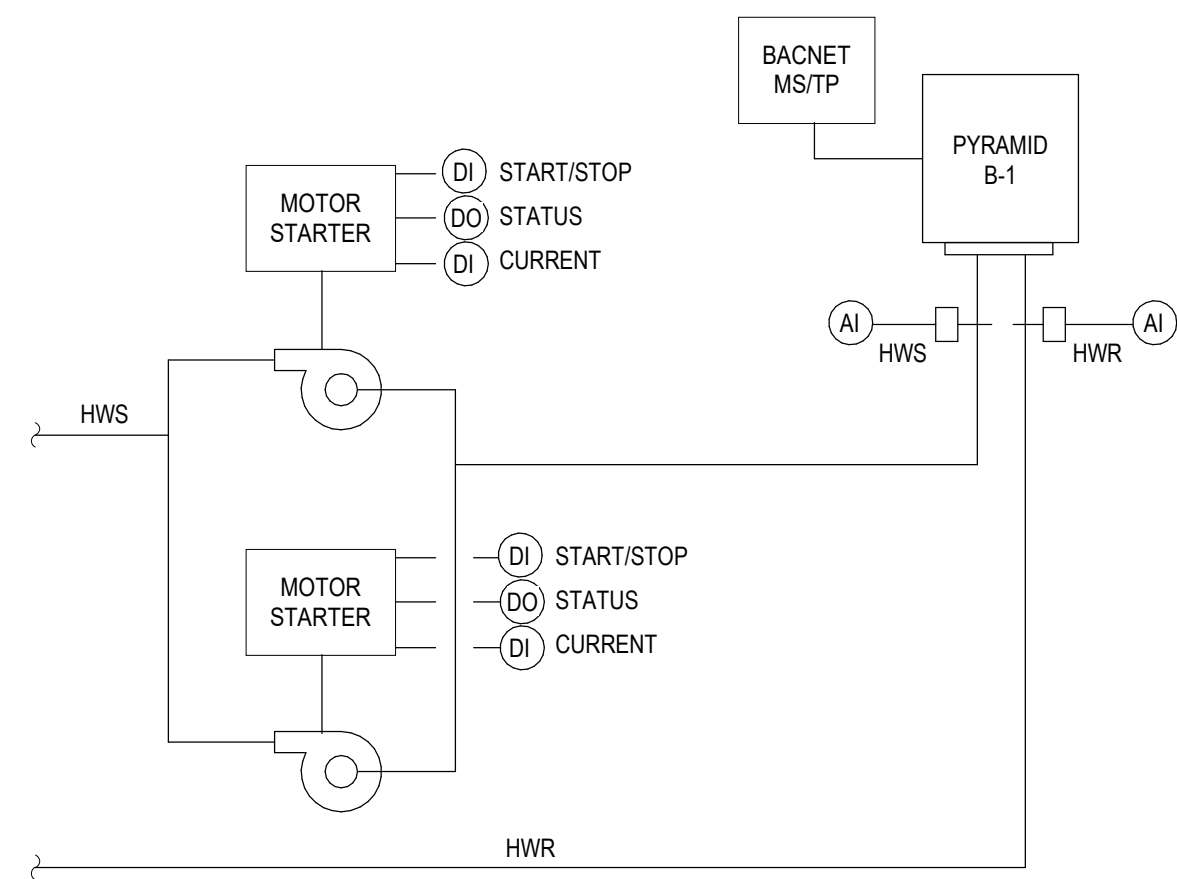
FLOOR PLAN - MAIN LEVEL - AREA A - HVAC

LITTLE ROCK WEST HIGH SCHOOL
 LITTLE ROCK SCHOOL DISTRICT
 LITTLE ROCK, ARKANSAS

STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 No. 186
 WILL M. BARNHART

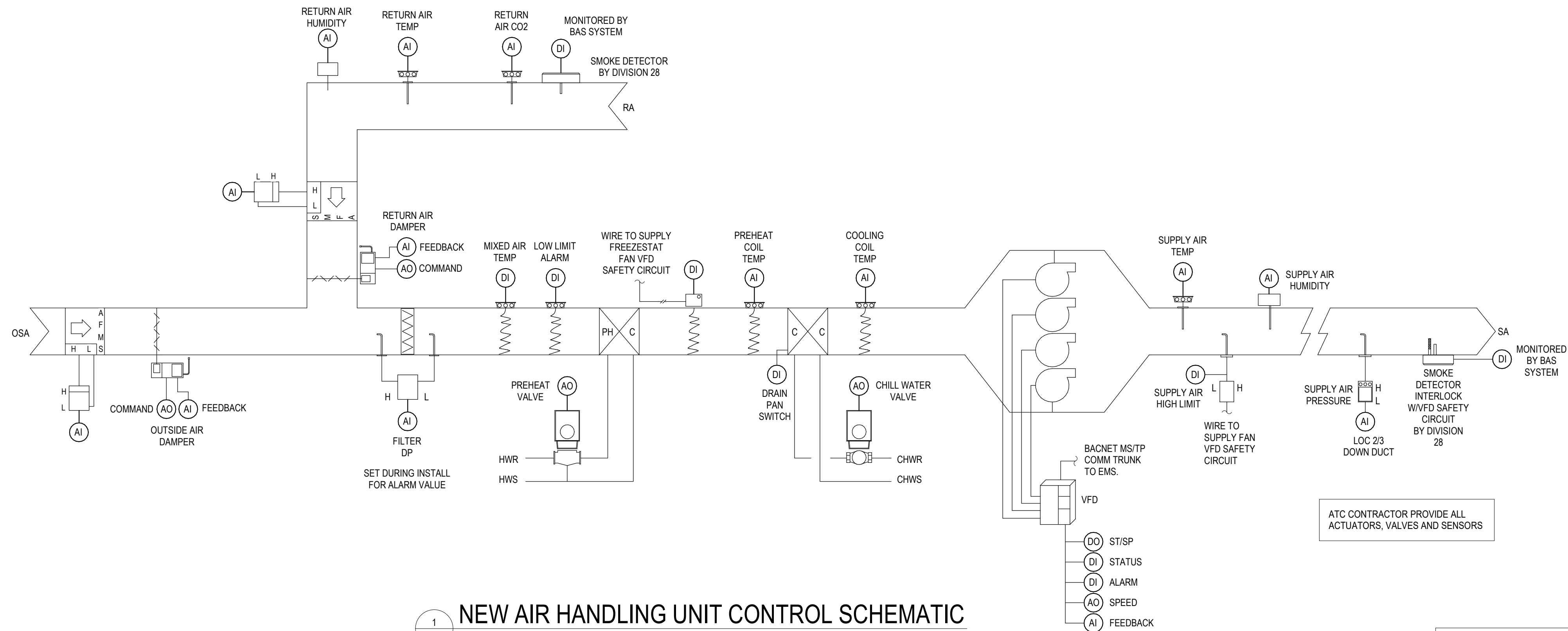
DATE: 2026-04-07
 PROJECT NO: 22033
 DRAWN BY: RAB
 REV:

M11.1

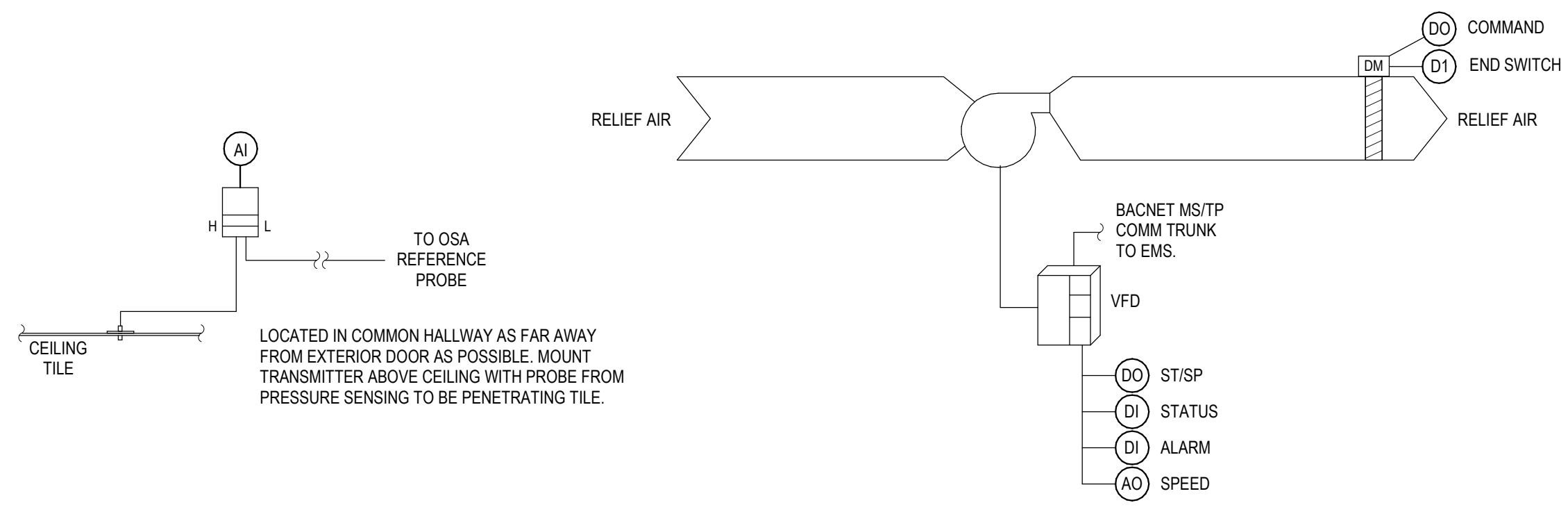


PYRAMID PRE HEAT BOILER SEQUENCE
 HOT WATER PUMP SHOULD BE ENABLED ANYTIME OUTSIDE AIR TEMPERATURE IS BELOW 50 DEG F (ADU) OR PREHEAT DEMAND FROM PYRAMID AIR HANDLER UNITS. HOT WATER PUMPS ALTERNATE TO EQUALIZE RUNTIME. SELECTION OF THE LEAD PUMP IS EVALUATED ON A WEEKLY BASIS. THE PUMP WITH THE LEAST RUNTIME IS THE LEAD PUMP. THE PUMP WITH THE MOST RUNTIME IS THE LAG PUMP. THE BOILER SHALL BE ENABLED ANYTIME THERE IS A PRE HEAT VALVE DEMAND, HOT WATER SUPPLY TEMPERATURE SHALL BE RESET BETWEEN 130 DEG F AND 160 DEG F TO MAINTAIN MAXIMUM OF 80% PREHEAT VALVE POSITION.

