

- THE WORK SHALL COMPLY WITH THE 2020 BUILDING CODE OF NYS. IN ADDITIONS, THE WORK SHALL COMPLY WITH ALL OTHER RELEVANT CODES, RULES AND ORDINANCES OF THIS STATE OF NEW YORK, ALL LOCAL, STATE AND FEDERAL AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL PAY ALL FEES AND TAXES, OBTAIN ALL PERMITS AND APPROVALS, FILE THE REQUIRED DOCUMENTS AND CAUSE ALL INSPECTIONS.
- CONTRACTOR SHALL PROVIDE ALL WORK, EQUIPMENT, LABOR AND MATERIAL REQUIRED FOR A COMPLETE AND TROUBLE FREE INSTALLATION.
- ALL DUCTWORK ELBOWS SHALL BE EITHER LONG RADIUS OR SQUARE WITH TURNING VANES.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT, PIPING, CONTROLS, DUCTWORK, REGISTERS, SUPPORTS, DAMPERS, AND ACCESSORIES PRIOR TO FABRICATION AND INSTALLATION. SUBMIT ALL REPORTS FOR REVIEW SUCH AS TESTING, ADJUSTING, AND BALANCING, AND COMMISSIONING.
- CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS AND NOTIFY OWNER OF ANY DISCREPANCIES BEFORE COMMENCING WORK.
- PROVIDE AN AIR BALANCE REPORT FOR THE EQUIPMENT SHOWN ON THE DRAWINGS.
- ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER TO THE SATISFACTION OF THE OWNER.
- EXCEPT AS NOTED, ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND IN GOOD CONDITION, WHERE APPLICABLE BY CODE AND/OR THESE SPECIFICATIONS. EQUIPMENT AND MATERIALS SHALL BE LABELED BY THE REQUISITE GOVERNING AGENCY.
- SURVEY THE INSTALLATION SITE PRIOR TO BID, DETERMINE THE CONSTRAINTS OF THE EXISTING AVAILABLE SPACE PERTAINING TO EQUIPMENT SIZE AND CONFIGURATION AND EXAMINE THE CONDITIONS UNDER WHICH THE EQUIPMENT WILL BE INSTALLED. VERIFY ALL MEASUREMENTS AT THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DIMENSIONAL COMPATIBILITY OF THE DUCTWORK AND EQUIPMENT WITH THE SPACE.
- SHIP AND DELIVER EQUIPMENT KNOCKED DOWN AS NECESSARY TO FIT THROUGH EXISTING BUILDING OPENINGS. VERIFY IN FIELD THE CONSTRAINTS OF THE EXISTING BUILDING PRIOR TO FABRICATION OF EQUIPMENTS. INCLUDE IN THE BID ALL COSTS ASSOCIATED WITH RIGGING AND DELIVERY OF EQUIPMENT AS REQUIRED BY THE EXISTING BUILDING CONDITIONS.
- SCHEDULE AND NOTIFY THE OWNER AND BUILDING MANAGEMENT IN ADVANCE PRIOR TO SHUTDOWN OF ANY SERVICES.
- UPON COMPLETION OF THE PROJECT, PROVIDE SIX (6) COPIES OF AS-BUILT DRAWINGS TO THE OWNER.
- IT IS THE INTENT OF THESE CONTRACT DOCUMENTS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IF AN ITEM OF WORK IS SHOWN ON THE DRAWINGS, IT SHALL BE CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION, WHETHER SPECIFICALLY MENTIONED OR NOT.
- RENDER FULL COOPERATION TO OTHER TRADES AND COORDINATE THE WORK WITH OTHER TRADES. THIS CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS.
- PERFORM ALL CUTTING AND PATCHING NECESSARY FOR THE PROPER INSTALLATION OF THIS WORK. REPAIR ANY DAMAGE DONE BY THIS WORK AND REPAIR ANY DAMAGE CAUSED.
- ON ACCEPTANCE OF CONTRACT, CONTRACTOR AGREES TO GUARANTEE THE WORK AND EQUIPMENT FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF INITIAL OPERATION. MANUFACTURED EQUIPMENT SHALL CARRY FULL PERIOD OF MANUFACTURER'S GUARANTEE, AND SHALL NOT BE LESS THAN ONE (1) YEAR. COMPRESSORS SHALL CARRY AN EXTENDED WARRANTY OF FIVE YEARS.

- PROVIDE LABOR, MATERIALS, TOOLS, MACHINERY, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETE THE HVAC WORK UNDER THIS CONTRACT. ALL SYSTEMS AND EQUIPMENT SHALL BE COMPLETE IN EVERY ASPECT AND ALL ITEMS OF MATERIAL, EQUIPMENT AND LABOR SHALL BE PROVIDED FOR A FULLY OPERATIONAL SYSTEM AND READY FOR USE. COORDINATE THE WORK WITH THE WORK OF THE OTHER TRADES IN ORDER TO RESOLVE ALL CONFLICTS WITHOUT IMPEDING THE JOB PROGRESS.
2. EXAMINE THE DRAWINGS OF OTHER DIVISIONS, AND SECTIONS OF THE SPECIFICATIONS IN ORDER TO DETERMINE THE EXTENT OF THE WORK REQUIRED TO BE COMPLETED UNDER THIS DIVISION. FAILURE TO EXAMINE ALL THE CONTRACT DOCUMENTS FOR THIS PROJECT WILL NOT RELIEVE THIS SECTION AND ANY OTHER SECTIONS OF THEIR RESPONSIBILITIES TO PERFORM THE WORK REQUIRED FOR A COMPLETE FULLY OPERATIONAL AND SATISFACTORY INSTALLATION.
3. THE WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING SYSTEMS, EQUIPMENT AND SERVICES, AS SPECIFIED HEREBY. STARTUP SERVICES FOR ALL ROOFTOP UNITS INSTALLED IN THIS CONTRACT SHALL BE INCLUDED IN THE BID.
4. ALL SYSTEMS, EQUIPMENT AND SERVICES SPECIFIED HEREIN SHALL BE PROVIDED COMPLETE AND READY FOR USE. ALL EQUIPMENT, DUCTWORK, PIPING, DAMPERS ARE NEW, FURNISHED AND INSTALLED BY THIS CONTRACTOR, UNLESS OTHERWISE NOTED.
5. DUCTWORK AND PIPING ARE SHOWN DIAGRAMMATICALLY AND DO NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ENGINEER. COORDINATION WITH THE EXISTING SERVICE, INCLUDE THOSE OF OTHER SUBCONTRACTORS IS REQUIRED. PRICE COORDINATION DRAWINGS SHOWING ALL TRADES WORK AND EXISTING CONDITION.
6. EXTEND ALL GREASE FITTINGS TO AN ACCESSIBLE LOCATION.
7. FOR ACCESS DOORS TO VALVES, DAMPERS AND ALL OTHER HVAC TYPE OF ITEMS, ACCESSORIES AND EQUIPMENT, CONCEALED IN WALLS, FURRINGS AND CEILINGS. DOOR SHALL PERMIT FULL ACCESS TO THE EQUIPMENT.
8. VERIFY FINAL LOCATIONS FOR ROUGH WORK WITH FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT BEING CONNECTED.
9. ARRANGE FOR CHASES, SLOTS, AND OPENINGS IN OTHER BUILDING COMPONENTS TO ALLOW FOR HVAC INSTALLATIONS.
10. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SIZE OF SLEEVES TO BE SET IN POURED CONCRETE AND OTHER STRUCTURAL COMPONENTS AS THEY ARE CONSTRUCTED.
11. COORDINATE THE INSTALLATION OF HVAC MATERIALS AND EQUIPMENT ABOVE CEILINGS WITH SUSPENSION SYSTEM, LIGHT FIXTURES, AND ALL OTHER INSTALLATIONS AND ACCESSORIES.
12. PROVIDE EQUIPMENT AND SYSTEMS THAT, AS DEFINED HEREIN, SHALL BE QUIET AND FREE OF APPARENT VIBRATION IN OPERATIONS.
13. OBTAIN EQUIPMENT THAT IS QUIET IN OPERATION AS COMPARED TO OTHER AVAILABLE EQUIPMENT OF ITS SIZE, CAPACITY, AND TYPE; INSTALL EQUIPMENT SO THAT A MINIMUM AMOUNT OF NOISE AND/OR VIBRATION IS TRANSMITTED TO THE BUILDING; AND FABRICATE THE DUCT SYSTEM SO THAT AIR NOISES GENERATED IN THE SYSTEM ARE HELD TO AN ABSOLUTE MINIMUM.
14. PROVIDE A COMPLETE SYSTEM OF VIBRATION ISOLATION FOR EACH ITEM OF HVAC EQUIPMENT AND APPARATUS AS SPECIFIED HEREIN, AS SHOWN ON THE DRAWINGS AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.
15. PROVIDE SEISMIC RESTRAINTS FOR ALL EQUIPMENT FURNISHED AS PART OF THIS CONTRACT. ANCHOR EQUIPMENT FURNISHED BY OTHERS WHEN INSTALLATION IS CLAIMED BY THIS CONTRACT. DUCTWORK SHALL HAVE SUPPORTS, HANGERS, VIBRATION ISOLATORS, AND SHALL BE SEISMICALLY RESTRAINED IN ACCORDANCE WITH CODE AND SMACNA STANDARDS.
16. THE WORD "PROVIDE" USED ON DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT MEANS "FURNISH AND INSTALL". WHEN ONLY ONE PART OF ACTION IS REQUIRED, EITHER "FURNISH" OR "INSTALL" WILL BE USED ACCORDINGLY (TYP., U.O.N.).
17. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES INVOLVING EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
18. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PROVIDE CONTROL WIRING TO THE BMS SYSTEM. MECHANICAL CONTRACTOR TO FURNISH THE SERVICES OF CONTROL CONTRACTOR TO PREPARE CONTROL WIRING DIAGRAMS.
19. CONTRACTOR SHALL PROVIDE CURBS AND FACTORY ASSEMBLED PIPE CABINET FOR EACH AHU/PACKAGED RTU. REMOVE EXISTING GRAVEL AND COORDINATE NEW ROOF WORK WITH GC. SEE ARCHITECTURAL DRAWINGS.
20. PERFORM COMMISSIONING OF THE INSTALLED AIR HANDLING EQUIPMENT AS PER 2020 NYS IECC C408. SEE SPEC 09113. SERVICES ARE TO BE PERFORMED BY A THIRD PARTY APPROVED AGENCY
21. FOR SEQUENCE OF OPERATIONS, SEE SPECIFICATION SECTION 230993.

1. THE BUILDING MANAGEMENT SYSTEM AND ALL DIRECT DIGITAL CONTROLS SHALL BE A BACNET BASED SYSTEM AND SHALL BE PROVIDED BY SIEMENS. THE CONTRACTOR SHALL RETAIN THE SERVICES OF SIEMENS TO PROVIDE THE SYSTEM. NO SUBSTITUTIONS ARE PERMITTED.

AT THE PROJECT INCEPTION THE CONTRACTOR SHALL RETAIN THE SERVICES OF A CERTIFIED TESTING AND BALANCING FIRM TO TEST AND DOCUMENT THE FOLLOWING PERFORMANCE DATA OF THE EXISTING EQUIPMENT DESIGNATED TO BE REMOVED, REUSED OR REPLACED AS PART OF THE SCOPE OF THIS PROJECT. THE TESTING AND DOCUMENTATION SHALL INCLUDE AS A MINIMUM:

ABBREVIATION:	DESCRIPTION:
A	AMPERE
AC	AIR CONDITIONING
ACH	AIR CHANGES PER HOUR
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHRI	AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AMP	AMPERE
AO	ANALOG OUTPUT
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS
AUME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASX	AUXILIARY
AVG	AVERAGE
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BP	BOTTOM OF PIPE
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
C	CONDENSATE LINE
CAP	CAPACITY
CD	CONDENSATE DRAIN
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CHW	CHILLED WATER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CI	CAST IRON, CUBIC INCHES
CO	CLEANOUT
CONC	CONCRETE
COP	COEFFICIENT OF PERFORMANCE
CW	COLD WATER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DRAIN, DEPTH
DB	DECIBELS
DB	DRY BULB
DBA	DECIBELS (A WEIGHTED)
DDC	DIRECT DIGITAL CONTROL
DEG.	DEGREES
Ø	DIAMETER/ROUND
DI	DIGITAL INPUT
DN	DOWN
DO	DIGITAL OUTPUT
DP	DEW POINT
DR	DRAIN
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EACH
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
EWI	ENTERING WATER TEMPERATURE
EX.	EXISTING
F	FAHRENHEIT
FA	FIRE ALARM
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FD	FLOOR DRAIN
FF	FINISHED FLOOR
FG	FINISHED GRADE
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
PPM	FEET PER MINUTE
FT	COMBINATION FIRE/SMOKE DAMPER
FTR	FINNED TUBE RADIATOR
FU	FIXTURE UNIT
G	NATURAL GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HOOR, HEIGHT
H2O	WATER
HD	HEAD
HG	MERCURY
HOA	HAND/OFF/AUTO
HR	HEAT PUMP
HR	HOUR
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HW	HOT WATER
HWR	HOT WATER RETURN

- A. REPLACE UNIT VENTILATORS THROUGHOUT THE BUILDING WHERE INDICATED. CONNECT ALL UNIT VENTILATORS TO THE CHILLED WATER PIPING SYSTEM. EXISTING CHILLED WATER PIPING IS TO BE RE-USED WHEREVER POSSIBLE.
- B. PROVIDE AN AIR-COOLED CHILLER COMPLETE WITH PUMPS, CONTROLS, AND APPURTENANCES AT THE NEW WING AND CONNECT THE EXISTING CHILLED WATER PIPING. THIS EXISTING CHILLED WATER PIPING WAS ORIGINALLY INSTALLED IN THE BUILDING FOR FUTURE CONNECTION, BUT WAS NOT CONNECTED TO A SOURCE OF CHILLED WATER AT THE TIME OF CONSTRUCTION. TEST THE EXISTING PIPING AS SPECIFIED PRIOR TO FABRICATION.
- C. PROVIDE AN AIR COOLED CHILLER AT THE SAME LOCATION AS THE EXISTING COOLING TOWER. DEMOLISH THE EXISTING COOLING TOWER AND TWO WATER COOLED CENTRIFUGAL CHILLERS. PROVIDE PUMPS, CONTROLS, PIPING, AND APPURTENANCES.
- D. REFURBISH THE TWO EXISTING AIR HANDLING UNITS AHU-1 AND AHU-2 ABOVE THE CEILING IN THE ORIGINAL WING. REPLACE THE VAV TERMINALS THROUGHOUT THIS AREA WITH PRESSURE INDEPENDENT, DDC VAV BOXES.
- E. REPLACE THE AIR HANDLING UNIT AHU-20 AT THE CEILING OF THE CAFETERIA.
- F. PROVIDE DX COOLING COILS AT THE FIVE EXISTING AIR HANDLING UNITS (AHU-3, 4, 5, 7, & 8) ADJACENT TO THE EXISTING COOLING COIL. SHALL BE SERVED BY A DEDICATED SPLIT SYSTEM AIR CONDITIONING UNIT LOCATED ON THE ROOF DIRECTLY ABOVE.
- G. REPLACE THE EXISTING CLIMATE CONTROL SYSTEM WITH A DIRECT DIGITAL BUILDING MANAGEMENT SYSTEM. THE BMS SHALL BE PROVIDED BY SIEMENS TO MATCH THE OTHER BUILDINGS IN THE DISTRICT.

	CENTER LINE
	DEMOLITION AND REMOVAL
	EXISTING TO REMAIN
	NEW PIPE, DUCTWORK OR EQUIPMENT
	PIPE DROPPING DOWN
	PIPE RISING UP
	AIR VENT
	AUTOMATIC FLOW CONTROL VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	CONCENTRIC REDUCER OR INCREASER
	ECCENTRIC REDUCER OR INCREASER
	FLEXIBLE CONNECTOR
	FLOW IN DIRECTION OF ARROW
	GATE VALVE
	GLOBE VALVE
	MODULATING CONTROL VALVE
	PRESSURE GAUGE WITH NEEDLE VALVE COCK
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	STRAINER
	THERMOMETER
	TRIPLE DUTY VALVE
	UNION
	DISCONNECT POINT
	TIE-IN POINT
	CHILLED WATER SUPPLY (CHWS)
	CHILLED WATER RETURN (CHWR)
	CONDENSER WATER RETURN
	CONDENSER WATER SUPPLY
	HOT WATER RETURN
	HOT WATER SUPPLY
	REFRIGERANT
	DRAIN
	MAKE-UP WATER
	VENT

- A. SITE (BASED ON NEAREST AVAILABLE DATA: ASHRAE HANDBOOK CLIMATIC DESIGN INFORMATION, WESTCHESTER CO, NY):
 - 1. 41.07°N, 73.71°W
 - 2. ELEVATION: 387 FT
 - 3. CLIMATE ZONE 5A.
- B. OUTSIDE DESIGN CONDITIONS (BASED ON NEAREST AVAILABLE DATA: ASHRAE CLIMATIC DESIGN INFORMATION, WESTCHESTER CO, NY):
 - 1. HEATING DB (95 °F): 9.0°F DB
 - 2. COOLING DB/MCWB (1%): 86.5°F DB, 72.1°F WB
- C. INSIDE DESIGN CONDITIONS (PER NYSDJ MANUAL OF PLANNING STANDARDS §602-6.B. AND 2015 ASHRAE HANDBOOK CH 7 TABLE 6):
 - 1. HEATING INDOOR SETPOINT: 72°F
 - 2. COOLING INDOOR SETPOINT: 78°F, 60% RH
- D. ACOUSTICS (PER NYSDJ MANUAL OF PLANNING STANDARDS, TABLE S304-1):
 - 1. DESIGN REQUIREMENTS FOR HVAC SYSTEM NOISE FOR CLASSROOMS: 7-12: RC 25-30.
- E. FILTRATION: MERV 13 (PER NYSDJ MANUAL OF PLANNING STANDARDS).

INCLUDE IN THE BID A SEPARATE PRICE FOR THE FOLLOWING:

1. BASE BID: REUSE THE EXISTING UV'S SPECIFIED FOR REPLACEMENT AS PER ALT. NO. 200. REMOVE EXISTING COIL, FAN AND CONNECT HEAT EXCHANGER TO EXISTING DUCTWORK. COILS OTHER THAN EXISTING UV'S TO BE REPLACED WITH NEW.
2. ALT. NO. 200: REPLACE EXISTING UV'S IN LOCATION SPECIFIED ON THE PLANS. SEE PLANS FOR LOCATIONS. INCLUDE AN ALLOWANCE TO REPLACE EXISTING HEAT SUPPLY & RETURN DUCTWORK AND INSULATION @ \$0.20 LINEAR FEET PER EACH UNIT VENTILATOR TO BE REPLACED.
3. ALT. NO. 201: REMOVE AND REPLACE CAFETERIA UNIT, AHU-202.
4. ALT. NO. 202: REFURBISH EXISTING PLENUM MOUNTED HVAC UNIT AND PROVIDE NEW ACCESS PANELS AND MAINTENANCE PLATFORMS FOR ACCESS.
5. ALT. NO. 203: REFER THE ARCHITECTURAL DRAWINGS.
6. ALT. NO. 204: REFER THE ARCHITECTURAL DRAWINGS.

<p>Drawing Title</p> <p>MECHANICAL GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS</p>	<p>Drawing No.</p> <p>WGES-M-001</p>
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WATER PUMP SCHEDULE																							
UNIT #	SERVICE	LOCATION	TYPE	FLUID	PUMP DATA									MOTOR				SPEED CONTROL	BASE DIMENSIONS (LxW, IN)	OPERATING WEIGHT (LBS)	BASIS OF DESIGN		
					IMPELLER DIA. (IN)	CAPACITY (GPM)	TOTAL HEAD (FT H2O)	DUTY POINT POWER (HP)	NPSHr (FT H2O)	PART LOAD EFF. (PLEVv)	DUTY POINT EFF.	MAX. WWP (PSIG)	WATER TEMP. (°F)	TYPE	ENCLOSURE TYPE	HP	RPM				V/PHz	MANUFACTURER	MODEL #
CHWP-1	CHILLED WATER	OUTDOORS	BASE MOUNTED, END SUCTION	30% PROPYLENE GLYCOL	8.625	320	50	6.13	9.2	70.3	67.5	175	44	NEMA PREMIUM, VFD READY	TEFC	7.5	1800	208/3/60	VARIABLE	34x14	367	BELL & GOSSETT	e-1510 2.5BB
CHWP-2	CHILLED WATER	OUTDOORS	BASE MOUNTED, END SUCTION	30% PROPYLENE GLYCOL	8.625	320	50	6.13	9.2	70.3	67.5	175	44	NEMA PREMIUM, VFD READY	TEFC	7.5	1800	208/3/60	VARIABLE	34x14	367	BELL & GOSSETT	e-1510 2.5BB
CHWP-3	CHILLED WATER	CHILLER ROOM	BASE MOUNTED, END SUCTION	30% PROPYLENE GLYCOL	5.25	320	80	9.12	11.8	70.9	72.4	175	44	NEMA PREMIUM, VFD READY	TEFC	10	1800	208/3/60	VARIABLE	34x14	328	BELL & GOSSETT	e-1510 2.5AC
CHWP-4	CHILLED WATER	CHILLER ROOM	BASE MOUNTED, END SUCTION	30% PROPYLENE GLYCOL	5.25	320	80	9.12	11.8	70.9	72.4	175	44	NEMA PREMIUM, VFD READY	TEFC	10	1800	208/3/60	VARIABLE	34x14	328	BELL & GOSSETT	e-1510 2.5AC
NOTES: 1. PROVIDE OPERATIONS AND MAINTENANCE MANUALS. 2. PROVIDE VARIABLE FREQUENCY DRIVE WITH HOA CONTROL. 3. PROVIDE INTERNALLY SELF-FLUSHING MECHANICAL SEALS.																							

CONDENSATE DRAIN PIPE SIZING SCHEDULE	
SIZE (IN)	MAXIMUM CONNECTED COOLING CAPACITY (TONS)
3/4	20
1	40
1 1/4	90
1 1/2	125
2	250
NOTES: 1. SIZE CONDENSATE DRAIN PIPING PER THIS SCHEDULE WHERE NOT OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS.	

COOLING COIL SCHEDULE																
TAG	SERVICE	REFRIGERANT	TOTAL COOLING CAPACITY (BTU/H)	SENSIBLE COOLING CAPACITY (BTU/H)	SUPPLY AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	PRESS. DROP (IN WC)	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	LAT (°F WB)	MAX. FACE VELOCITY (FPM)	MIN. FACE AREA (SF)	ROWS	OVERALL DIMENSIONS (WxH)(IN)	BASIS OF DESIGN
CC-3	AHU-3	R-410A	52,380	36,660	2000	1000	0.5	79.0	67.0	55.0	54.0	400	5.0	4-8	44x35.25	TRANE CSAA SIZE 6, TYPE UF COIL
CC-4	AHU-4	R-410A	115,605	80,900	7000	1360	0.5	75.0	65.0	55.0	54.0	400	17.5	4-8	80x52.75	TRANE CSAA SIZE 21, TYPE UF COIL
CC-5	AHU-5	R-410A	115,605	80,900	7000	1360	0.5	75.0	65.0	55.0	54.0	400	17.5	4-8	80x52.75	TRANE CSAA SIZE 21, TYPE UF COIL
CC-7	AHU-7	R-410A	52,380	36,660	2000	1000	0.5	79.0	67.0	55.0	54.0	400	5.0	4-8	44x35.25	TRANE CSAA SIZE 6, TYPE UF COIL
CC-8	AHU-8	R-410A	52,380	36,660	2000	1000	0.5	79.0	67.0	55.0	54.0	400	5.0	4-8	44x35.25	TRANE CSAA SIZE 6, TYPE UF COIL
NOTES: 1. THE COILS SHALL BE FACTORY INSTALLED WITHIN A DOUBLE-WALLED, INSULATED HOUSING COMPLETE WITH ACCESS DOORS AND DRAIN PLAN. 2. PROVIDE LINEAR EXPANSION VALVE KITS FOR EACH COIL. THE EXPANSION VALVES SHALL BE A PRODUCT OF THE VRF SYSTEM MANUFACTURER (REFER TO THE SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE).																

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE																
UNIT #	LOCATION	TOTAL COOLING CAPACITY (MBH)	EER	IEER	REFRIGERANT	CONDENSER	COMPRESSOR	ELECTRICAL						UNIT WEIGHT (LBS)	BASIS OF DESIGN	
						EA DB °F (COOLING/ HEATING)	TYPE	VOLTS	PHASE	Hz	MOCP (A)	MCA (A)	MANUFACTURER		MODEL #	
AC-3	GRADE	72,000	11.9	27.2	R410A	95/0	SCROLL	208	3	60	40	24.0	470	470	470	MITSUBISHI PUHY-P72TNU-A
AC-4	GRADE	240,000	12.2	23.2	R410A	95/0	SCROLL	208	3	60	80	49.0	649	649	649	MITSUBISHI PUHY-P144TNU-A
AC-5	GRADE	240,000	12.2	23.2	R410A	95/0	SCROLL	208	3	60	80	49.0	649	649	649	MITSUBISHI PUHY-P144TNU-A
AC-7	GRADE	72,000	11.9	27.2	R410A	95/0	SCROLL	208	3	60	40	24.0	470	470	470	MITSUBISHI PUHY-P72TNU-A
AC-8	GRADE	72,000	11.9	27.2	R410A	95/0	SCROLL	208	3	60	40	24.0	470	470	470	MITSUBISHI PUHY-P72TNU-A
NOTES: 1. PROVIDE DISCONNECT SWITCH. 2. PROVIDE LINEAR EXPANSION VALVE KIT FOR CONNECTION TO THE COOLING COILS (PAC-LV96AC-1/PAC-LV120AC-1 OR EQUAL). 3. PROVIDE AHU CONTROLLER (PAC0AH001-1 OR EQUAL). 4. PROVIDE TWINNING KIT WHERE REQUIRED BY THE MANUFACTURER. 5. PROVIDE FILTER DRIER KIT (PAC-SPRFC5 OR EQUAL).																

GLYCOL MAKEUP UNIT													
UNIT #	LOCATION	FLOW RATE (GPM)	MAX. PRESS. (PSIG)	TANK SIZE (GAL)	ELECTRICAL				OVERALL DIMENSIONS (LxWxH, IN)	UNIT WEIGHT (LBS)	BASIS OF DESIGN		
					VOLTS	PHASE	Hz	MOP (A)			MCA (A)	MANUFACTURER	MODEL #
MU-1	CHILLER RM	1.4	85	100	115	1	60	15	0.9	33x33x60	900	AXIOM INDUSTRIES	SF-100-PRV-HP-L
NOTES: 1. PROVIDE A PACKAGED MAKE-UP UNIT WHICH SHALL BE CAPABLE OF MAINTAINING THE SYSTEM FILL PRESSURE AT 30 PSIG. PROVIDE A POLYETHYLENE TANK WITH REMOVABLE LID, STRAINER, ISOLATION VALVES, PUMP, CHECK/BALANCING VALVE, EXPANSION TANK, DISCHARGE PRESSURE GAUGE, STEEL PIPING, LOW LEVEL CUT-OUT, AND CONTROL/ALARM PANEL WITH INDICATOR LIGHTS IN A NEMA 4 ENCLOSURE. 2. PROVIDE WITH DUAL PRVS AND CONTROLS CAPABLE OF SUPPLYING TWO SEPARATE SYSTEMS.													

EXPANSION TANK SCHEDULE												
UNIT #	LOCATION	SYSTEM	APPROX. SYSTEM VOLUME (GAL)	SYSTEM TEMP. RANGE		INITIAL TANK PRESS (PSIG)	MIN. VOLUME (GAL)	MIN. ACCEPT- ANCE VOLUME (GAL)	PIPE SIZE TO TANK (IN)	UNIT WEIGHT WHEN FULL (LBS)	BASIS OF DESIGN	
				MIN. (°F)	MAX (°F)						MANUFACTURER	MODEL #
ET-1	OUTDOORS	CHW	2000	40	100	12	50	25	1	700	BELL & GOSSETT	200-L
ET-2	CHILLER RM	CHW	2000	40	100	12	50	25	1	700	BELL & GOSSETT	200-L
NOTES: 1. PROVIDE VERTICAL ASME BLADDER EXPANSION TANK.												

WATER FILTER SCHEDULE									
UNIT #	SERVICE	LOCATION	TYPE	SIZE (IN)	FLOW (GPM)	FILTER MEDIA (MICRON)	BASIS OF DESIGN		
							MANUFACTURER	MODEL #	
WF-1	CHW	OUTDOORS	SIDE STREAM	1	10	5	AXIOM INDUSTRIES	SFP-10	
WF-2	CHW	CHILLER RM	SIDE STREAM	1	10	5	AXIOM INDUSTRIES	SFP-10	
WATER FILTER SCHEDULE NOTES: 1. PROVIDE WITH 304SS FILTER HOUSING WITH BRASS HEAD, SIGHT GLASS, BALL VALVES, BALANCING VALVE, BRASS DRAIN VALVE, AND BRASS NIPPLES. FILTER MEDIA SHALL BE COTTON WOUND WITH TIN CORE (25 MICRON). 2. REPLACE THE FILTER MEDIA WITH A NEW 25 MICRON CARTRIDGE AFTER SYSTEM START-UP AND BALANCING. PROVIDE ATTIC STOCK OF TWO 25 MICRON AND TWO 5 MICRON FILTERS.									

AIR SEPARATOR SCHEDULE									
UNIT #	SERVICE	LOCATION	TYPE	AIR SEPARATOR			OPERATING WEIGHT (LBS)	BASIS OF DESIGN	
				SIZE (IN)	FLOW (GPM)	PRESS. DROP (FT H2O)		MANUFACTURER	MODEL #
AS-1	CHW	BASEMENT	COALESCING AIR & DIRT	6	320	0.81	366	BELL & GOSSETT	CRSN-6F
AS-2	CHW	BASEMENT	COALESCING AIR & DIRT	6	320	0.81	366	BELL & GOSSETT	CRSN-6F

AIR COOLED WATER CHILLER SCHEDULE											
CHILLER TAG											CH-1 AND CH-2
LOCATION											OUTDOORS
DIMENSIONS	LENGTH x WIDTH x HEIGHT (IN)										251 x 89 x 94
	HEIGHT (IN)										94
	OPERATING WEIGHT (LBS)										10691
REFRIGERATION CAPACITY (EACH CHILLER)(TONS)										116.81	
COMPRESSORS (EACH MODULE)	QUANTITY										2
	CAPACITY CONTROL										VARIABLE
EVAPORATOR (TOTAL)	RLA EACH										98
	TEMP. ENT F.										54
	TEMP. LVG F.										44
	GPM										320
	MAX. P.D.-FT.										11.6
	FOULING FACTOR										0.0001
	WORKING FLUID										30% GLYCOL
	AMBIENT AIR TEMP. °F										95
CONDENSER (EACH MODULE)	QUANTITY										10
	FANS										2.5
	FLA EACH										
	FAN TYPE										VARIABLE SPEED
ELECTRICAL	VOLTS/PH/Hz										208/3/60
	MCA (A) CIRCUIT #1										310.72
	MOP (A) CIRCUIT #1										500
	MCA (A) CIRCUIT #2										298.56
	MOP (A) CIRCUIT #2										500
REFRIGERANT DATA	REFRIGERANT										R-513A
	REFRIGERANT CHARGE CKT #1 (LB)										86.6
	REFRIGERANT CHARGE CKT #2 (LB)										84.9
	REFRIGERANT SAFETY CLASS										A1
A-WEIGHTED SOUND POWER (DBA AT 30 FEET FULL LOAD)										100	
TOTAL SYSTEM EER, FULL LOAD, AHRI (BTU/W)										9.931	
TOTAL SYSTEM EER, IPLV (BTU/W)										16.10	
REMARKS: 1. PROVIDE OPERATIONS AND MAINTENANCE MANUALS. 2. PROVIDE MANUFACTURER'S STANDARD FREEZE PROTECTION PACKAGE AND SEPARATE 115V POWER SOURCE 3. PROVIDE CONVENIENCE OUTLET WITH SEPARATE 115V POWER SOURCE. 4. THE POWER CONNECTIONS FOR EACH CIRCUIT SHALL BE PROVIDED IN TWO SEPARATE ENCLOSURES. 5. REFER TO THE CHILLER ACOUSTIC ACCESSORIES SCHEDULE BELOW FOR SOUND ATTENUATION TO BE PROVIDED UNDER THIS CONTRACT. 6. THE CHILLERS HAVE BE PRE-ORDERED (TRANE RTAF130EUAH) BY THE OWNER. INSTALL THE CHILLERS UNDER THIS CONTRACT.											

VAV BOX SCHEDULE							
TAG	SERVICE	INLET SIZE	CFM		MAX NC LEVEL	DESIGN BASIS	REMARKS
			MAX	MIN			
V-01	CLASSROOM	12	1520	460	20	VCCF	SEE NOTES
V-02	CLASSROOM	10	1220	365	20	VCCF	SEE NOTES
V-03	CLASSROOM	10	1220	365	20	VCCF	SEE NOTES
V-04	CLASSROOM	10	1220	365	20	VCCF	SEE NOTES
V-05	CLASSROOM	10	1200	360	20	VCCF	SEE NOTES
V-06	CLASSROOM	10	1200	360	20	VCCF	SEE NOTES
V-07	CLASSROOM	10	1200	360	20	VCCF	SEE NOTES
V-08	CLASSROOM	10	1040	315	20	VCCF	SEE NOTES
V-09	CLASSROOM	10	1200	360	20	VCCF	SEE NOTES
V-10	CLASSROOM	10	1340	400	20	VCCF	SEE NOTES
V-11	CLASSROOM	14	2000	600	20	VCCF	SEE NOTES
V-12	CLASSROOM	10	950	285	20	VCCF	SEE NOTES
V-13	CLASSROOM	10	950	285	20	VCCF	SEE NOTES
V-14	CLASSROOM	12	1500	450	20	VCCF	SEE NOTES
V-15	CLASSROOM	10	1140	340	20	VCCF	SEE NOTES
V-16	CLASSROOM	8	400	120	20	VCCF	SEE NOTES
V-21	KITCHEN	14	1990	600	20	VCCF	SEE NOTES
V-21D	FAC ROOM	10	1230	365	20	VCCF	SEE NOTES
NOTES: 1. PROVIDE CONTROLS CABINET WITH CONTROL TRANSFORMER AND 120V TO CONTROL VOLTAGE. 2. PROVIDE REMOVABLE FLOW SENSOR. 3. PROVIDE HANGER BRACKET SUPPORTS, SIDE ACCESS DOOR, FIBER-FREE LINER.							

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UNIT VENTILATOR SCHEDULE

UNIT VENTILATOR SCHEDULE																																		
UNIT TAG	LOCATION	CONFIGUR- ATION	TOTAL SUPPLY AIRFLOW (CFM)	MINIMUM OUTSIDE AIRFLOW		MAXIMUM OUTSIDE AIRFLOW (CFM)	COOLING								HEATING								FILTER	ELECTRICAL			UNIT WEIGHT LBS	UNIT DIMENSIONS (LxH, IN) (V.I.F.)	UNIT DEPTH (IN)	BASIS OF DESIGN	BASE BID: REPLACE THE COILS FOR THE EXISTING UNIT VENTILATOR IN NORTH WING AS INDICATED BELOW, EXISTING UNIT VENTILATOR TO REMAIN. ALL OTHER UNIT VENTILATORS TO BE REPLACED.			ALTERNATE NO. 200 REPLACE UNIT VENTILATORS IN NORTH WING
				COOLING	HEATING		EADB (°F)	EAWB (°F)	LADB (°F)	LAWB (°F)	EWT	LWT	WATER FLOW (GPM)	WATER PRESS- URE DROP FT H2O	MIN TOTAL CAPACITY (BTU/H)	EADB (°F)	LADB (°F)	EWT	LWT	WATER FLOW (GPM)	WATER PRESS- URE DROP FT H2O	REQUIRED TOTAL CAPACITY (BTU/H)		MERV	MCA	MAX FUSE SIZE					V/PH/Hz	HANDING OF EX. COIL	HANDING OF NEW COIL	
UV-101	RM 101	VERTICAL	1250	390	390	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	52.3	90	180	160	5.08	4.0	50,800	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-102	RM 102	VERTICAL	1250	390	390	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	52.3	90	180	160	5.08	4.0	50,800	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-103	RM 103	VERTICAL	1250	405	405	1250	80.8	69.3	55	54	44	54	7.42	7.0	37,100	51.6	90	180	160	5.19	4.0	51,900	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-104	RM 104	HORIZONTAL	1500	460	460	1500	80.6	69.3	55	54	44	54	8.92	7.0	44,600	52.7	90	180	160	6.05	4.0	60,500	13	12	15	115/1/60	500	106.25x39	21.25	TRANE HUVC150	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-105	RM 105	VERTICAL	1250	405	405	1250	80.8	69.3	55	54	44	54	7.42	7.0	37,100	51.6	90	180	160	5.19	4.0	51,900	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-106	RM 106	VERTICAL	1250	400	400	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	51.8	90	180	160	5.15	4.0	51,500	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-107	RM 107	HORIZONTAL	1500	450	450	1500	80.6	69.2	55	54	44	54	8.92	7.0	44,600	53.1	90	180	160	5.98	4.0	59,800	13	12	15	115/1/60	500	106.25x39	21.25	TRANE HUVC150	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-108	RM 108	VERTICAL	1250	405	405	1250	80.8	69.3	55	54	44	54	7.42	7.0	37,100	51.6	90	180	160	5.19	4.0	51,900	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-109	RM 109	VERTICAL	1250	405	405	1500	80.8	69.3	55	54	44	54	7.42	7.0	37,100	51.6	90	180	160	5.19	4.0	51,900	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-110	RM 110	HORIZONTAL	1500	415	415	1250	80.4	69.1	55	54	44	54	8.92	7.0	44,600	54.6	90	180	160	5.74	4.0	57,400	13	12	15	115/1/60	500	106.25x39	21.25	TRANE HUVC150	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-111	RM 111	VERTICAL	1250	405	405	1250	80.8	69.3	55	54	44	54	7.42	7.0	37,100	51.6	90	180	160	5.19	4.0	51,900	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-112	RM 112	VERTICAL	1250	390	390	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	52.3	90	180	160	5.08	4.0	50,800	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-113	RM 113	VERTICAL	1250	390	390	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	52.3	90	180	160	5.08	4.0	50,800	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-114A	RM 114	VERTICAL	1250	365	365	1250	80.5	69.2	55	54	44	54	7.42	7.0	37,100	53.6	90	180	160	4.91	4.0	49,100	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-114B	RM 115	VERTICAL	1250	365	365	1250	80.5	69.2	55	54	44	54	7.42	7.0	37,100	53.6	90	180	160	4.91	4.0	49,100	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-117A	RM 117	HORIZONTAL	1250	280	280	1250	79.9	68.9	55	54	44	54	7.42	7.0	37,100	57.9	90	180	160	4.34	4.0	43,400	13	12	15	115/1/60	435	94.25x38	21.25	TRANE HUVC125	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-117B	RM 117	HORIZONTAL	1250	280	280	1250	79.9	68.9	55	54	44	54	7.42	7.0	37,100	57.9	90	180	160	4.34	4.0	43,400	13	12	15	115/1/60	435	94.25x38	21.25	TRANE HUVC125	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-118	RM 118	HORIZONTAL	750	90	90	750	79.0	68.5	55	54	44	54	4.46	7.0	22,300	64.4	90	180	160	2.07	4.0	20,700	13	12	15	115/1/60	340	70.25x36	21.25	TRANE HUVC075	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-119	RM 119	HORIZONTAL	750	195	195	750	80.2	69.1	55	54	44	54	4.46	7.0	22,300	55.6	90	180	160	2.78	4.0	27,800	13	12	15	115/1/60	340	70.25x36	21.25	TRANE HUVC075	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-LL19	RM LL19	VERTICAL	1500	450	450	1250	80.6	69.2	55	54	44	54	8.92	7.0	44,600	53.1	90	180	160	5.98	4.0	59,800	13	8.75	15	115/1/60	470	105x30	21.25	TRANE VUVE150	REPLACE UNIT VENTILATOR			NOT APPLICABLE
UV-LL21A	RM LL21	VERTICAL	1500	325	325	1500	79.8	68.9	55	54	44	54	8.92	7.0	44,600	58.4	90	180	160	5.13	4.0	51,300	13	8.75	15	115/1/60	470	105x30	21.25	TRANE VUVE150	REPLACE UNIT VENTILATOR			NOT APPLICABLE
UV-LL21B	RM LL21	VERTICAL	1500	325	325	1500	79.8	68.9	55	54	44	54	8.92	7.0	44,600	58.4	90	180	160	5.13	5.0	51,300	14	8.75	15	115/1/60	470	105x30	21.25	TRANE VUVE150	REPLACE UNIT VENTILATOR			NOT APPLICABLE
UV-200	RM 200	VERTICAL	750	75	75	750	78.9	68.4	55	54	44	54	4.46	7.0	22,300	65.7	90	180	160	1.97	6.0	19,700	15	4.38	15	115/1/60	320	69x30	21.25	TRANE VUVE075	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-201	RM 201	VERTICAL	1250	390	390	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	52.3	90	180	160	5.08	4.0	50,800	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-202	RM 202	VERTICAL	1250	390	390	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	52.3	90	180	160	5.08	4.0	50,800	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-203	RM 203	VERTICAL	1250	405	405	1250	80.8	69.3	55	54	44	54	7.42	7.0	37,100	51.6	90	180	160	5.19	4.0	51,900	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-204	RM 204	HORIZONTAL	1500	460	460	1500	80.6	69.3	55	54	44	54	8.92	7.0	44,600	52.7	90	180	160	6.05	4.0	60,500	13	12	15	115/1/60	500	106.25x39	21.25	TRANE HUVC150	VIF	VIF	HUV_150	REPLACE UNIT VENTILATOR
UV-205	RM 205	VERTICAL	1250	405	405	1250	80.8	69.3	55	54	44	54	7.42	7.0	37,100	51.6	90	180	160	5.19	4.0	51,900	13	8.75	15	115/1/60	450	93x30	21.25	TRANE VUVE125	RH COOLING/LH HEATING	LH COOLING/RH HEATING	VUVB12510G0DAD0000011CG100001510	REPLACE UNIT VENTILATOR
UV-206	RM 206	VERTICAL	1250	400	400	1250	80.7	69.3	55	54	44	54	7.42	7.0	37,100	51.8	90	18																

MECHANICAL VENTILATION SCHEDULE														
GENERAL					PER 2020 MCNYS CHAPTER 4									
ROOM NUMBER	ROOM NAME	ROOM AREA (SF)	CEILING HEIGHT (IN)	ROOM VOLUME (CF)	OCCUPANCY	OCCUPANT LOAD/ 1,000 SF	# OF OCCUPANTS	REQUIRED CFM/ OCCUPANT	REQUIRED CFM/SF	REQUIRED EXHAUST CFM/SF	BREATHING ZONE OUTDOOR AIRFLOW	ZONE DISTRIBUTION EFFECTIVENESS	MIN. OA CFM	ACTUAL OA CFM
LOWER LEVEL														
101	CLASSROOM	733	108.0	6,597	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	348	0.9	387	390
102	CLASSROOM	741	108.0	6,669	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	349	0.9	388	390
103	CLASSROOM	756	108.0	6,804	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
104	CLASSROOM	867	108.0	7,803	CLASSROOMS (AGES 9 PLUS)	35	31	10	0.12	0	414	0.9	460	460
105	CLASSROOM	755	108.0	6,795	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
106	CLASSROOM	754	108.0	6,786	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	360	0.9	400	400
107	CLASSROOM	843	108.0	7,587	CLASSROOMS (AGES 9 PLUS)	35	30	10	0.12	0	401	0.9	446	450
108	CLASSROOM	757	108.0	6,813	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
109	CLASSROOM	755	108.0	6,795	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
110	SCIENCE	843	108.0	7,587	SCIENCE LABORATORIES	25	22	10	0.18	1	372	0.9	413	415
111	CLASSROOM	757	108.0	6,813	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
112	CLASSROOM	737	108.0	6,633	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	348	0.9	387	390
113	CLASSROOM	734	108.0	6,606	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	348	0.9	387	390
114	TECHNOLOGY	1,394	108.0	12,546	CLASSROOMS (AGES 9 PLUS)	35	49	10	0.12	0	657	0.9	730	730
117	CLASSROOM	1,343	108.0	12,087	COMPUTER LAB	25	34	10	0.12	0	501	0.9	557	560
118	CLASSROOM	163	108.0	1,467	CLASSROOMS (AGES 9 PLUS)	35	6	10	0.12	0	80	0.9	89	90
119	CLASSROOM	252	108.0	2,268	CLASSROOMS (AGES 9 PLUS)	35	9	10	0.12	0	120	0.9	133	135
LL19	TEMPORARY CLASSROOM	845	108.0	7,605	CLASSROOMS (AGES 9 PLUS)	35	30	10	0.12	0	401	0.9	446	450
LL21	TEMPORARY CLASSROOM	1,241	108.0	11,169	CLASSROOMS (AGES 9 PLUS)	35	44	10	0.12	0	589	0.9	654	655
MAIN LEVEL														
200	CLASSROOM	134	108.0	1,206	CLASSROOMS (AGES 9 PLUS)	35	5	10	0.12	0	66	0.9	73	75
201	CLASSROOM	733	108.0	6,597	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	348	0.9	387	390
202	CLASSROOM	741	108.0	6,669	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	349	0.9	388	390
203	CLASSROOM	756	108.0	6,804	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
204	CLASSROOM	867	108.0	7,803	CLASSROOMS (AGES 9 PLUS)	35	31	10	0.12	0	414	0.9	460	460
205	CLASSROOM	755	108.0	6,795	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
206	CLASSROOM	754	108.0	6,786	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	360	0.9	400	400
207	CLASSROOM	843	108.0	7,587	CLASSROOMS (AGES 9 PLUS)	35	30	10	0.12	0	401	0.9	446	450
208	CLASSROOM	757	108.0	6,813	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
209	CLASSROOM	755	108.0	6,795	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
210	CLASSROOM	843	108.0	7,587	CLASSROOMS (AGES 9 PLUS)	35	30	10	0.12	0	401	0.9	446	450
211	CLASSROOM	757	108.0	6,813	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	361	0.9	401	405
212	CLASSROOM	737	108.0	6,633	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	348	0.9	387	390
213	CLASSROOM	733	108.0	6,597	CLASSROOMS (AGES 9 PLUS)	35	26	10	0.12	0	348	0.9	387	390
213A	CLASSROOM	180	108.0	1,620	CLASSROOMS (AGES 9 PLUS)	35	7	10	0.12	0	92	0.9	102	105
214A	COMP. LAB	749	108.0	6,741	COMPUTER LAB	25	19	10	0.12	0	280	0.9	311	315
214B	COMP. LAB	640	108.0	5,760	COMPUTER LAB	25	16	10	0.12	0	237	0.9	263	265
217	ART	1,121	108.0	10,089	ART CLASSROOM	20	23	10	0.18	0.7	432	0.9	480	480
218	CLASSROOM	161	108.0	1,449	CLASSROOMS (AGES 9 PLUS)	35	6	10	0.12	0	79	0.9	88	90
219	CLASSROOM	260	108.0	2,340	CLASSROOMS (AGES 9 PLUS)	35	10	10	0.12	0	131	0.9	146	150
1	CLASSROOM	764	108.0	6,876	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
2	CLASSROOM	764	108.0	6,876	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
3	CLASSROOM	766	108.0	6,894	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
4	CLASSROOM	765	108.0	6,885	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
5	CLASSROOM	767	108.0	6,903	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
6	CLASSROOM	767	108.0	6,903	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
7	CLASSROOM	767	108.0	6,903	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
8	MAIN OFFICE	720	108.0	6,480	OFFICE SPACES	5	4	5	0.06	0	63	0.8	79	80
9	CLASSROOM	771	108.0	6,939	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	363	0.8	454	455
10	CLASSROOM	769	108.0	6,921	CLASSROOMS (AGES 9 PLUS)	35	27	10	0.12	0	362	0.8	453	455
11	CLASSROOM	903	108.0	8,127	CLASSROOMS (AGES 9 PLUS)	35	32	10	0.12	0	428	0.8	535	535
12	CLASSROOM	1,000	108.0	9,000	CLASSROOMS (AGES 9 PLUS)	35	35	10	0.12	0	470	0.8	588	590
14	CLASSROOM	987	108.0	8,883	CLASSROOMS (AGES 9 PLUS)	35	35	10	0.12	0	468	0.8	585	585
15	CLASSROOM	791	108.0	7,119	CLASSROOMS (AGES 9 PLUS)	35	28	10	0.12	0	375	0.8	469	470
16	CLASSROOM	495	108.0	4,455	CLASSROOMS (AGES 9 PLUS)	35	18	10	0.12	0	239	0.8	299	300
17	ORCHESTRA	1,157	108.0	10,413	MUSIC/THEATER/DANCE	35	41	10	0.06	0	479	0.9	532	535
18	CLASSROOM	658	108.0	5,922	CLASSROOMS (AGES 9 PLUS)	35	24	10	0.12	0	319	0.9	354	355
20	CAFETERIA	2,946	240.0	58,920	MULTIUSE ASSEMBLY	100	295	7.5	0.06	0	2389	1.0	2389	2390
23	CLASSROOM	552	108.0	4,968	CLASSROOMS (AGES 9 PLUS)	35	20	10	0.12	0	266	0.9	296	300
21	KITCHEN	458	108.0	4,122	KITCHENS (COOKING)	20	10	7.5	0.12	0.7	130	0.8	163	165
30	GYMNASIUM	8436	108.0	75,924	GYMNASIUM	7	60	20	0.18	0	2718	0.8	3398	3400



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Drawing Title

MECHANICAL SCHEDULES - 3

Drawing No.

WGES-M-004

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
145 ROUTE 9B
THERESA, NY 10984
COUNTY OF ROCKLAND

Mechanical Electrical Engineer:
GREENMAN PEDERSEN, INC
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10961

Structural Engineer:
GREENMAN PEDERSEN, INC
2 EXECUTIVE BOULEVARD
SUITE 200
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Drawn by MEP

Checked by PV

Project No. 42054

Scale NTS

Date 09-14-23

REC. EXP. DATE: 04-30-24

3 09-14-23 BIDDING DOCUMENTS

2 06-09-23 SED ADDENDUM #1

1 12-28-22 BIDDING DOCUMENTS

No. Date Revisions

EXISTING AIR HANDLING UNIT SCHEDULE

EXISTING AIR HANDLING UNIT SCHEDULE							
TAG	LOCATION	SERVICE	NOMINAL AIRFLOW (CFM)	COOLING TYPE	MANUFACTURER	MODEL	RELEVANT CONTROL DETAIL(S)
BASE BID							
AHU-1	LOWER LEVEL STORAGE RM	BAND ROOM	4000	DX	MCQUAY	LSL108CH	1/WGES-M-402
AHU-2	ELEVATOR MACHINE ROOM	LIBRARY	4000	DX	MCQUAY	LSL108CH	1/WGES-M-402
AHU-3	FAN ROOM	BOYS LOCKER	2000	DX	MCQUAY	LSL104CH	1/WGES-M-402
AHU-4	FAN ROOM	GYM	7000	DX	MCQUAY	LHD114CH	1/WGES-M-402
AHU-5	FAN ROOM	GYM	7000	DX	MCQUAY	LHD114CH	1/WGES-M-402
AHU-6	LOW ROOF OUTSIDE RM LL20	ROOM LL20	2000	DX	MCQUAY	LSL104CH	1/WGES-M-402
AHU-7	FAN ROOM	GIRLS LOCKER	2000	DX	MCQUAY	LSL104CH	1/WGES-M-402
AHU-8	FAN ROOM	LOBBY	2000	DX	MCQUAY	LSL104CH	1/WGES-M-402
AHU-X	MECH RM 5A	CAFETERIA	6000	DX	MCQUAY	CAH012FDAC	1/WGES-M-402
ALTERNATE NO. 202							
AHU-1	MAIN LEVEL (ABOVE CORRIDOR CLG)	CLASSROOMS	13000	CHW	SNYDER GENERAL	LSL128DH	2/WGES-M-402
AHU-2	MAIN LEVEL (ABOVE CORRIDOR CLG)	CLASSROOMS	13000	CHW	SNYDER GENERAL	LSL128DH	2/WGES-M-402
NOTES: 1. THIS SCHEDULE IDENTIFIES EXISTING EQUIPMENT THAT IS TO REMAIN. EQUIPMENT CONTROLS ARE TO BE UPGRADED AND INTEGRATED WITH THE BMS. REFER TO THE REFERENCED CONTROL DETAIL FOR MORE INFORMATION. 2. INFORMATION IN THIS SCHEDULE IS PROVIDED FOR REFERENCE ONLY. VERIFY ALL INFORMATION IN FIELD PRIOR TO FABRICATION.							

EXISTING PUMP SCHEDULE

TAG	LOCATION	SERVICE	NOMINAL CAPACITY (GPM)	MOTOR HP	VOLTS/PHASE	MANUFACTURER	MODEL	RELEVANT CONTROL DETAIL(S)
P-4	BOILER ROOM	HOT WATER	230	7.5	208/3	BELL & GOSSETT	2.5BB	1/WGES-M-403
P-5	BOILER ROOM	HOT WATER	230	7.5	208/3	BELL & GOSSETT	2.5BB	1/WGES-M-403
P-6	BOILER ROOM	HOT WATER	420	7.5	208/3	ARMSTRONG	5X4X80 4030	1/WGES-M-403
P-7	BOILER ROOM	HOT WATER	420	7.5	208/3	ARMSTRONG	5X4X80 4030	1/WGES-M-403
P-8	BOILER ROOM	HOT WATER	150	7.5	208/3	ARMSTRONG	3X2X10 4030	1/WGES-M-403
P-9	BOILER ROOM	HOT WATER	150	7.5	208/3	ARMSTRONG	3X2X10 4030	1/WGES-M-403
P-10	BOILER ROOM	HOT WATER	50	3	208/3	ARMSTRONG	2X1X10 4030	1/WGES-M-403
P-11	BOILER ROOM	HOT WATER	50	3	208/3	ARMSTRONG	2X1X10 4030	1/WGES-M-403

NOTES:

1. THIS SCHEDULE IDENTIFIES EXISTING EQUIPMENT THAT IS TO REMAIN. EQUIPMENT CONTROLS ARE TO BE UPGRADED AND INTEGRATED WITH THE BMS. REFER TO THE REFERENCED CONTROL DETAIL FOR MORE INFORMATION.

2. INFORMATION IN THIS SCHEDULE IS PROVIDED FOR REFERENCE ONLY. VERIFY ALL INFORMATION IN FIELD PRIOR TO FABRICATION.

EXISTING FINNED TUBE RADIATOR/
CONVECTOR SCHEDULE

EXISTING FINNED TUBE RADIATOR/ CONVECTOR SCHEDULE		
ROOM	LOCATION	RELEVANT CONTROL DETAIL(S)
117	LOWER LEVEL (CLASSROOM)	2/WGES-M-404
1	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
2	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
3	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
4	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
5	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
6	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
7	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
8	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
8A	MAIN LEVEL (ASST. PRINC.)	2/WGES-M-404
8B	MAIN LEVEL (CONFERENCE)	2/WGES-M-404
8C	MAIN LEVEL (PRINCIPAL)	2/WGES-M-404
9	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
10	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
11	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
12	MAIN LEVEL (CLASSROOM)	2/WGES-M-404
13A	MAIN LEVEL (GUIDANCE)	2/WGES-M-404
13B	MAIN LEVEL (GUIDANCE)	2/WGES-M-404
14A	MAIN LEVEL (LIBRARY)	2/WGES-M-404
17A	MAIN LEVEL	2/WGES-M-404
20A	MAIN LEVEL (GIRLS)	2/WGES-M-404
20B	MAIN LEVEL (BOYS)	2/WGES-M-404
-	MAIN LEVEL (VESTIBULE)	2/WGES-M-404
-	MAIN LEVEL (VESTIBULE)	2/WGES-M-404
20C	MAIN LEVEL (WOMEN)	2/WGES-M-404
20D	MAIN LEVEL (MEN)	2/WGES-M-404
26	MAIN LEVEL (LOCKER ROOM)	2/WGES-M-404

NOTES:
 1. THIS SCHEDULE IDENTIFIES EXISTING EQUIPMENT THAT IS TO REMAIN. EQUIPMENT CONTROLS ARE TO BE UPGRADED AND INTEGRATED WITH THE BMS.
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 3. INFORMATION IN THIS SCHEDULE IS PROVIDED FOR REFERENCE ONLY. VERIFY ALL INFORMATION IN FIELD PRIOR TO FABRICATION.

EXISTING CABINET HEATER / UNIT HEATER
SCHEDULE

TAG	LOCATION	RELEVANT CONTROL DETAIL(S)
CH-1	LOWER LEVEL	1/WGES-M-404
CH-2	LOWER LEVEL	1/WGES-M-404
CH-3	LOWER LEVEL	1/WGES-M-404
CH-4	LOWER LEVEL	1/WGES-M-404
CH-5	LOWER LEVEL	1/WGES-M-404
CH-6	LOWER LEVEL	1/WGES-M-404
CH-7	LOWER LEVEL	1/WGES-M-404
CH-8	LOWER LEVEL	1/WGES-M-404
CH-9	LOWER LEVEL	1/WGES-M-404
CH-10	LOWER LEVEL	1/WGES-M-404
CH-11	LOWER LEVEL	1/WGES-M-404
CH-12	MAIN LEVEL	1/WGES-M-404
CH-13	MAIN LEVEL	1/WGES-M-404
CH-14	MAIN LEVEL	1/WGES-M-404
CH-15	MAIN LEVEL	1/WGES-M-404
CH-16	MAIN LEVEL	1/WGES-M-404
CH-17	MAIN LEVEL	1/WGES-M-404
CH-18	MAIN LEVEL	1/WGES-M-404
CH-19	MAIN LEVEL	1/WGES-M-404
CH-20	MAIN LEVEL	1/WGES-M-404
CH-21	MAIN LEVEL	1/WGES-M-404
CH-22	MAIN LEVEL	1/WGES-M-404
CH-23	LOWER LEVEL	1/WGES-M-404
UH-EMR	ELEVATOR MACHINE ROOM	4/WGES-M-404
UH-GYM	GYM STORAGE ROOM	4/WGES-M-404
FCU-7	MAIN LEVEL (17C)	1/WGES-M-401
FCU-8	MAIN LEVEL (17B)	1/WGES-M-401
FCU-8C	MAIN LEVEL (LOBBY)	1/WGES-M-401
FCU-9	MAIN LEVEL (CORRIDOR)	1/WGES-M-401
FCU-10	MAIN LEVEL (CORRIDOR)	1/WGES-M-401
FCU-11	MAIN LEVEL (CORRIDOR)	1/WGES-M-401
FCU-12	MAIN LEVEL (CHILLER ROOM)	1/WGES-M-401
FCU-LOBBY	MAIN LEVEL (MAIN ENTRANCE)	1/WGES-M-401
UV-9	MAIN LEVEL (19)	1/WGES-M-401

EXISTING SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

EXISTING SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE								
TAG	LOCATION	SERVICE	NOMINAL CAPACITY (TONS)	MCA	VOLTS/PHASE	MANUFACTURER	MODEL	RELEVANT CONTROL DETAIL(S)
AC-1	COURTYARD	AHU-1 BAND ROOM	10	39	208/3	INTERNATIONAL COMFORT PRODUCTS	CAS120HDA0A00AA---	1/WGES-M-402
AC-2	ROOF (CLASSROOM ADDITION)	AHU-2 LIBRARY	10	39	208/3	INTERNATIONAL COMFORT PRODUCTS	CAS120HDA0A00AA---	1/WGES-M-402
AC-6	ROOF (CLASSROOM ADDITION)	AHU-6 GUIDANCE	4	-	208/3	TEMPSTAR	N4A348GBH200	1/WGES-M-402
AC-16	COURTYARD	CLASSROOM 16	3	-	208/1	-	-	NONE
AC-CAFE	ROOF (ORIGINAL BUILDING)	AHU-CAFE	15	64	208/3	RHEEM COMMERCIAL	RAWL-180CAZ	1/WGES-M-402
AC-LL20	LOW ROOF OUTSIDE RM LL20	ROOM LL20	1.5	-	208/1	FUJITSU	-	NONE
AC-A	ROOF (ORIGINAL BUILDING)	GENERAL	1	12	208/1	MITSUBISHI	MU12NN2	NONE
AC-B	ROOF (ORIGINAL BUILDING)	GENERAL	0.75	14	115/1	MITSUBISHI	MU09NW	NONE
AC-C	ROOF (ORIGINAL BUILDING)	GENERAL	2	17.1	208/1	MITSUBISHI	MUZ-GL24NA	NONE
AC-D	ROOF (ORIGINAL BUILDING)	GENERAL	2	17.1	208/1	FUJITSU	A0U24RLB	NONE

NOTES:
1. THIS SCHEDULE IDENTIFIES EXISTING EQUIPMENT THAT IS TO REMAIN. EQUIPMENT CONTROLS ARE TO BE UPGRADED AND INTEGRATED WITH THE BMS. REFER TO THE REFERENCED CONTROL DETAIL FOR MORE INFORMATION.
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EXISTING BOILER SCHEDULE

EXISTING BOILER SCHEDULE										
TAG	LOCATION	SERVICE	INPUT GAS (MBH)	INPUT #2 OIL (GPH)	GROSS OUTPUT (MBH)	BOILER MANUFACTURER	BOILER MODEL	BURNER MANUFACTURER	BURNER MODEL	RELEVANT CONTROL DETAIL(S)
B-1	BOILER ROOM	HOT WATER	6134	43.8	4940	WEIL MCLAIN	1894	POWER FLAME	CR4-GO-25	1/WGES-M-403
B-1	BOILER ROOM	HOT WATER	6134	43.8	4940	WEIL MCLAIN	1894	POWER FLAME	CR4-GO-25	1/WGES-M-403

NOTES:

- THIS SCHEDULE IDENTIFIES EXISTING EQUIPMENT THAT IS TO REMAIN. EQUIPMENT CONTROLS ARE TO BE UPGRADED AND INTEGRATED WITH THE BMS. REFER TO THE REFERENCED CONTROL DETAIL FOR MORE INFORMATION.
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EXISTING EXHAUST FAN SCHEDULE

TAG	LOCATION	SERVICE	TYPE	MOTOR HP	VOLTS/PHASE	MANUFACTURER	MODEL	RELEVANT CONTROL DETAIL(S)
EF-1	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	PENN	BX11R	3/WGES-M-404
EF-2	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	PENN	-	3/WGES-M-404
E-2A	ROOF (ORIGINAL BUILDING)	GENERAL	UPBLAST	3/4	208/3	GREENHECK	CUBE-HP-24-7G	3/WGES-M-404
EF-2B	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	-	-	3/WGES-M-404
EF-3	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	PENN	DX18B	3/WGES-M-404
EF-4	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	PENN	D13B	3/WGES-M-404
EF-4A	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	1/2	-	-	C-1809-B	3/WGES-M-404
EF-4B	ROOF (ORIGINAL BUILDING)	TOILETS	DOWNBLAST	1/12	-	-	C-1111	3/WGES-M-404
EF-8	MAIN LEVEL (NEAR RM 20D ABOVE CLG)	TOILETS	CENTRIFUGAL	-	-	-	-	3/WGES-M-404
EF-9	ROOF (ORIGINAL BUILDING)	GENERAL	SIDEWALL	-	-	-	-	3/WGES-M-404
EF-10	ROOF (ORIGINAL BUILDING)	GENERAL	SIDEWALL	-	-	-	-	3/WGES-M-404
EF-13	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	-	-	3/WGES-M-404
EF-14	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	-	-	3/WGES-M-404
EF-14A	ROOF (ORIGINAL BUILDING)	GENERAL	DOWNBLAST	-	-	PENN	DX30B	3/WGES-M-404
PRE-1	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/2	208/3	LOREN COOK	18005B	3/WGES-M-404
PRE-2	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	3/4	208/3	LOREN COOK	16506B	3/WGES-M-404
PRE-3	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	3/4	208/3	LOREN COOK	18006B	3/WGES-M-404
PRE-4	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	15003B	3/WGES-M-404
PRE-5	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	12003B	3/WGES-M-404
PRE-6	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	8003B	3/WGES-M-404
PRE-7	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	6003B	3/WGES-M-404
PRE-8	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	10003B	3/WGES-M-404
PRE-9	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	3/4	208/3	LOREN COOK	18006E	3/WGES-M-404
PRE-10	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	17003B	3/WGES-M-404
PRE-11	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	12003B	3/WGES-M-404
PRE-12	ROOF (GYM)	GENERAL	DOWNBLAST	1/6	115/1	LOREN COOK	100002B	3/WGES-M-404
PRE-13	ROOF (GYM)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	15003B	3/WGES-M-404
PRE-15	ROOF (CLASSROOM ADDITION)	GENERAL	DOWNBLAST	1/4	115/1	LOREN COOK	7003B	3/WGES-M-404
RF-20	CAFETERIA FAN ROOM	CAFETERIA RETURN	UTILITY FAN	-	-	-	-	1/WGES-M-402

NOTES:
1. THIS SCHEDULE IDENTIFIES EXISTING EQUIPMENT THAT IS TO REMAIN. EQUIPMENT CONTROLS ARE TO BE UPGRADED AND INTEGRATED WITH THE BMS. REFER TO THE REFERENCED CONTROL DETAIL FOR MORE INFORMATION.
2. INFORMATION IN THIS SCHEDULE IS PROVIDED FOR REFERENCE ONLY. VERIFY ALL INFORMATION IN FIELD PRIOR TO FABRICATION.

EXISTING 3-WAY VALVE SCHEDULE

EXISTING 3-WAY VALVE SCHEDULE							
TAG	LOCATION	SERVICE	PIPE SIZE (IN)	CV	MANUFACTURER	MODEL	RELEVANT CONTROL DETAIL(S)
CV-A	BOILER ROOM	HOT WATER	3	100	LANDIS & GYR	599-06161	1/WGES-M-403
CV-B	BOILER ROOM	HOT WATER	4	160	LANDIS & GYR	599-06167	1/WGES-M-403

NOTES:

1. REPLACE THE EXISTING ACTUATOR WITH AN ELECTRONIC ACTUATOR AND INTEGRATE WITH THE BMS. THE EXISTING VALVE BODY SHALL REMAIN. REFER TO THE REFERENCED CONTROL DETAIL FOR MORE INFORMATION.
2. INFORMATION IN THIS SCHEDULE IS PROVIDED FOR REFERENCE ONLY. VERIFY ALL INFORMATION IN FIELD PRIOR TO FABRICATION.

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REG. EXP. DATE: 04-30-24

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Checked by	PV
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Scale	NTS
Date	09-14-23

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 202 SUFFERN, NY 10901
Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 202 SUFFERN, NY 10901

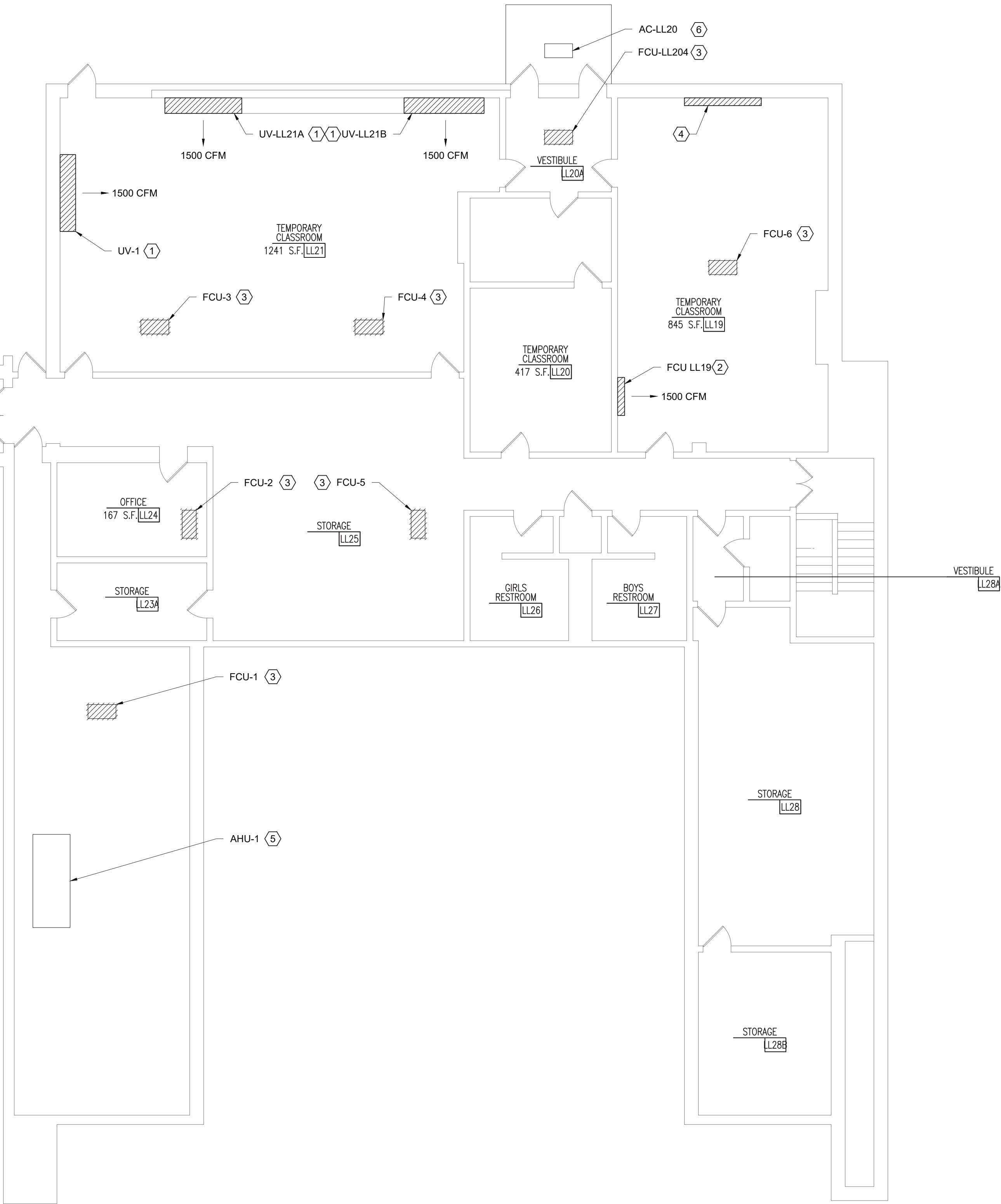
UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
153 STOVER RD
THIRLEYS, NY 10964
COUNTY OF ROCKLAND



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Drawing Title MECHANICAL SCHEUDLES - 4	Drawing No. WGES-M-005
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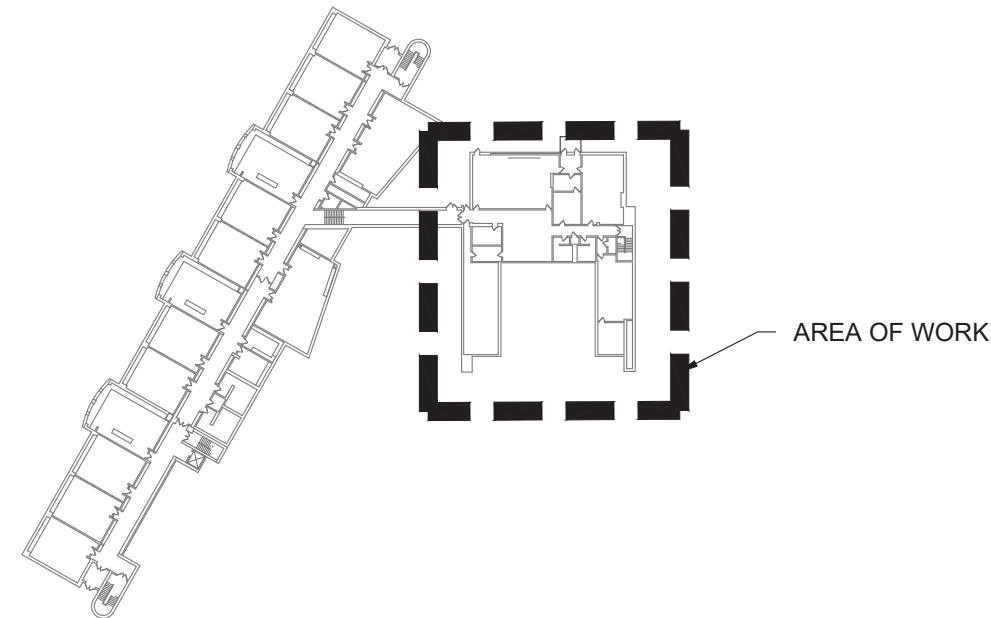
MATCHLINE SEE DRAWING WGES-M-062



1 LOWER LEVEL FLOOR PLAN DEMOLITION
SCALE: 1/8" = 1' - 0"

KEYED NOTES:

- DEMOLISH VERTICAL UNIT VENTILATOR (TRANE MODEL VUVB150). DISCONNECT AND TEMPORARILY CAP CD, CHW, AND HW PIPING. TEMPORARILY COVER OA INTAKE.
- DEMOLISH VERTICAL FAN COIL UNIT. DEMOLISH CD, CHW, AND HW PIPING BACK TO THE MAIN.
- DEMOLISH HORIZONTAL FAN COIL UNIT ABOVE THE CEILING. DEMOLISH CD, CHW, AND HW PIPING BACK TO THE MAIN.
- DEMOLISH FINNED TUBE CONVECTOR ENCLOSURE TO ALLOW FOR THE INSTALLATION OF THE NEW UNIT VENTILATOR. TEMPORARILY CAP HW PIPING.
- AIR HANDLING UNIT AHU-1 SERVING BAND ROOM TO REMAIN (MCQUAY MODEL LSL108CH TO REMAIN).
- AIR COOLED CONDENSING UNIT ON AWNING ABOVE DOOR TO REMAIN.



2 LOWER LEVEL KEY PLAN
SCALE: NONE



PLAN NORTH

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Drawing Title
**MECHANICAL LOWER
LEVEL DEMOLITION - 3**

Drawing No.

WGES-M-063



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UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
140 PARK AVENUE, 10TH FLOOR
NEW YORK, NY 10058
COUNTY OF ROCKLAND

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Structural
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**GREENMAN
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SUDBURY, NY 10901

Drawn by

MEP

Checked by

PV

Project No.

42054

Scale

AS NOTED

Date

09-14-23

REC. EXP. DATE: 04-30-24

Revisions

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Date

1

12-28-22

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3

09-14-23

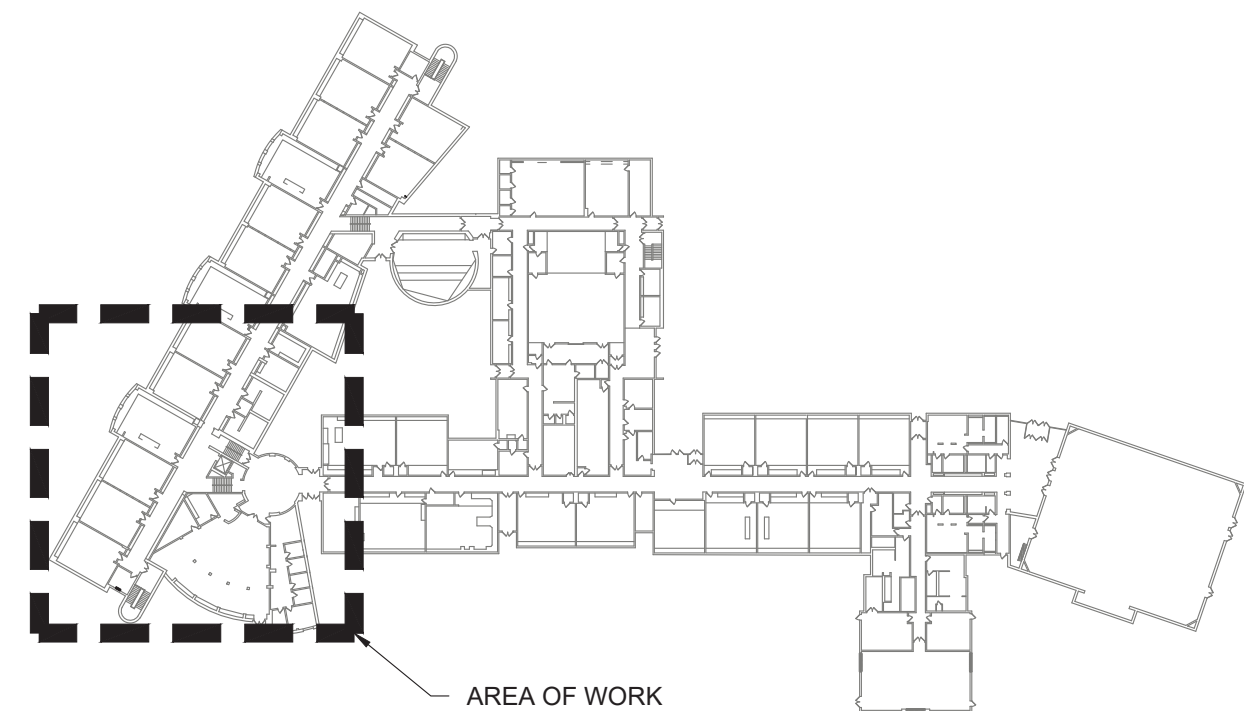
BIDDING DOCUMENTS



1 MAIN LEVEL FLOOR PLAN DEMOLITION
SCALE: 1/8" = 1' - 0"

KEYED NOTES:

- (1) BASE BID: UNIT VENTILATOR TO REMAIN. REMOVE THE FOUR-PIPE COIL ONLY.
- ALT NO. 200: DEMOLISH VERTICAL UNIT VENTILATOR (TRANE MODEL VUVB125). DISCONNECT AND TEMPORARILY CAP HOT WATER PIPING. TEMPORARILY COVER OA INTAKE.
- (2) BASE BID: EXISTING UNIT VENTILATOR TO REMAIN.
- ALT NO. 200: DEMOLISH HORIZONTAL UNIT VENTILATOR ABOVE CEILING (TRANE MODEL HUVB150). DISCONNECT AND TEMPORARILY CAP HOT WATER PIPING. TEMPORARILY COVER OA INTAKE.
- (3) DEMOLISH VERTICAL UNIT VENTILATOR (TRANE MODEL VUVB075). DEMOLISH HW PIPING BACK TO THE MAIN. TEMPORARILY CAP THE PIPING AND OA INTAKE.
- (4) DEMOLISH TWO SETS OF 1/2" AND 7/8" REFRIGERANT PIPING.
- (5) RECESSED CABINET HEATER TO REMAIN.
- (6) FINNED TUBE RADIATOR TO REMAIN.



2 MAIN LEVEL KEY PLAN
SCALE: NONE



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Drawing Title
**MECHANICAL MAIN
LEVEL DEMOLITION - 1**

Drawing No.