2 M11.2
 NEW HOT WATER BOILER AND PUMP CONTROL SCHEMATIC
 NOT TO SCALE

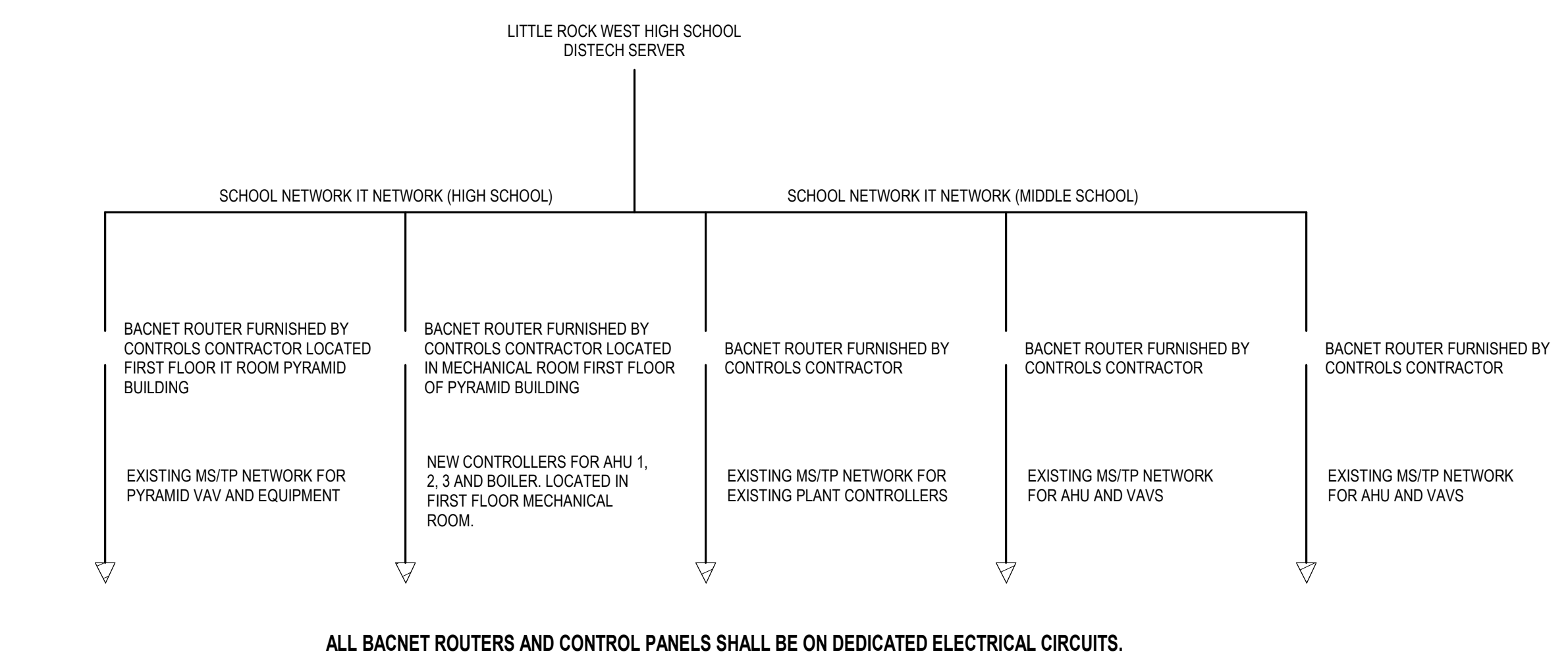


1 M11.2
 NEW AIR HANDLING UNIT CONTROL SCHEMATIC
 (AH-1, AH-2 & AH-3)
 NOT TO SCALE



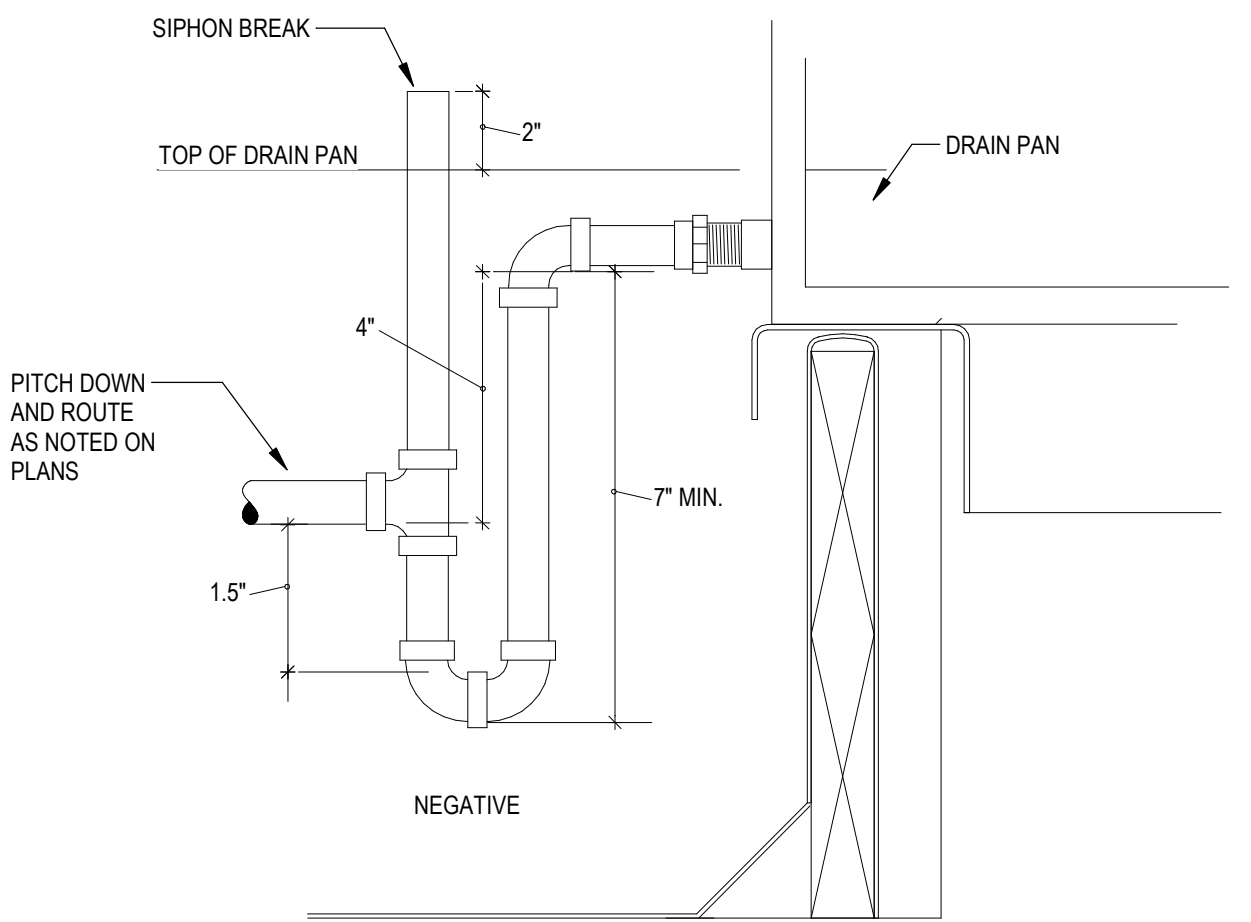
BUILDING PRESSURE SEQUENCE OF OPERATION
 THE BUILDING PRESSURE CONTROL FANS WILL BE ENABLED WHEN EITHER AIR HANDLER IS ENABLED AND THE AHU MODE OF OPERATION IS IN THE OCCUPIED MODE. THE BUILDING PRESSURE CONTROL FANS WILL BE STAGED ON AND OFF AS NEEDED TO MAINTAIN BUILDING PRESSURE. RELIEF FANS SHALL ONLY START ONCE ITS ASSOCIATED DAMPER END SWITCH HAS PROVIDED OPEN. ITS ASSOCIATED VARIABLE FREQUENCY DRIVE WILL BE MODULATED AS REQUIRED TO MAINTAIN BUILDING PRESSURE SETPOINT.

3 M11.2
 BUILDING PRESSURE CONTROL SCHEMATIC
 NOT TO SCALE



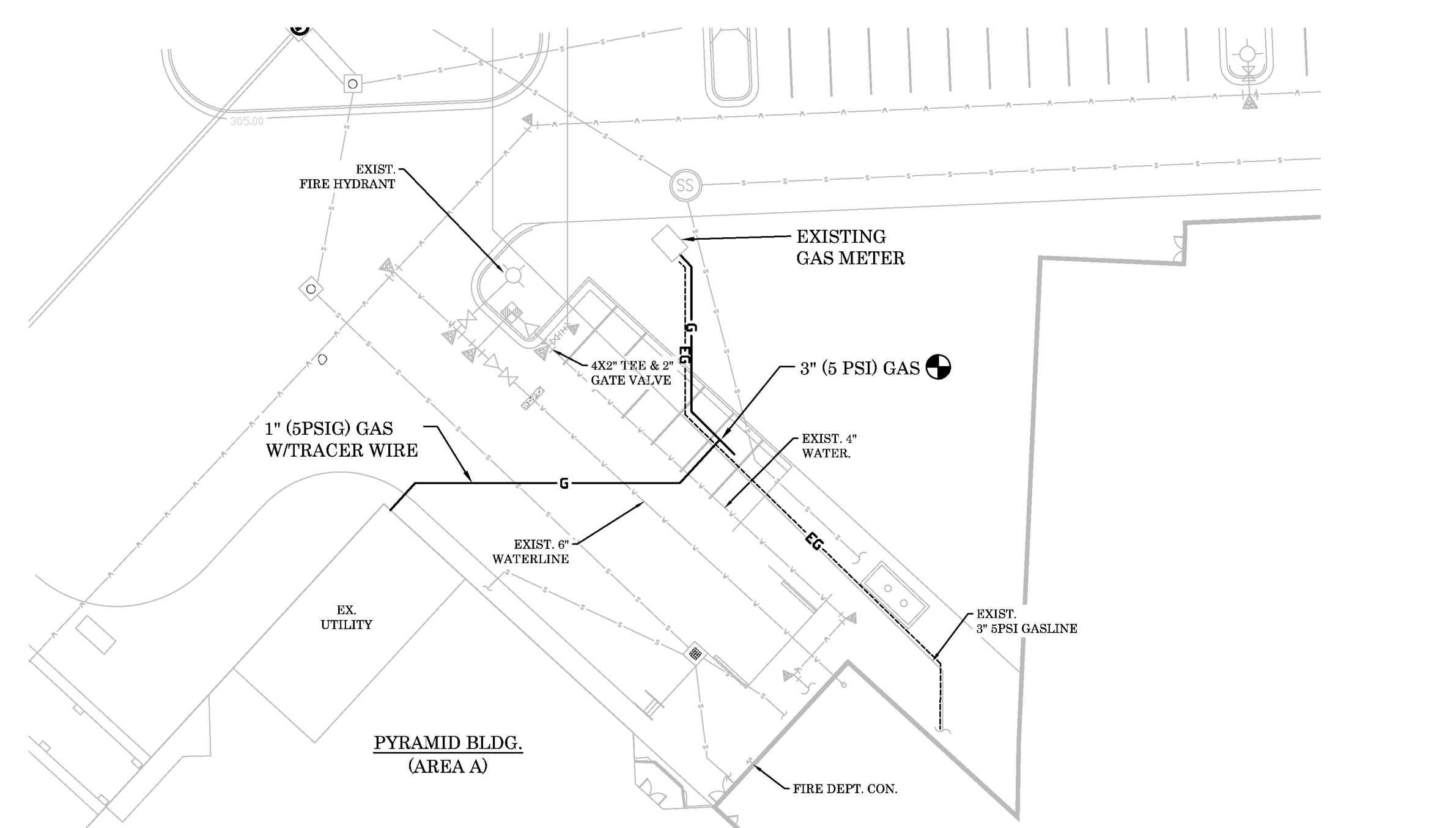
ALL BACNET ROUTERS AND CONTROL PANELS SHALL BE ON DEDICATED ELECTRICAL CIRCUITS.

4 M11.2
 DISTECH CAMPUS NETWORK
 NOT TO SCALE



- NOTES:**
1. RUNNING TRAPS WILL NOT BE ACCEPTED.
 2. INSTALL FACTORY FURNISHED TRAP WITH PACKAGED OUTSIDE AIR UNITS (POAU).
 3. EXTERIOR CONDENSATE LINES - SCH 80 PVC.
 4. INTERIOR CONDENSATE LINES - TYP L COPPER.

6 M11.2
 CONDENSATE TRAP DETAIL
 NOT TO SCALE



5 M11.2
 PARTIAL SITE PLAN - AREA A/B
 1/8" = 1'-0"

SEQUENCE OF OPERATION

VARIABLE AIR VOLUME AIR HANDLER UNITS (TYP. OF 3)
 THE VARIABLE VOLUME AIR HANDLER CONSISTS OF A MIXED AIR SECTION WITH OUTDOOR AIR AND RETURN AIR DAMPERS, PRE-FILTER, HOT WATER PREHEAT COIL, CHILLED WATER COOLING COIL, SUPPLY FAN WITH VARIABLE FREQUENCY DRIVE. THE UNIT IS DDC CONTROLLED USING ELECTRIC ACTUATION.

THE AIR HANDLER UNIT IS SCHEDULED FOR AUTOMATIC OPERATION ON A TIME OF DAY BASIS FOR OCCUPIED AND UNOCCUPIED MODES OR A BUILDING DEMAND IN UNOCCUPIED. WITHIN THE OCCUPIED MODE, THE SYSTEM CAN ENTER THE WARM-UP MODE WHEN THE AVERAGE SPACE TEMPERATURES ARE BELOW SET POINT OR THE COOL-DOWN MODE WHEN THE AVERAGE SPACE TEMPERATURE IS ABOVE THE SET POINT. THE SYSTEM STAYS IN THE WARM-UP OR COOL-DOWN UNTIL THE MODE SET POINT IS SATISFIED. WITHIN THE UNOCCUPIED MODE, NIGHT HEATING IS AVAILABLE WHEN THE AVERAGE SPACE TEMPERATURE DROPS BELOW 65 DEGREES F, OR ANY SPACE TEMPERATURE IS LESS THAN 50 DEGREES F. THE LATEST START TIME IS THE SCHEDULED OCCUPANCY FOR THE SPACE.