WGES-M-064

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Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901

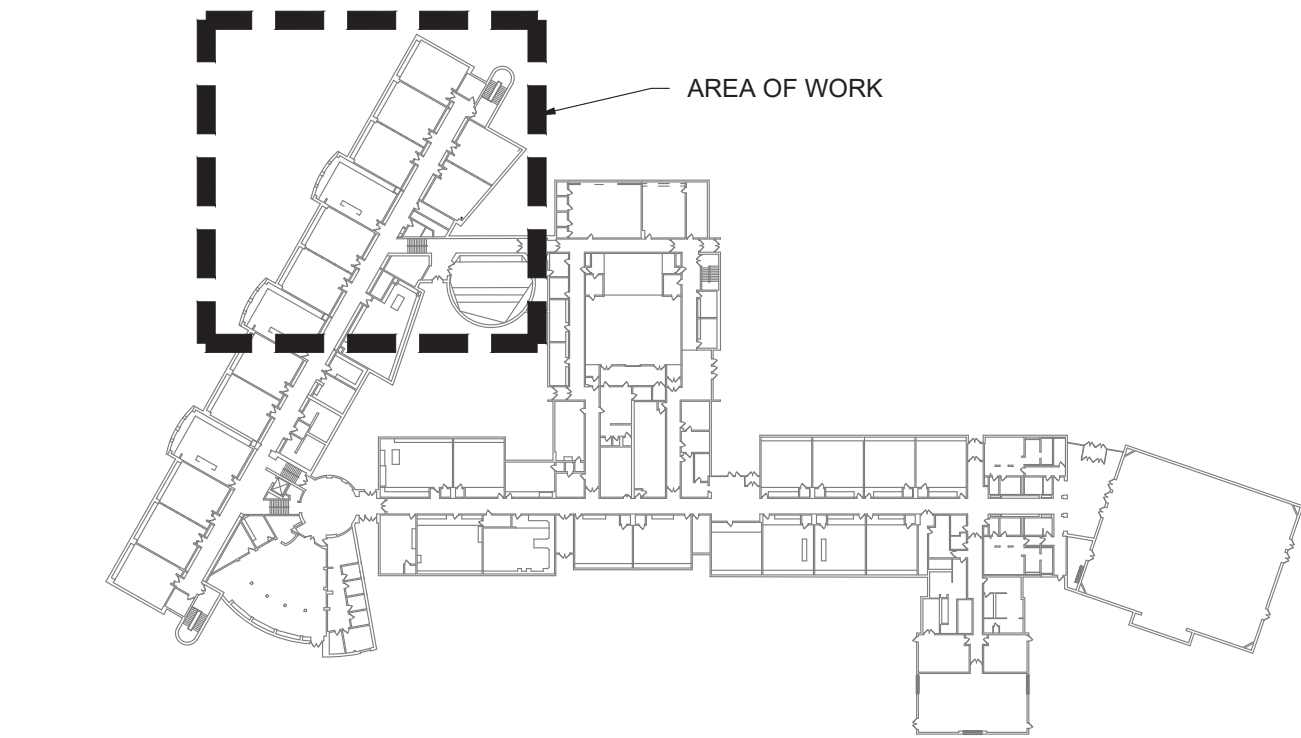
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Project No.	42054
Scale	AS NOTED
Date	09-14-23

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No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REC. EXP. DATE: 04-30-24



KEYED NOTES:

- ① BASE BID: UNIT VENTILATOR TO REMAIN. REMOVE THE FOUR-PIPE COIL ONLY.
- ALT NO. 200: DEMOLISH VERTICAL UNIT VENTILATOR (TRANE MODEL VUVB125). DISCONNECT AND TEMPORARILY CAP HOT WATER PIPING. TEMPORARILY COVER OA INTAKE.
- ② BASE BID: EXISTING UNIT VENTILATOR TO REMAIN.
- ALT NO. 200: DEMOLISH HORIZONTAL UNIT VENTILATOR ABOVE CEILING (TRANE MODEL HUVB150). DISCONNECT AND TEMPORARILY CAP HOT WATER PIPING. TEMPORARILY COVER OA INTAKE.
- ③ DEMOLISH CABINET HEATER. DISCONNECT HW PIPING. TEMPORARILY CAP THE PIPING AND OA INTAKE.
- ④ DEMOLISH 2 SETS OF 1/2" AND 7/8" REFRIGERANT PIPING.
- ⑤ RECESSED CABINET HEATER TO REMAIN.
- ⑥ FINNED TUBE RADIATOR TO REMAIN.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REG. EXP. DATE: 04-30-24

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Project No.	42054
Scale	AS NOTED
Date	09-14-23

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Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901

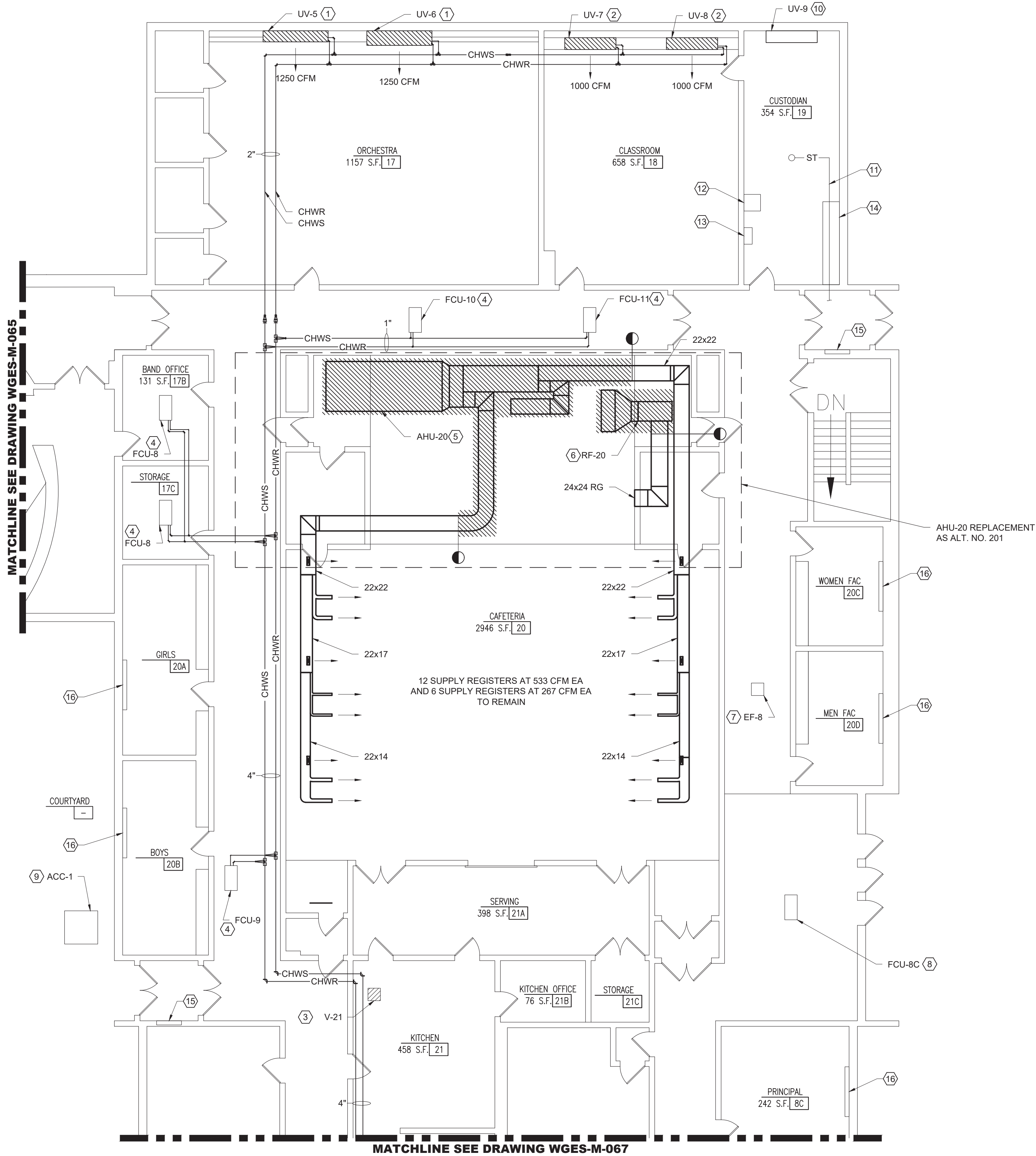
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Drawing Title MECHANICAL MAIN LEVEL DEMOLITION - 2	Drawing No. WGES-M-065
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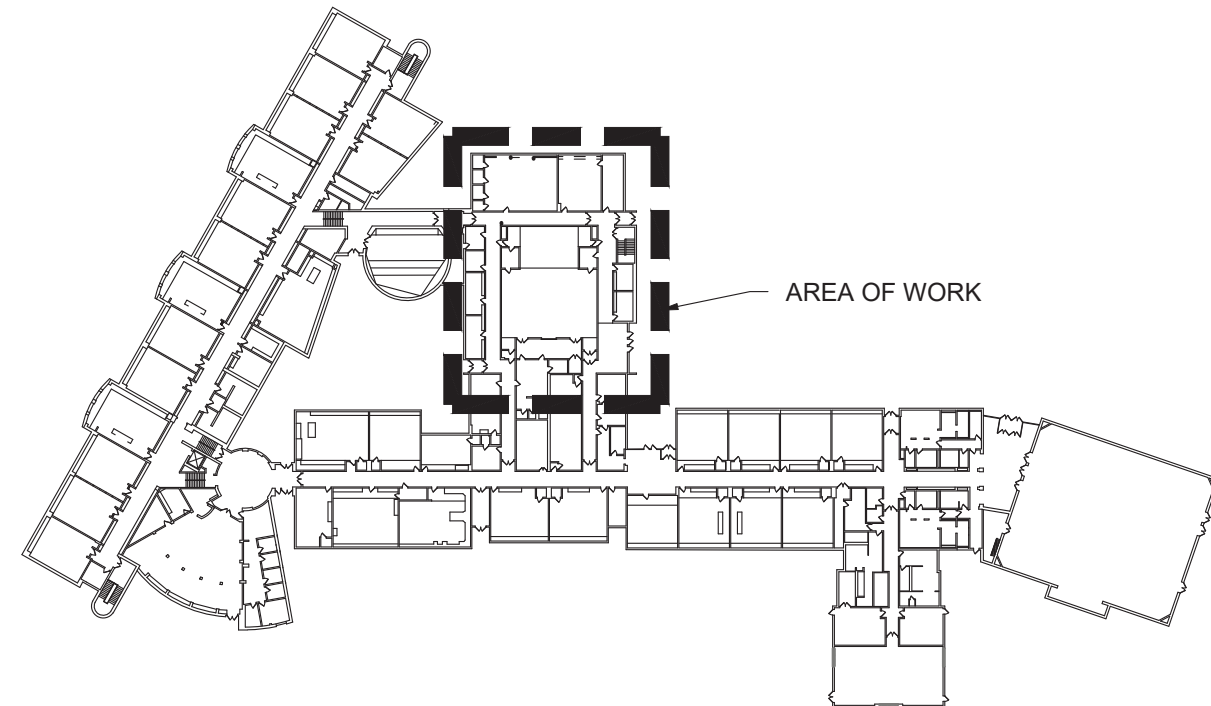
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1 MAIN LEVEL FLOOR PLAN DEMOLITION
SCALE: 1/8" = 1' - 0"

KEYED NOTES:

- ① DEMOLISH VERTICAL UNIT VENTILATOR (TRANE MODEL VUVB125).
- ② DEMOLISH VERTICAL UNIT VENTILATOR (TRANE MODEL VUVB100).
- ③ DEMOLISH VAV BOX ABOVE THE CEILING (TRANE MODEL VCCD).
- ④ HORIZONTAL FAN COIL UNIT ABOVE THE CEILING TO REMAIN.
- ⑤ BASE BID: EXISTING CAFETERIA AIR HANDLING UNIT AHU-20 TO REMAIN.
ALT. NO. 201: CAFETERIA AIR HANDLING UNIT AT CEILING. DEMOLISH CONTROLS ONLY UNDER BASE BID, AND DEMOLISH ENTIRE UNIT UNDER ALTERNATE NO. 201.
- ⑥ BASE BID: EXISTING RETURN FAN TO REMAIN.
ALT. NO. 201: AUDITORIUM RETURN FAN. DEMOLISH CONTROLS ONLY UNDER BASE BID, AND DEMOLISH ENTIRE UNIT UNDER ALTERNATE NO. 201.
- ⑦ TOILET EXHAUST FAN ABOVE THE CEILING TO REMAIN.
- ⑧ FAN COIL UNIT ABOVE THE CEILING TO REMAIN.
- ⑨ SPLIT SYSTEM AC UNIT ACC-1 INTERLOCKED WITH THE BAND ROOM AHU-1 TO REMAIN (INTERNATIONAL COMFORT MODEL CAS120HDA0A00AA, 10 TONS COOLING).
- ⑩ VERTICAL UNIT VENTILATOR TO REMAIN.
- ⑪ 4" STORM PIPE AT CEILING TO REMAIN.
- ⑫ DEMOLISH PRIMARY OPERATOR'S TERMINAL FOR THE BMS.
- ⑬ FUEL OIL TANK GAUGING AND LEAK DETECTION SYSTEM PANEL TO REMAIN (ONMTEC PROTEUS).
- ⑭ ELECTRICAL SWITCHGEAR TO REMAIN.
- ⑮ RECESSED CONVECTOR TO REMAIN.
- ⑯ FINNED TUBE RADIATOR TO REMAIN.



2 MAIN LEVEL KEY PLAN
SCALE: NONE

Revisions	
No.	Date
3	09-14-23 BIDDING DOCUMENTS
2	06-09-23 SED ADDENDUM #1
1	12-28-22 BIDDING DOCUMENTS

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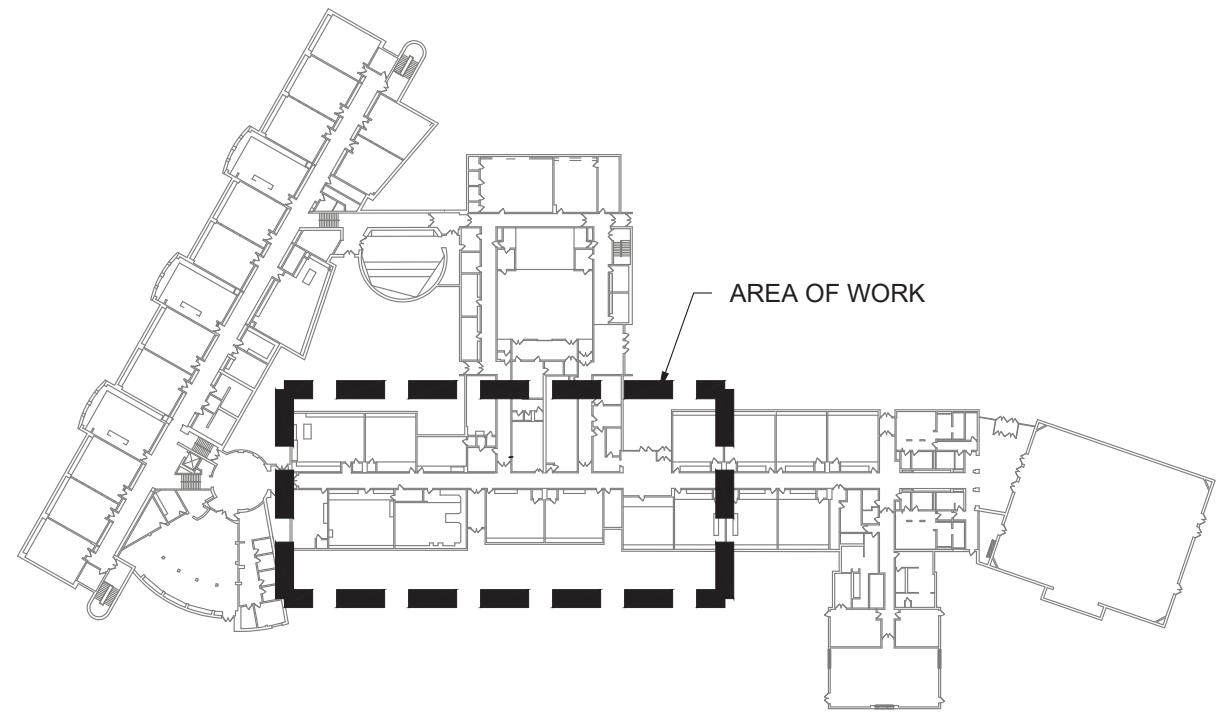
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Date	09-14-23

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Mechanical Electrical Engineer:	Structural Engineer:

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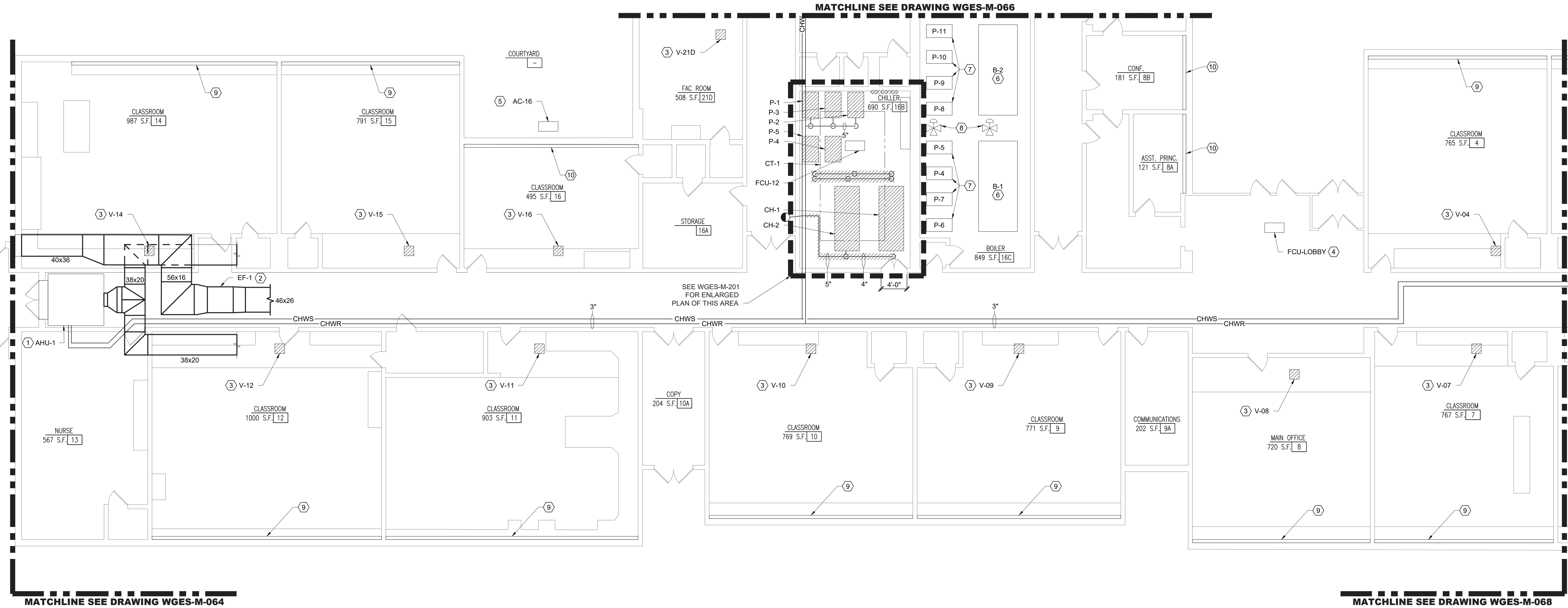
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2 MAIN LEVEL KEY PLAN

SCALE: NONE



1 MAIN LEVEL FLOOR PLAN DEMOLITION

SCALE: 1/8" = 1' - 0"

- KEYED NOTES:**
- 1 REFURBISH AIR HANDLING UNIT, AHU-1, ABOVE THE CEILING IN THE CORRIDOR (ALT. NO. 202).
 - 2 REFURBISH EXHAUST FAN, EF-1, ABOVE THE CEILING IN THE CORRIDOR (ALT. NO. 202).
 - 3 DEMOLISH THE VAV BOX ABOVE THE CEILING (TRANE MODEL VCCD).
 - 4 FAN COIL UNIT ABOVE THE CEILING TO REMAIN.
 - 5 AIR COOLED CONDENSING UNIT TO REMAIN.
 - 6 BOILER TO REMAIN (WEIL MCLAIN MODEL 1894).
 - 7 HOT WATER PUMP TO REMAIN.
 - 8 4" 3-WAY CONTROL VALVE WITH PNEUMATIC ACTUATOR TO REMAIN.
 - 9 EXISTING FINNED TUBE HEATING ELEMENT RECESSED WITHIN WOODEN CASEWORK TO REMAIN.
 - 10 EXISTING FINNED TUBE RADIATOR TO REMAIN.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

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Mechanical Electrical Engineer:	Structural Engineer:

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Drawing Title MECHANICAL MAIN LEVEL DEMOLITION - 4	Drawing No. WGES-M-067
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- KEYED NOTES:**
- ① AIR HANDLING UNIT (MCQUAY MODEL LHD) TO REMAIN.
 - ② DEMOLISH SECTION OF SUPPLY DUCT AND TEMPORARILY CAP OPENINGS.

1 UPPER LEVEL FLOOR PLAN DEMOLITION
SCALE: 1/8" = 1' - 0"

2 UPPER LEVEL KEY PLAN
SCALE: NONE



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Drawing Title
**MECHANICAL UPPER
LEVEL DEMOLITION**

Drawing No.
WGES-M-069

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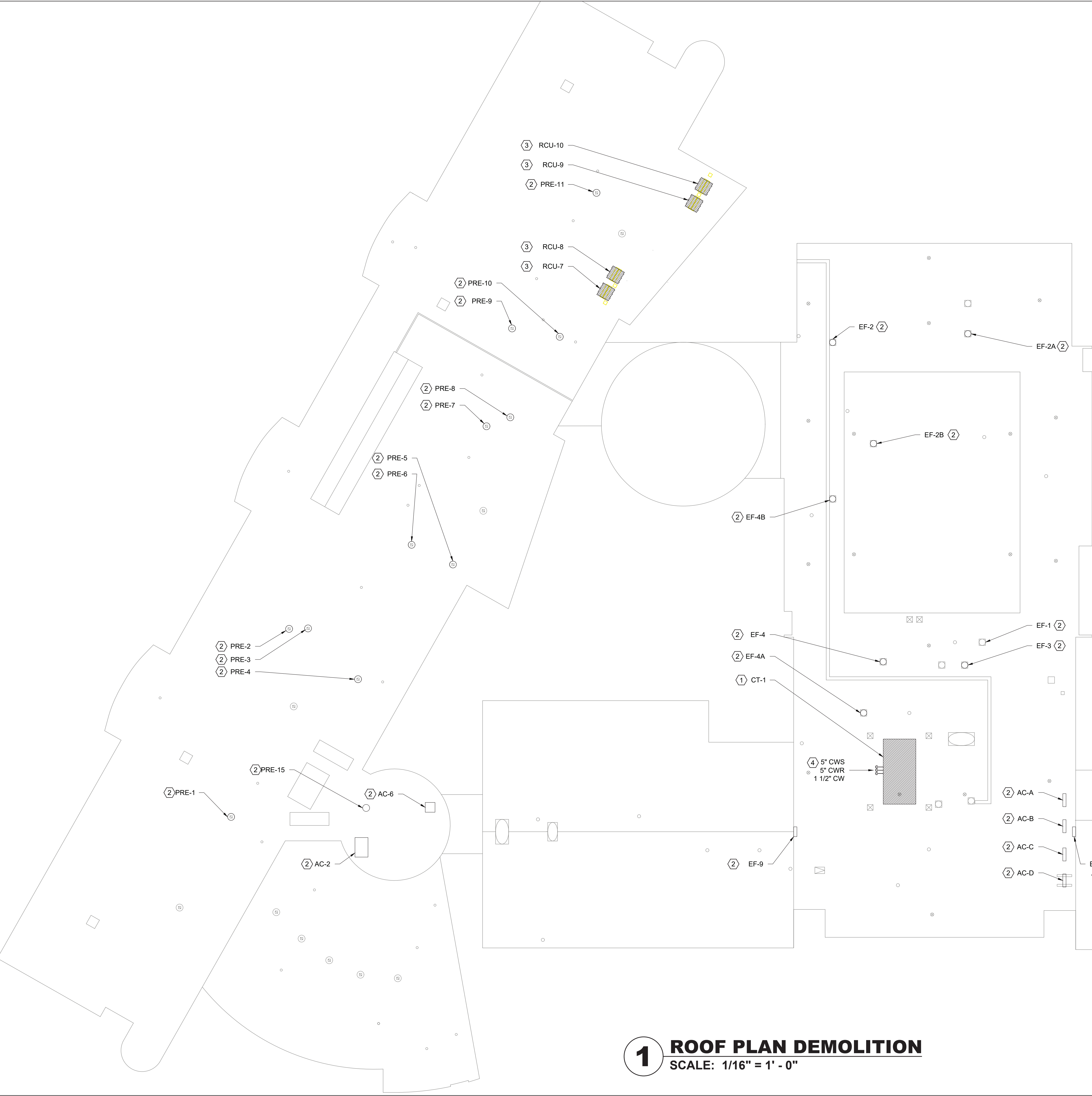
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Structural
Engineer:
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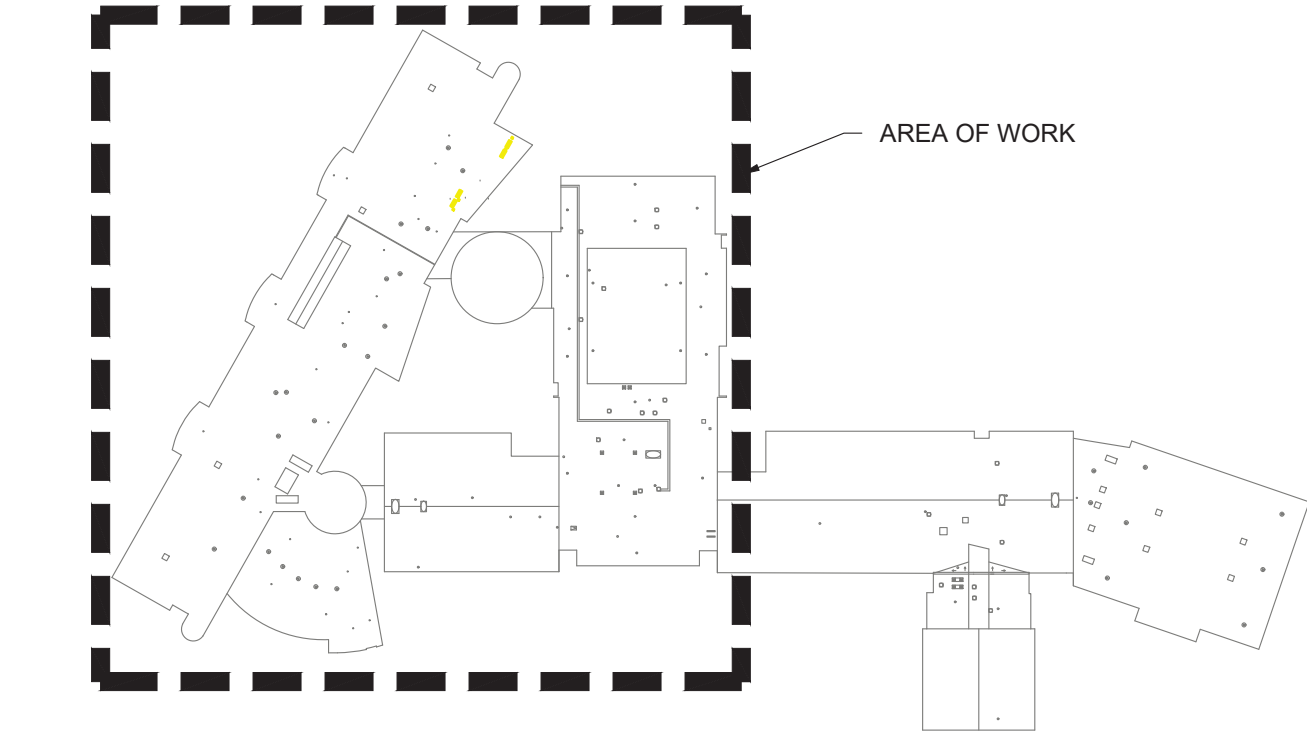
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Project No. 42054
Scale AS NOTED
Date 09-14-23

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3	09-14-23	BIDDING DOCUMENTS
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1 ROOF PLAN DEMOLITION
SCALE: 1/16" = 1' - 0"



2 ROOF KEY PLAN
SCALE: NONE



- KEYED NOTES:**
- 1 DEMOLISH THE COOLING TOWER ON THE ROOF ABOVE INCLUDING PIPING, CONTROLS, AND APPURTENANCES (BAC MODEL 35470R).
 - 2 EXISTING MECHANICAL EQUIPMENT. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
 - 3 DEMOLISH SPLIT SYSTEM AC UNITS SERVING UNIT VENTILATORS BELOW.
 - 4 DEMOLISH CWS,CWR, AND CW PIPING DOWN THRU ROOF.

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AT
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ELEMENTARY SCHOOL**
SDD# 50-02-01-06-0-030-016
140 PARK AVENUE
NEW CITY, NY 10956
COUNTY OF ROCKLAND

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Structural
Engineer:

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SUITE 200
SUFFERN, NY 10901

Drawn by

MEP

Checked by

PV

Project No.

42054

Scale

AS NOTED

Date

09-14-23

REC. EXP. DATE: 04-30-24

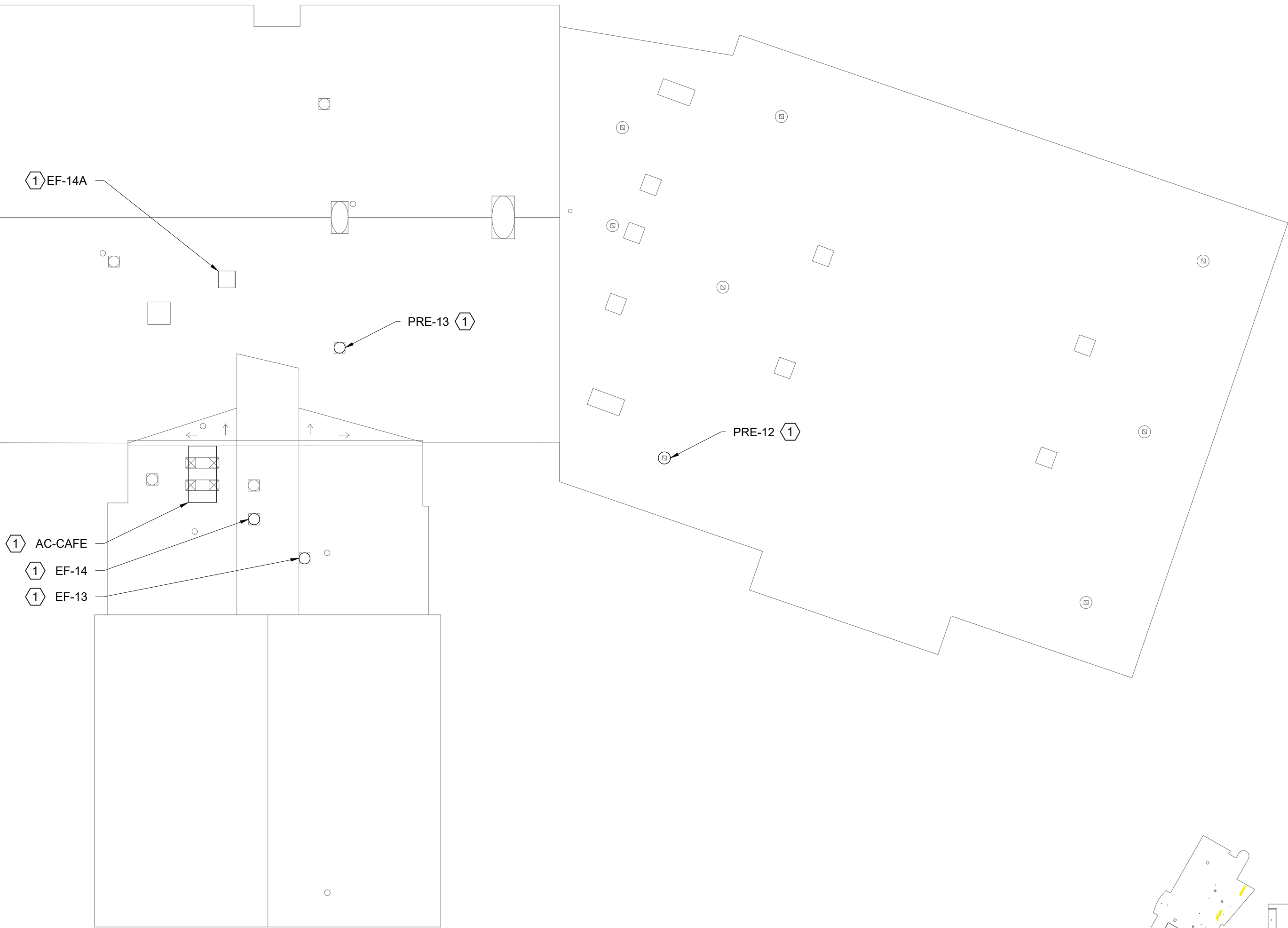
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No.	Date
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2	06-09-23 SED ADDENDUM #1
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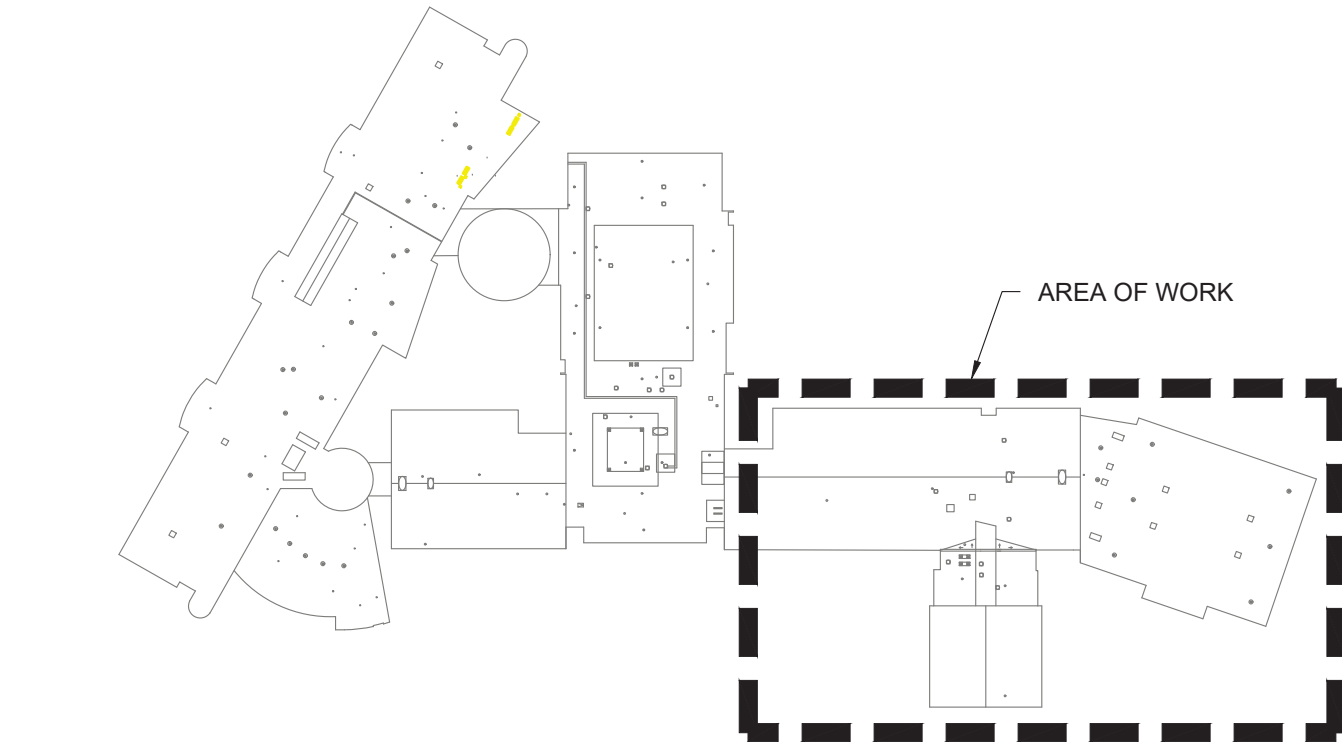
Drawing Title
**MECHANICAL ROOF
PLAN DEMOLITION - 1**

Drawing No.
WGES-M-070

MATCHLINE SEE DRAWING WGES-M-070



1 ROOF LEVEL FLOOR PLAN DEMOLITION
SCALE: 1/16" = 1' - 0"



2 ROOF KEY PLAN
SCALE: NONE



KEYED NOTES:

① EXISTING MECHANICAL EQUIPMENT TO REMAIN. DEMOLISH THE EXISTING CONTROLS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.



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UNIVENT REPLACEMENT
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SUITE 200
SUDBURY, NY 10901

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Project No. 42054
Scale AS NOTED
Date 09-14-23

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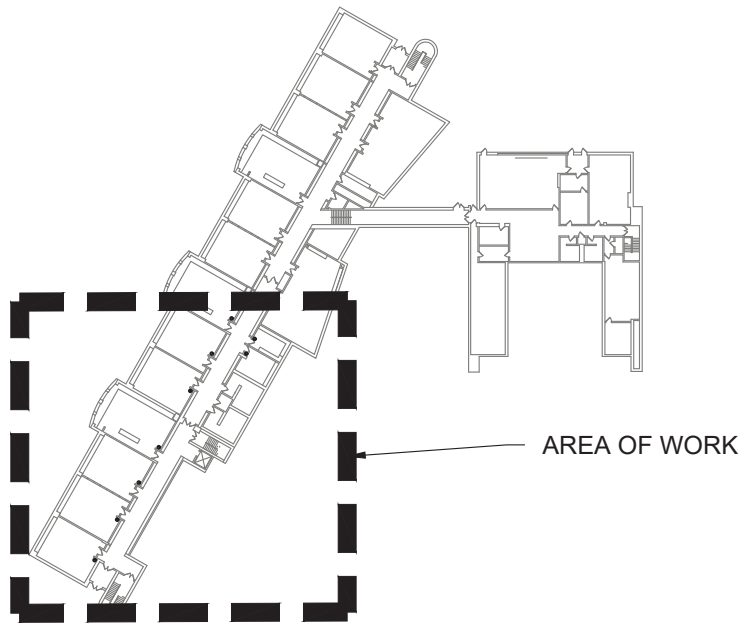
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3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS



MATCHLINE SEE DRAWING WGES-M-102

KEYED NOTES:

- 1 BASE BID: RETROFIT THE EXISTING UNIT VENTILATOR BY PROVIDING A FOUR PIPE COIL AS SPECIFIED IN THE UNIT VENTILATOR SCHEDULE ON M003.
ALT NO. 200: VERTICAL UNIT VENTILATOR. CONNECT D, CHW, AND HW PIPING.
- 2 BASE BID: PROVIDE CHILLED WATER PIPING AS SHOWN ON THE PLAN AND CONNECT TO THE EXISTING UNIT VENTILATOR.
ALT NO. 200: HORIZONTAL UNIT VENTILATOR ABOVE CEILING CONNECT CD, CHW, AND HW PIPING.
- 3 EX. 1 1/4" CHWS & R UP THROUGH FLOOR TO UNIT VENTILATOR ON SECOND FLOOR TO REMAIN.
- 4 EX. 2" CHWS & R DN TO CRAWLSPACE TO REMAIN.
- 5 1 1/4" CHWS & R UP THROUGH FLOOR TO UNIT VENTILATOR ON SECOND FLOOR.
- 6 EXISTING CABINET HEATER. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- 7 3/4" CONDENSATE DRAIN TO SPLASH BLOCK AT GRADE.
- 8 CONNECT TO EXISTING OA LOUVER.
- 9 TERMINATE 1 1/2" CONDENSATE DRAIN AT THE EXISTING SERVICE SINK.



1 LOWER LEVEL FLOOR PLAN INSTALLATION
SCALE: 1/8" = 1' - 0"

2 LOWER LEVEL KEY PLAN
SCALE: NONE



No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

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Scale	AS NOTED
Date	09-14-23

Mechanical Electrical Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SYRACUSE, NY 13201
Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SYRACUSE, NY 13201

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SED# 50-02-01-06-0-030-016 140 PARK AVENUE NEW CITY, NY 10958 Tel 845-798-9200 www.hsaarchitects.com THERESA, NY 10984 COUNTY OF ROCKLAND

HSAA MICHAEL SHILALE ARCHITECTS, L.L.P. 140 Park Avenue New City, NY 10958 Tel 845-798-9200 www.hsaarchitects.com
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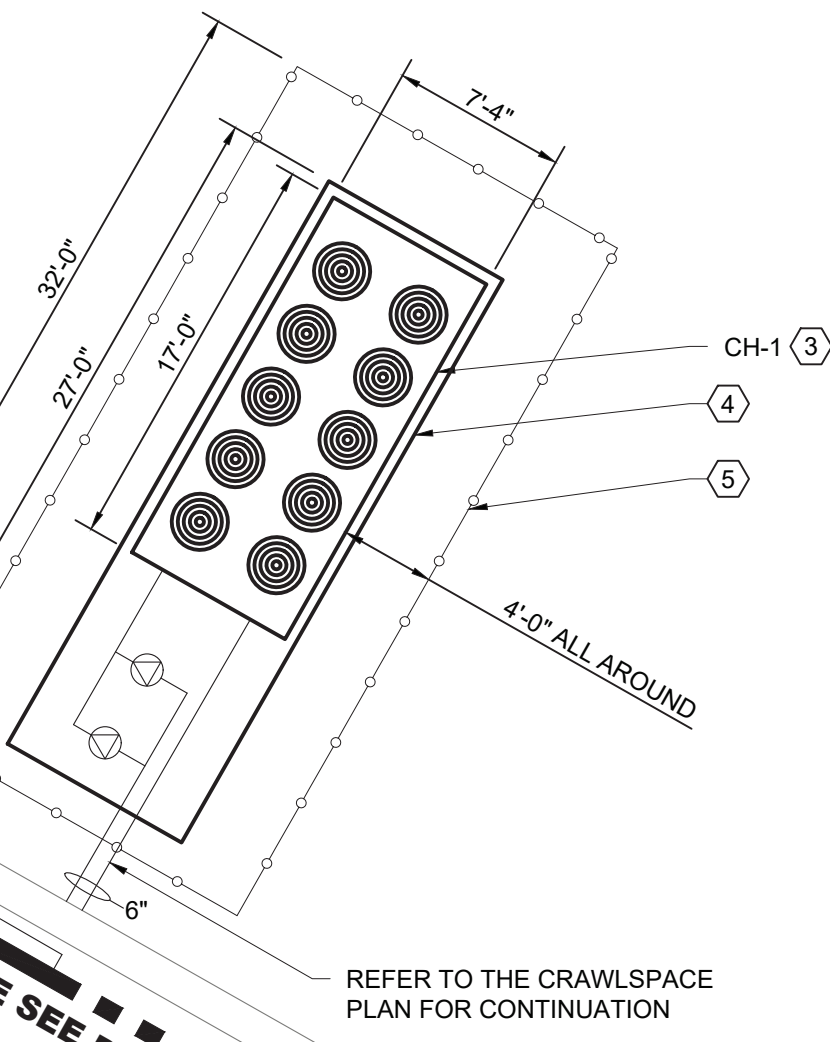
Drawing Title MECHANICAL LOWER LEVEL INSTALLATION PLAN - 1	Drawing No. WGES-M-101
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NOTES:
1. REFER TO THE ENLARGED PLAN ON DRAWING
WGES-M-201 FOR MORE INFORMATION.

2 LOWER LEVEL FLOOR PLAN 2

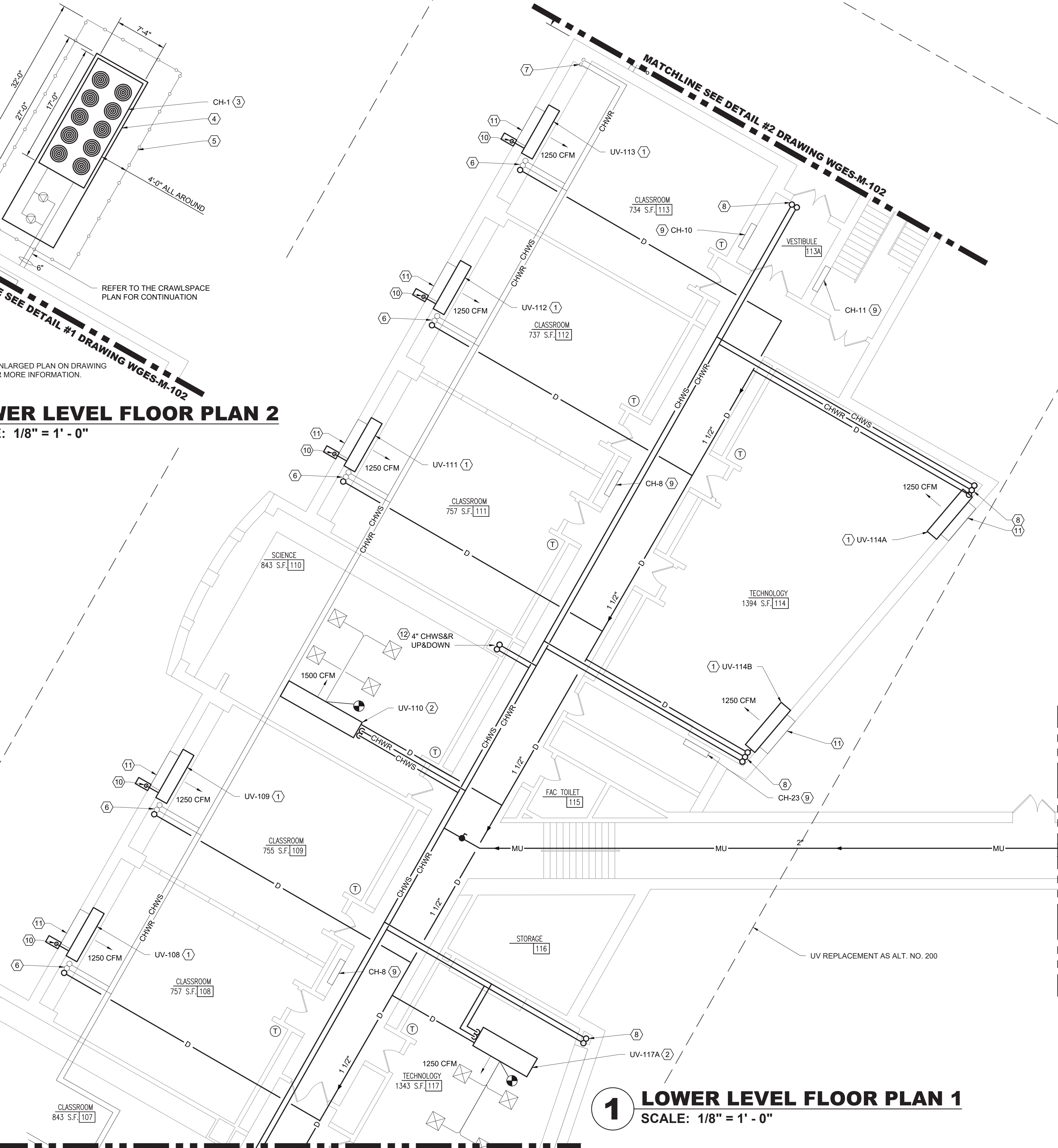
SCALE: 1/8" = 1' - 0"



REFER TO THE CRAWLSPACE
PLAN FOR CONTINUATION

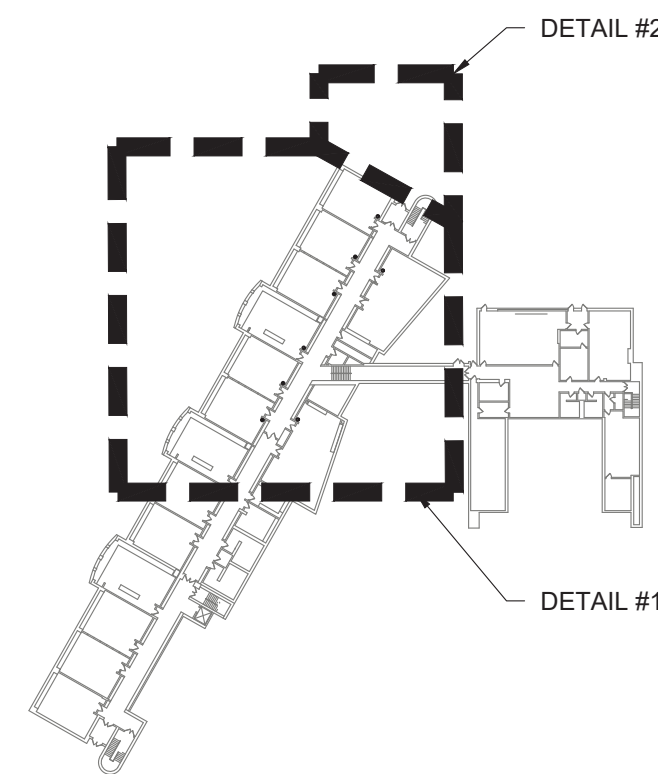
1 LOWER LEVEL FLOOR PLAN 1

SCALE: 1/8" = 1' - 0"



KEYED NOTES:

- BASE BID: RETROFIT THE EXISTING UNIT VENTILATOR BY PROVIDING A FOUR PIPE COIL AS SPECIFIED IN THE UNIT VENTILATOR SCHEDULE ON M003.
ALT NO. 200: VERTICAL UNIT VENTILATOR. CONNECT D, CHW, AND HW PIPING.
- BASE BID: PROVIDE CHILLED WATER PIPING AS SHOWN ON THE PLAN AND CONNECT TO THE EXISTING UNIT VENTILATOR.
ALT NO. 200: HORIZONTAL UNIT VENTILATOR ABOVE CEILING. CONNECT CD, CHW, AND HW PIPING.
- AIR COOLED CHILLER (CH-1) SUPPORTED ON DUNNAGE AT GRADE.
- NEW CONCRETE PAD ON GRADE, SEE STRUCTURAL.
- CHAIN LINK FENCE ENCLOSURE AT CHILLER BY GC. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
- EX. 1 1/4" CHWS & R UP THROUGH FLOOR TO UNIT VENTILATOR ON SECOND FLOOR.
- EX. 2" CHWS & R DN TO CRAWLSPACE.
- 1 1/4" CHWS & R UP THROUGH FLOOR TO UNIT VENTILATOR ON SECOND FLOOR.
- EXISTING RECESSED CABINET HEATER. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- 3/4" CONDENSATE DRAIN TO SPLASH BLOCK AT GRADE.
- CONNECT TO EXISTING OA LOUVER.
- CUT AND PATCH THE EXISTING CMU SHAFT TO INSTALL THE PIPE RISER.



3 LOWER LEVEL KEY PLAN

SCALE: NONE



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Drawing Title
**MECHANICAL LOWER
LEVEL INSTALLATION
PLAN - 2**

Drawing No.

WGES-M-102

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUFFERN, NY 10901
Mechanical
Electrical
Engineer:

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUFFERN, NY 10901
Structural
Engineer:

**UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL**
SED# 50-02-01-06-0-030-016
100 SPRING RD
TIRELLA, NY 10964
COUNTY OF ROCKLAND

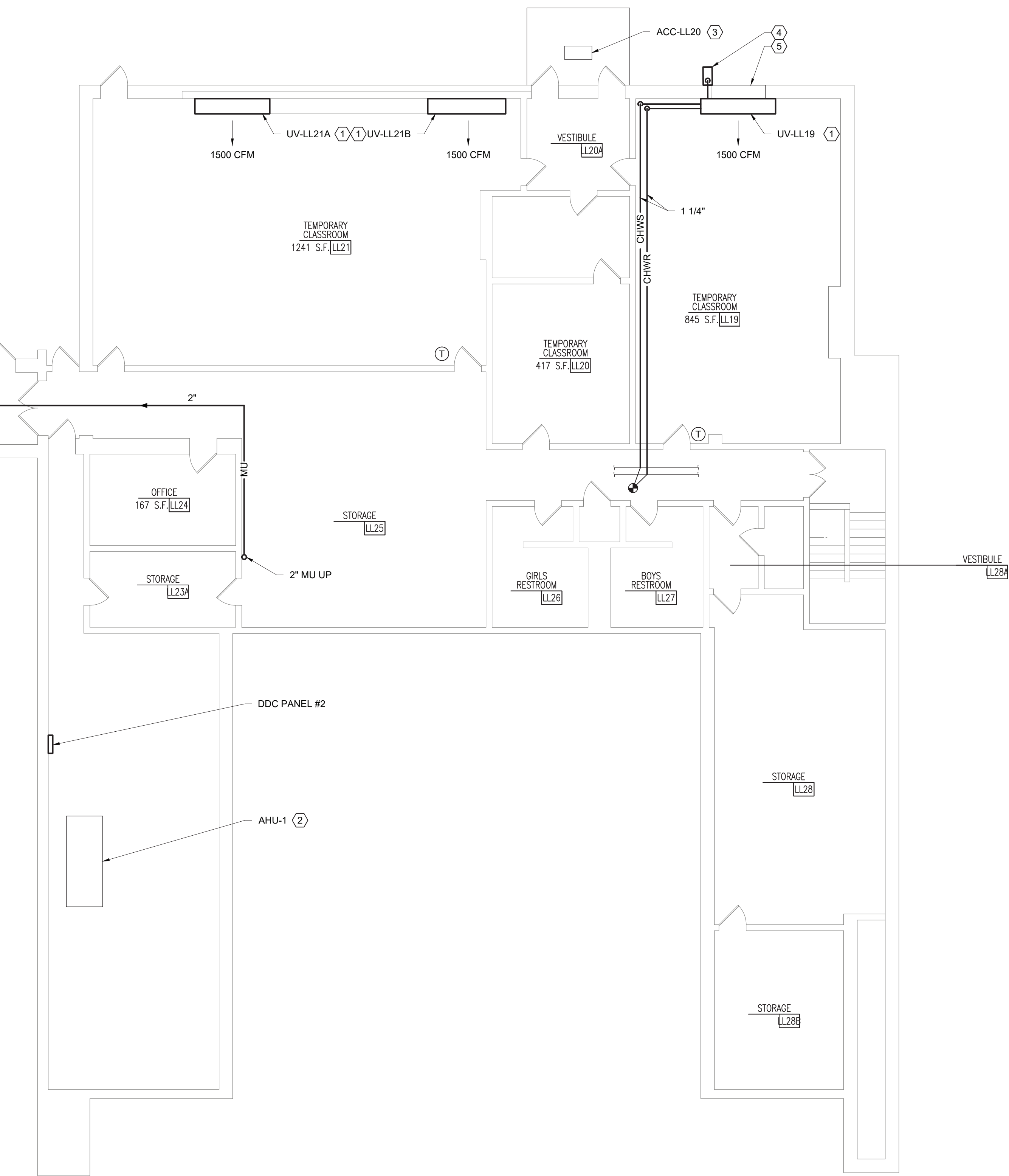
HSA
MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New City, NY 10958 Tel 845-708-5200
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No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REC. EXP. DATE: 04-30-24

Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	AS NOTED
Date	09-14-23

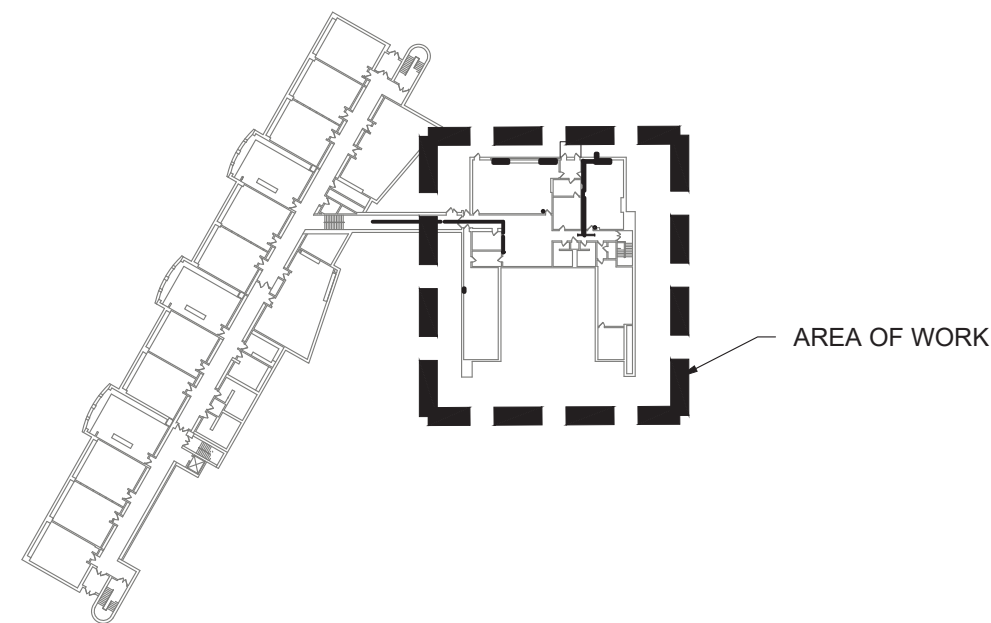
MATCHLINE SEE DRAWING WGES-M-102



1 LOWER LEVEL FLOOR PLAN INSTALLATION
SCALE: 1/8" = 1' - 0"

KEYED NOTES:

- ① VERTICAL UNIT VENTILATOR. CONNECT TO D, CHW, AND HW PIPING AND OA INTAKE LOUVER.
- ② EXISTING BAND ROOM AHU-1 TO BE INTEGRATED WITH THE BMS.
- ③ EXISTING ACC-1 ON AWNING ABOVE DOOR TO REMAIN.
- ④ 3/4" CONDENSATE DRAIN TERMINATES AT SPLASH BLOCK AT GRADE.
- ⑤ CONNECT TO THE EXISTING OA INTAKE LOUVER.



2 LOWER LEVEL KEY PLAN
SCALE: NONE



PLAN NORTH

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Drawing Title
**MECHANICAL LOWER
LEVEL INSTALLATION
PLAN - 3**

Drawing No.

WGES-M-103

UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SDD# 50-02-01-06-0-030-016
140 PARK AVENUE NEW CITY, NY 10958 Tel 845-798-9200
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Mechanical
Electrical
& Plumbing
Engineer:

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10901

Structural
Engineer:

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10901

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Project No.

42054

Scale

AS-NOTED

Date

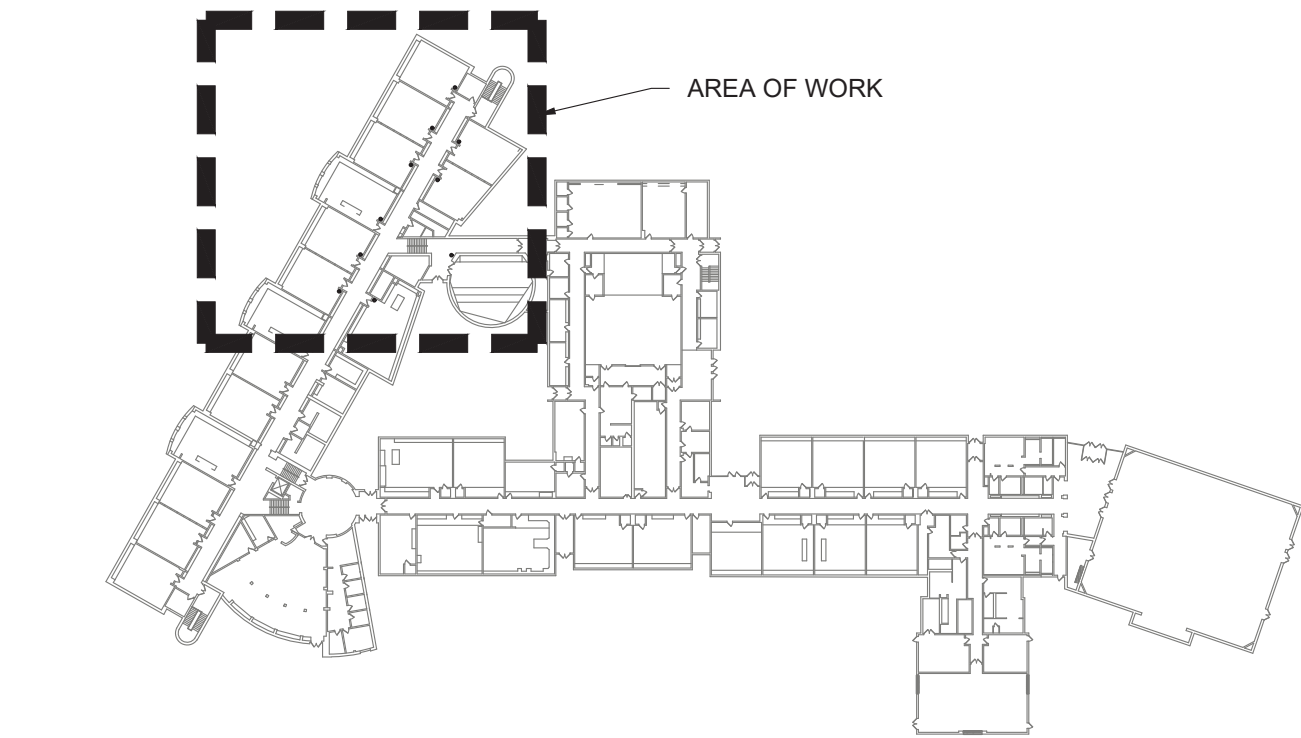
09-14-23

REG. EXP. DATE: 04-30-24

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS



1 MAIN LEVEL FLOOR PLAN INSTALLATION
SCALE: 1/8" = 1' - 0"



2 MAIN LEVEL KEY PLAN
SCALE: NONE



KEYED NOTES:

- 1 BASE BID: RETROFIT THE EXISTING UNIT VENTILATOR BY PROVIDING A FOUR PIPE COIL AS SPECIFIED IN THE UNIT VENTILATOR SCHEDULE ON M003.
ALT NO. 200: VERTICAL UNIT VENTILATOR. CONNECT D, CHW, AND HW PIPING.
- 2 BASE BID: PROVIDE CHILLED WATER PIPING AS SHOWN ON THE PLAN AND CONNECT TO THE EXISTING UNIT VENTILATOR.
ALT NO. 200: HORIZONTAL UNIT VENTILATOR ABOVE CEILING.CONNECT CD, CHW, AND HW PIPING.
- 3 VERTICAL FAN COIL UNIT. CONNECT D, CHW, AND HW PIPING.
- 4 EXISTING RECESSED CABINET HEATER. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- 5 EXISTING FINNED TUBE RADIATOR. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- 6 CONNECT TO THE EXISTING OA INTAKE LOUVER.
- 7 CUT AND PATCH THE EXISTING CMU SHAFT TO INSTALL THE PIPE RISER.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REG. EXP. DATE: 04-30-24

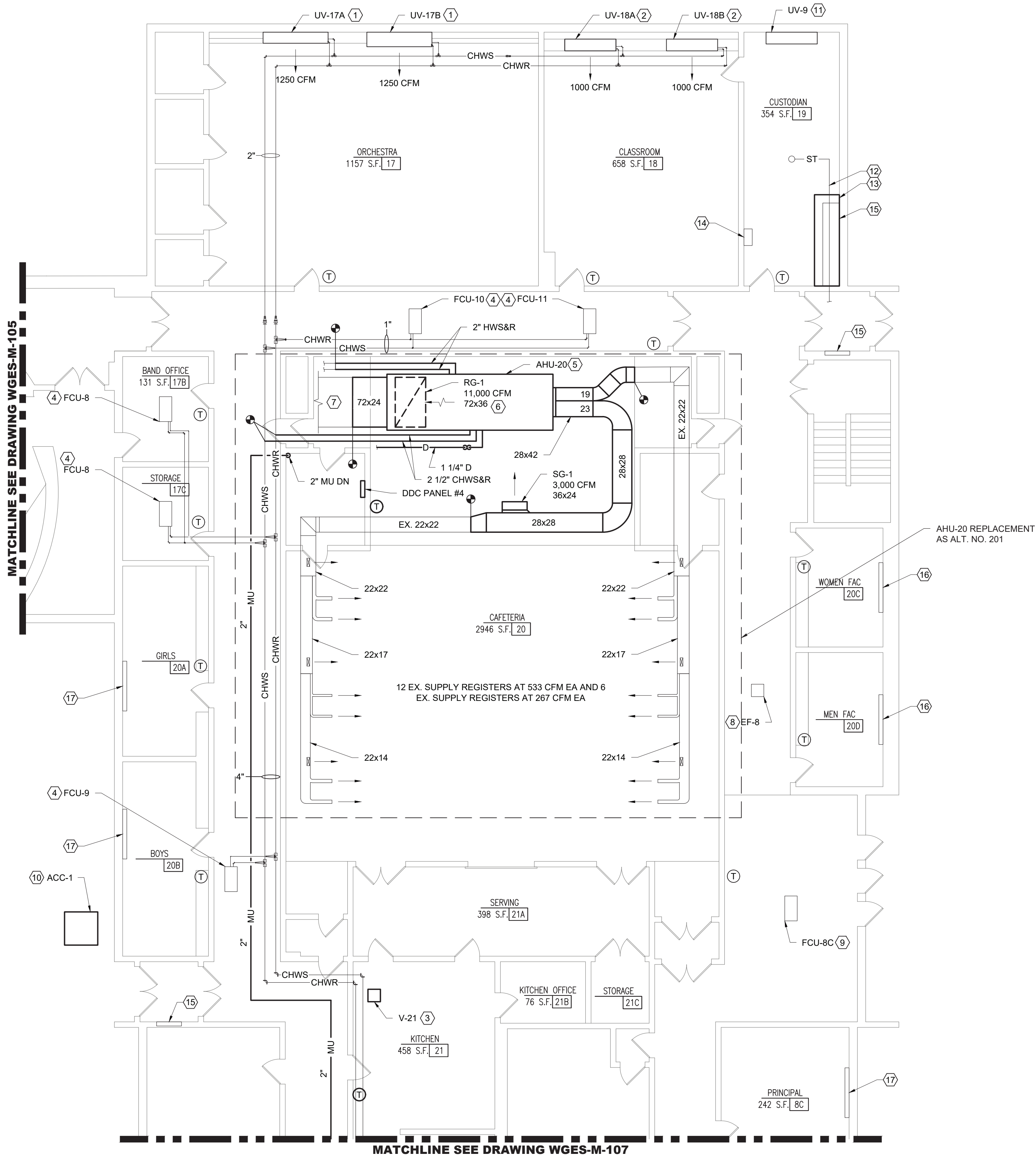
Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	AS NOTED
Date	09-14-23

GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901
Mechanical Electrical Engineer:	Structural Engineer:

UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
100 PINE ST.
TIRELLA, NY 10964
COUNTY OF ROCKLAND

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140 Park Avenue New City, NY 10958 Tel 845-798-9200
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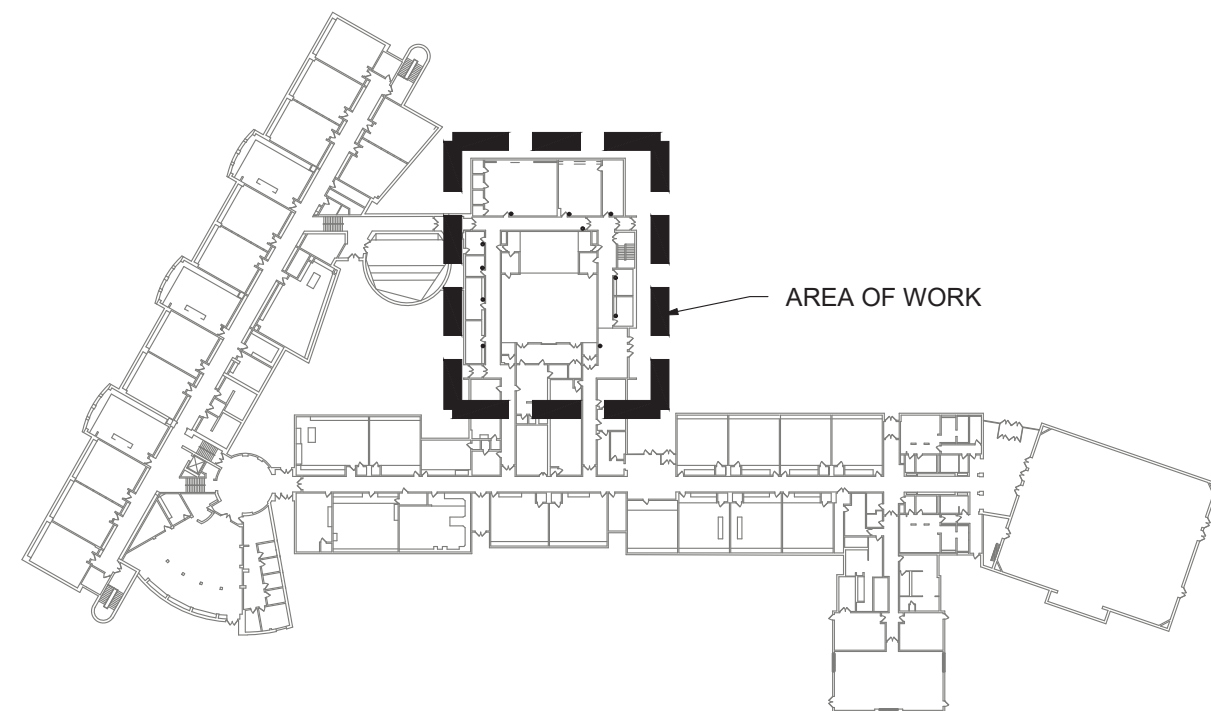
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Drawing Title
**MECHANICAL MAIN
LEVEL INSTALLATION
PLAN - 2**
Drawing No.
WGES-M-105



1 MAIN LEVEL FLOOR PLAN INSTALLATION
SCALE: 1/8" = 1' - 0"

KEYED NOTES:

- ① VERTICAL UNIT VENTILATOR (1250 CFM). CONNECT D, CHW, AND HW PIPING. CONNECT TO EXISTING OA INTAKE LOUVER.
- ② VERTICAL UNIT VENTILATOR (1000 CFM). CONNECT D, CHW, AND HW PIPING. CONNECT TO EXISTING OA INTAKE LOUVER.
- ③ VAV BOX ABOVE THE CEILING.
- ④ EX. HORIZONTAL FAN COIL UNIT ABOVE THE CEILING. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
- ⑤ BASE BID: INTEGRATE THE EXISTING AHU-20 AND RETURN FAN INTO THE BMS.
- ALT. NO. 201: CAFETERIA AIR HANDLING UNIT (AHU-20) AT CEILING. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS. CONNECT D, CHW, AND HW PIPING. REPLACE CONTROLS ONLY UNDER THE BASE BID AND REPLACE THE ENTIRE UNIT UNDER ALTERNATE NO. 201.
- ⑥ RETURN GRILL AT BOTTOM OF AHU.
- ⑦ CONNECT TO THE EXISTING OA DUCT IN THE ROOM ABOVE.
- ⑧ EX. TOILET EXHAUST FAN ABOVE THE CEILING. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
- ⑨ EX. FAN COIL UNIT ABOVE THE CEILING. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
- ⑩ SPLIT SYSTEM AC UNIT ACC-1 INTERLOCKED WITH THE BAND ROOM AHU-1. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS (INTERNATIONAL COMFORT MODEL CAS120HDA0A00AA, 10 TONS COOLING).
- ⑪ EXISTING VERTICAL UNIT VENTILATOR PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- ⑫ EXISTING 4" STORM PIPE AT CEILING.
- ⑬ PROVIDE A DRIP PAN BELOW THE EXISTING STORM PIPE THAT RUNS ABOVE THE SWITCHGEAR. THE DRIP PAN SHALL BE AT LEAST 12" LARGER THE THE FOOTPRINT OF THE SWITCHGEAR IN ALL DIRECTIONS. PROVIDE 22 GAUGE GALVANIZED PAN WITH 2" HIGH SIDES AND A 3/4" COPPER DRAIN TERMINATING 6" AFF.
- ⑭ EXISTING FUEL OIL TANK GAUGING AND LEAK DETECTION SYSTEM TO BE INTERGRATED WITH THE BMS (ONMTEC PROTEUS).
- ⑮ EXISTING ELECTRICAL SWITCHGEAR. REFER TO THE ELECTRICAL DRAWINGS.
- ⑯ EXISTING RECESSED CONVECTOR. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- ⑰ EXISTING FINNED TUBE RADIATOR. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.



2 MAIN LEVEL KEY PLAN
SCALE: NONE



PLAN NORTH

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Drawing Title
**MECHANICAL MAIN
LEVEL INSTALLATION
PLAN - 3**

Drawing No.

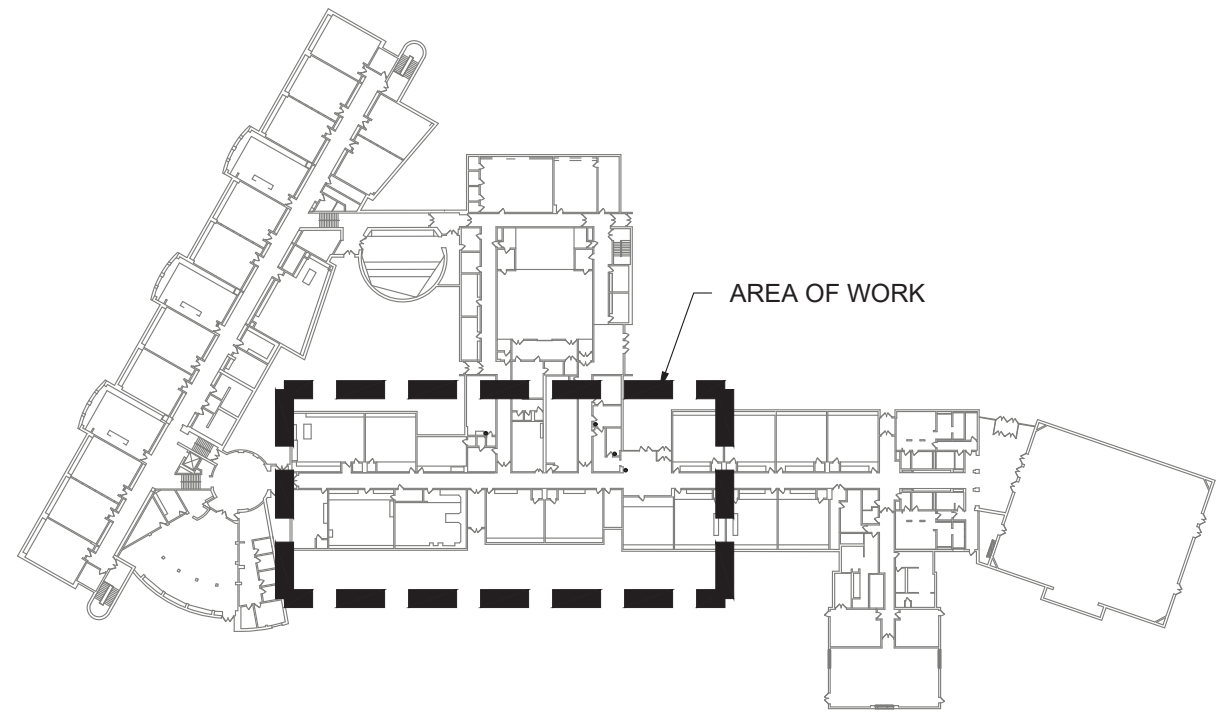
WGES-M-106

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SED# 50-02-01-06-0-030-016 105 FROBERG RD SUDBURY, NY 10961 COUNTY OF ROCKLAND		Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10961
		Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10961

Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	AS NOTED
Date	09-14-23

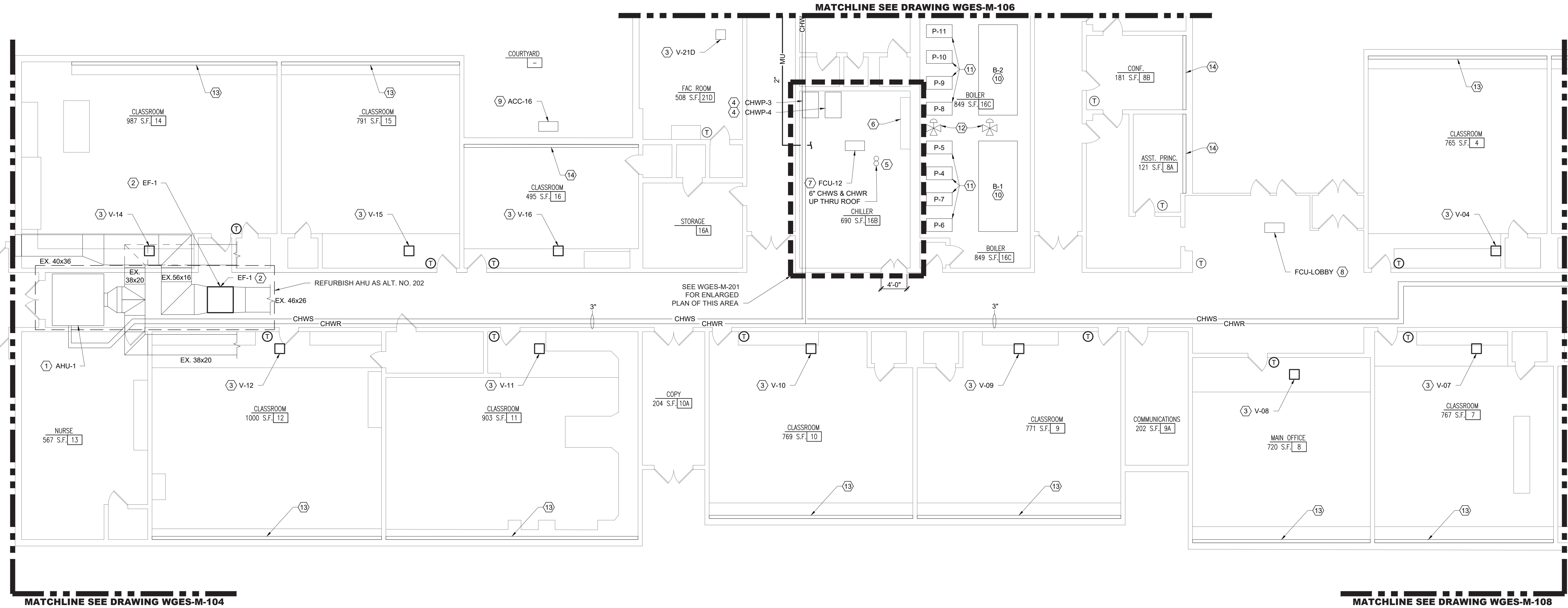
REC.	EXP.	DATE:	04-30-24
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Revisions		No.	Date
3	09-14-23	BIDDING DOCUMENTS	
2	06-09-23	SED ADDENDUM #1	
1	12-28-22	BIDDING DOCUMENTS	



2 MAIN LEVEL KEY PLAN

SCALE: NONE



1 MAIN LEVEL FLOOR PLAN INSTALLATION

SCALE: 1/8" = 1' - 0"

KEYED NOTES:

- BASE BID: INTEGRATE THE EXISTING AIR HANDLING UNIT INTO THE BMS.
ALT NO. 202: EX. AIR HANDLING UNIT, AHU-1, ABOVE THE CEILING IN THE CORRIDOR TO BE REFURBISHED.
- THE WORK INCLUDES:
 - PROVIDE DIRECT DIGITAL CONTROLS. REFER TO THE CONTROL DIAGRAMS.
 - REPLACE OA, EA, AND RA DAMPERS.
 - REPLACE FAN SHAFT BEARINGS.
 - REMOVE THE INLET VANE DAMPERS
 - REPLACE THE EX. 15 HP MOTOR WITH A 15 HP NEMA PREMIUM VFD READY MOTOR.
 - REPLACE V-BELTS AND FAN AND MOTOR SHEAVES.
- BASE BID: INTEGRATE THE EXISTING EXHAUST FAN INTO THE BMS.
ALT NO. 202: EX. EXHAUST FAN, EF-1, ABOVE THE CEILING IN THE CORRIDOR TO BE REFURBISHED.
- THE WORK INCLUDES:
 - PROVIDE DIRECT DIGITAL CONTROLS. REFER TO THE CONTROL DIAGRAMS.
 - REPLACE THE FAN SHAFT BEARINGS.
 - REPLACE THE EX. 3 HP MOTOR WITH A 3 HP NEMA PREMIUM, VFD READY MOTOR.
 - REPLACE THE V-BELTS AND FAN AND MOTOR SHEAVES.
- VAV BOX ABOVE THE CEILING.
- BASE-MOUNTED, END-SUCTION CHILLED WATER PUMPS INCLUDING PIPING, CONTROLS, AND APPURTENANCES.
- 6" CHWS AND CHWR PIPES UP THRU ROOF.
- EXISTING ELECTRICAL EQUIPMENT. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
- EX. FAN COIL UNIT AT THE CEILING. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.