THE AIR HANDLING UNIT OPERATES IN WARM-UP, COOL-DOWN, OCCUPIED, UNOCCUPIED, NIGHT HEATING AND SAFETY MODES AS FOLLOWS (ALL SUGGESTED SET POINTS AND SETTINGS ARE ADJUSTABLE):

WARM-UP
 THE SUPPLY FAN STARTS, THE COOLING COIL VALVE STAYS CLOSED AND THE MIXING DAMPERS MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT. WHEN THE OUTSIDE AIR DRY BULB TEMPERATURE IS BELOW THE ECONOMIZER CHANGEOVER VALUE THE MIXING DAMPERS ARE POSITIONED FOR 100% RETURN AIR. IF THE TIME REACHES THE LATEST START TIME DURING THE COOL-DOWN MODE, THE OUTDOOR AIR DAMPER OPENS TO ITS MINIMUM POSITION OR IS CONTROLLED IN ECONOMIZER OPERATION. THE SYSTEM IS PREVENTED FROM ENTERING THE COOL-DOWN MODE MORE THAN ONCE PER DAY.

COOL-DOWN
 THE SUPPLY FAN STARTS, PREHEAT COIL VALVE STAYS CLOSED, THE COOLING VALVE AND THE MIXING DAMPERS MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT. WHEN THE OUTDOOR AIR DRY BULB TEMPERATURE IS ABOVE THE ECONOMIZER CHANGEOVER VALUE THE MIXING DAMPERS ARE POSITIONED FOR 100% RETURN AIR. IF THE TIME REACHES THE LATEST START TIME DURING THE COOL-DOWN MODE, THE OUTDOOR AIR DAMPER OPENS TO ITS MINIMUM POSITION OR IS CONTROLLED IN ECONOMIZER OPERATION. THE SYSTEM IS PREVENTED FROM ENTERING THE COOL-DOWN MODE MORE THAN ONCE PER DAY.

OCCUPIED
 THE FAN STARTS OR CONTINUES TO RUN AND THE UNITS IS CONTROLLED AS FOLLOWS
 WHEN THE OUTSIDE AIR DRY BULB TEMPERATURE IS BELOW THE ECONOMIZER CHANGEOVER VALUE. THE HEATING SECTION, THE COOLING COIL VALVE AND THE MIXING DAMPERS MODULATE IN SEQUENCE WITHOUT OVERLAP TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT WITH A LOW LIMIT OF 48 DEGREES AT THE MIXED AIR SENSOR. THE MIXING DAMPERS RAMP OPEN SLOWLY TO MINIMIZE OVERSHOOTING.

WHEN THE AHU IS IN THE OCCUPIED MODE, THE DAMPER SECTION WILL BE MODULATED AS REQUIRED TO MAINTAIN THE MINIMUM OUTSIDE AIR VOLUME AS DETERMINED BY THE RETURN AIR CO2 SENSORS OR A CALCULATION INVOLVING THE SUM OF THE AMOUNT OF OCCUPIED SPACES WITHIN THE BUILDING WHICH EVER IS GREATER. THE MINIMUM OSA DAMPER CFM SET POINT WILL BE RESET UPWARD AS THE RETURN AIR CO2 LEVELS RISE OR AS THE BUILDING ZONES BECOME OCCUPIED. THE CFM SET-POINT WILL BE RESET DOWNWARD AS THE RETURN AIR CO2 LEVELS DROP OR AS THE BUILDING ZONES ARE NO LONGER OCCUPIED. WHEN ECONOMIZER IS DISABLED THE SUPPLY AIR SETPOINT SHOULD BE RESET BETWEEN 50 DEGREES F AND 55 DEGREES F BASED ON VAV TERMINAL LOAD AND RETURN HUMIDITY.

UNOCCUPIED (NORMAL OFF)
 THE SUPPLY FAN STOPS, THE COOLING COIL VALVE CLOSES, MIXING DAMPERS CLOSE TO THE OUTDOOR AIR. THE HEATING COIL VALVE CLOSES. (IF OUTSIDE AIR TEMPERATURE IS BELOW 40 DEGREES MODULATE PREHEAT COIL TO MAINTAIN 40 DEGREE MIXED AIR TEMPERATURE.)

NIGHT HEATING
 THE SUPPLY FAN IS ON, THE PREHEAT COIL VALVE MODULATES TO MAINTAIN A MINIMUM RETURN OF 65 DEGREES. THE MIXING DAMPERS ARE POSITIONED TO 100% RETURN AIR, AND THE COOLING COIL VALVE REMAIN CLOSED.

STATIC PRESSURE CONTROL
 THE SUPPLY FAN VARIABLE FREQUENCY DRIVE MODULATES TO MAINTAIN A CONSTANT DUCT STATIC PRESSURE OF 1.5 INCHES OF WATER (ADU) AS SENSED AT LEAST TWO-THIRDS OF THE WAY DOWNSTREAM OF THE SUPPLY FAN IN THE LONGEST OR MOST CRITICAL DUCT. UPON INTIAL START-UP OF THE AIR HANDLING SYSTEM, THE SUPPLY FAN SPEED SLOWLY RAMP TO THE DESIRED STATIC PRESSURE SET POINT. UPON SHUTDOWN OF THE AIR HANDLER SYSTEM, THE SUPPLY FAN VARIABLE FREQUENCY DRIVE STOPS AND THE SPEED SIGNAL GOES TO ZERO SPEED.

SAFETY
 DISCHARGE HIGH STATIC CUTOUT, SMOKE DETECTOR IN THE SUPPLY AND RETURN AIR STREAMS SHUT DOWN FAN AND IF OUTSIDE AIR TEMPERATURE IS BELOW 45 DEGREE MODULATE PREHEAT COIL VALVE TO MAINTAIN 40 DEGREE TEMPERATURE AT THE PREHEAT LEAVING AIR TEMPERATURE SENSOR.

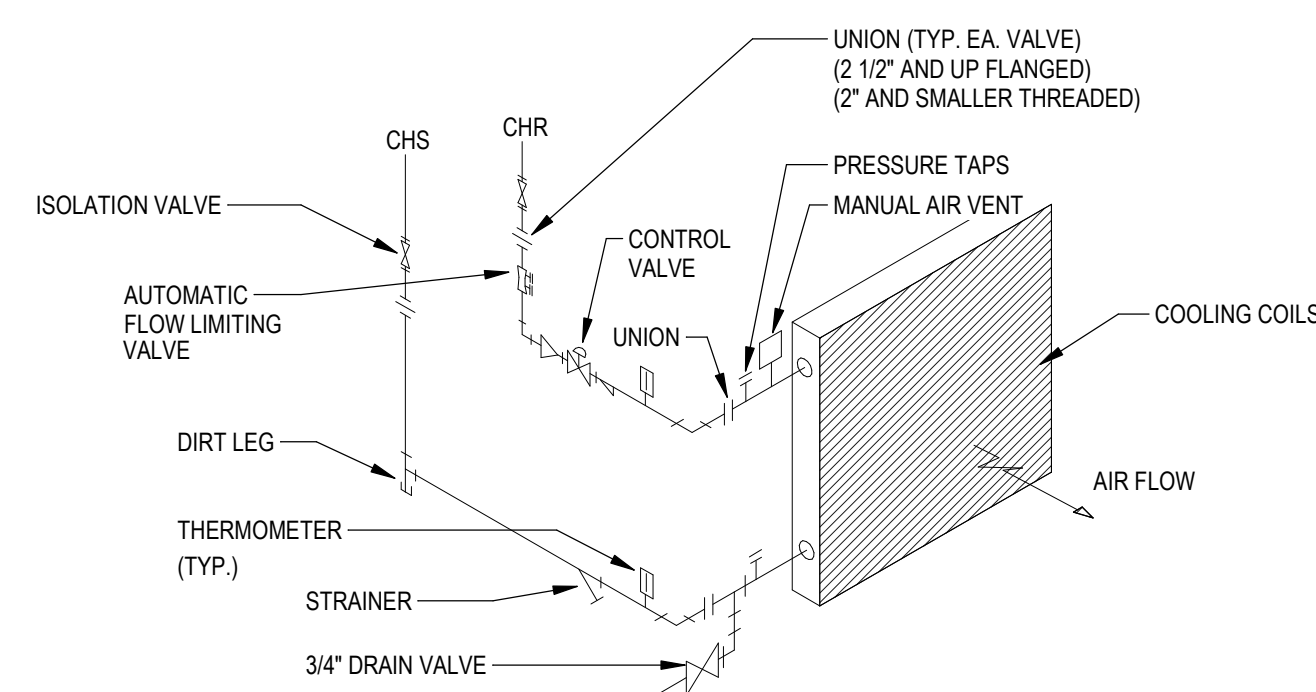
IF LOW TEMPERATURE FREEZESTAT ALARM IS DETECTED AT THE DISCHARGE OF THE PREHEAT COIL DE-ENERGIZE THE SUPPLY FAN. MODULATE THE PREHEAT COIL VALVE TO MAINTAIN 45 DEGREE TEMPERATURE AT THE PREHEAT LEAVING AIR TEMPERATURE SENSOR. IF PREHEAT TEM IS BELOW 40 DEG. F AND FREEZESTAT TRIPS OPEN COOLING COIL VALVE TO 50%.

A FEEDBACK FROM THE VFD AND THE DUCT STATIC READINGS VERIFY THAT THE FAN IS OPERATING CORRECTLY. IF THE FAN IS PROVED TO BE ENABLED BUT NOT REACHING DUCT STATIC SETPOINT FOR GREATER THAN 10 MINUTES GENERATE AND ALARM. THE DDC SYSTEM SHALL GENERATE A VFD TROUBLE ALARM INDEPENDENT FROM THE FAN STATUS. IF THE SUPPLY FAN DOES NOT MATCH THE DESIRED STATE (OFF, ON) THE DDC SHALL GENERATE A FAN STATUS ALARM.

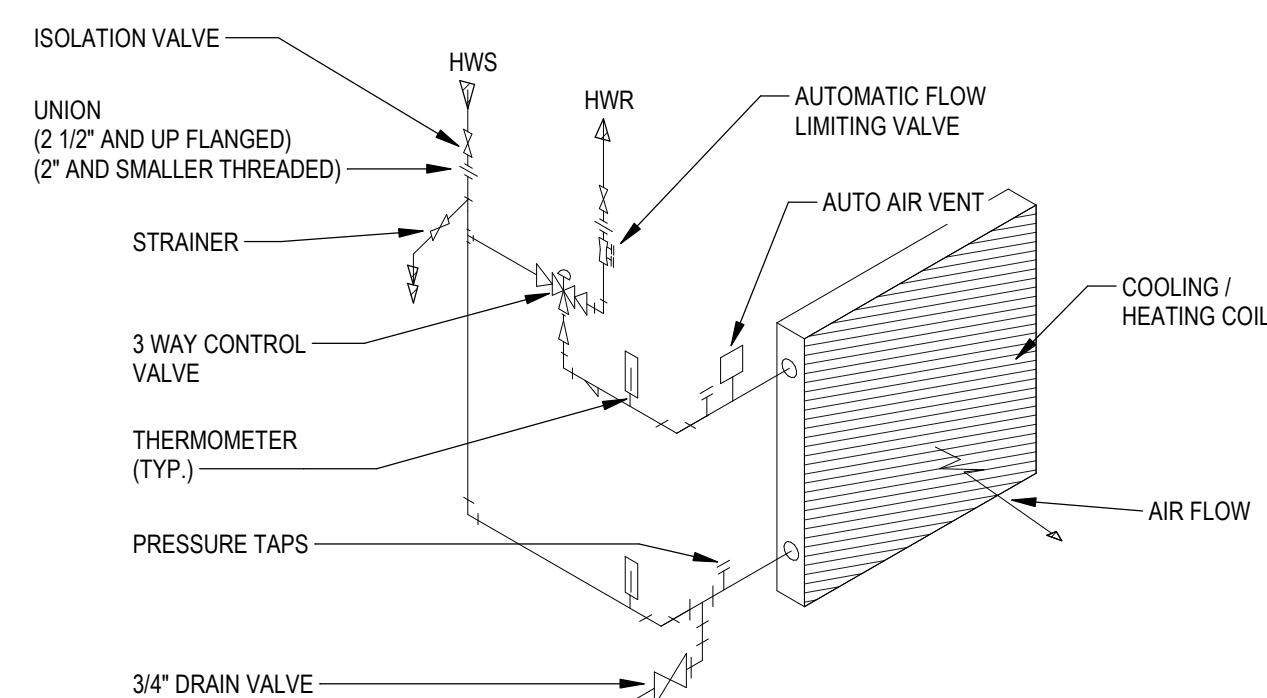
ALARMS (MINIMUM)
 DUCT STATIC NOT REACHING SETPOINT WITH SUPPLY FAN ENABLED.
 FREEZESTAT ALARM
 SMOKE DETECTOR ALARM
 DRAIN FAN ALARM
 HIGH STATIC ALARM
 FAN STATUS ALARM
 OUTSIDE AIR FLOW NOT REACHING SETPOINT
 RETURN AIR HUMIDITY ABOVE 70% RH
 RETURN AIR CO2 ABOVE 1500 PPM
 BUILDING PRESSURE NOT REACHING SETPOINT
 ANY VFD ALARM STATUS

TRENDS (MINIMUM)
 TRENDS IN 15 MINUTE INTERVALS
 SUPPLY TEMPERATURE
 SUPPLY TEMPERATURE SETPOINT
 PREHEAT COIL TEMPERATURE
 PREHEAT COIL TEMPERATURE SETPOINT
 MIXED AIR TEMPERATURE
 MIXED AIR TEMPERATURE SETPOINT
 OUTSIDE AIR FLOW
 OUTSIDE AIR FLOW SETPOINT
 OUTSIDE AIR DAMPER COMMAND
 RETURN AIR DAMPER COMMAND
 PREHEAT VALVE COMMAND
 CHILL WATER VALVE COMMAND
 RETURN AIR TEMPERATURE
 RETURN AIR HUMIDITY
 FILTER DP

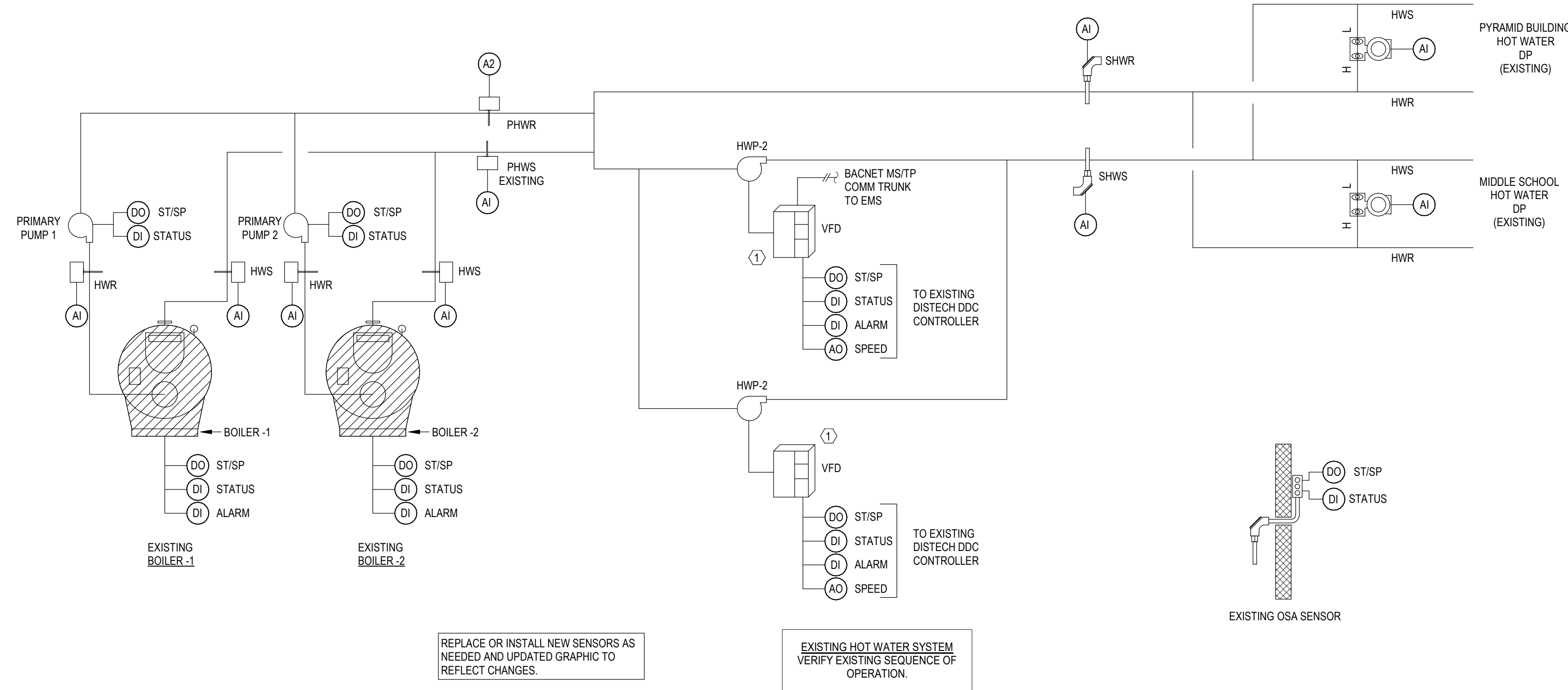
TRENDS IN CHANGE OF VALUE (MINIMUM)
 SUPPLY FAN ENABLE
 SUPPLY FAN STATUS
 SUPPLY FAN ALARM
 DRAIN FAN SWITCH STATUS
 HIGH STATIC STATUS
 SMOKE DETECTOR STATUS



2 M11.3 NOT TO SCALE
CHILLED WATER COIL PIPING



3 M11.3 NOT TO SCALE
HEATED WATER COIL PIPING



REPLACE OR INSTALL NEW SENSORS AS NEEDED AND UPDATED GRAPHIC TO REFLECT CHANGES.

EXISTING HOT WATER SYSTEM VERIFY EXISTING SEQUENCE OF OPERATION.

1 M11.3 NOT TO SCALE
MIDDLE SCHOOL HOT WATER SYSTEM CONTROL SCHEMATIC

EXISTING HOT WATER SYSTEM SEQUENCE OF OPERATION

THE EXISTING HOT WATER SYSTEM SHALL SERVE HOT WATER TO THE PYRAMID AND MIDDLE SCHOOL AREAS INCLUDING VARIABLE AIR VOLUME TERMINALS AND HOT WATER PREHEAT COIL FOR THE AIR HANDLING UNITS. LOCATED IN MIDDLE SCHOOL.

THE EXISTING HOT WATER SYSTEM EQUIPMENT INCLUDES 2-HOT WATER BOILERS, 2-HOT WATER SYSTEM PUMPS AND EXISTING SENSORS, DDC CONTROLS, ALL EXISTING FIELD POINTS, CONDUIT, AND WIRE TO REMAIN.

THE EXISTING BOILERS SHALL BE STAGED TO MAINTAIN THE HOT WATER SYSTEM SETPOINT DETERMINED BY HOT WATER VALVE POSITIONS AND OUTSIDE AIR TEMPERATURE. WHEN THE OUTSIDE AIR TEMPERATURE IS 50 DEGREES F OR LESS THE HOT WATER SETPOINT SHOULD BE 180 DEGREES F. THE SETPOINT SHALL RESET LINEARLY TO MAINTAIN CRITICAL HOT WATER VALVE POSITION AND PREVENT BOILER RETURN TEMPERATURE FROM DROPPING BELOW 130 DEGREES F (ADJ.) OR MANUFACTURER RECOMMENDATION.

THE EXISTING HOT WATER SYSTEM WILL BE ENABLED WHEN THE BUILDING IS OCCUPIED. IF ANY AIR HANDLER IS RUNNING UNOCCUPIED HEAT DEMAND FROM BUILDING OR OUTSIDE AIR TEMPERATURE IS BELOW 50 DEGREES F (ADJ.) WHEN THE SYSTEM IS ON THE HOT WATER PUMPS WILL START AND RAMP UPWARD TO MAINTAIN BUILDING DP SETPOINT (LEAD-LAG ALTERNATE PUMPING SCHEME WILL BE USED TO CONTROLS THE PUMPS).

THE VFD SPEED WILL BE MODULATED TO MAINTAIN BOTH THE MINIMUM DIFFERENTIAL PRESSURE SET POINTS FOR THE EXISTING 3-WAY VALVE SIDE OF THE BUILDING AND THE REMODELED 2-WAY VALVE SIDE OF THE BUILDING.

ALARMS (MINIMUM)
ANY DP SENSOR HAS A STALE VALUE FOR ANY REASON OR SECONDARY HOT WATER PUMP IS AT 100% WITHOUT A LOOP DP CHANGE OF VALUE IN 10 MINUTES.
HOT WATER LOOP TEMPERATURE DROPS BELOW HOT WATER LOOP SET POINT FOR GREATER THAN 10 MINUTES.
HOT WATER LOOP TEMPERATURE EXCEEDS HIGH WATER TEMPERATURE SETPOINT.
BOILER RETURN TEMPERATURE IS LESS THAN 120 DEGREES F FOR GREATER THAN 5 MINUTES OR MORE THAN 10 TIMES IN A 24 HOUR PERIOD WHILE ENABLED.
DP SENSORS VALUES ARE GREATER OR LESS THAN SETPOINT FOR MORE THAN 60 MINUTES (ADJ.).

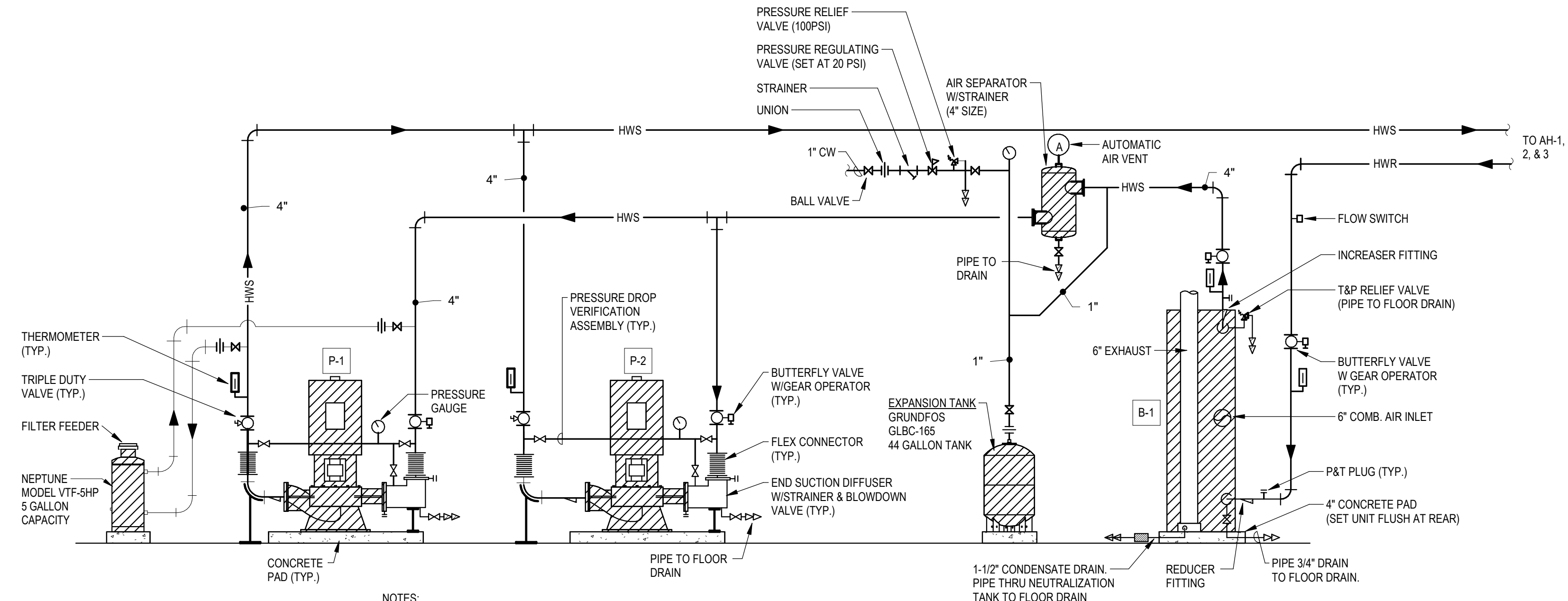
TRENDS (MINIMUM)
*ALL RUNTIMES SHALL BE TRENDED IN 24-HOUR INTERVALS

CHANGE OF VALUE

NUMERIC VALUES (15 MINUTE INTERVALS)