KEYED NOTES (CONTINUED):

- EX. FAN COIL UNIT ABOVE THE CEILING. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
- EXISTING AIR COOLED CONDENSING UNIT TO REMAIN.
- EXISTING BOILER. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. (WEIL MCLAIN MODEL 1894).
- EXISTING HOT WATER PUMPS. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- EXISTING 4" 3-WAY CONTROL VALVE. PROVIDE AN ELECTRONIC ACTUATOR AND DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- EXISTING FINNED TUBE HEATING ELEMENT RECESSED WITHIN WOODEN CASEWORK. PROVIDE AND ELECTRONIC ACTUATOR AND DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- EXISTING FINNED TUBE RADIATOR. PROVIDE AND ELECTRONIC ACTUATOR AND DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REC. EXP. DATE: 04-30-24

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Scale	AS NOTED
Date	09-14-23

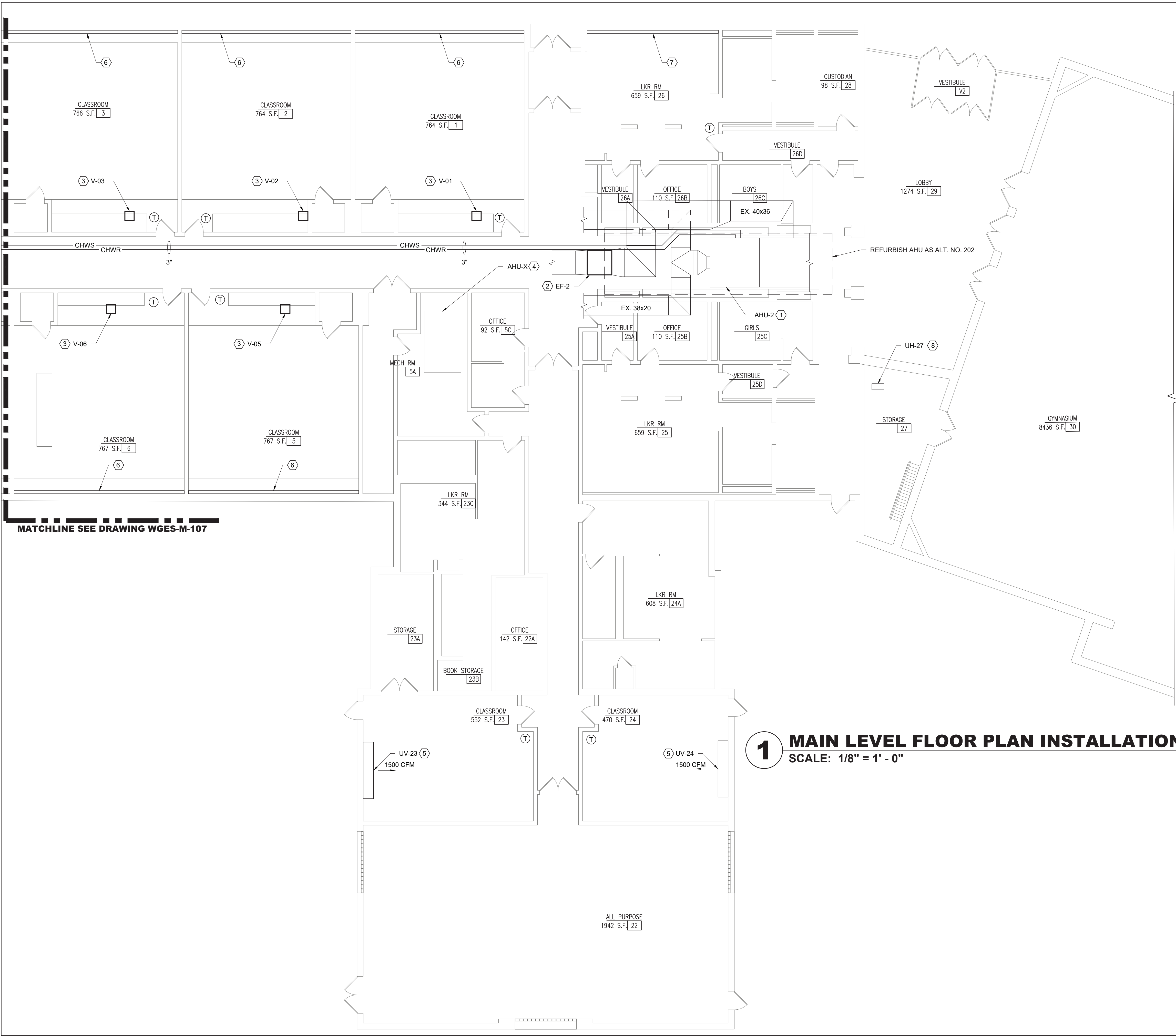
GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901
Mechanical & Electrical Engineer:	Structural Engineer:

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SED# 50-02-01-06-0-030-016 145 ROUTE 90 THERMIDALE, NY 10984 COUNTY OF ROCKLAND
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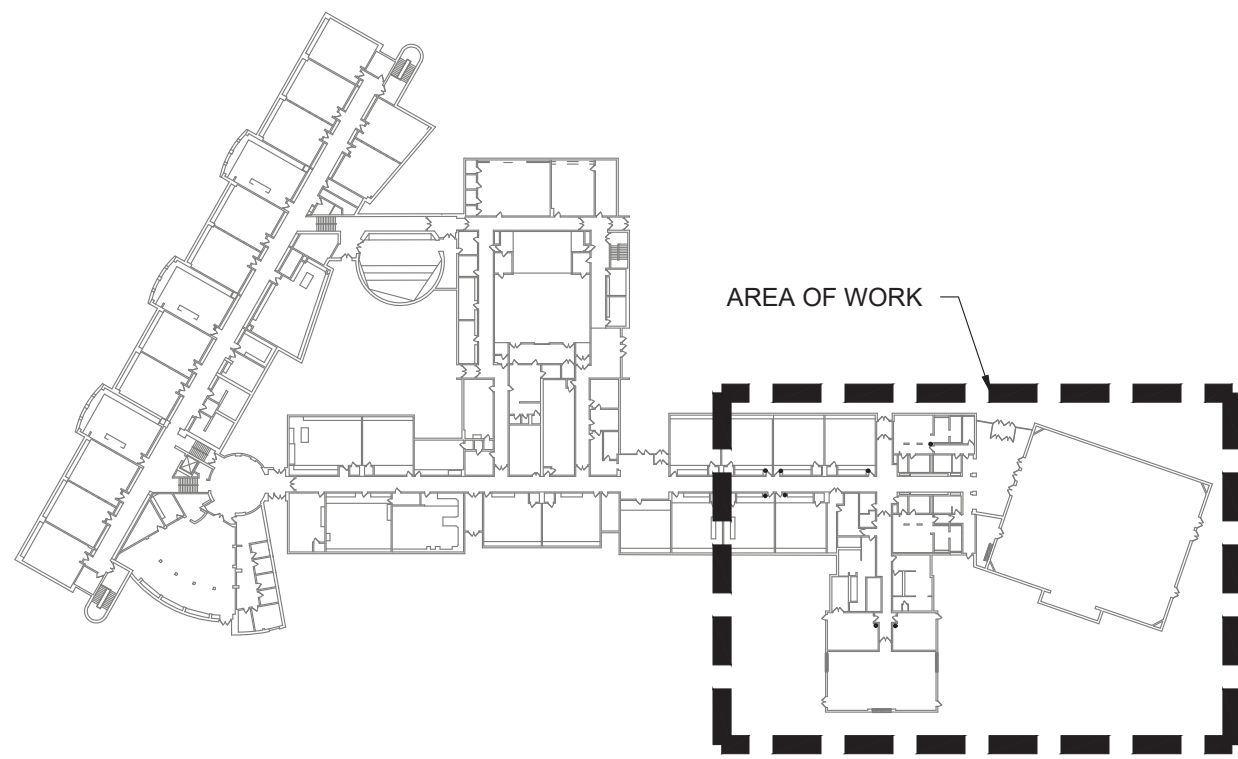
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MECHANICAL MAIN LEVEL INSTALLATION PLAN - 4	Drawing No. WGES-M-107
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1 MAIN LEVEL FLOOR PLAN INSTALLATION
SCALE: 1/8" = 1' - 0"



2 MAIN LEVEL KEY PLAN
SCALE: NONE



KEYED NOTES:

- ① BASE BID: INTEGRATE THE EXISTING AIR HANDLING UNIT INTO THE BMS.
ALT. NO. 202: EX. AIR HANDLING UNIT, AHU-2, ABOVE THE CEILING IN THE CORRIDOR TO BE REFURBISHED.
- THIS WORK INCLUDES
• PROVIDE DIRECT DIGITAL CONTROLS. REFER TO THE CONTROL DIAGRAM.
• REPLACE OA, EA, AND RA DAMPERS.
• REPLACE FAN SHAFT BEARINGS.
• REMOVE THE INLET VANE DAMPERS.
• REPLACE THE EX. 15 HP MOTOR WITH A 15 HP NEMA PREMIUM, VFD READY MOTOR.
• REPLACE V-BELTS AND FAN AND MOTOR SHEAVES.
- ② BASE BID: INTEGRATE THE EXISTING EXHAUST FAN INTO THE BMS
ALT. NO. 202: EX. EXHAUST FAN, EF-2 ABOVE THE CEILING IN THE CORRIDOR TO BE REFURBISHED.
- THIS WORK INCLUDES
• PROVIDE DIRECT DIGITAL CONTROLS. REFER TO THE CONTROL DIAGRAMS.
• REPLACE THE FAN SHAFT BEARINGS.
• REPLACE THE EX. 3 HP MOTOR WITH A 3 HP NEMA PREMIUM, VFD READY MOTOR.
• REPLACE THE V-BELTS AND FAN AND MOTOR SHEAVES.
- ③ VAV BOX ABOVE THE CEILING.
- ④ EX. AIR HANDLING UNIT. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
- ⑤ VERTICAL UNIT VENTILATOR. CONNECT D, CHW, AND HW PIPING. CONNECT TO THE EXISTING OA INTAKE LOUVER.
- ⑥ EXISTING FINNED TUBE HEATING ELEMENT RECESSED WITHIN WOODEN CASEWORK. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- ⑦ EXISTING FINNED TUBE RADIATOR. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.
- ⑧ EXISTING UNIT HEATER. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REC. EXP. DATE: 04-30-24

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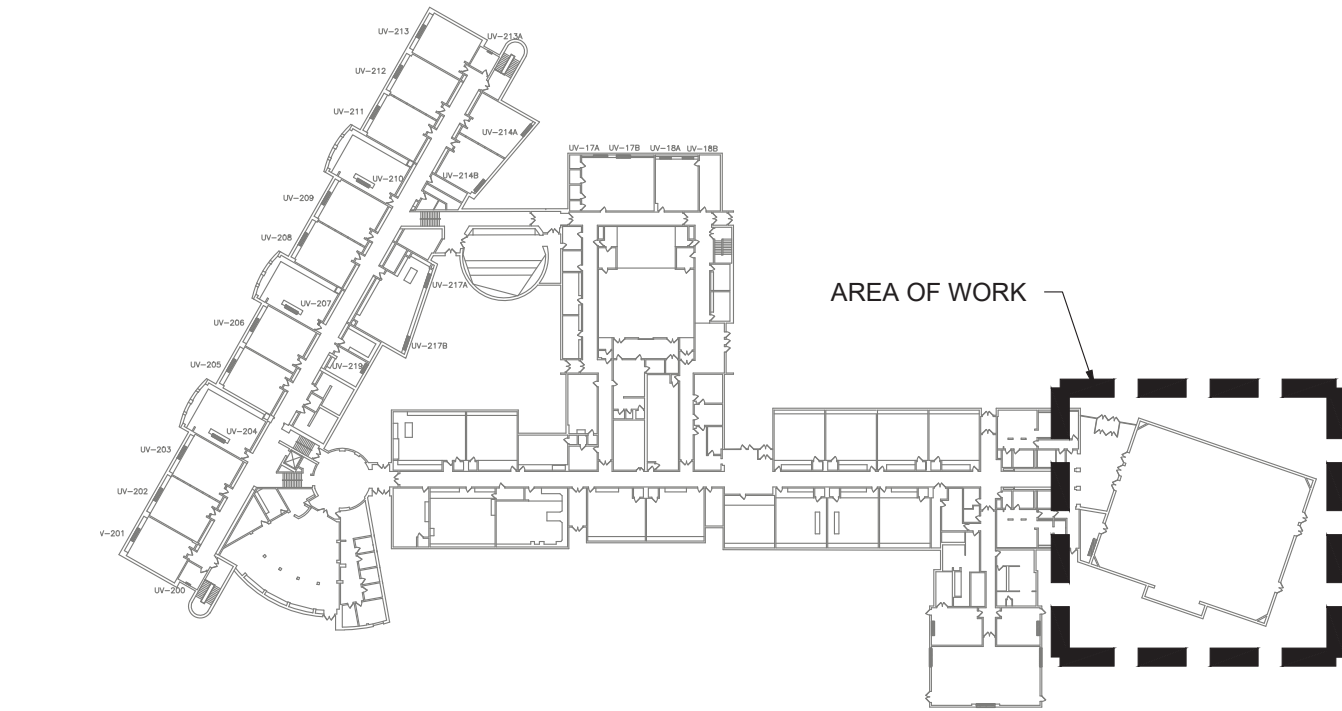
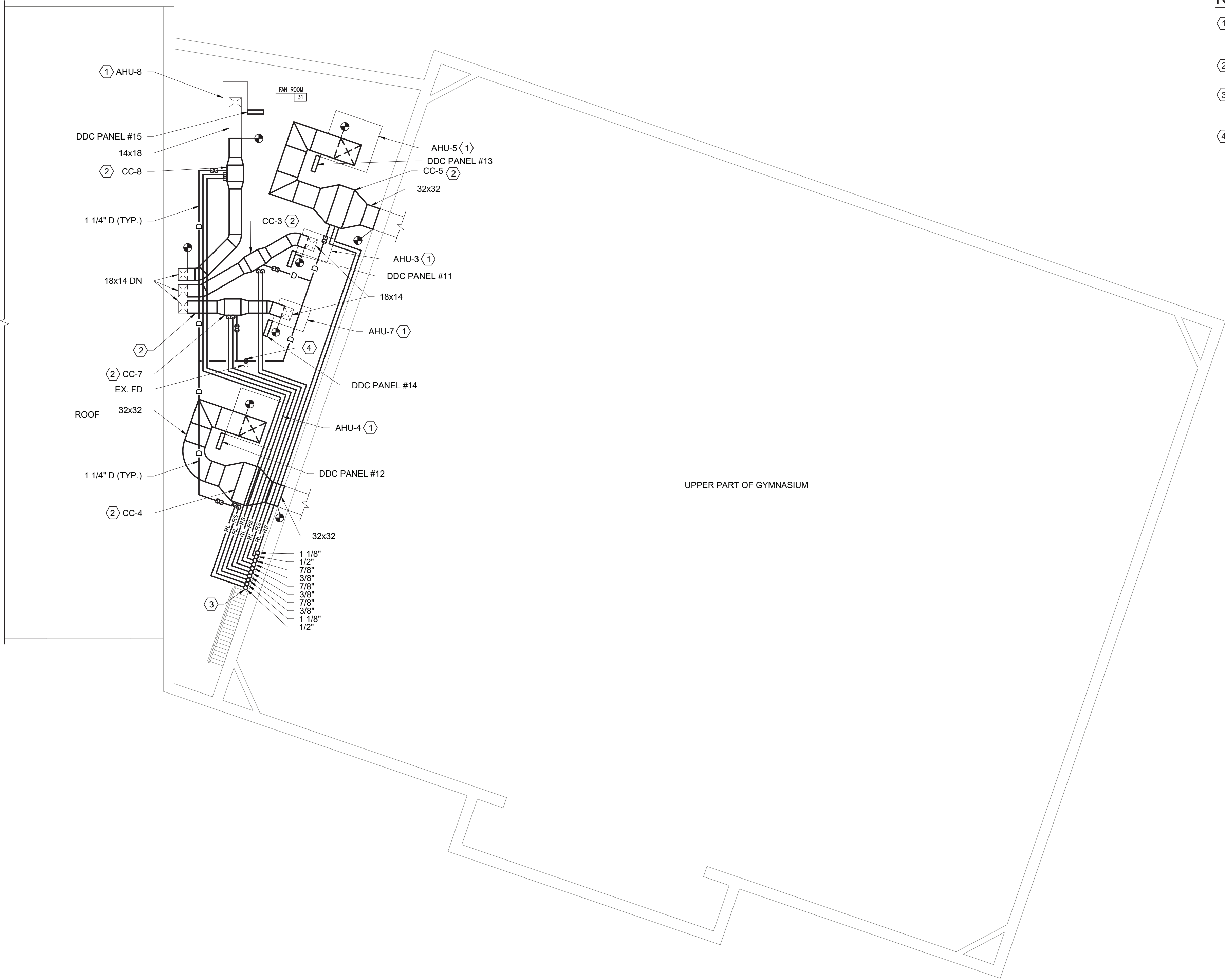
GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUFFERN, NY 10901	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUFFERN, NY 10901
Mechanical Structural Engineer:	Structural Engineer:

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SDD# 50-02-01-06-0-030-016 100 ROUTE 80 THERESA, NY 10984 COUNTY OF ROCKLAND

HSA MICHAEL SHILALE ARCHITECTS, L.L.P. 140 Park Avenue New City, NY 10958 Tel 845-708-9200 www.hsaarch.com
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Drawing Title MECHANICAL MAIN LEVEL INSTALLATION PLAN - 5	Drawing No. WGES-M-108
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- KEYED NOTES:**
- 1 EX. AIR HANDLING UNIT (MCQUAY MODEL LHD). PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
 - 2 PROVIDE DX COIL IN SUPPLY DUCTWORK AT EXISTING AIR HANDLING UNITS.
 - 3 PROVIDE REFRIGERANT PIPING UP THROUGH THE ROOF TO THE SPLIT SYSTEM AC UNITS AT GRADE BELOW. REFER TO DRAWING WGES-M-111 FOR CONTINUATION.
 - 4 PROVIDE 1 1/4" CONDENSATE DRAIN PIPING TERMINATES AT EXISTING FLOOR DRAIN.

1 UPPER LEVEL FLOOR PLAN INSTALLATION
SCALE: 1/8" = 1' - 0"

2 UPPER LEVEL KEY PLAN
SCALE: NONE



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Drawing Title
**MECHANICAL UPPER
LEVEL INSTALLATION
PLAN**



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UNIVENT REPLACEMENT
AT
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ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
140 PARK AVENUE
TEHERA, NY 10994
COUNTY OF ROCKLAND

Mechanical
Electrical
Engineer:

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10901

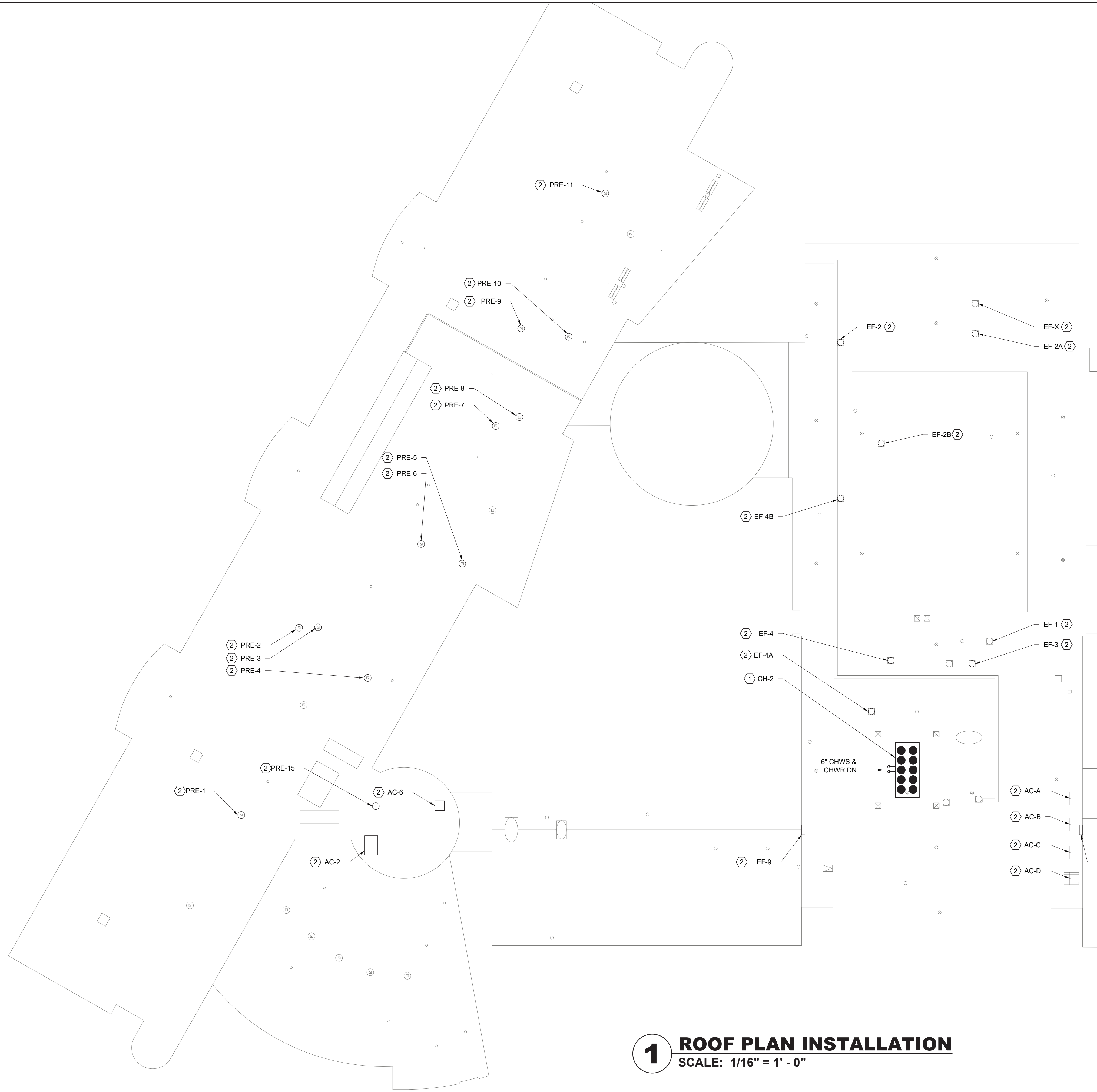
Structural
Engineer:

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10901

Drawn by MEP
Checked by PV
Project No. 42054
Scale AS NOTED
Date 09-14-23

REC. EXP. DATE: 04-30-24

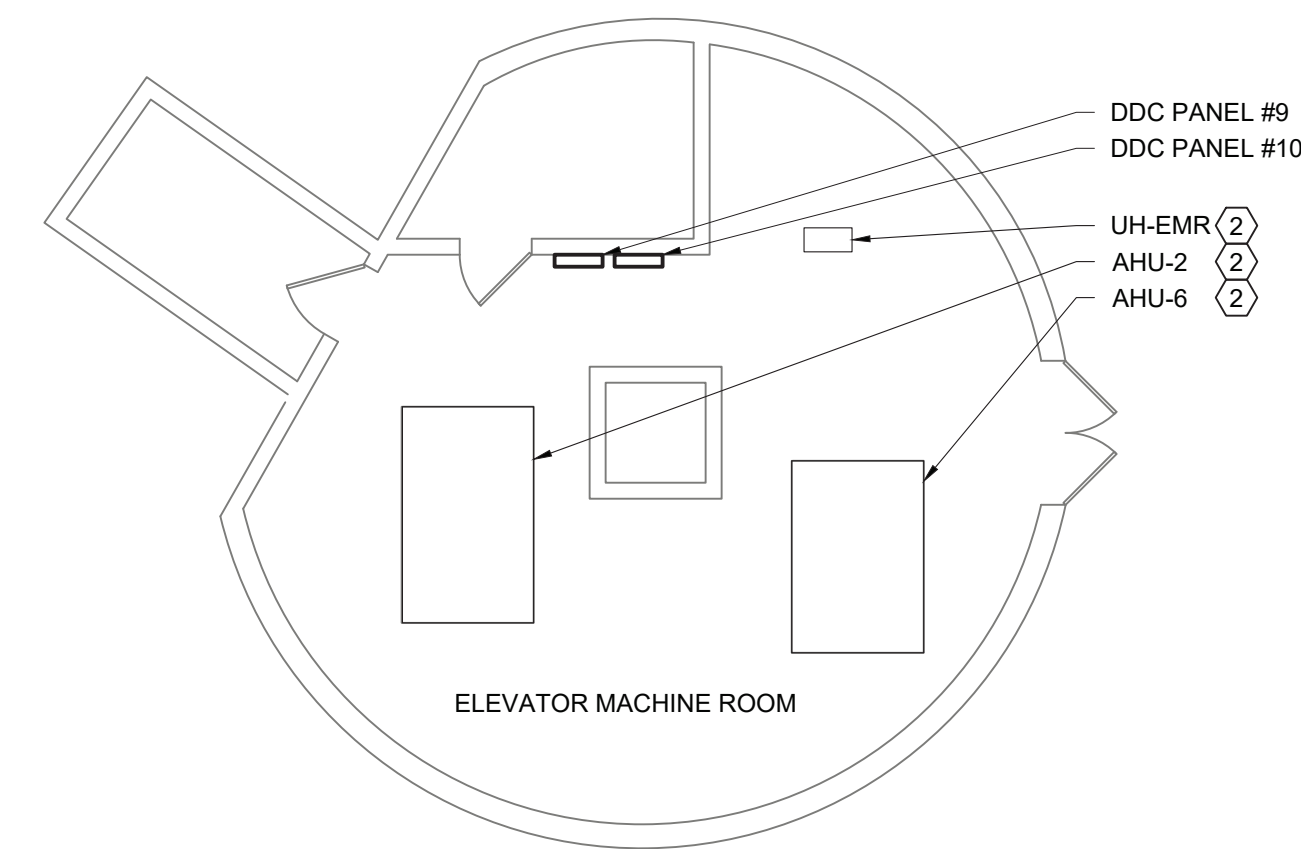
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2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS



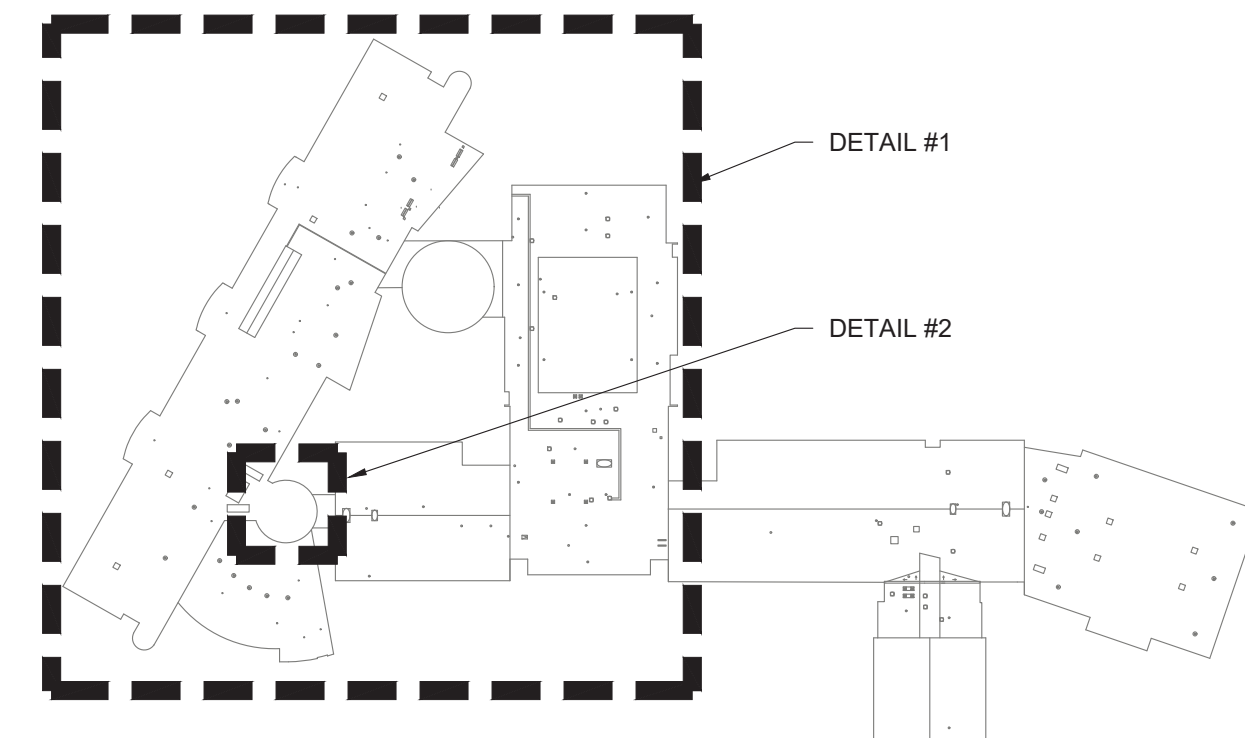
1 ROOF PLAN INSTALLATION
SCALE: 1/16" = 1' - 0"

KEYED NOTES:

- ① AIR-COOLED CHILLER ON THE ROOF. PROVIDE STEEL DUNNAGE TO SUIT THE FOOTPRINT OF THE CHILLER. REFER TO THE STRUCTURAL DRAWINGS FOR DETAILS.
- ② EXISTING MECHANICAL EQUIPMENT. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.



2 ELEVATOR MACHINE ROOM PLAN
SCALE: 1/8" = 1' - 0"



3 ROOF KEY PLAN
SCALE: NONE

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REC. EXP. DATE: 04-30-24

Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	AS NOTED
Date	09-14-23

GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901
Mechanical & Electrical Engineer:	Structural Engineer:

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SDD# 50-02-01-06-0-030-016 140 PARK AVENUE 10TH FLOOR TEANECK, NY 10964 COUNTY OF ROCKLAND

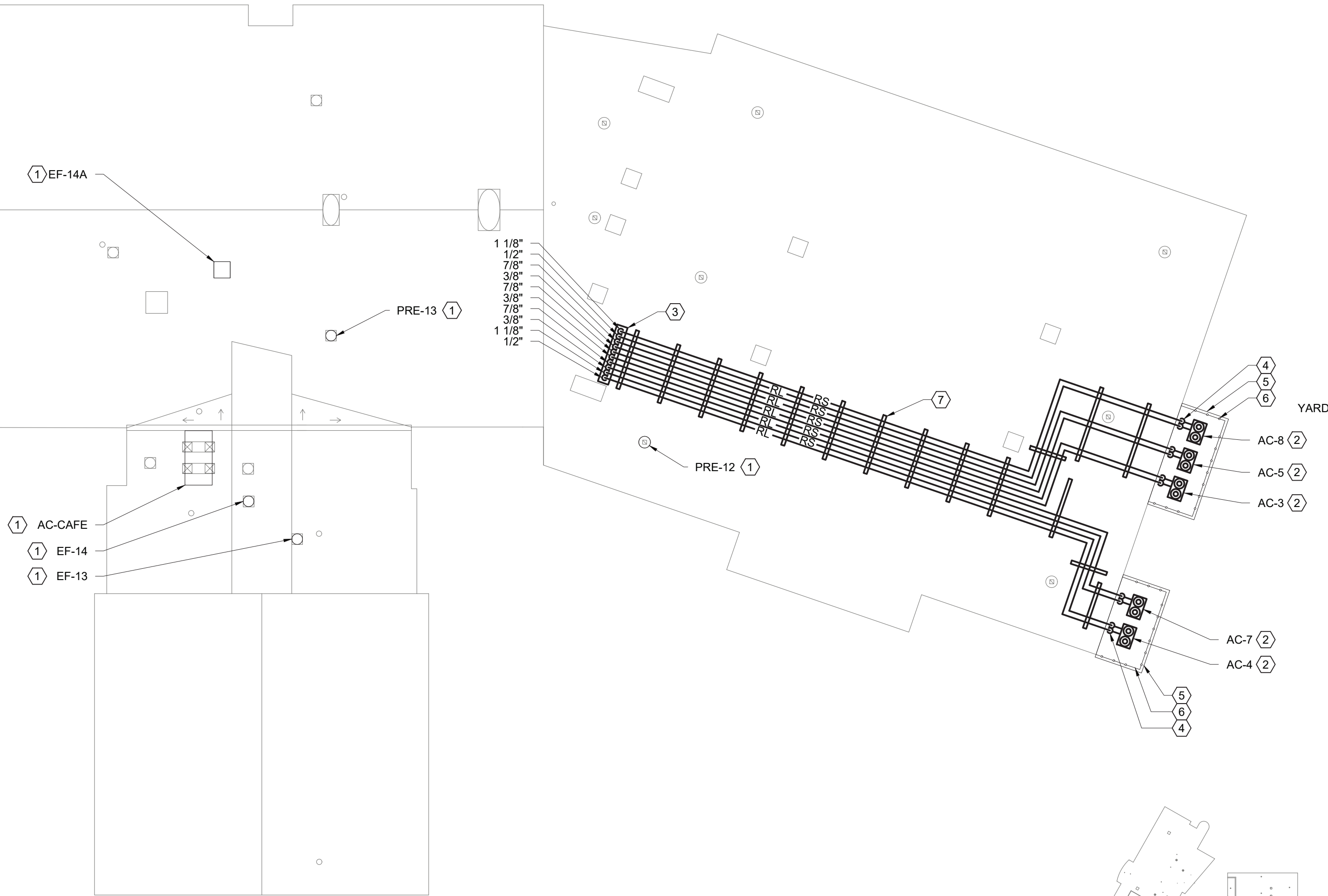
HSA MICHAEL SHILALE ARCHITECTS, L.L.P. 140 Park Avenue New City, NY 10958 Tel 845-798-5200 www.hsaarch.com
--

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Drawing Title
MECHANICAL ROOF INSTALLATION PLAN - 1

Drawing No.
WGES-M-110

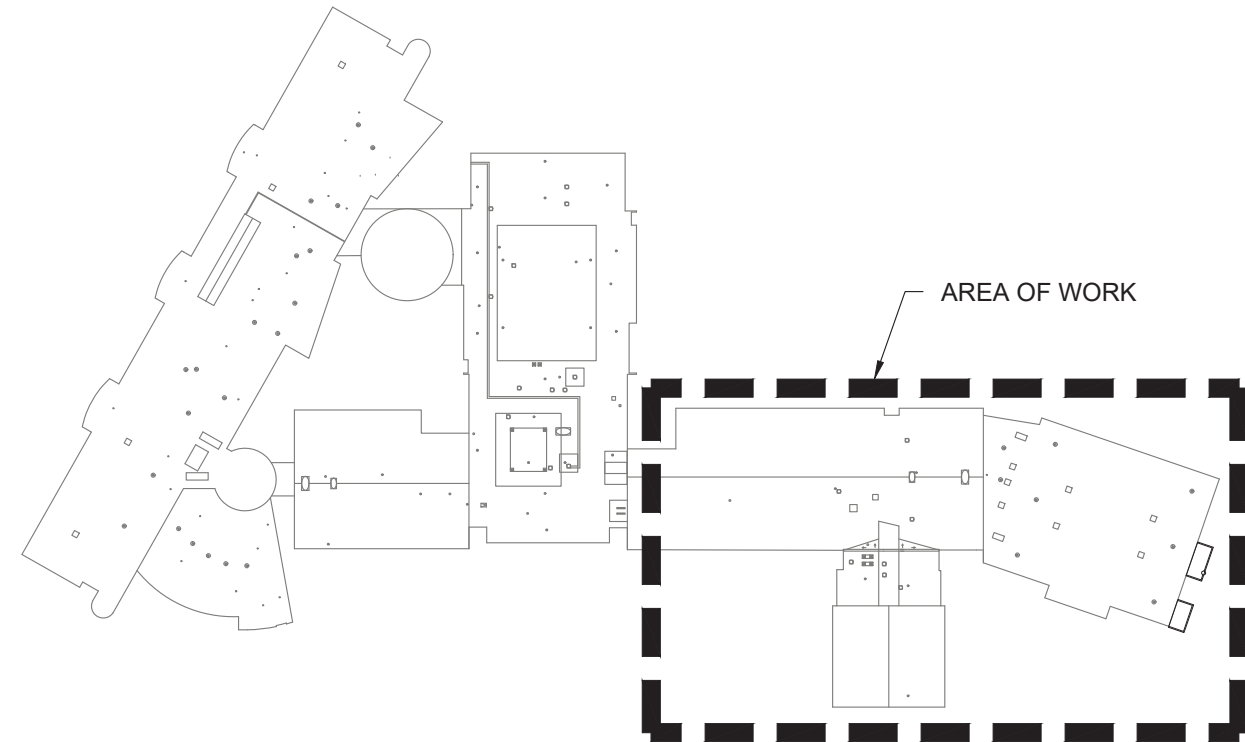
MATCHLINE SEE DRAWING WGES-M-110



1 ROOF LEVEL FLOOR PLAN INSTALLATION
SCALE: 1/16" = 1' - 0"

KEYED NOTES:

- EXISTING MECHANICAL EQUIPMENT. PROVIDE DIRECT DIGITAL CONTROLS INTEGRATED WITH THE BMS. REFER TO THE CONTROL DIAGRAMS FOR MORE DETAILS.
- PROVIDE SPLIT SYSTEM AIR CONDITIONING UNITS AS SHOWN.
- PROVIDE ROOF CURB WITH PIPE PORTAL WHERE REFRIGERANT PIPING RUNS DOWN THROUGH THE ROOF. PROVIDE WATERTIGHT PENETRATION COMPATIBLE WITH THE EXISTING ROOFING SYSTEM. SEE DRAWING WGES-M-109 FOR CONTINUATION.
- PROVIDE THREE (3) SETS 3/8" RL AND 7/8" RS AND TWO (2) SETS 1/2" RL AND 1-1/8" RS. INSTALL WITHIN LINESET COVER ALONG THE WALL AT 10'-0" AFFL. PAINT THE LINESET COVERS TO MATCH THE WALL IN A COLOR TO BE SELECTED BY THE OWNER.
- PROVIDE CONCRETE PAD AT GRADE TO SUPPORT AC UNITS. VERIFY THE ACTUAL DIMENSIONS AGAINST THE MANUFACTURER'S RECOMMENDED CLEARANCES.
- CHAIN LINK FENCE ENCLOSURE BY GC. VERIFY THE ACTUAL DIMENSIONS AGAINST THE MANUFACTURER'S RECOMMENDED CLEARANCES.
- PROVIDE REFRIGERANT PIPING ALONG ROOF WITH CURB SUPPORTS SPACED AT 8'-0" O.C. MAXIMUM. SUPPORTS SHALL BE COMPATIBLE WITH THE EXISTING ROOFING SYSTEM.



2 ROOF KEY PLAN
SCALE: NONE



PLAN NORTH

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Drawing Title
**MECHANICAL ROOF
INSTALLATION PLAN - 2**



UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
140 PARK AVENUE
NEW CITY, NY 10956
COUNTY OF ROCKLAND

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10961
Mechanical
Structural
Engineer

Drawn by MEP
Checked by PV
Project No. 42054
Scale AS NOTED
Date 09-14-23

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

Drawing No.
WGES-M-111



- ① PERFORM A HYDROSTATIC TEST ON THE EXISTING CHILLED WATER PIPING AT THE CRAWLSPACE AND SUBMIT FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF THE CHILLED WATER PIPING IN THIS WING. UPON COMPLETION OF THE WORK, PERFORM TESTING AND BALANCING OF THE COMPLETED SYSTEM AS PER THE SPECIFICATIONS.
- ② EX. 1 1/4" CHWS & R UP THROUGH FLOOR TO UNIT VENTILATOR ON FIRST FLOOR.
- ③ EX. 2" CHWS & R UP TO 2ND FLOOR UNIT VENTILATORS.

2 CRAWLSPACE KEY PLAN

SCALE: NONE



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Drawing Title
**MECHANICAL
CRAWLSPACE
INSTALLATION PLAN - 1**

Drawing No.