HOT WATER PUMP 1 ENABLE
HOT WATER PUMP 1 STATUS
HOT WATER PUMP 2 ENABLE
HOT WATER PUMP 2 STATUS
HOT WATER PRIMARY PUMP 1 ENABLE
HOT WATER PRIMARY PUMP 1 STATUS
HOT WATER PRIMARY PUMP 2 ENABLE
HOT WATER PRIMARY PUMP 2 STATUS

BUILDING DP SETPOINTS
BUILDING DP VALUES
BOILER 1 SUPPLY TEMPERATURE
BOILER 1 RETURN TEMPERATURE
BOILER 2 SUPPLY TEMPERATURE
BOILER 2 RETURN TEMPERATURE
OUTSIDE AIR TEMPERATURE
VFD 1 SPEED
VFD 2 SPEED
VFD 1 FEEDBACK
VFD 2 FEEDBACK



4 M11.3 NOT TO SCALE
HOT WATER FLOW DIAGRAM (AREA A)

MARK	MANUFACTURER	MODEL	TYPE	CFM	E.S.P. (IN W.G.)	VOLTAGE / PHASE	FAN HP (HP OR WATTS)	SONES	WEIGHT (LBS)	CONTROL POINT	NOTES
EF-1-10	GREENHECK	SP-B150	CEILING	125	0.3	120/1	128	1.1	13	LIGHTS	1, 2, 3
EF-1-11	GREENHECK	SP-B150	CEILING	125	0.3	120/1	128	1.1	13	LIGHTS	1, 2, 3
EF-1-12	GREENHECK	SP-B110	CEILING	75	0.3	120/1	80.0	0.6	13	LIGHTS	1, 2, 3
EF-1-13	GREENHECK	SP-B110	CEILING	75	0.3	120/1	80.0	0.6	13	LIGHTS	1, 2, 3

ACCESSORIES & NOTES:
1. PROVIDE HANGING RODS AND VIBRATION ISOLATORS AS REQUIRED.
2. PROVIDE FACTORY MOUNTED SOLID STATE SPEED CONTROLLER AT FAN, INTERNAL DISCONNECT AND BACKDRAFT DAMPER.
3. PROVIDE W/ WHITE ALUMINUM CEILING GRILLE.

MARK	MANUFACTURER	MODEL	TYPE	FUEL	INPUT MBH	OUTPUT MBH	EWT	LWT	GPM	P.D. (FT)	REMARKS
B-1	AERCO	BAK1000	HIGH EFFICIENCY CONDENSING	NATURAL GAS	1000	960	142	160	105	3.0	EDGE CONTROL PANEL

ACCESSORIES & NOTES:
1. 439 STAINLESS STEEL HEAT EXCHANGER
2. FAULT MODE DIAGNOSTIC PANEL W/DIGITAL READOUT
3. NORMALLY OPEN FAULT RELAY
4. ADJUSTABLE AUTOMATIC RESET HIGH LIMIT
5. MANUAL RESET HIGH LIMIT W/MAX 2100 F SETPOINT
6. 20" MODULATING AIR / FUEL VALVE
7. ELECTRIC PROBE LOW WATER CUT-OFF
8. COMBINATION TEMP AND PRESSURE GAUGE
9. INSULATED HEAT EXCHANGER
10. PRESSURE RELIEF VALVE, CONDENSATE TRAP, 2" EXTERNAL MANUAL GAS COCK
11. ELECTRICAL - 120V, 15A MCCP

MARK	MANUFACTURER	MODEL	TYPE	SIZE	FINISH	ACCESSORIES	NOTES
L-1	GREENHECK	ESD-635	EXHAUST LOUVER	120"W X 72"H	NOTE 1	NOTE 2	37.7 SQ. FT. FREE AREA
REV-1	GREENHECK	GRSR-15	ROOF GRAVITY VENTILATOR	14"Ø NECK	MEDIUM BRONZE	NOTE 3 & 4	

1. LOUVER SHALL HAVE (2) COAT 70% KYNAR FINISH (COLOR BY ARCHITECT)
2. BIRD SCREEN
3. ROOF CURB FOR METAL ROOF (MATCH ROOF SLOPE AND RIB SPACING)
4. INSECT SCREEN.

MARK	MANUFACTURER	MODEL	SERVES	LOCAT.	TYPE	GPM	HEAD	EFF.	MOTOR DATA			REMARKS	
									BHP	HP	RPM	VOL/PH	
P-1,2	GRUNDFOS	25709 VLS	BOILER B-1 HEATING WATER	EXISTING UTILITY 2129	VERTICAL IN-LINE	105	35 FT.	67%	1.73	3	1,800	460/3	

ACCESSORIES & NOTES:
1. PROVIDE W/ MANUFACTURER'S PUMP STAND
2. PROVIDE OSHA COUPLING GUARDS ON ALL PUMPS

MARK	MFR/MDL	AREA SERVED	LOCAT.	TYPE	FAN DATA					MOTOR DATA				REMARKS (NOTES)		
					(CFM)	S.P.	RPM	DRIVE	TYPE	DIA.	SONES	RPM	BHP		HP	VOLT/PH
RF-1	GREENHECK SQ-27-VG	1ST FLOOR PRESS. RELIEF	UTILITY 2129	IN-LINE	16,500	0.6"	1100	OK	CENTR.	---	27	1100	5	10	460/3	NOTE 1
RF-2	GREENHECK SQ-27-VG	2ND FLOOR PRESS. RELIEF	UTILITY 2129	IN-LINE	16,500	0.6"	1100	OK	CENTR.	---	27	1100	5	10	460/3	NOTE 1
RF-3 THRU RF-6	GREENHECK Q-160-VG	3RD FLOOR PRESS. RELIEF	ROOF	DOWNBLAST	3,500	0.3"	1481	DIRECT	CENTR.	---	20	1481	1.3	2	460/3	NOTE 2

ACCESSORIES & NOTES:
1. PROVIDE HANGING RODS AND VIBRATION ISOLATORS AS REQUIRED.
2. PROVIDE ADAPTOR ROOF CURB.
3. VARIABLE FREQUENCY DRIVE (VFD) - SECTION 23 09 23 - DIRECT DIGITAL CONTROL SYSTEM.

DESIG.	MFR/MDL	AREA SERVED	LOCAT.	TYPE	MIN. OSA (CFM)	(CFM)	ESP/STSP	TYPE	QTY/DIA.	CHILLED WATER COIL				PRE-HEAT COIL				ELECTRICAL		REMARKS (NOTES)													
										EAT (DEG. F.)	LAT (DEG. F.)	TOTAL (MBH)	SENSIBLE (MBH)	EWT (F.)	LWT (F.)	GPM	W.P.D	ROWS / FIN	FACE VELOCITY		APD (H2O)	EAT/LAT	EWT/LWT	GPM	W.P.D	ROWS / FIN	FACE VELOCITY	APD (H2O)	BHP	HP	FLA	VOLTAGE/PH	
AH-1	NORTEK	1ST FLOOR	UTILITY 2129	HORIZ.	2400	24,000	4.5' / 6.0"	CENTR.	4/22" DIA.	77.4 db 62.7 wb	52.1 db 51.7 wb	733	652.8	44	54	150	8.59	8/8 FPI	500 FPM	.75"	30F / 60F	160F / 110F	35	7.7 FT.	831	1/11 FPI	492 FPM	.13"	34	(4) 8.5	42.8	460/3	1, 2, 3, 4
AH-2	NORTEK	2ND FLOOR	UTILITY 2129	HORIZ.	2400	24,000	4.5' / 6.0"	CENTR.	4/22" DIA.	77.4 db 62.7 wb	52.1 db 51.7 wb	733	652.8	44	54	150	8.59	8/8 FPI	500 FPM	.75"	30F / 60F	160F / 110F	35	7.7 FT.	831	1/11 FPI	492 FPM	.13"	34	(4) 8.5	42.8	460/3	1, 2, 3, 4
AH-3	NORTEK	3RD FLOOR	UTILITY 2129	HORIZ.	2400	20,000	4.5' / 6.0"	CENTR.	4/22" DIA.	77.4 db 62.7 wb	49.9 db 49.8 wb	707.6	589.7	44	53.7	150	14.9	8/8 FPI	417 FPM	.60"	30F / 60F	160F / 120F	35	4 FT.	689	1/11 FPI	410 FPM	.10"	34	(4) 7	35.2	460/3	1, 2, 3, 4

ACCESSORIES & NOTES:
1. PROVIDE 2" PLEATED FILTERS.
2. PROVIDE PIPING AND WIRING CONNECTIONS AND ACCESS PANELS/DOORS ON SIDE OF UNIT THAT WILL ALLOW GREATEST ACCESSIBILITY. SEE PLANS FOR UNIT ORIENTATIONS.
3. PROVIDE INVERTOR DUTY MOTOR, VARIABLE FREQUENCY DRIVE TO BE PROVIDED BY CONTROLS CONTRACTOR (SECTION 23 09 23)
4. 20% PROPYLENE GLYCOL.

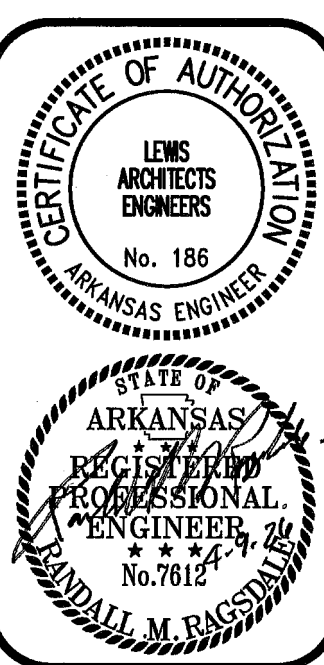
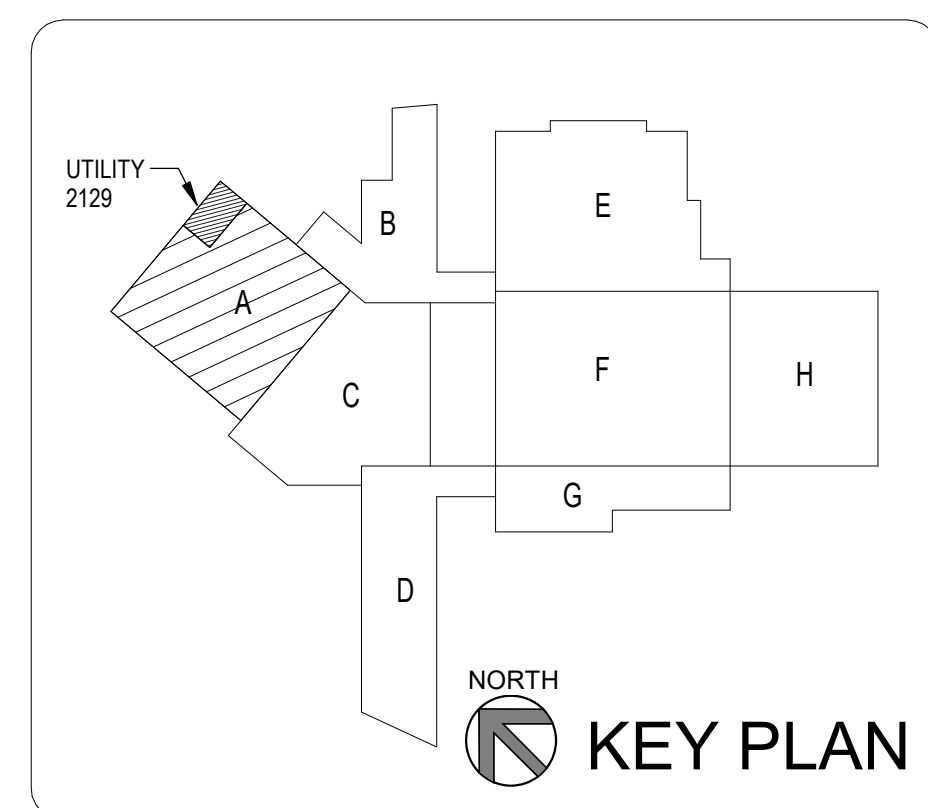
MAIN LEVEL (AHJ-1) EXISTING HEATING AND COOLING BOXES			
MARK	TYPE	COOLING CFM	HEATING CFM
D	SERIES FAN POWERED	2000	2000
E	PARALLEL FAN POWERED	400	280
F	PARALLEL FAN POWERED	600	420
H	PARALLEL FAN POWERED	1400	980
J	VAV TERMINAL W/ REHEAT	200	100
K	VAV TERMINAL W/ REHEAT	400	200
L	VAV TERMINAL W/ REHEAT	600	300
M	VAV TERMINAL W/ REHEAT	800	400
N	VAV TERMINAL W/ REHEAT	1250	625
Q	VAV TERMINAL W/ REHEAT	2500	1250
R	VAV TERMINAL W/ REHEAT	300	---
141	VAV TERMINAL W/ REHEAT	750	325
142	VAV TERMINAL W/ REHEAT	1800	540
DET-1	VAV TERMINAL W/ REHEAT	700	420
DET-2	VAV TERMINAL W/ REHEAT	2500	1000
DET-3	VAV TERMINAL W/ REHEAT	2000	1200
DET-4	VAV TERMINAL W/ REHEAT	225	135
DET-5	VAV TERMINAL W/ REHEAT	600	360
DET-6	VAV TERMINAL W/ REHEAT	1200	720
DET-7	VAV TERMINAL W/ REHEAT	1000	600
DET-8	VAV TERMINAL W/ REHEAT	800	360
DET-9	VAV TERMINAL W/ REHEAT	700	420
1ST FLOOR BOXES TOTAL AIRFLOW		38,925	



ALL EQUIPMENT, DUCTWORK, AIR DEVICES, & CONTROLS ARE EXISTING (UNLESS NOTED OTHERWISE).

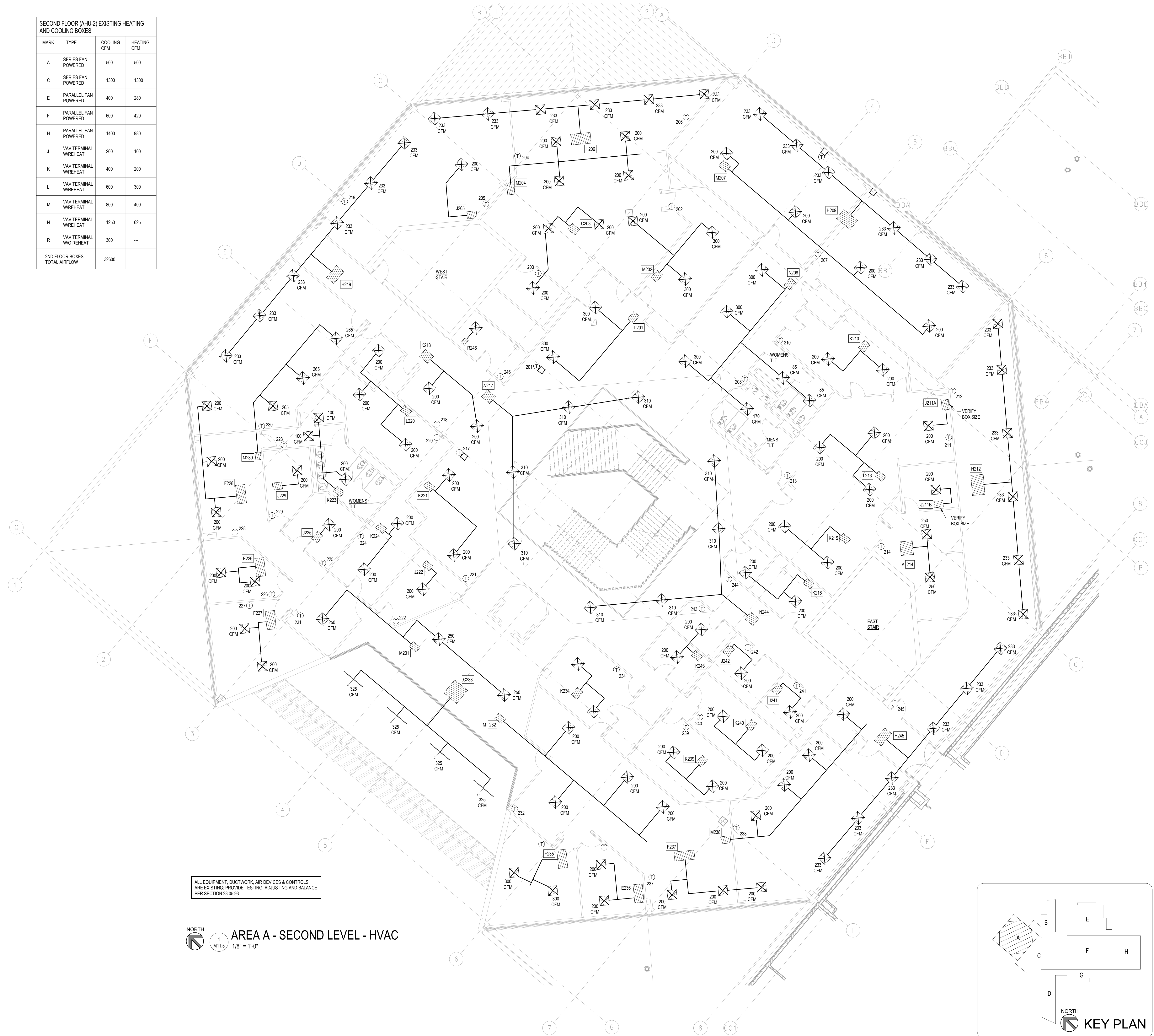
PROVIDE TESTING, ADJUSTING AND BALANCE PER SECTION 2305.59, INCLUDE WATER BALANCE FOR AH-1, AH-2, AH-3, P-1 & P-2.

NORTH
1
M11.4
1" = 10'-0"
AREA A - MAIN LEVEL - HVAC



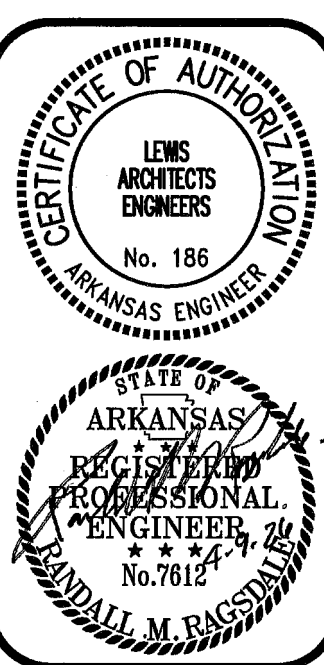
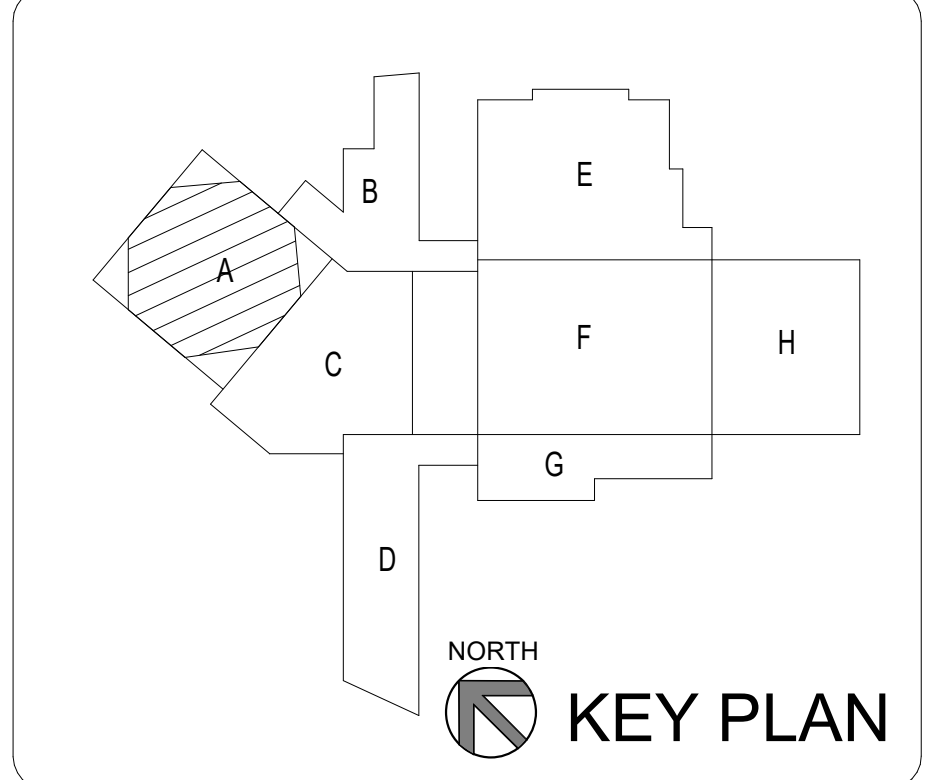
DATE: 2026 04-07
PROJECT NO: 22033
DRAWN BY: RAB
REV:

SECOND FLOOR (AHU-2) EXISTING HEATING AND COOLING BOXES			
MARK	TYPE	COOLING CFM	HEATING CFM
A	SERIES FAN POWERED	500	500
C	SERIES FAN POWERED	1300	1300
E	PARALLEL FAN POWERED	400	280
F	PARALLEL FAN POWERED	600	420
H	PARALLEL FAN POWERED	1400	980
J	VAV TERMINAL W/REHEAT	200	100
K	VAV TERMINAL W/REHEAT	400	200
L	VAV TERMINAL W/REHEAT	600	300
M	VAV TERMINAL W/REHEAT	800	400
N	VAV TERMINAL W/REHEAT	1250	625
R	VAV TERMINAL W/O REHEAT	300	---
2ND FLOOR BOXES TOTAL AIRFLOW		32600	