WGES-M-112

UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SRD# 50-02-01-06-0-030-016
153 STORES RD.
THIRLES, NY 10964
COUNTY OF ROCKLAND

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 202
SUFFERN, NY 10901

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 202
SUFFERN, NY 10901

MEP

Checked by

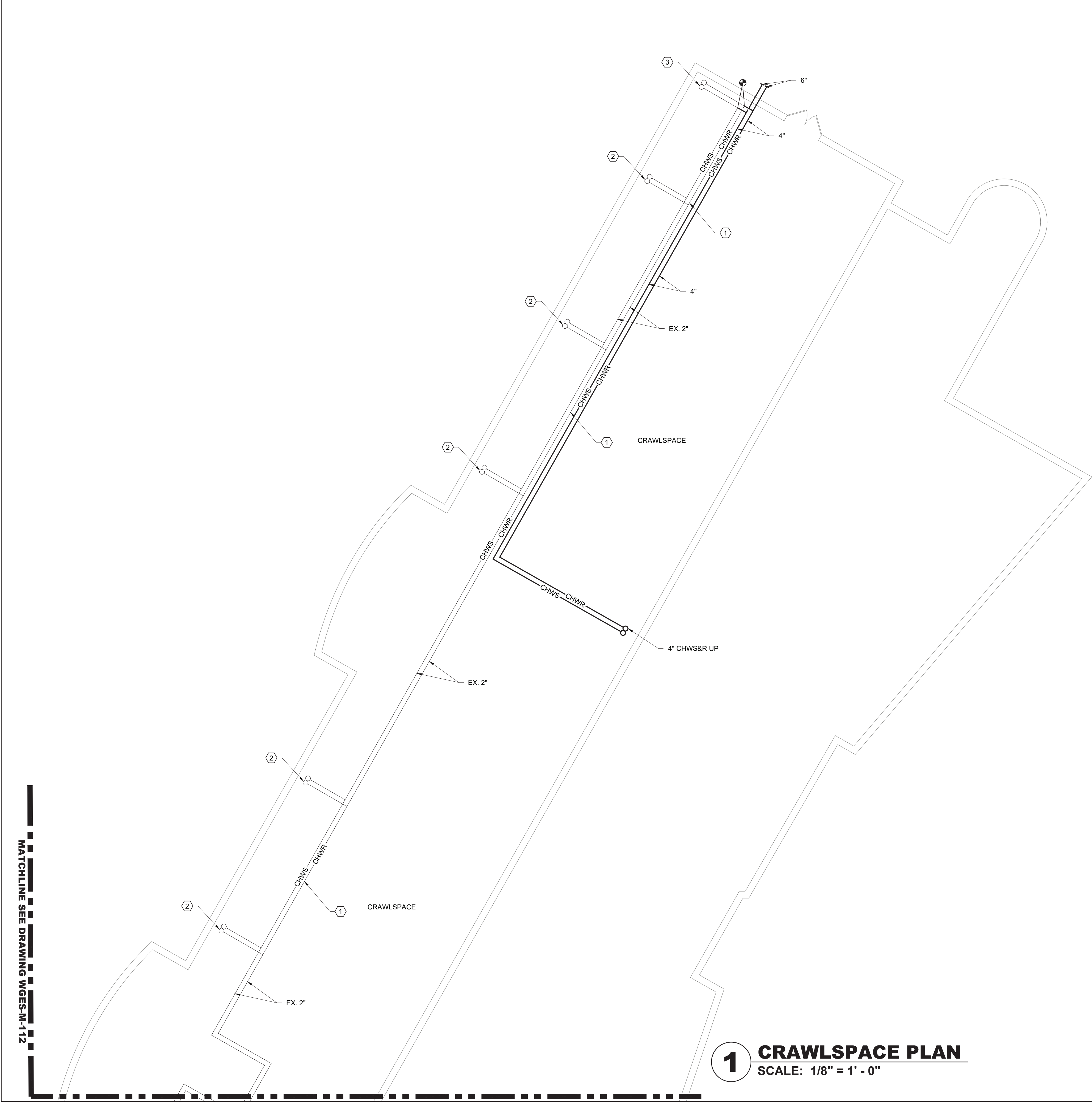
Project No.

Scale

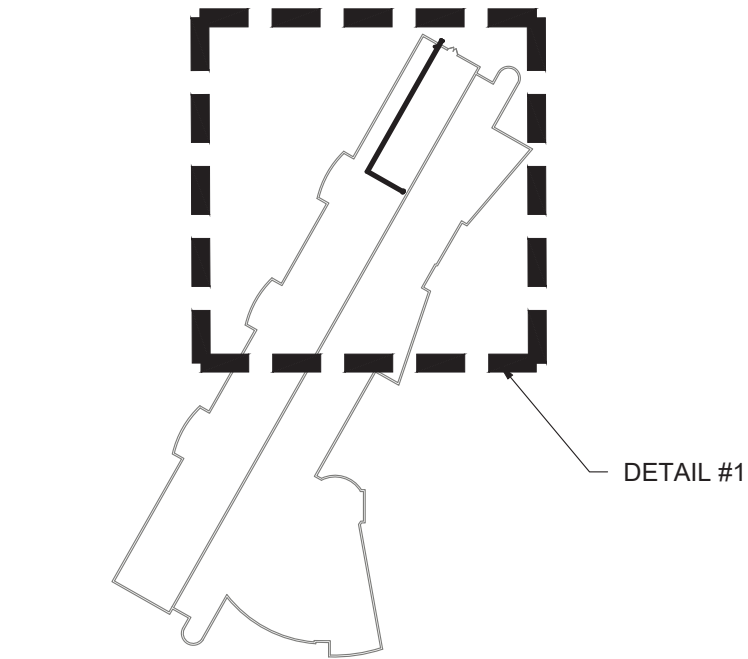
Date _____ AS NOTED _____

REG. EXP. DATE: 04-30-24

3	09-14-23	BIDDING DOCUMENTS	
2	06-09-23	SED ADDENDUM #1	
1	12-28-22	BIDDING DOCUMENTS	
No.	Date	Revisions	



1 CRAWLSPACE PLAN
SCALE: 1/8" = 1' - 0"



2 CRAWLSPACE KEY PLAN
SCALE: NONE



- KEYED NOTES:**
- ① PERFORM A HYDROSTATIC TEST ON THE EXISTING CHILLED WATER PIPING AT THE CRAWLSPACE AND SUBMIT FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF THE CHILLED WATER PIPING IN THIS WING. UPON COMPLETION OF THE WORK, PERFORM TESTING AND BALANCING OF THE COMPLETED SYSTEM AS PER THE SPECIFICATIONS.
 - ② EX. 1 1/4" CHWS & R UP THROUGH FLOOR TO UNIT VENTILATOR ON FIRST FLOOR.
 - ③ EX. 2" CHWS & R UP TO 2ND FLOOR UNIT VENTILATORS.

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Drawing Title
**MECHANICAL
CRAWLSPACE
INSTALLATION PLAN - 2**

Drawing No.
WGES-M-113

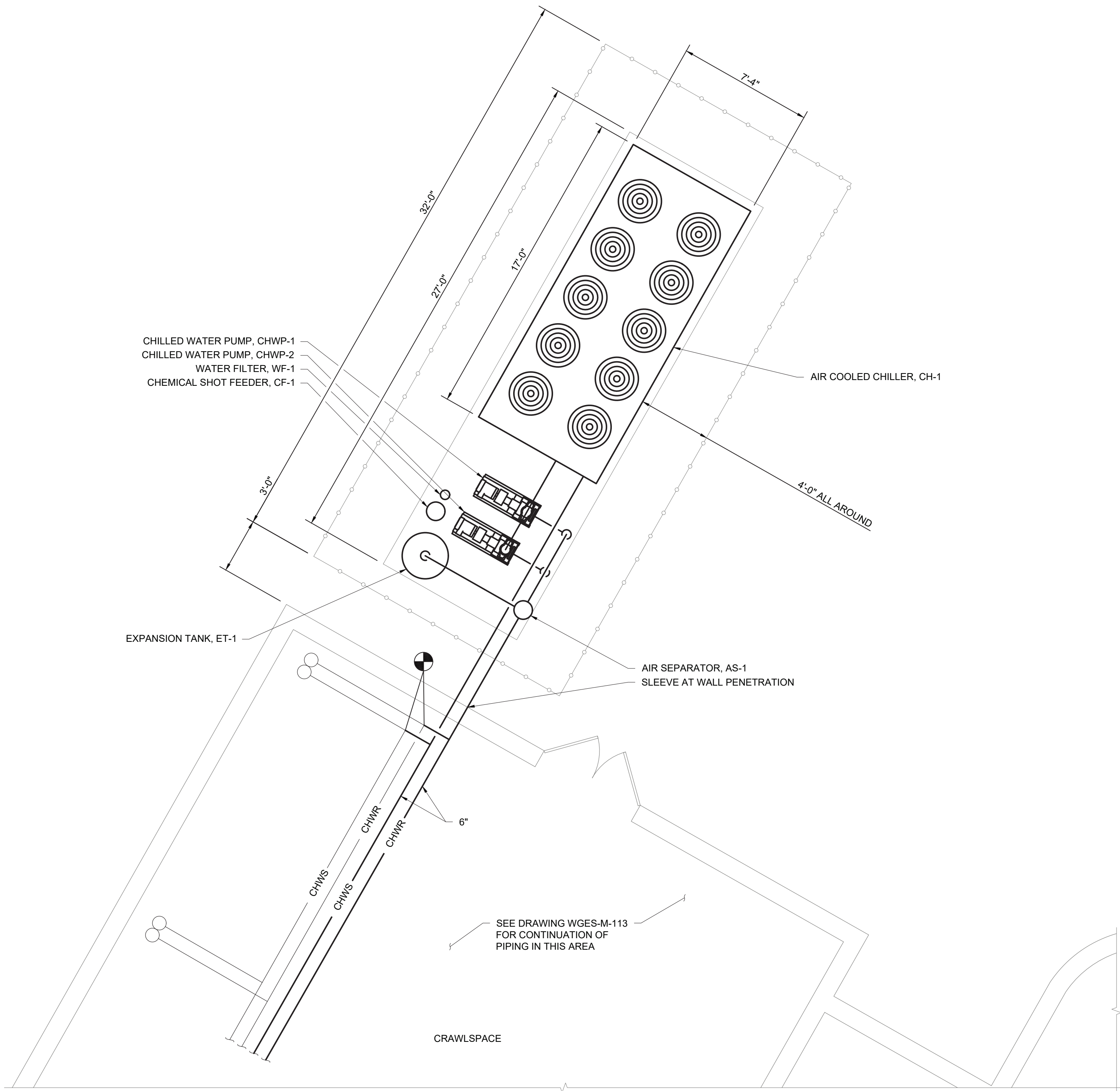
**UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL**
SED# 50-02-01-06-0-030-016
100 POND RD
THERESA, NY 10984
COUNTY OF ROCKLAND

Mechanical Electrical Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901
Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901

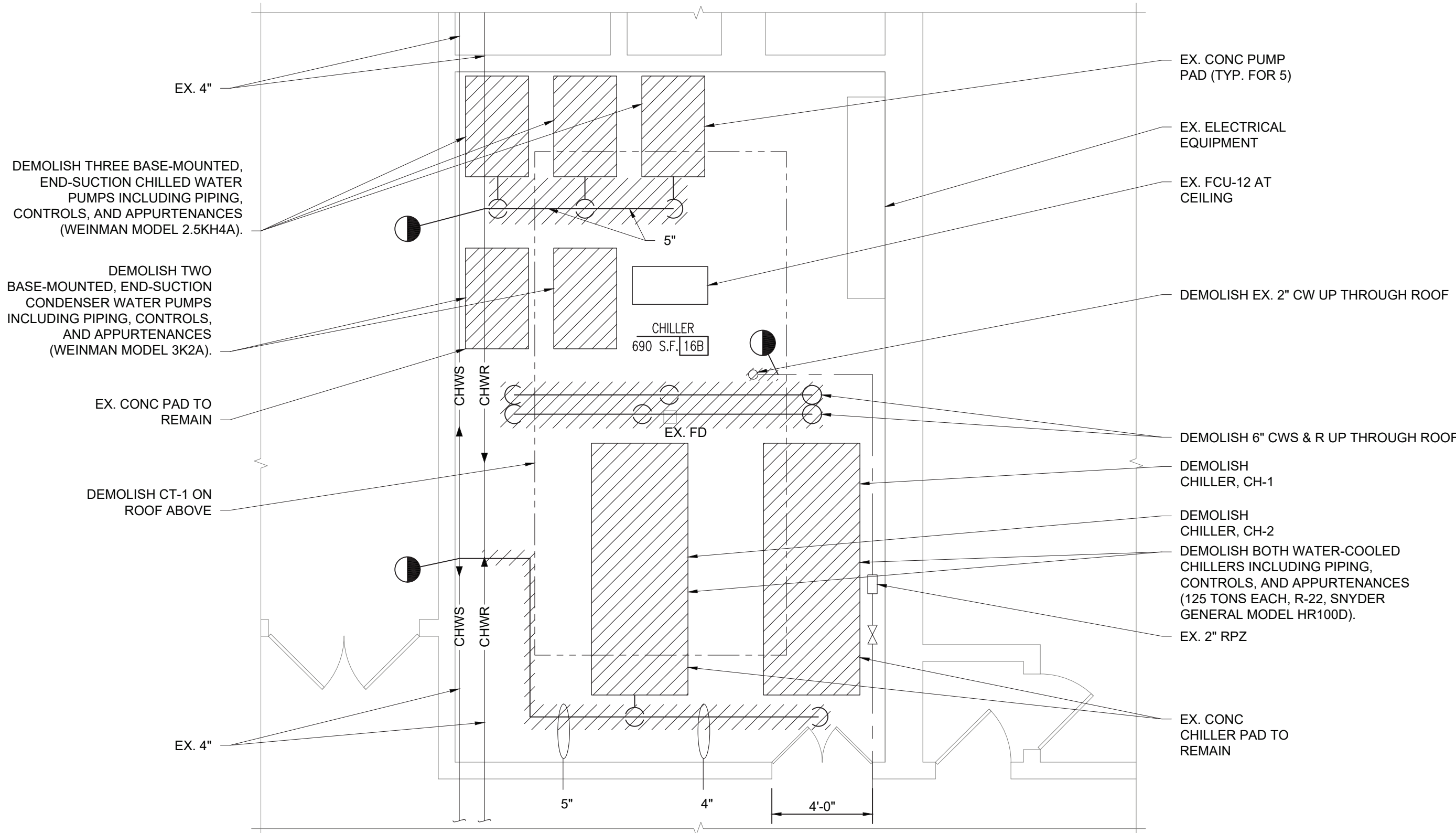
Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	AS NOTED
Date	09-14-23

REC. EXP. DATE: 04-30-24

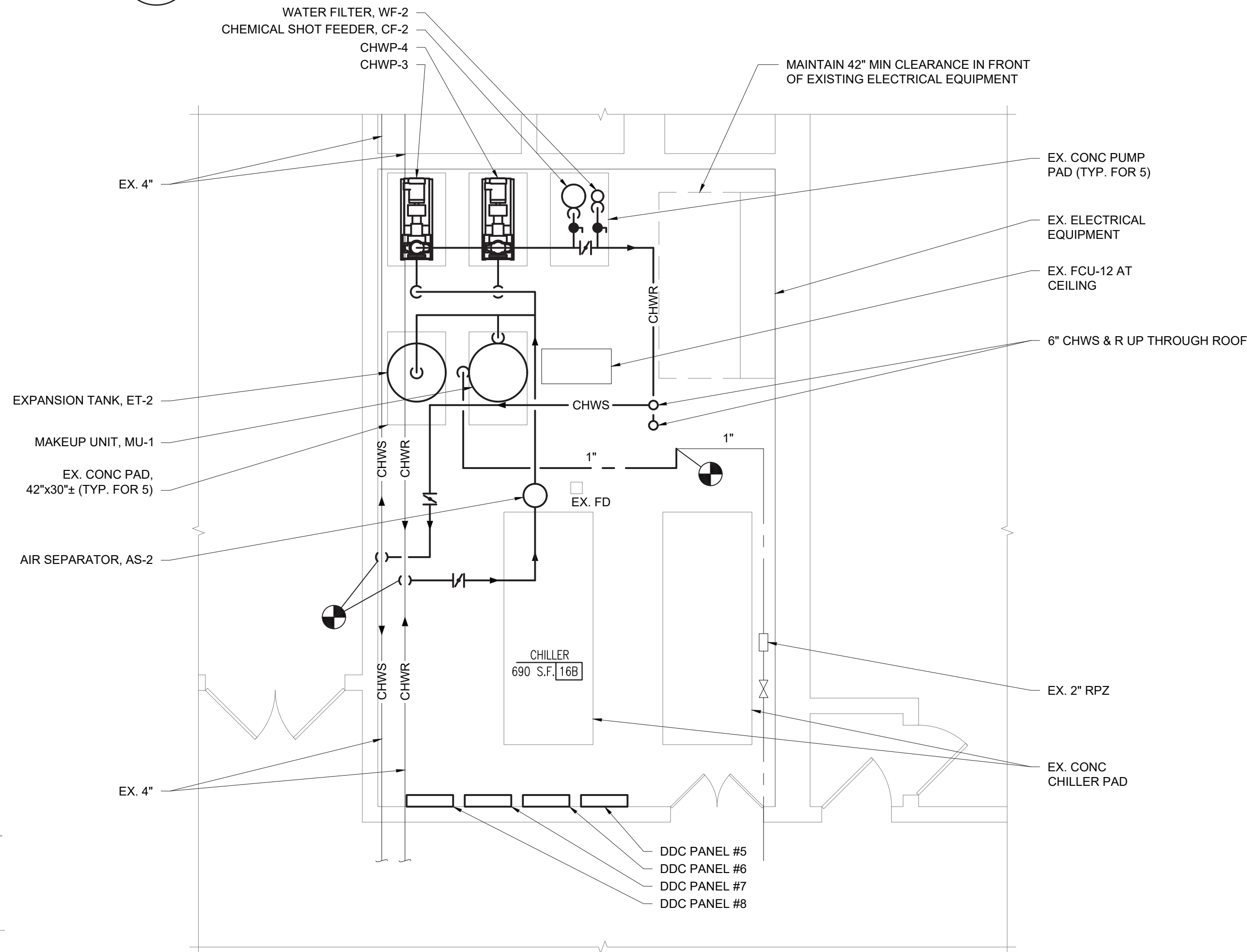
No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS



1 CHILLER ROOM ENLARGED PLAN
SCALE: 1/4" = 1' - 0"



2 CHILLER ROOM ENLARGED PLAN DEMOLITION
SCALE: 1/4" = 1' - 0"



3 CHILLER ROOM ENLARGED PLAN - INSTALLATION
SCALE: 1/4" = 1' - 0"



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Drawing Title
**MECHANICAL
ENLARGED
INSTALLATION PLANS**

Drawing No.

WGES-M-201

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUFFERN, NY 10901
Mechanical
Electrical
Engineer:

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUFFERN, NY 10901
Structural
Engineer:

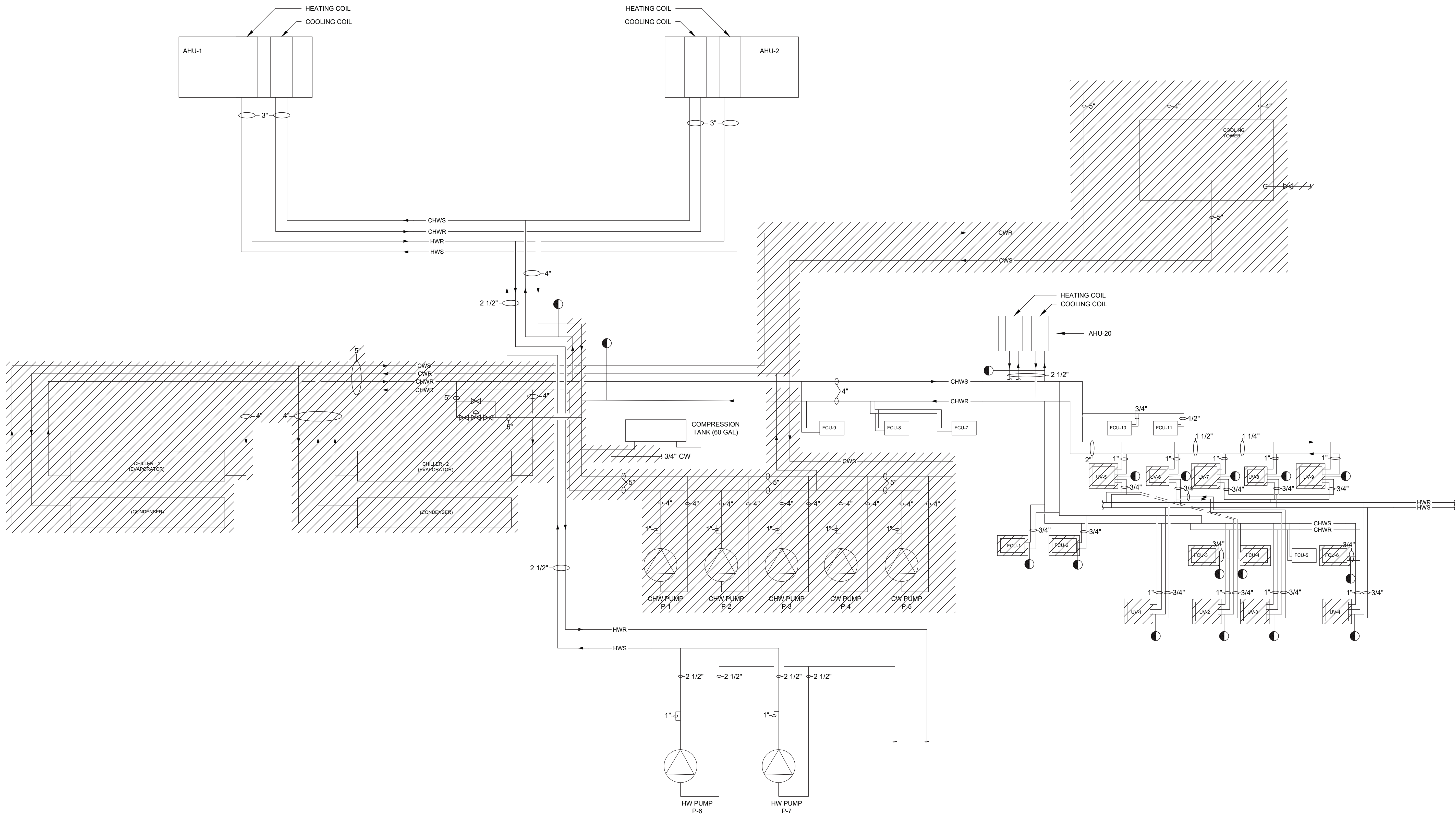
UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
145 SPRING RD
THERESA, NY 10984
COUNTY OF ROCKLAND

HSA
MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New City, NY 10956 Tel 845-798-9200
www.hsaarch.com

Drawn by MEP
Checked by PV
Project No. 42054
Scale AS NOTED
Date 09-14-23

REC. EXP. DATE: 04-30-24

Revisions	
No.	Date
3	09-14-23 BIDDING DOCUMENTS
2	06-09-23 SED ADDENDUM #1
1	12-28-22 BIDDING DOCUMENTS



1 CHILLED WATER SYSTEM PIPING DIAGRAM - ORIGINAL BUILDING - DEMOLITION
SCALE: N.T.S.

3	09-14-23	BIDDING DOCUMENTS			
2	06-09-23	SED ADDENDUM #1			
1	12-28-22	BIDDING DOCUMENTS			
No.	Date	Revisions			

REC. EXP. DATE: 04-30-24

Drawn by	NY
Checked by	MP
Project No.	42054
Scale	NTS
Date	09-14-23

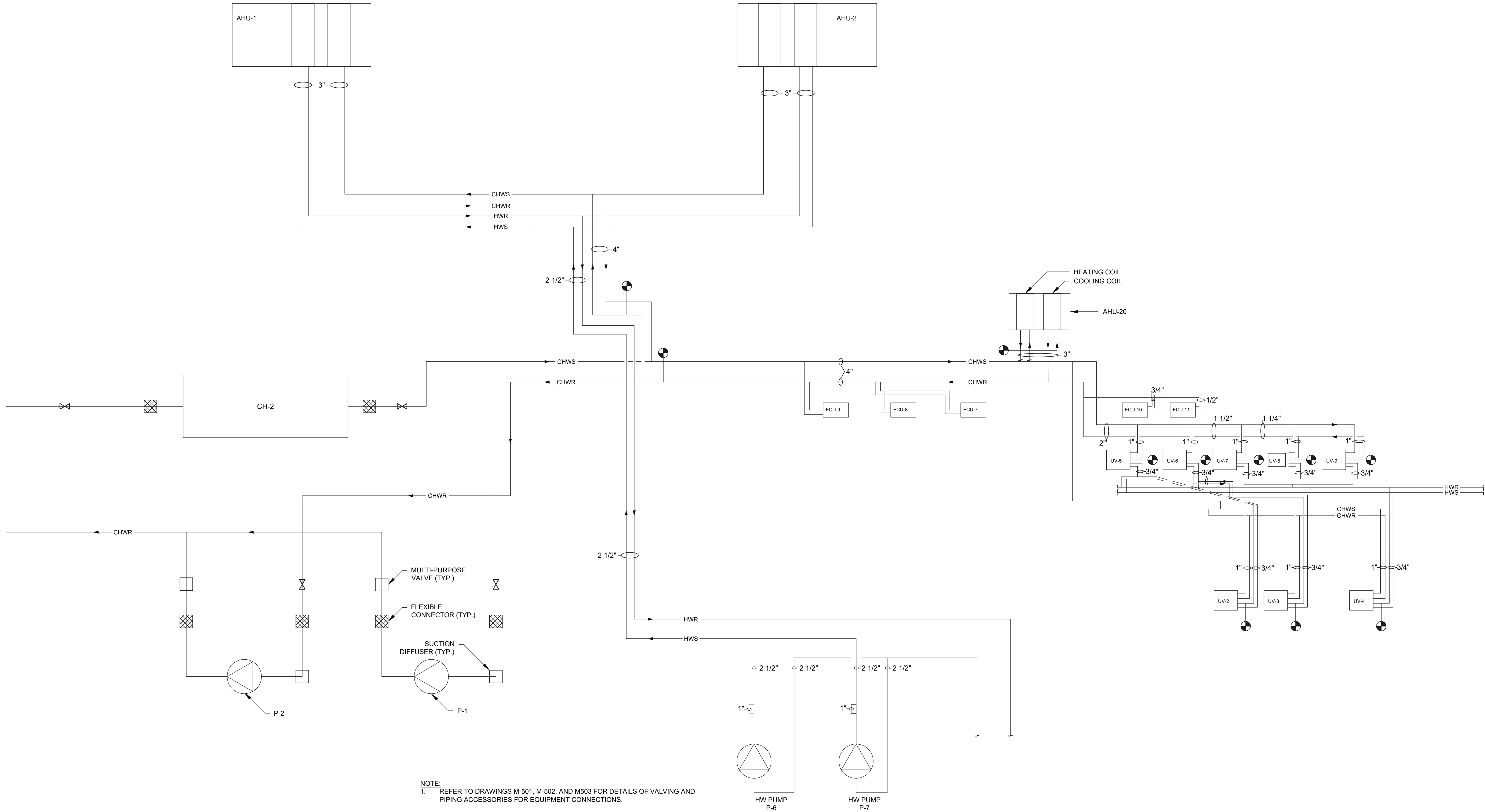
GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUFFERN, NY 10901
Mechanical Electrical Engineer:	Structural Engineer:

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL
SED# 50-02-01-06-0-030-016
100 ROUTE 90
THERESA, NY 10984
COUNTY OF ROCKLAND

MSA
MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New City, NY 10956 Tel 845-708-9200
www.msaarch.com

Drawing Title HVAC PIPING DIAGRAM - DEMOLITION	Drawing No. WGES-M-301
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NOTE:
1. REFER TO DRAWINGS M-501, M-502, AND M503 FOR DETAILS OF VALVING AND PIPING ACCESSORIES FOR EQUIPMENT CONNECTIONS.

1 CHILLED WATER SYSTEM PIPING DIAGRAM - ORIGINAL BUILDING - INSTALLATION
SCALE: N.T.S.

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Drawing Title
**HVAC PIPING DIAGRAM
- INSTALLATION**



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140 Park Avenue New City, NY 10956 Tel 845-708-9200
www.shilale.com

UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SDD# 50-02-01-06-0-030-016
140 PARK AVENUE
NEW CITY, NY 10956
COUNTY OF ROCKLAND

Mechanical
Engineer:

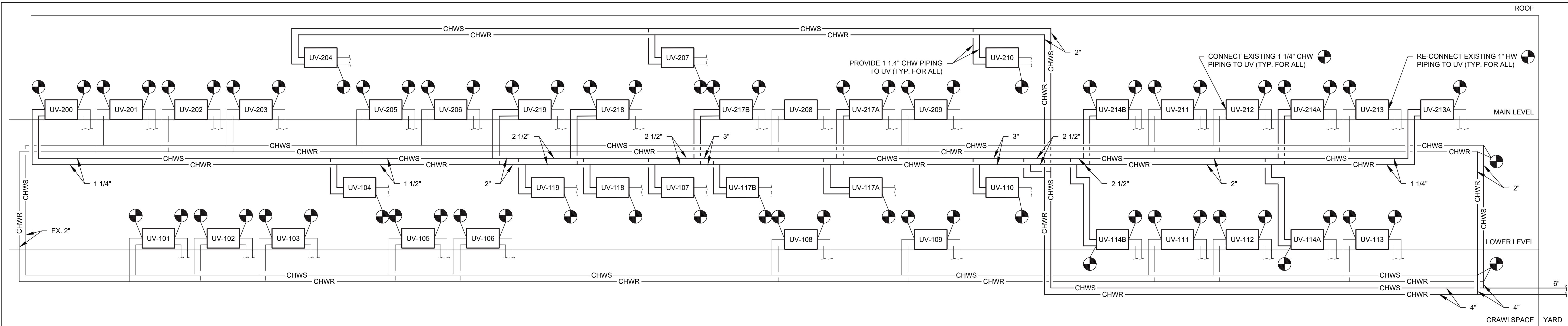
GREENMAN
PEDERSEN, INC
2 EXECUTIVE BOULEVARD
SUITE 200
SYRACUSE, NY 13201

Structural
Engineer:

GREENMAN
PEDERSEN, INC
2 EXECUTIVE BOULEVARD
SUITE 200
SYRACUSE, NY 13201

Drawn by NY
Checked by MP
Project No. 42054
Scale NTS
Date 09-14-23
REC. EXP. DATE: 04-30-24

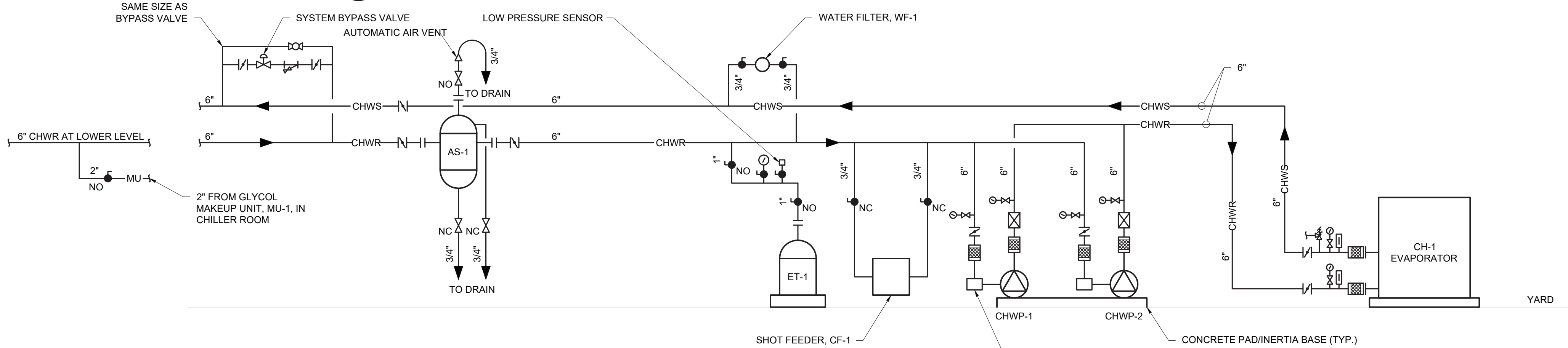
No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS



- NOTES:
- CONDENSATE DRAIN AND SOME HOT WATER PIPING ARE NOT SHOWN FOR CLARITY. REFER TO THE PLANS FOR THE COMPLETE LAYOUT.
 - THE MINIMUM SIZE FOR CHILLED WATER PIPING IS 1 1/4". REFER TO THE PIPE SIZING SCHEDULES FOR ALL OTHER SIZES NOT SPECIFICALLY SHOWN HERE. VERIFY IN FIELD ALL SIZES FOR EXISTING PIPING PRIOR TO FABRICATION.
 - FOR VALVES AND ACCESSORIES AT UNIT VENTILATORS, SEE DETAILS ON M-503.

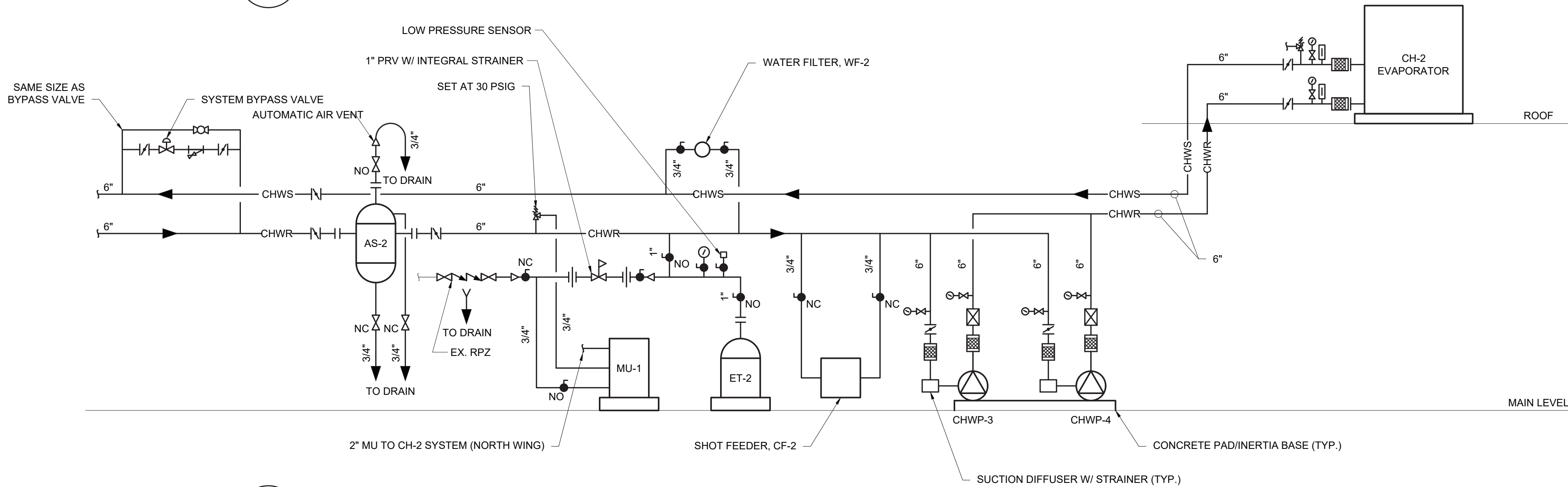
1 CHILLED WATER SYSTEM PIPING DIAGRAM - NORTH WING - INSTALLATION

SCALE: N.T.S.



2 CHILLER CH-1 PIPING DIAGRAM - NORTH WING - INSTALLATION

SCALE: N.T.S.



3 CHILLER CH-2 PIPING DIAGRAM - INSTALLATION

SCALE: N.T.S.