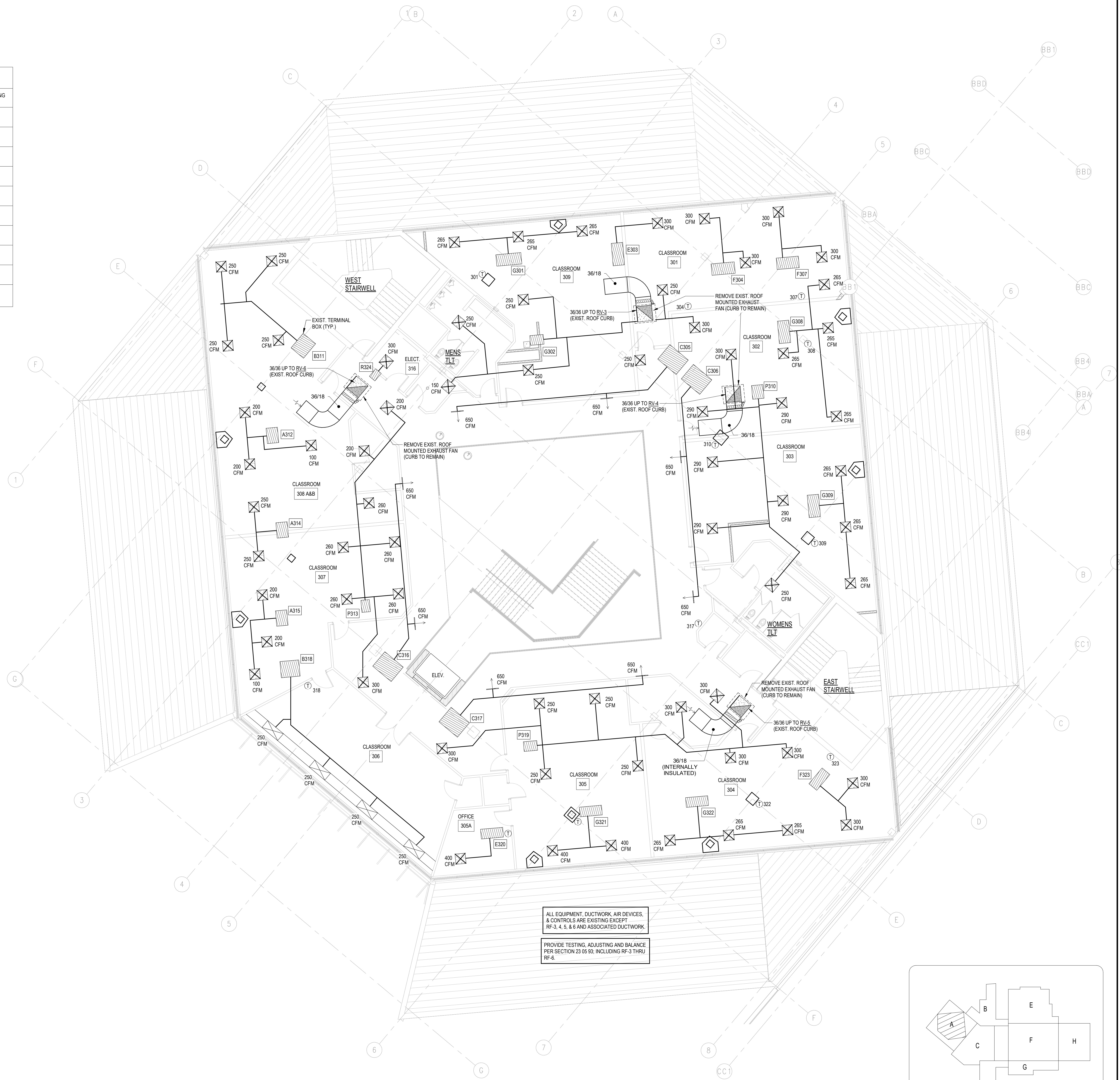
ALL EQUIPMENT, DUCTWORK, AIR DEVICES & CONTROLS ARE EXISTING. PROVIDE TESTING, ADJUSTING AND BALANCE PER SECTION 23 05 93

AREA A - SECOND LEVEL - HVAC
 NORTH
 1" = 1'-0"



DATE: 2026 04-07
 PROJECT NO: 22033
 DRAWN BY: RAB
 REV:

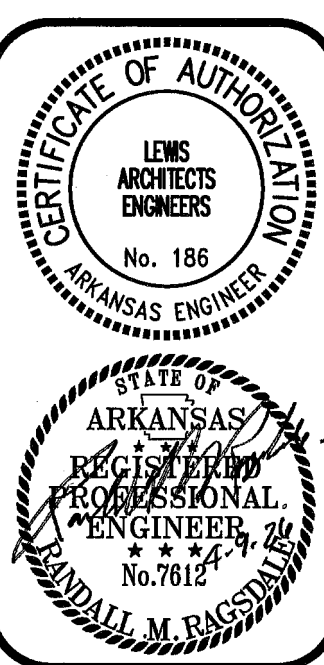
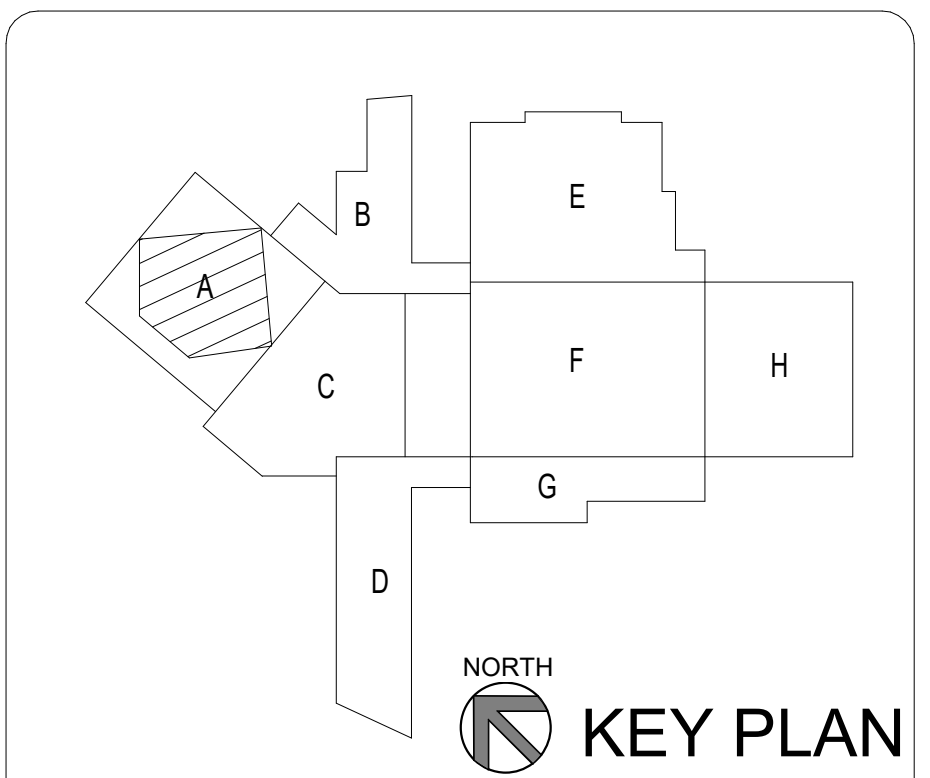
THIRD FLOOR (AHU-3) EXISTING HEATING AND COOLING BOXES			
MARK	TYPE	COOLING CFM	HEATING CFM
A	SERIES FAN POWERED	500	500
B	SERIES FAN POWERED	1000	1000
C	SERIES FAN POWERED	1300	1300
D	SERIES FAN POWERED	2000	2000
E	PARALLEL FAN POWERED	400	280
F	PARALLEL FAN POWERED	600	420
G	PARALLEL FAN POWERED	800	560
P	VAV TERMINAL WIREHEAT	2000	---
R	VAV TERMINAL NO REHEAT	300	---
3RD FLOOR BOXES TOTAL AIRFLOW		22,400	6,100



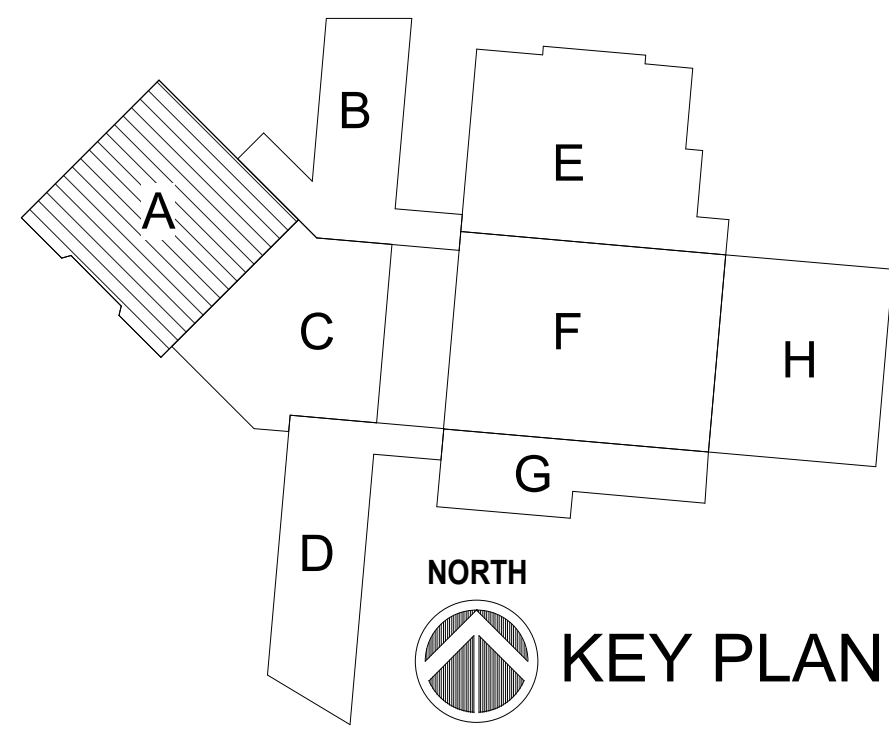
ALL EQUIPMENT, DUCTWORK, AIR DEVICES, & CONTROLS ARE EXISTING EXCEPT RF-3, 4, 5, & 6 AND ASSOCIATED DUCTWORK.

PROVIDE TESTING, ADJUSTING AND BALANCE PER SECTION 23 05 93, INCLUDING RF-3 THRU RF-6.

NORTH
1
M11.6 1/8" = 1'-0"



DATE: 2026 04-07
PROJECT NO: 22033
DRAWN BY: RAB
REV:



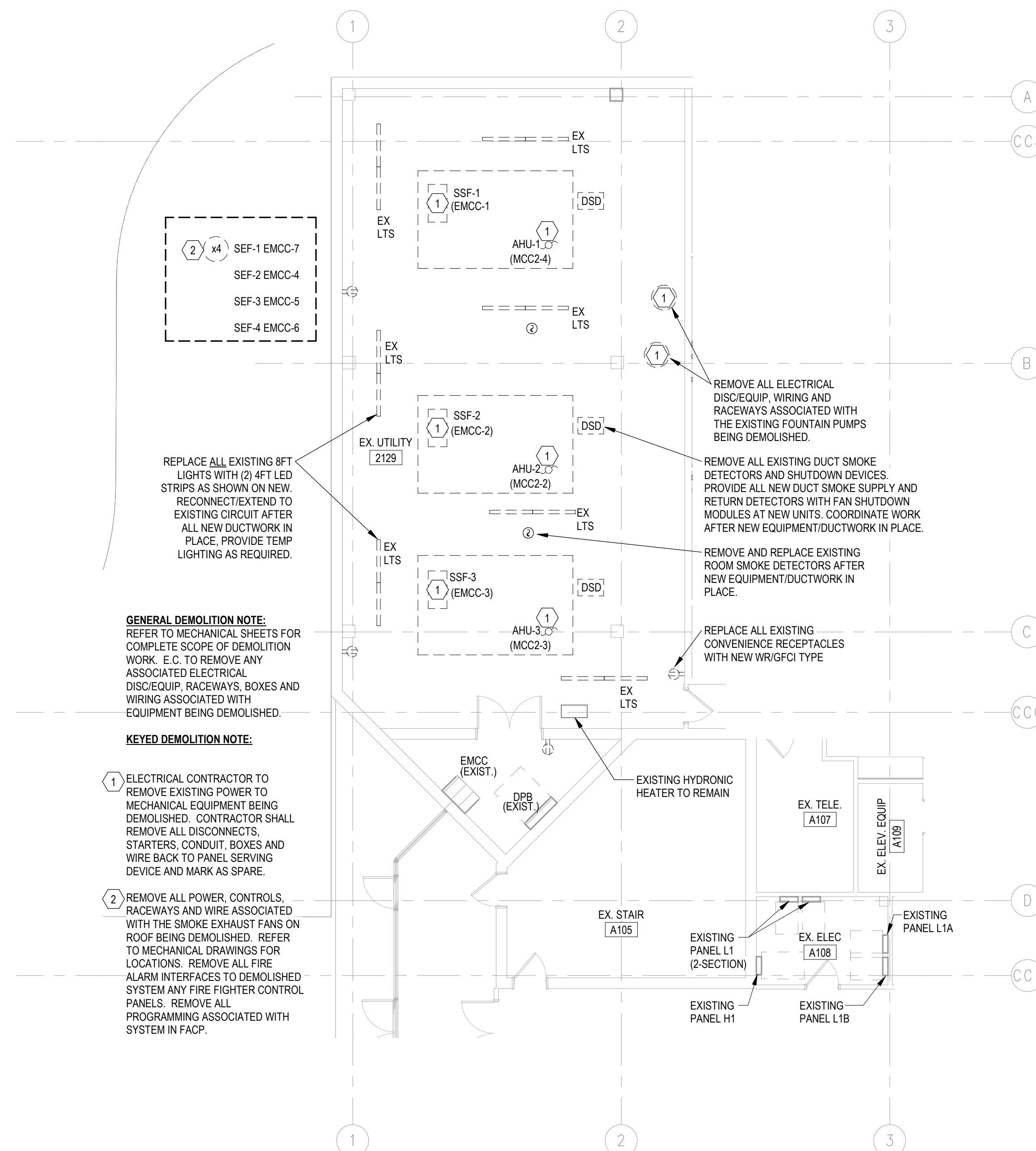
KEY PLAN

PANELBOARD: AHP1

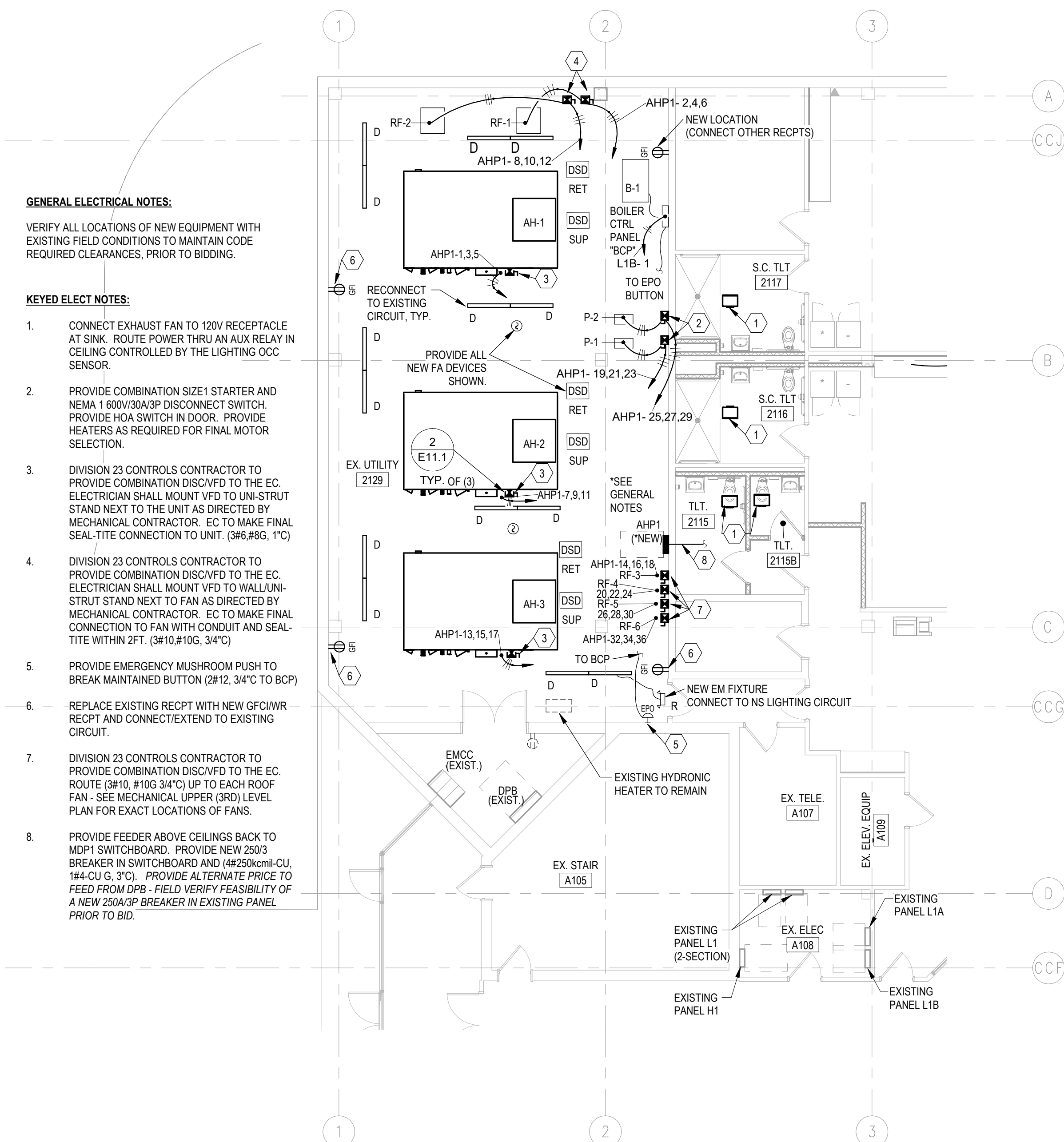
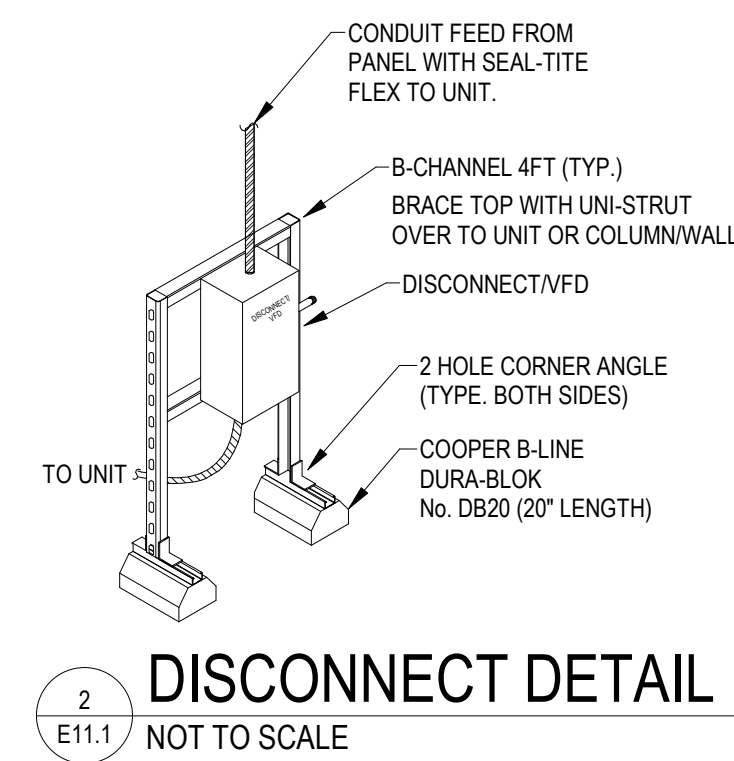
LOCATION: EX. UTILITY 2129 VOLTAGE: 480Y/277 V, 3 ø 4 W.
 MOUNTING: SURFACE NEMA 1 A.I.C. RATING: 30,000 AMPS SYMMETRICAL.
 MAIN DEVICE: 250.0 A MLO SPECIAL:
 BUS AMPS: 250 AMPS

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
AH-1	60 A	3	1	13.0	3.9		2			RF-1
			3			13.0	3.9	4	30 A	
			5	13.0	3.9			6		
AH-2	60 A	3	7	13.0	3.9		8			RF-2
			9			13.0	3.9	10	30 A	
			11			13.0	3.9	12		
AH-3	50 A	3	13	10.7	1.0			14	20 A	RF-3
			15			10.7	1.0	16		
			17			10.7	1.0	18		
P-1	20 A	3	19	1.4	1.0			20	20 A	RF-4
			21			1.4	1.0	22		
			23			1.4	1.0	24		
P-2	20 A	3	25	1.4	1.0			26	20 A	RF-5
			27			1.4	1.0	28		
			29			1.4	1.0	30		
SPACE	--	1	31	--	1.0			32		
SPACE	--	1	33	--	1.0			34	20 A	RF-6
SPACE	--	1	35	--	1.0			36		
SPACE	--	1	37	--	--			38	1	SPACE
SPACE	--	1	39	--	--			40	1	SPACE
SPACE	--	1	41	--	--			42	1	SPACE
TOTAL LOAD:				51 kVA	51 kVA	51 kVA				
TOTAL AMPS:				185 A	184.8 A	185 A				
LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS						
MTR	0 VA	0.00%	0 VA	CONNECTED LOAD:	153540 VA					
SPEC	153540 VA	100.00%	153540 VA	ESTIMATED DEMAND:	153540 VA					
				CONNECTED CURRENT:	184.7 A					
				EST. DEMAND CURRENT:	184.7 A					

NOTES:
 SQUARE D NF



- GENERAL DEMOLITION NOTE:**
 REFER TO MECHANICAL SHEETS FOR COMPLETE SCOPE OF DEMOLITION WORK. E.C. TO REMOVE ANY ASSOCIATED ELECTRICAL DISCONNECTS, RACEWAYS, BOXES AND WIRING ASSOCIATED WITH EQUIPMENT BEING DEMOLISHED.
- KEYED DEMOLITION NOTE:**
- 1 ELECTRICAL CONTRACTOR TO REMOVE EXISTING POWER TO MECHANICAL EQUIPMENT BEING DEMOLISHED. CONTRACTOR SHALL REMOVE ALL DISCONNECTS, STARTERS, CONDUIT, BOXES AND WIRE BACK TO PANEL SERVING DEVICE AND MARK AS SPARE.
 - 2 REMOVE ALL POWER, CONTROLS, RACEWAYS AND WIRE ASSOCIATED WITH THE SMOKE EXHAUST FANS ON ROOF BEING DEMOLISHED. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS. REMOVE ALL FIRE ALARM INTERFACES TO DEMOLISHED SYSTEM AND FIRE FIGHTER CONTROL PANELS. REMOVE ALL PROGRAMMING ASSOCIATED WITH SYSTEM IN FACT.



- GENERAL ELECTRICAL NOTES:**
 VERIFY ALL LOCATIONS OF NEW EQUIPMENT WITH EXISTING FIELD CONDITIONS TO MAINTAIN CODE REQUIRED CLEARANCES, PRIOR TO BIDDING.
- KEYED ELECT NOTES:**
1. CONNECT EXHAUST FAN TO 120V RECEPTACLE AT SINK. ROUTE POWER THRU AN AUX RELAY IN CEILING CONTROLLED BY THE LIGHTING OCC SENSOR.
 2. PROVIDE COMBINATION SIZE 1 STARTER AND NEMA 1 600V/30A/3P DISCONNECT SWITCH. PROVIDE HOA SWITCH IN DOOR. PROVIDE HEATERS AS REQUIRED FOR FINAL MOTOR SELECTION.
 3. DIVISION 23 CONTROLS CONTRACTOR TO PROVIDE COMBINATION DISCONNECT TO THE EC. ELECTRICIAN SHALL MOUNT VFD TO UNISTRUT STAND NEXT TO THE UNIT AS DIRECTED BY MECHANICAL CONTRACTOR. EC TO MAKE FINAL SEAL-TITE CONNECTION TO UNIT. (SEE REG. 1'C)
 4. DIVISION 23 CONTROLS CONTRACTOR TO PROVIDE COMBINATION DISCONNECT TO THE EC. ELECTRICIAN SHALL MOUNT VFD TO WALL UNISTRUT STAND NEXT TO FAN AS DIRECTED BY MECHANICAL CONTRACTOR. EC TO MAKE FINAL CONNECTION TO FAN WITH CONDUIT AND SEAL-TITE WITHIN 2FT. (3#10, #10G, 3/4"C)
 5. PROVIDE EMERGENCY MUSHROOM PUSH TO BREAK MAINTAINED BUTTON (2#12, 3/4"C TO BCP)
 6. REPLACE EXISTING RECEPT WITH NEW GFCIWR RECEPT AND CONNECT EXTEND TO EXISTING CIRCUIT.
 7. DIVISION 23 CONTROLS CONTRACTOR TO PROVIDE COMBINATION DISCONNECT TO THE EC. ROUTE (3#10, #10G 3/4"C) UP TO EACH ROOF FAN - SEE MECHANICAL UPPER (3RD) LEVEL PLAN FOR EXACT LOCATIONS OF FANS.
 8. PROVIDE FEEDER ABOVE CEILINGS BACK TO MEP1 SWITCHBOARD. PROVIDE NEW 250G BREAKER IN SWITCHBOARD AND (4#250kcmil-CU, 184-CU G, 3"C). PROVIDE ALTERNATE PRICE TO FEED FROM DPR - FIELD VERIFY FEASIBILITY OF A NEW 250A/3P BREAKER IN EXISTING PANEL.

DEMO PLAN - MAIN LEVEL - AREA A MECH ROOM - ELECTRICAL
 1/8" = 1'-0"

FLOOR PLAN - MAIN LEVEL - AREA A MECH ROOM - ELECT.
 1/8" = 1'-0"