Revisions	
No.	Date
3	09-14-23 BIDDING DOCUMENTS
2	06-09-23 SED ADDENDUM #1
1	12-28-22 BIDDING DOCUMENTS

REC. EXP. DATE: 04-30-24

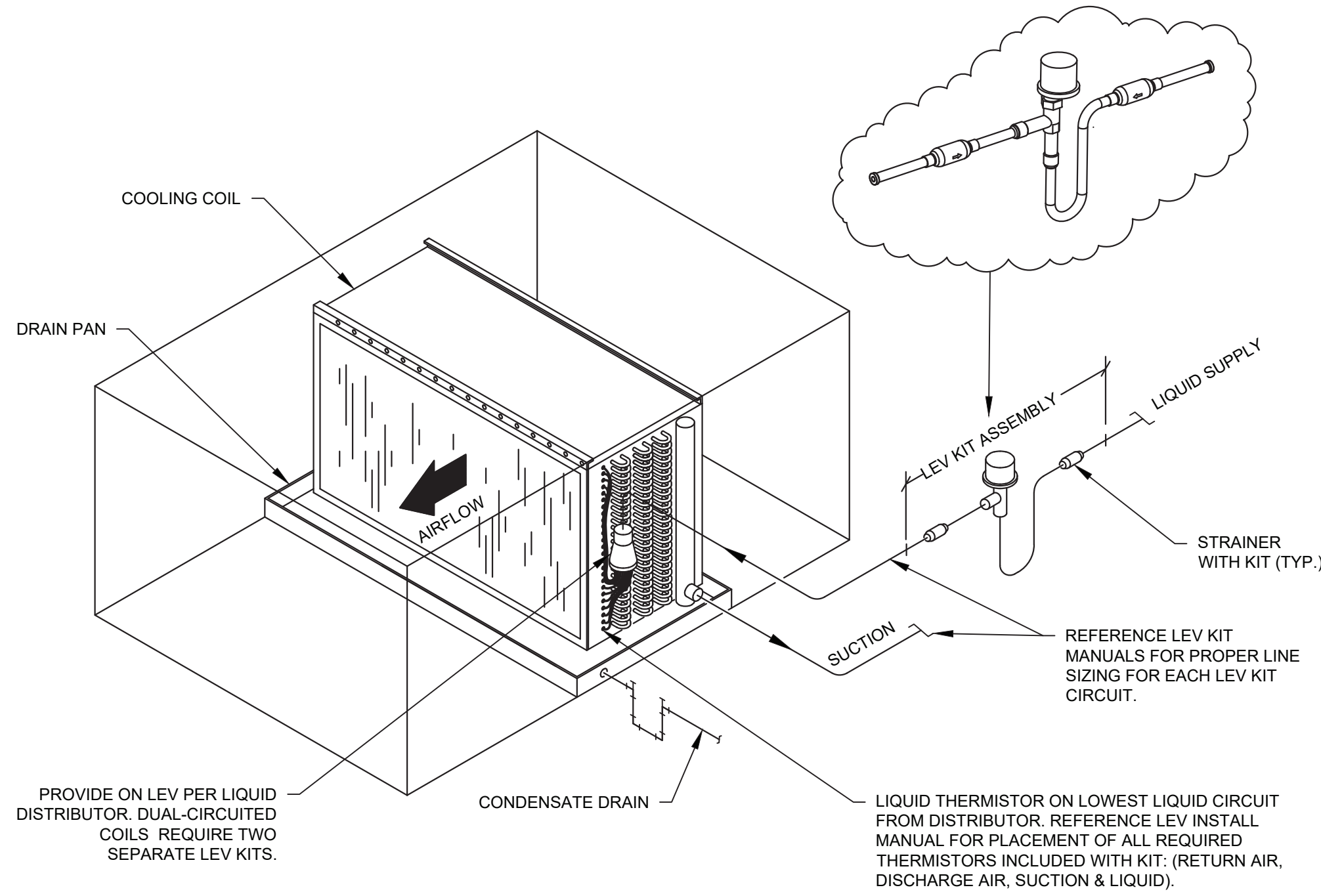
Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	NTS
Date	09-14-23

GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10961	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10961
Mechanical Electrical Engineer:	Structural Engineer:

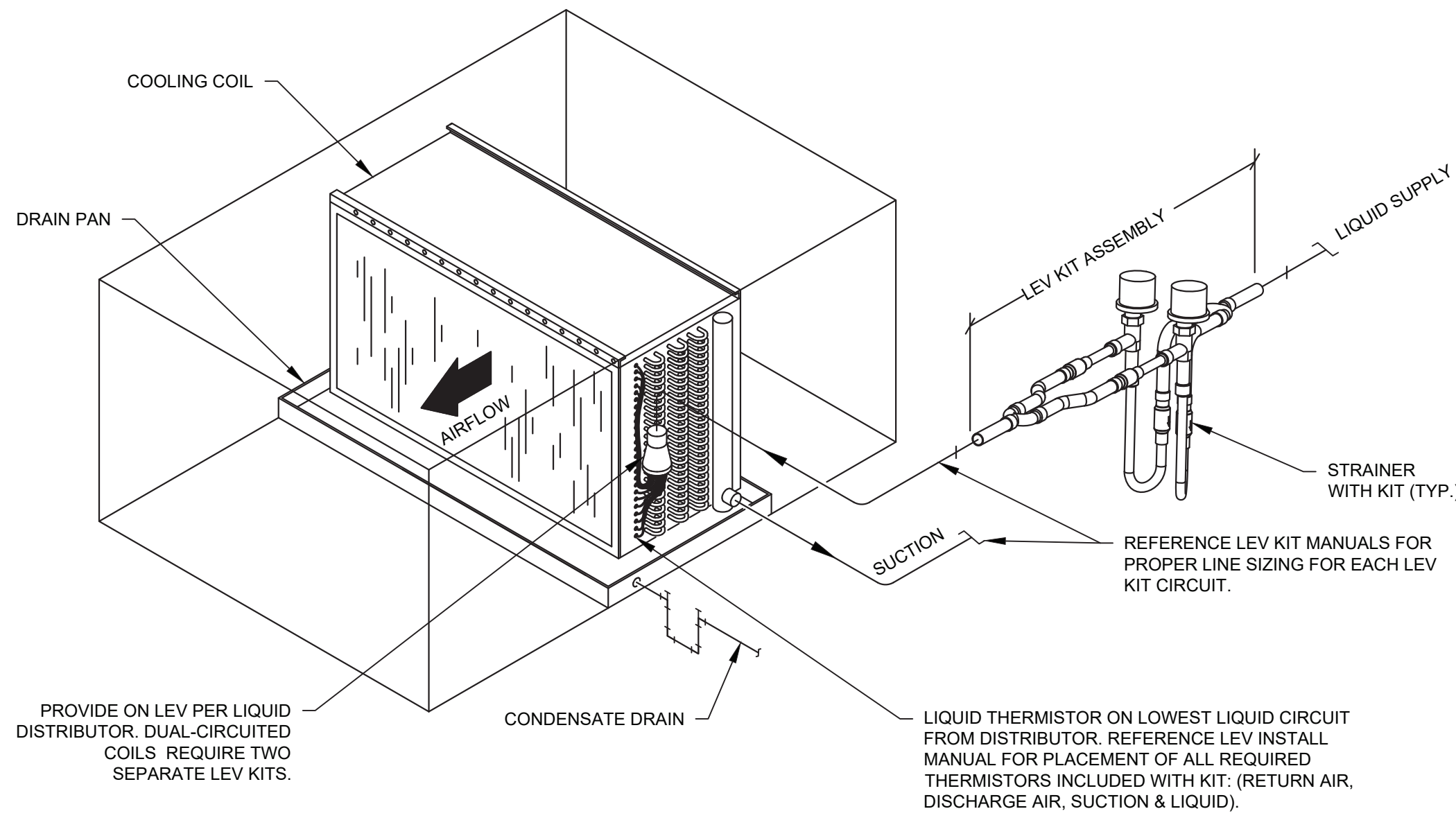
UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SED# 50-02-01-06-0-030-016 140 PARK AVENUE NEW CITY, NY 10956 TEL 845-708-9200 WWW.SHIALE.COM	COUNTY OF ROCKLAND
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MSA MICHAEL SHIALE ARCHITECTS, LLP 140 PARK AVENUE NEW CITY, NY 10956 TEL 845-708-9200 WWW.SHIALE.COM
--

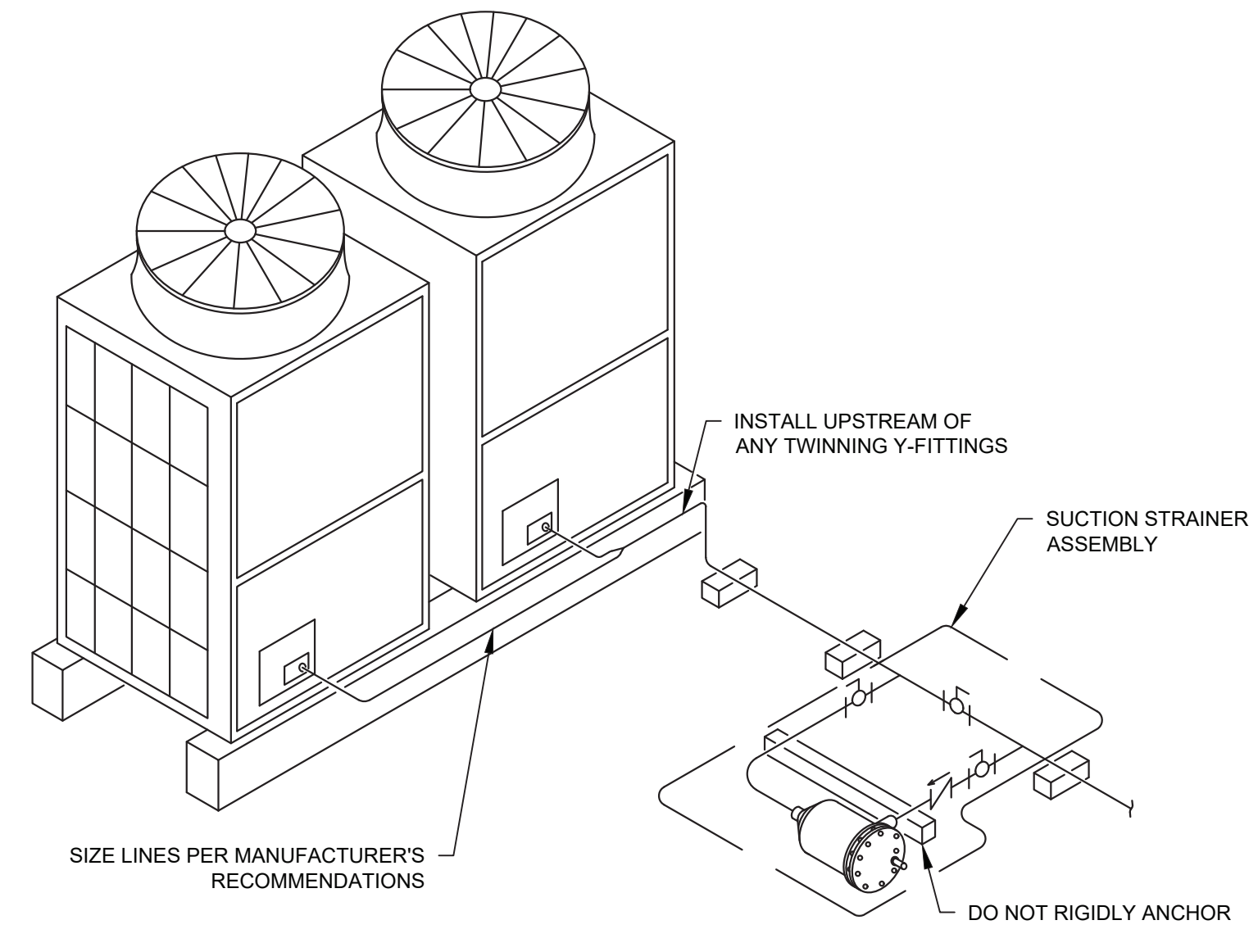
Copyright, MICHAEL SHIALE ARCHITECTS, ALL RIGHTS RESERVED. Drawing Title CHILLER PIPING DIAGRAMS	Drawing No. WGES-M-303
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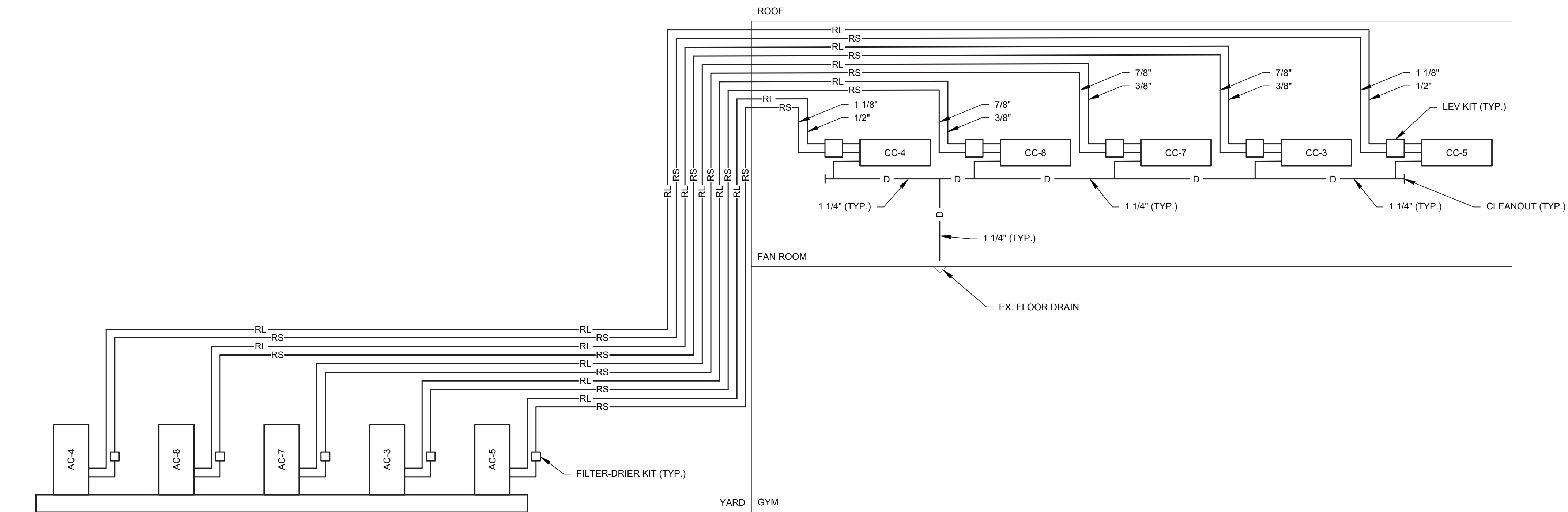
2 DX COOLING COIL PIPING - CC-3, CC-7, AND CC-8
SCALE: N.T.S.



3 DX COOLING COIL PIPING - CC-4 & CC-5
SCALE: N.T.S.



4 PIPING AT AC-3, AC-4, AC-5, AC-7, & AC-8
SCALE: N.T.S.



- NOTE:
1. REFRIGERANT PIPE SIZES ARE SHOWN HERE FOR REFERENCE ONLY. PIPE SIZES SHALL BE CALCULATED BY THE VRF SYSTEM MANUFACTURER BASED ON THE ACTUAL LAYOUT, AND THE MANUFACTURER'S EQUIPMENT AND PIPING SELECTIONS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION.
 2. RUN CONDENSATE PIPING AS PER THE AHU MANUFACTURER'S RECOMMENDATIONS. TERMINATE AT THE NEAREST FLOOR DRAIN OR CONNECT TO THE SANITARY DRAINAGE SYSTEM WITH AN AIR GAP FITTING UNLESS OTHERWISE NOTED.

1 REFRIGERANT PIPING DIAGRAM
SCALE: N.T.S.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REG. EXP. DATE: 04-30-24

Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	NTS
Date	09-14-23

GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10961	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10961
Mechanical Structural Engineer	Structural Engineer

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SED# 50-02-01-06-0-030-016 140 PARK AVENUE NEW CITY, NY 10956 TEL 845-708-9200 WWW.SHILALE.COM	COUNTY OF ROCKLAND TOWN OF TOWN
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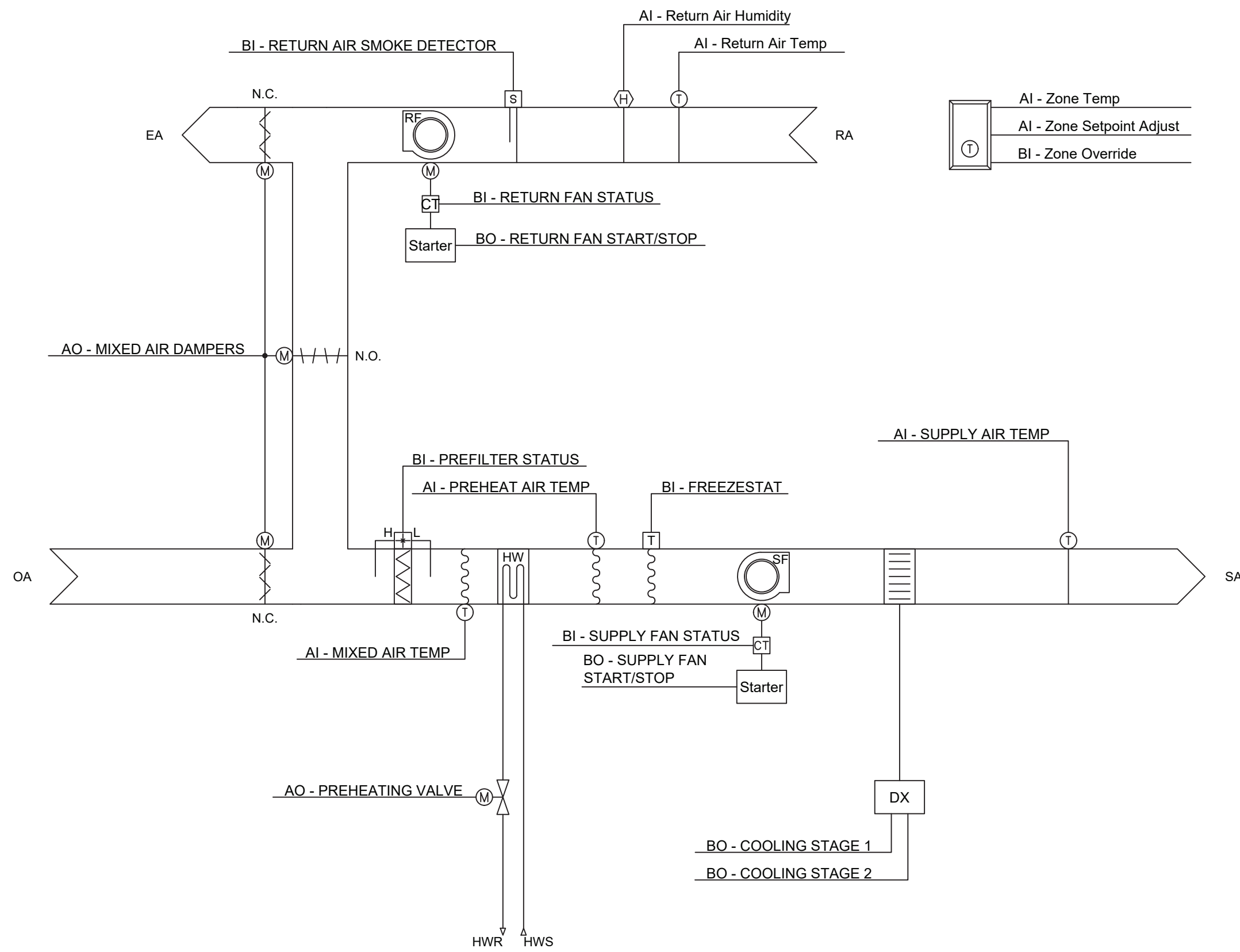
MSA MICHAEL SHILALE ARCHITECTS, LLP 140 Park Avenue New City, NY 10956 Tel 845-708-9200 www.shilale.com

Drawing Title REFRIGERANT PIPING DIAGRAMS	Drawing No. WGES-M-304
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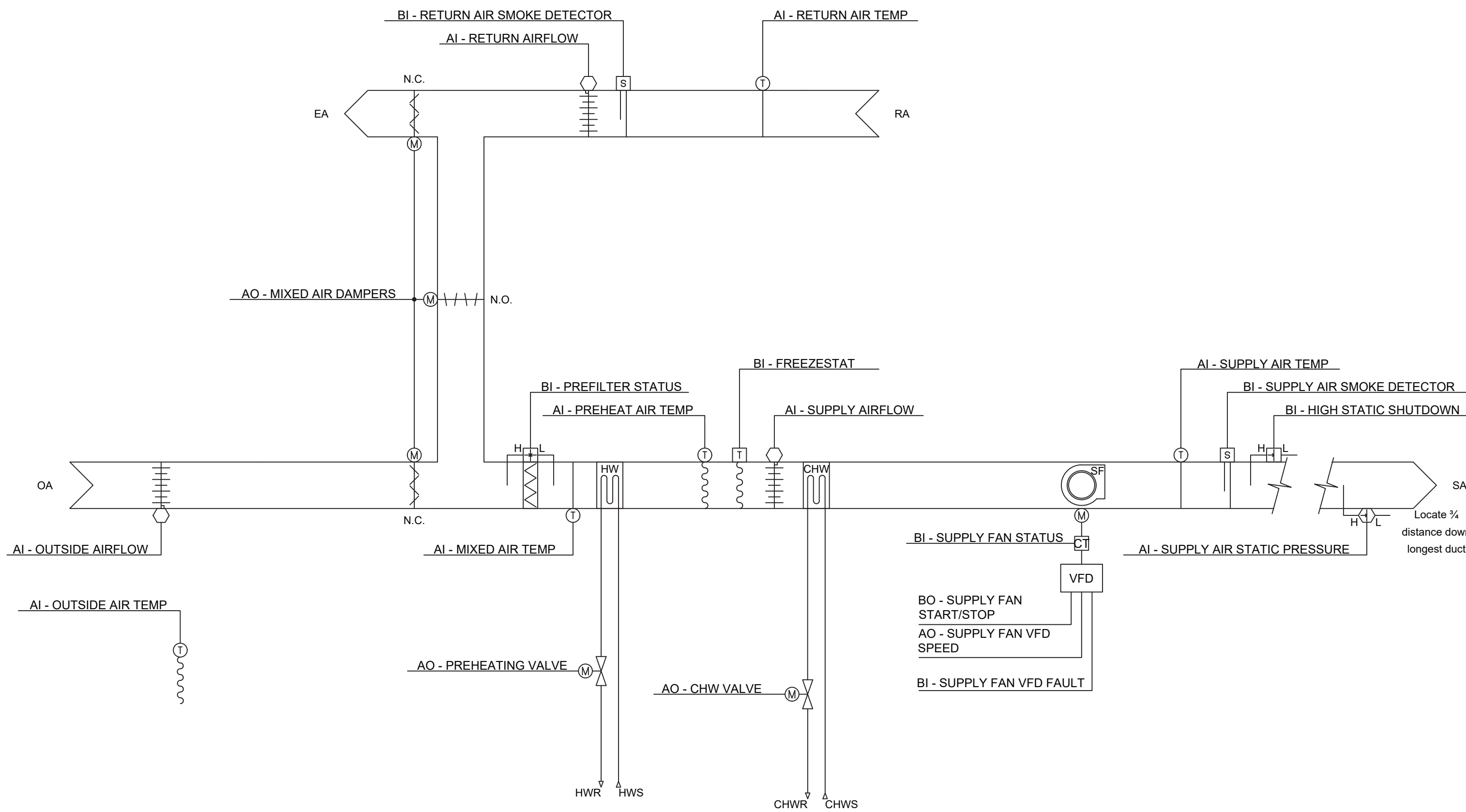
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Drawing No. **WGES-M-401**



1 AIR HANDLING UNIT CONTROL DIAGRAM - DX COOLING
SCALE: NONE



2 AIR HANDLING UNIT CONTROL DIAGRAM - CHW COOLING
SCALE: NONE

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Drawing Title
CONTROL DIAGRAMS -

Drawing No.

WGES-M-402

UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SDD# 50-02-01-06-0-030-016
140 PARK AVENUE NEW CITY, NY 10956 Tel 845-708-9200
www.shilale.com
THERMAL, NY 10984
COUNTY OF ROCKLAND

MSA
MICHAEL SHILALE ARCHITECTS, LLP
140 Park Avenue New City, NY 10956 Tel 845-708-9200
www.shilale.com

Mechanical
Electrical
Engineer:

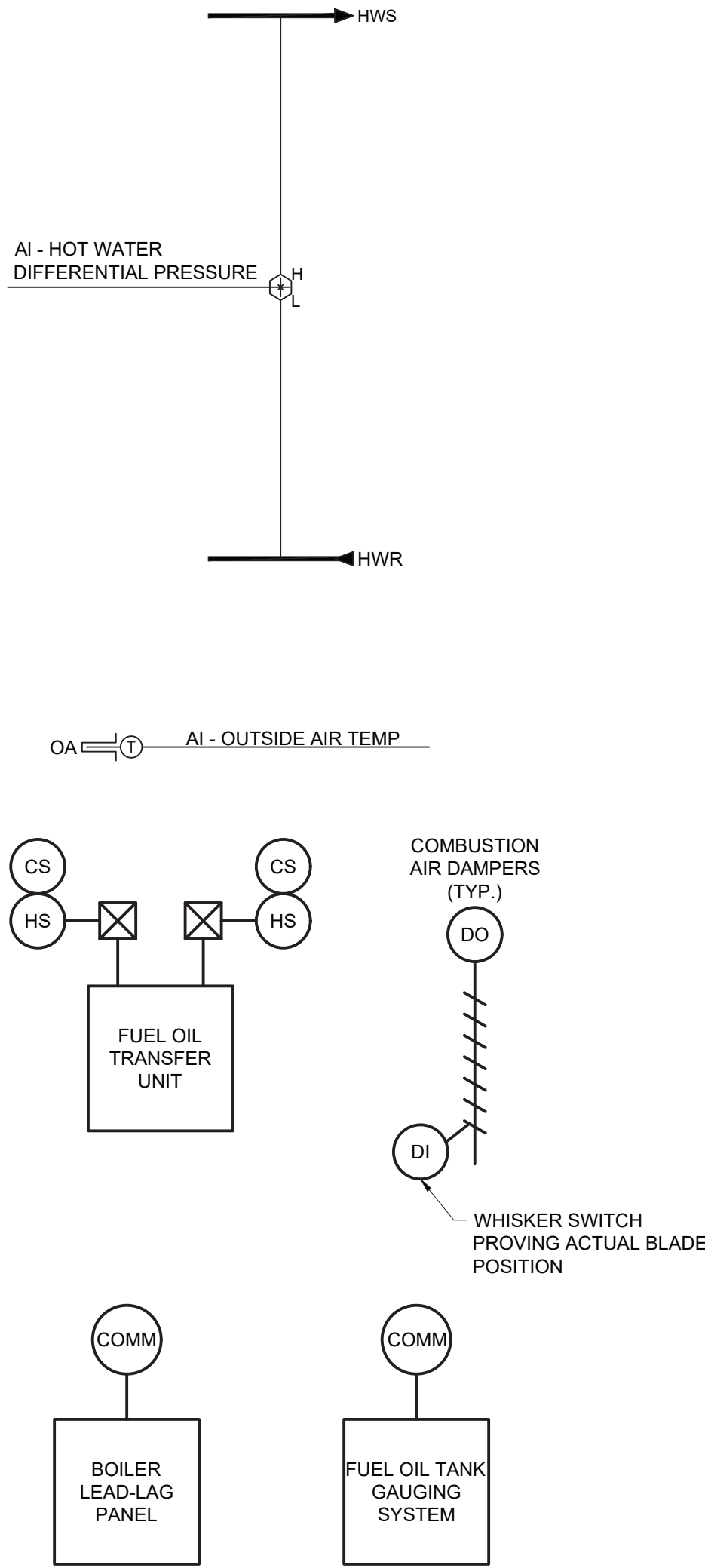
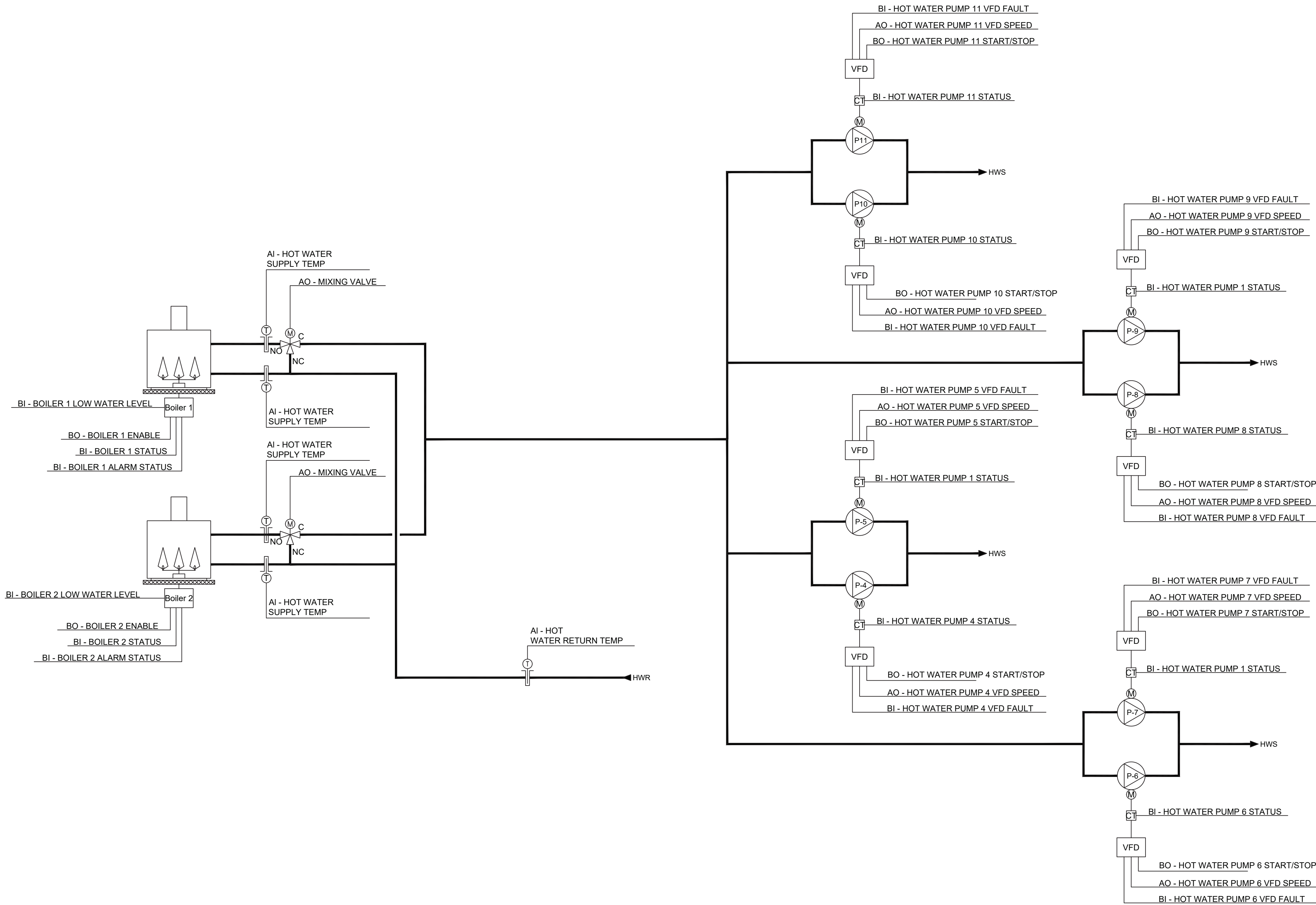
**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10901

Structural
Engineer:

**GREENMAN
PEDERSEN, INC**
2 EXECUTIVE BOULEVARD
SUITE 200
SUDBURY, NY 10901

Drawn by MEP
Checked by PV
Project No. 42054
Scale NTS
Date 09-14-23
REC. EXP. DATE: 04-30-24

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS



1 HOT WATER BOILER SYSTEM CONTROL SCHEMATIC
SCALE: NTS

3	09-14-23	BIDDING DOCUMENTS			
2	06-09-23	SED ADDENDUM #1			
1	12-28-22	BIDDING DOCUMENTS			
No.	Date	Revisions			

REC. EXP. DATE: 04-30-24

Drawn by	MEP
Checked by	PV
Project No.	42054
Scale	NTS
Date	09-14-23

GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901
Mechanical Electrical Engineer:	Structural Engineer:

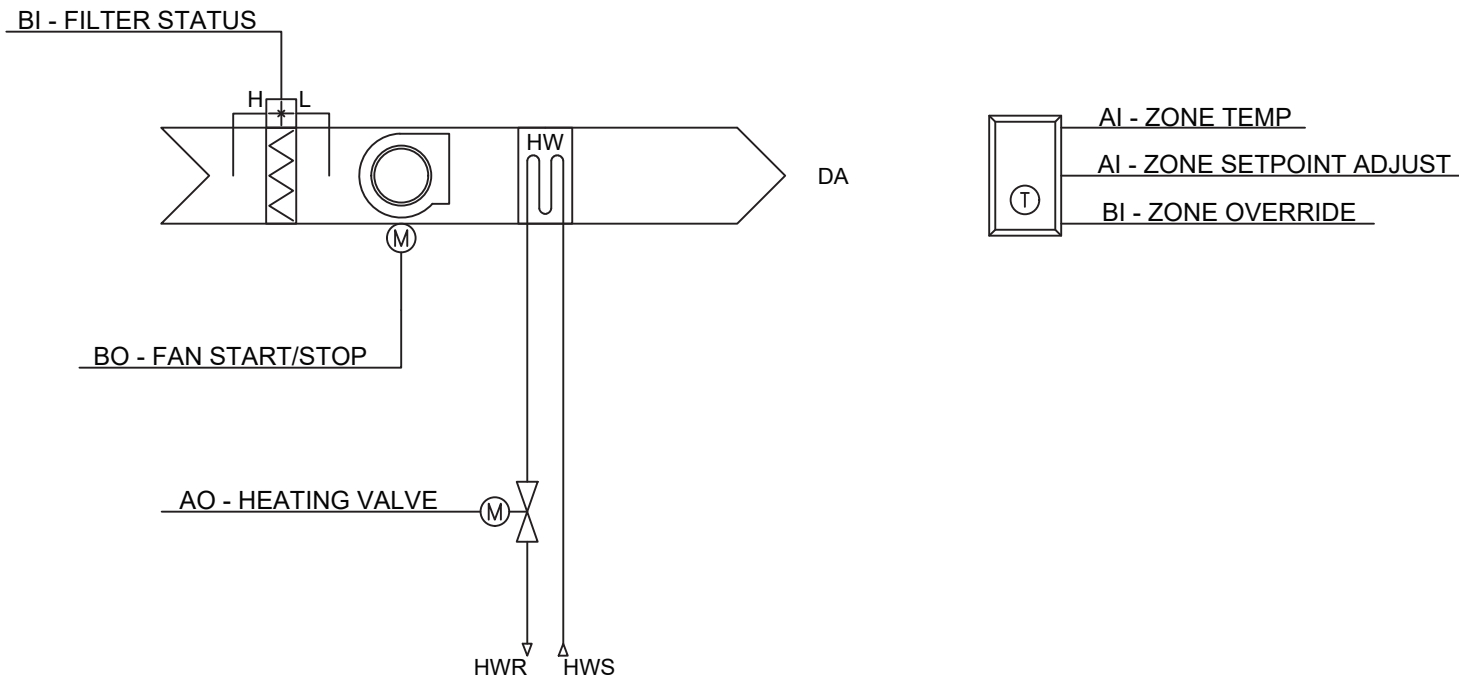
UNIVENT REPLACEMENT
AT
WILLOW GROVE
ELEMENTARY SCHOOL
SDD# 50-02-01-06-0-030-016
140 PARK AVENUE NEW CITY, NY 10956 Tel 845-708-9200
www.shilale.com
THERMAL, NY 10984

MICHAEL SHILALE ARCHITECTS, LLP
140 Park Avenue New City, NY 10956 Tel 845-708-9200
www.shilale.com

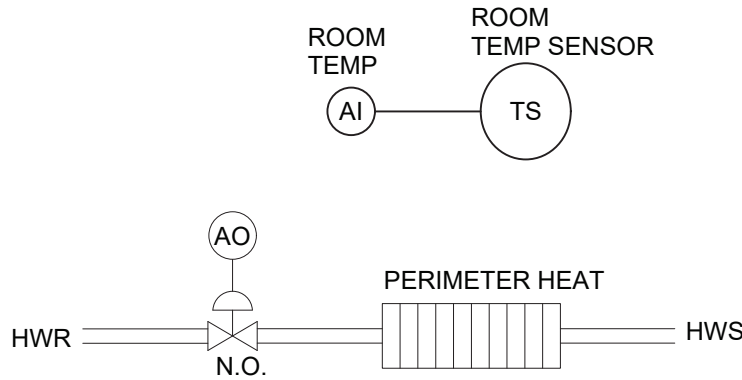
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Drawing Title
CONTROL DIAGRAMS - 3

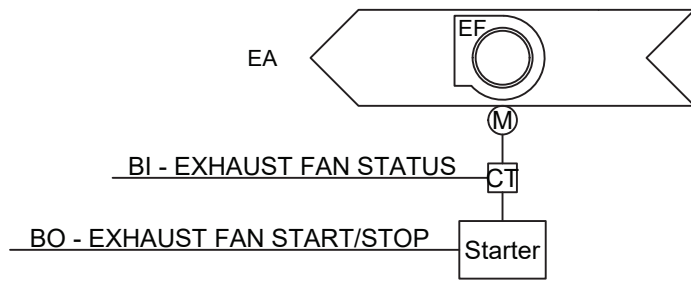
Drawing No.
WGES-M-403



1 CABINET HEATER CONTROL DIAGRAM
SCALE: NONE



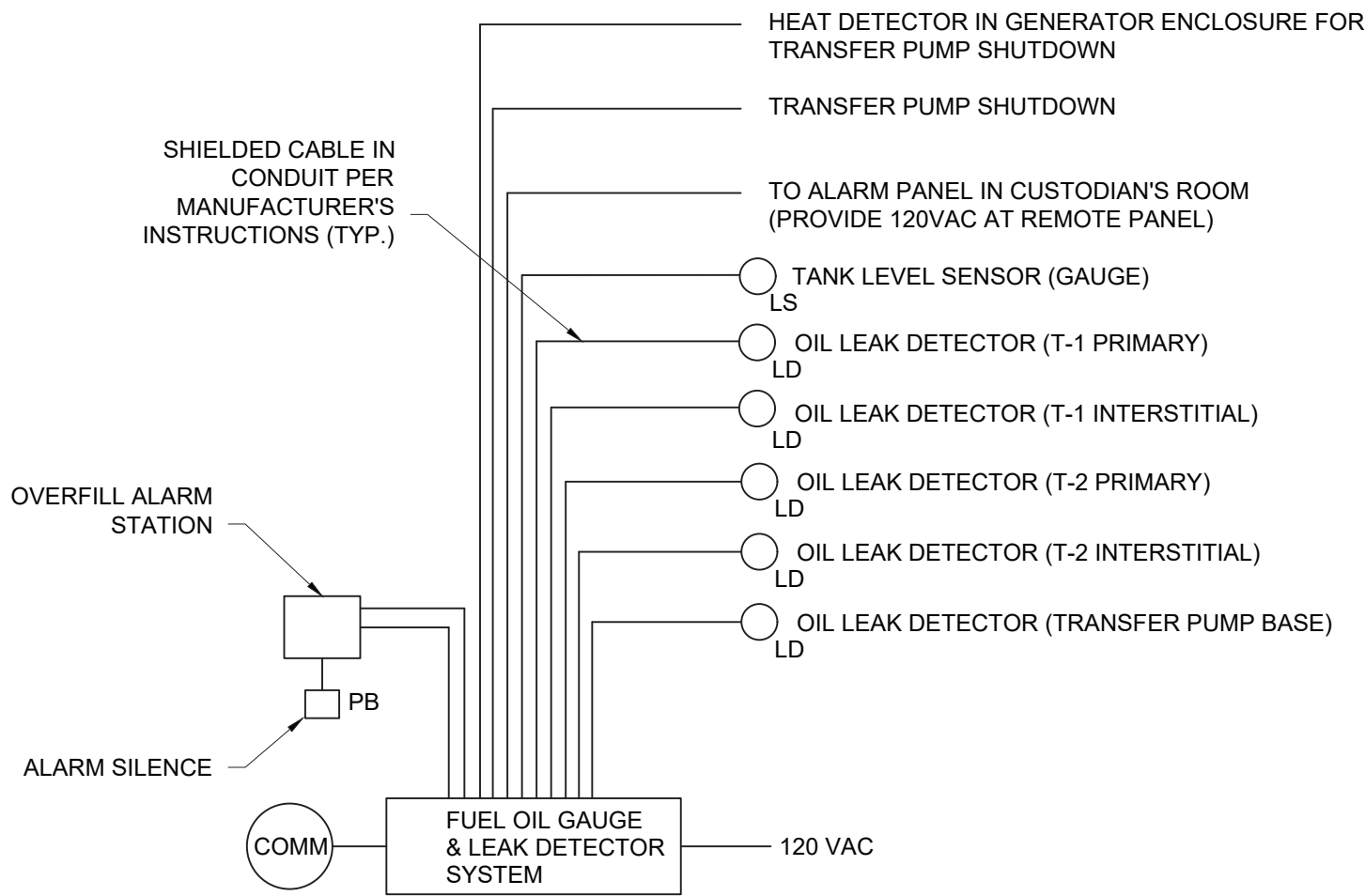
2 RADIATOR CONTROL DIAGRAM
SCALE: NONE



3 EXHAUST FAN CONTROL DIAGRAM
SCALE: NONE

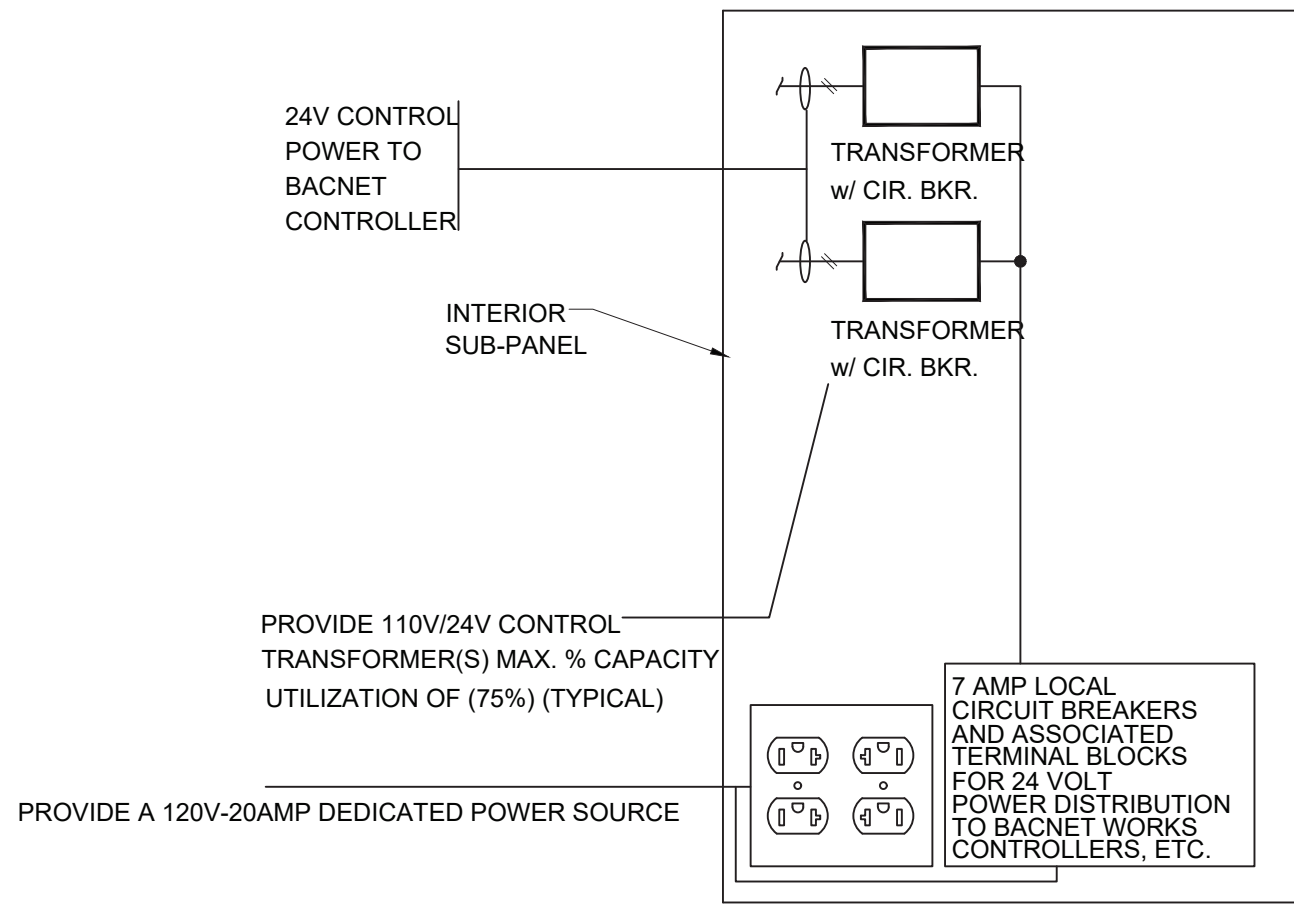
THE FOLLOWING LIST IS PROVIDED FOR REFERENCE ONLY TO INDICATE WHICH MAJOR EQUIPMENT IS CONTROLLED BY EACH PANEL, AND MAY NOT BE A COMPLETE LIST OF ALL EQUIPMENT. DEVICES NOT SPECIFICALLY LISTED HERE SUCH AS UNIT VENTILATORS, RADIATORS, FAN COIL UNITS, CABINET HEATERS, UNIT HEATERS, EXHAUST FANS, AIR CONDITIONING UNITS, AND OTHER EQUIPMENT SHALL BE CONNECTED TO THE NEAREST PANELS.

- DDC PANEL #1
 - CH-1
 - CHWP-1
 - CHWP-2
 - CABINET HEATERS
 - UNIT VENTILATORS
- DDC PANEL #2
 - AHU-1
- DDC PANEL #3
 - CABINET HEATERS
 - UNIT VENTILATORS
- DDC PANEL #4
 - AHU-20
 - FAN COIL UNITS
 - UNIT VENTILATORS
- DDC PANEL #5
 - AHU-1
 - EF-1
 - VAV TERMINALS
 - RADIATORS
- DDC PANEL #6
 - CH-2
 - CHWP-3
 - CHWP-4
- DDC PANEL #7
 - BOILER ROOM EQUIPMENT
- DDC PANEL #8
 - AHU-2
 - EF-2
 - AHU-CAFE
 - VAV TERMINALS
 - RADIATORS
- DDC PANEL #9
 - AHU-2
- DDC PANEL #10
 - AHU-6
- DDC PANEL #11
 - AHU-3
 - AC-3
- DDC PANEL #12
 - AHU-4
 - AC-4
- DDC PANEL #13
 - AHU-5
 - AC-5
- DDC PANEL #14
 - AHU-7
 - AC-7
- DDC PANEL #15
 - AHU-8
 - AC-8



NOTE:
1. VERIFY CABLE SIZES AND QUANTITIES WITH EQUIPMENT MANUFACTURERS.

5 FUEL OIL TANK GAUGING SYSTEM
SCALE: NONE



- NOTE:
- THE TCC SHALL PROVIDE 24VAC TO THOSE MISC. CONTROL DEVICES WHICH ARE NOT POWERED DIRECTLY FROM A UNITARY HVAC SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR AND EQUIPMENT VENDORS FOR CONTROL DEVICE POWER.
 - THE DISTRICT SHALL PROVIDE ETHERNET DROPS TO EACH PANEL.

7 DDC CONTROL PANEL INSTALLATION
SCALE: NONE

6 DDC CONTROL PANEL DESIGNATIONS
SCALE: NONE

No.	Date	Revisions
1	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
1	12-28-22	BIDDING DOCUMENTS

REC. EXP. DATE: 04-30-24

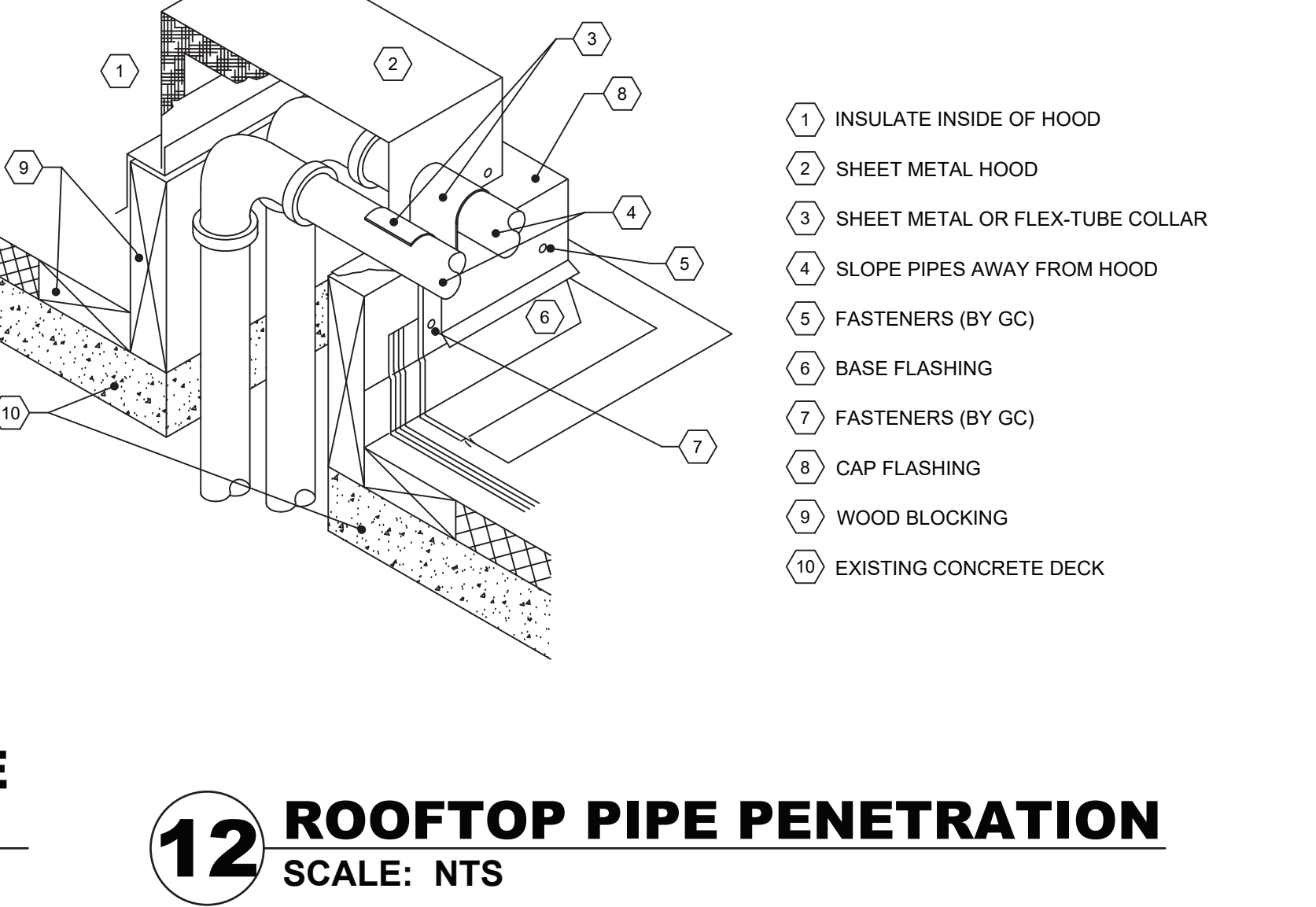
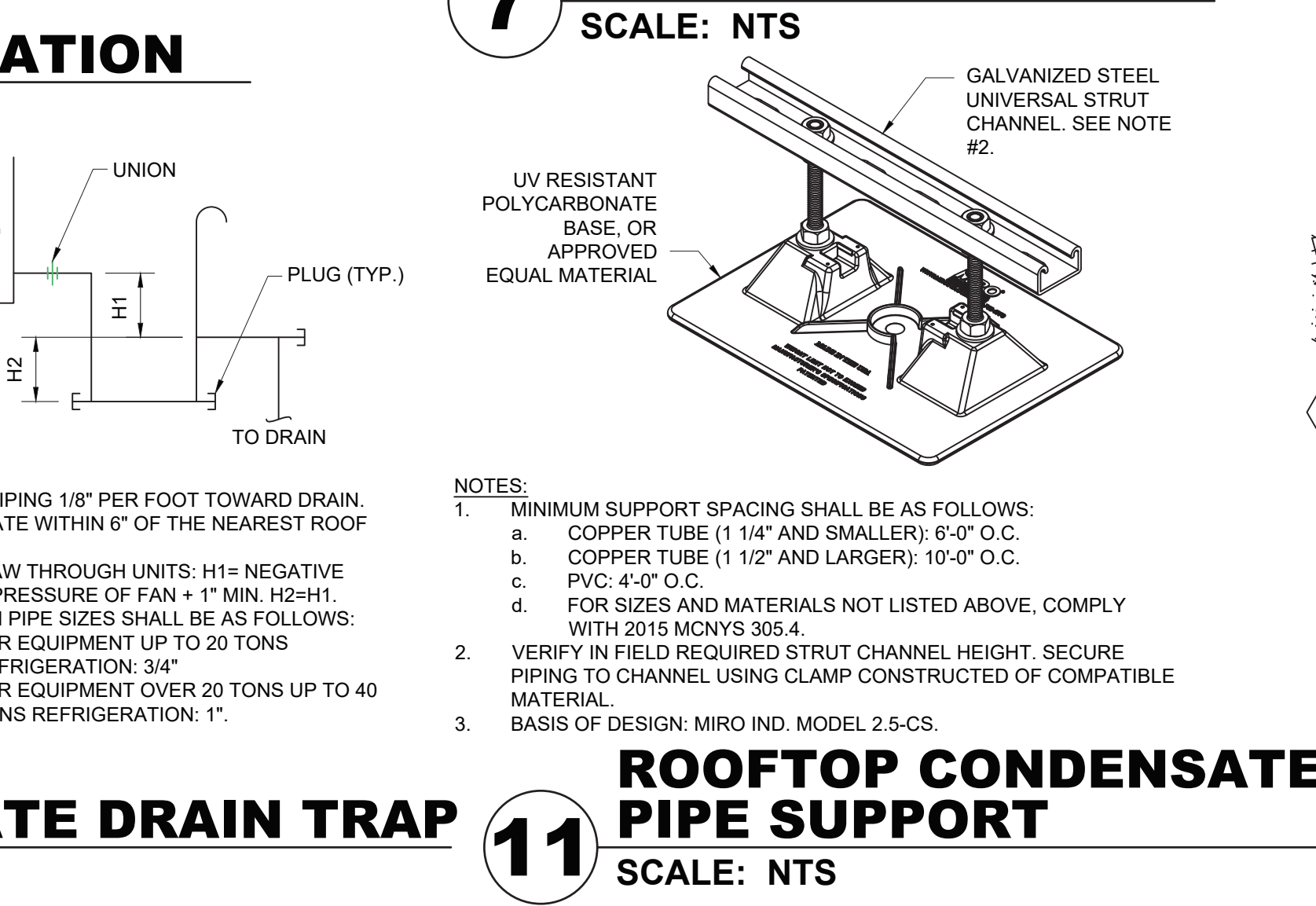
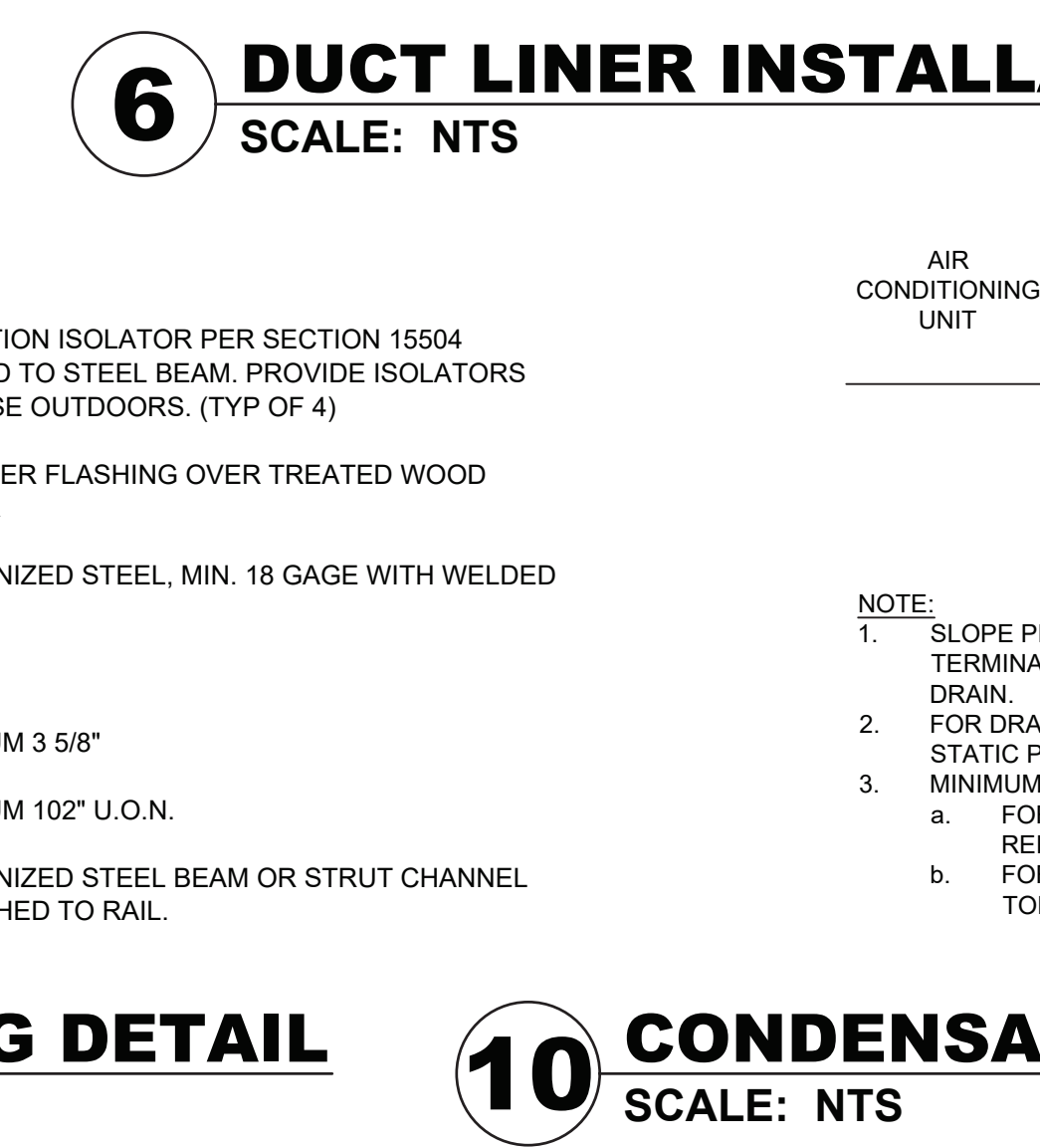
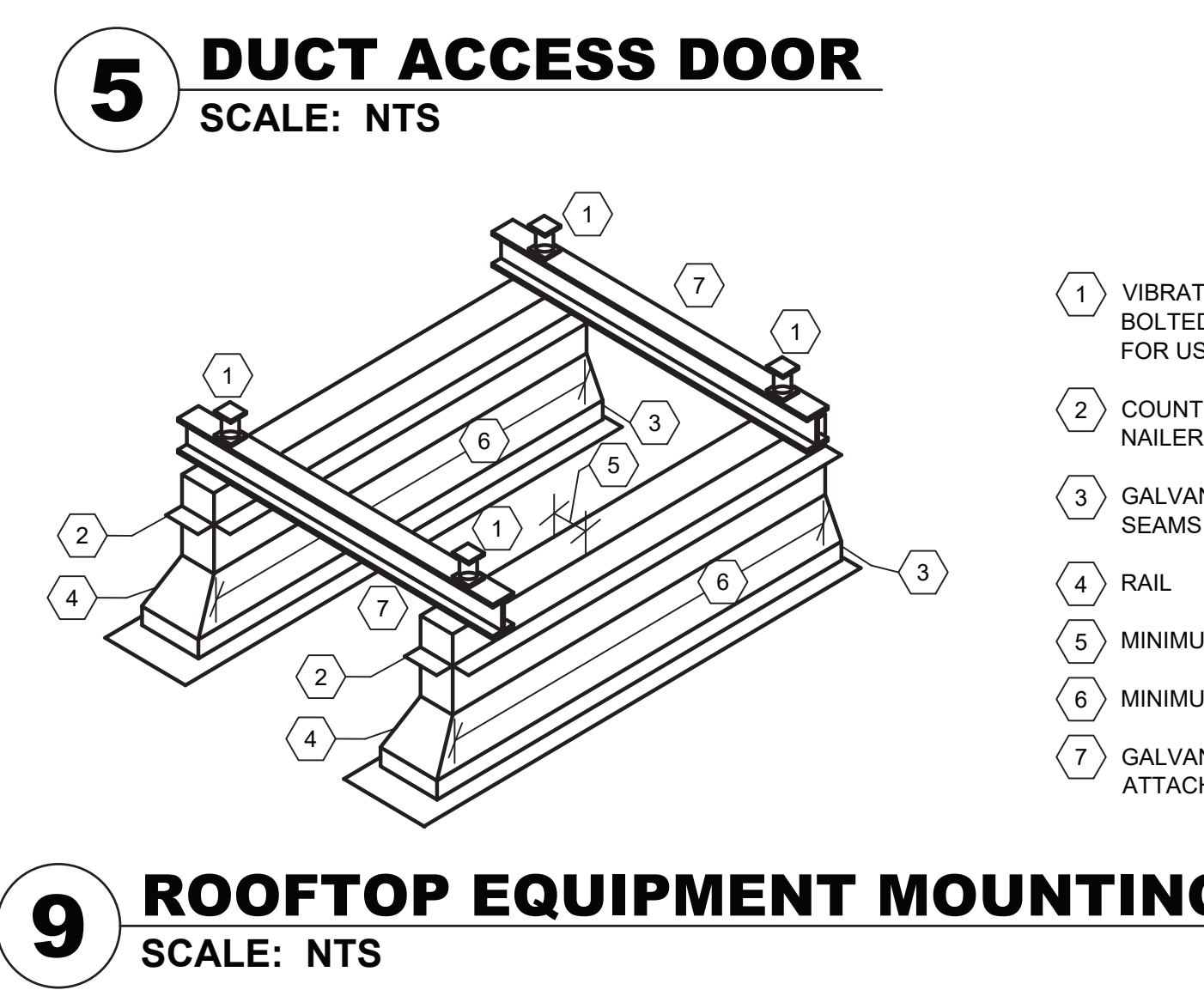
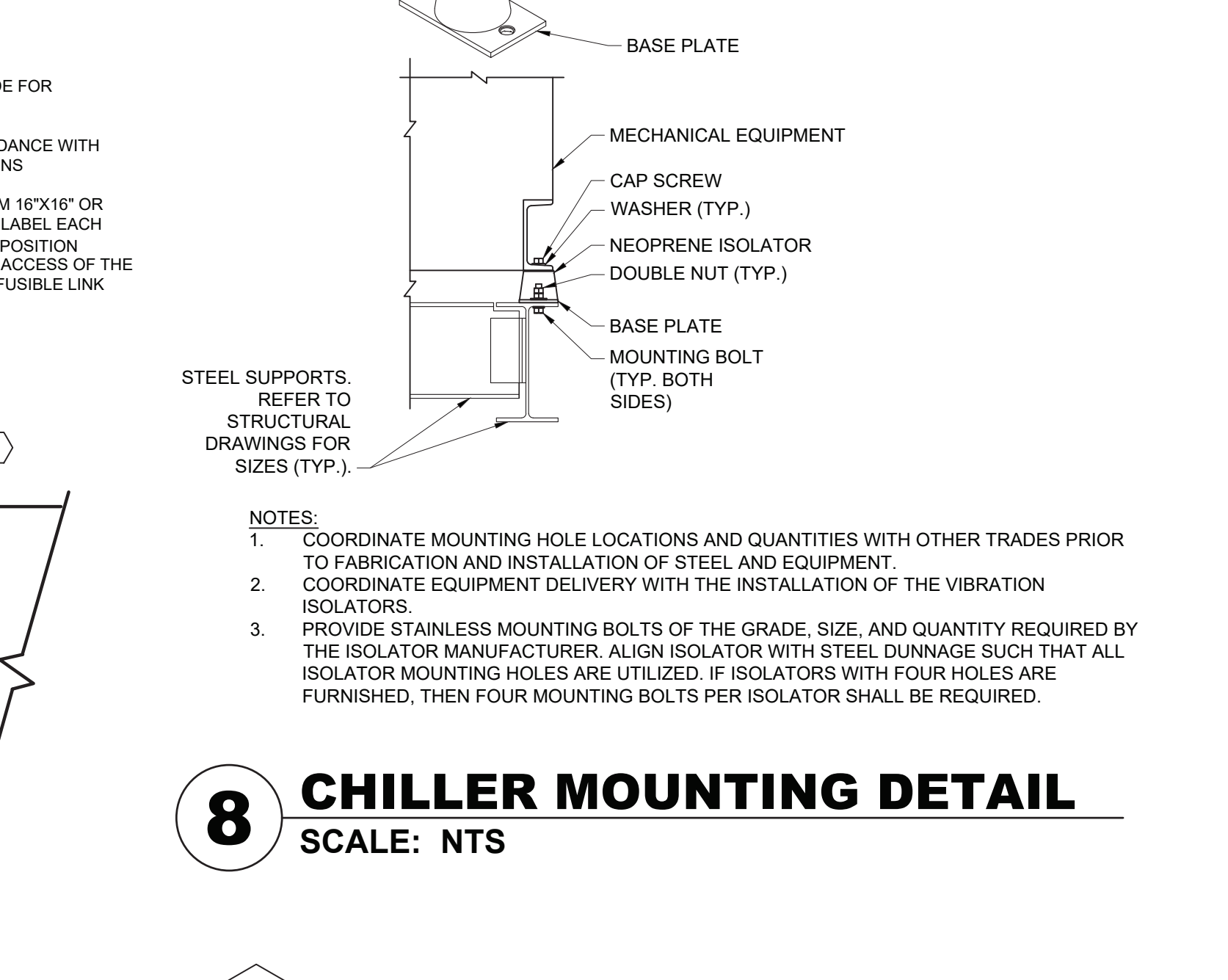
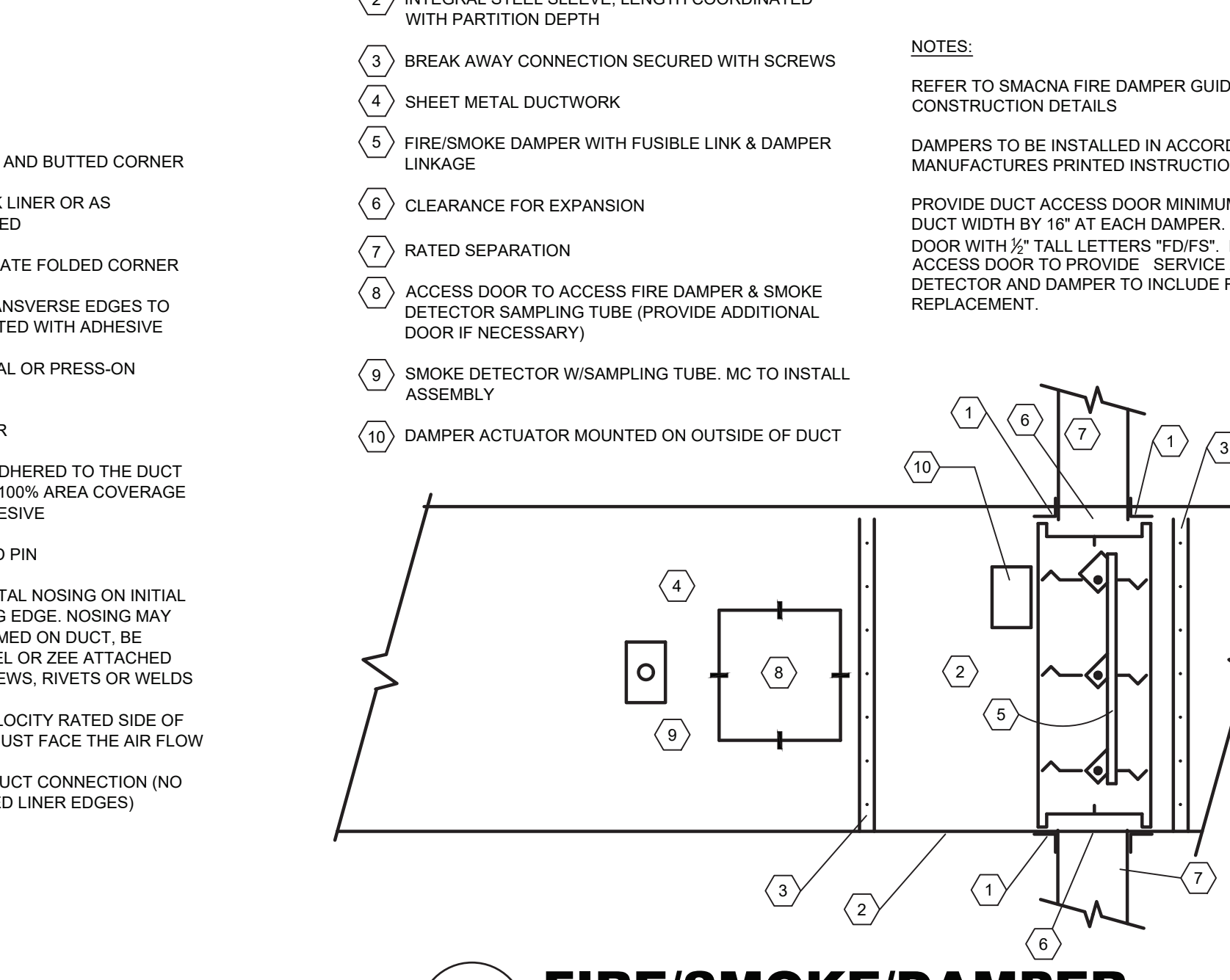
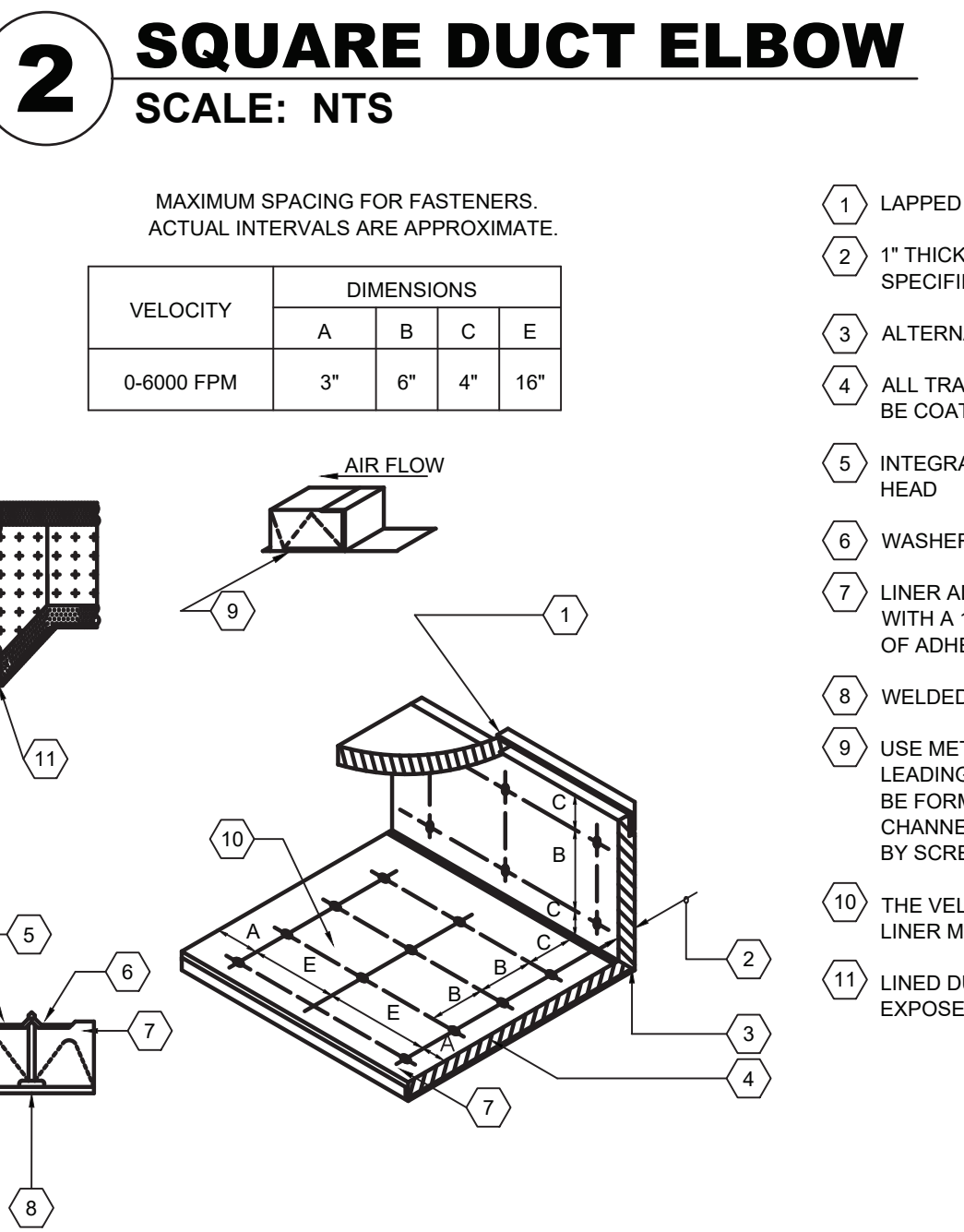
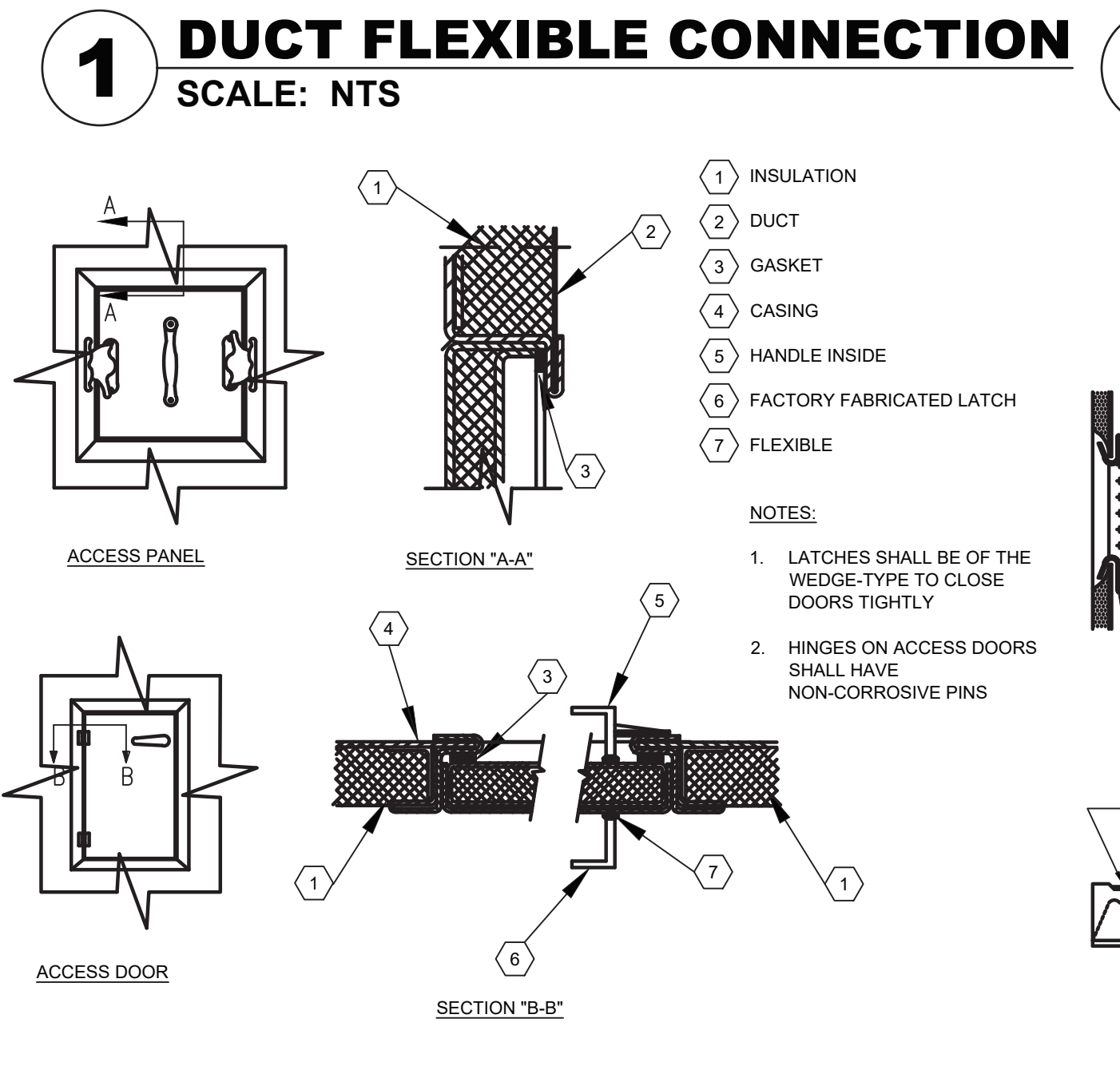
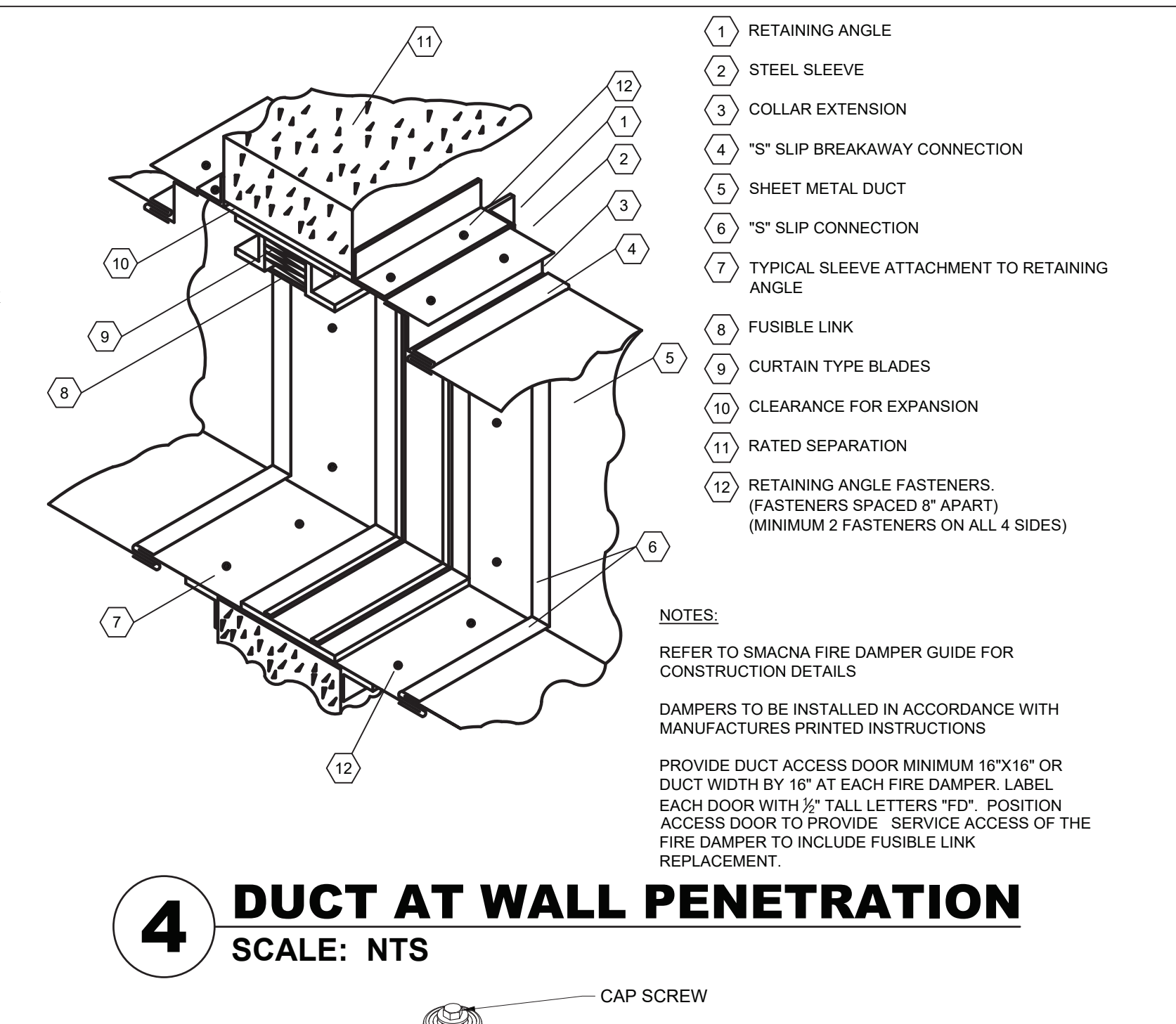
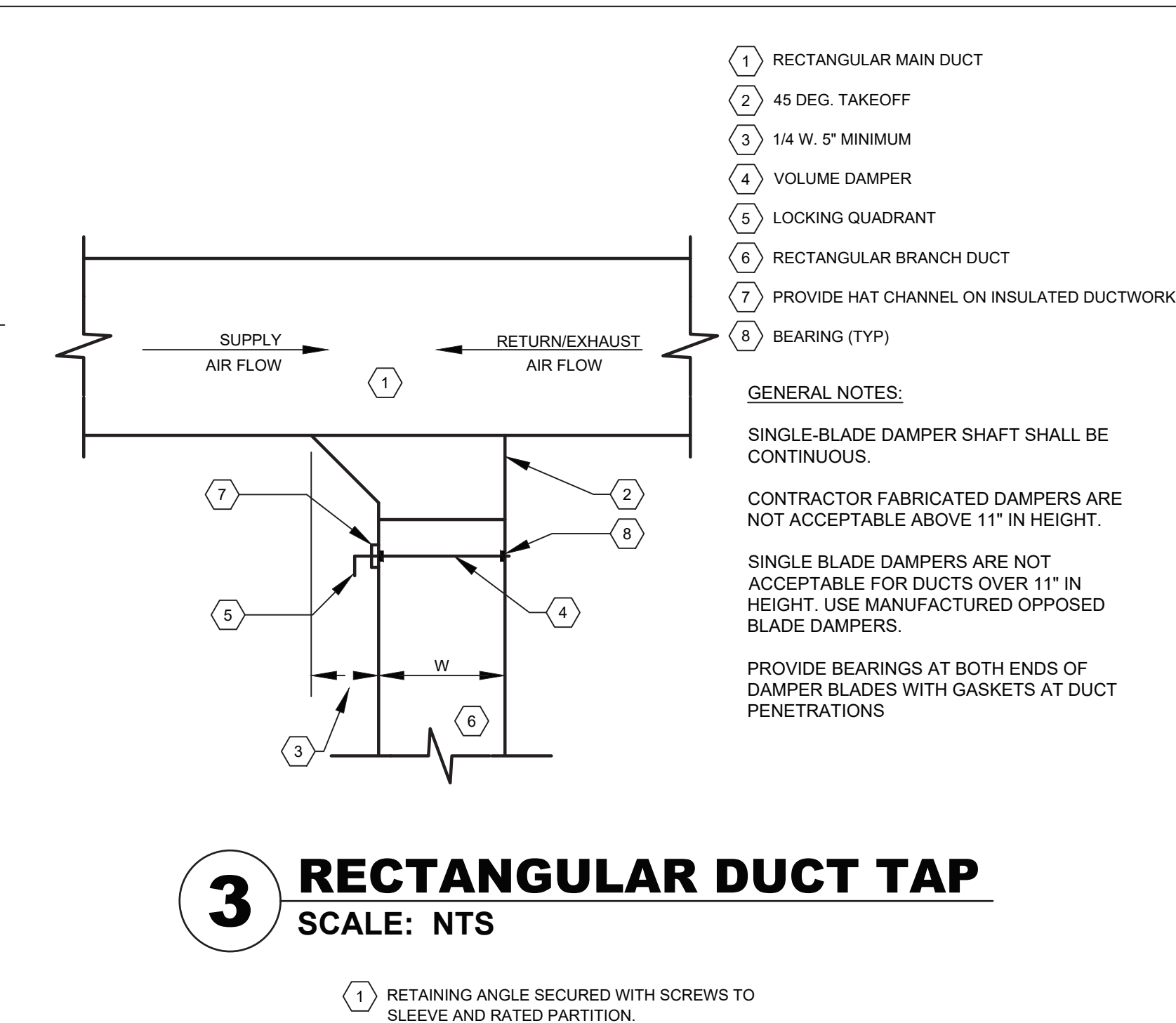
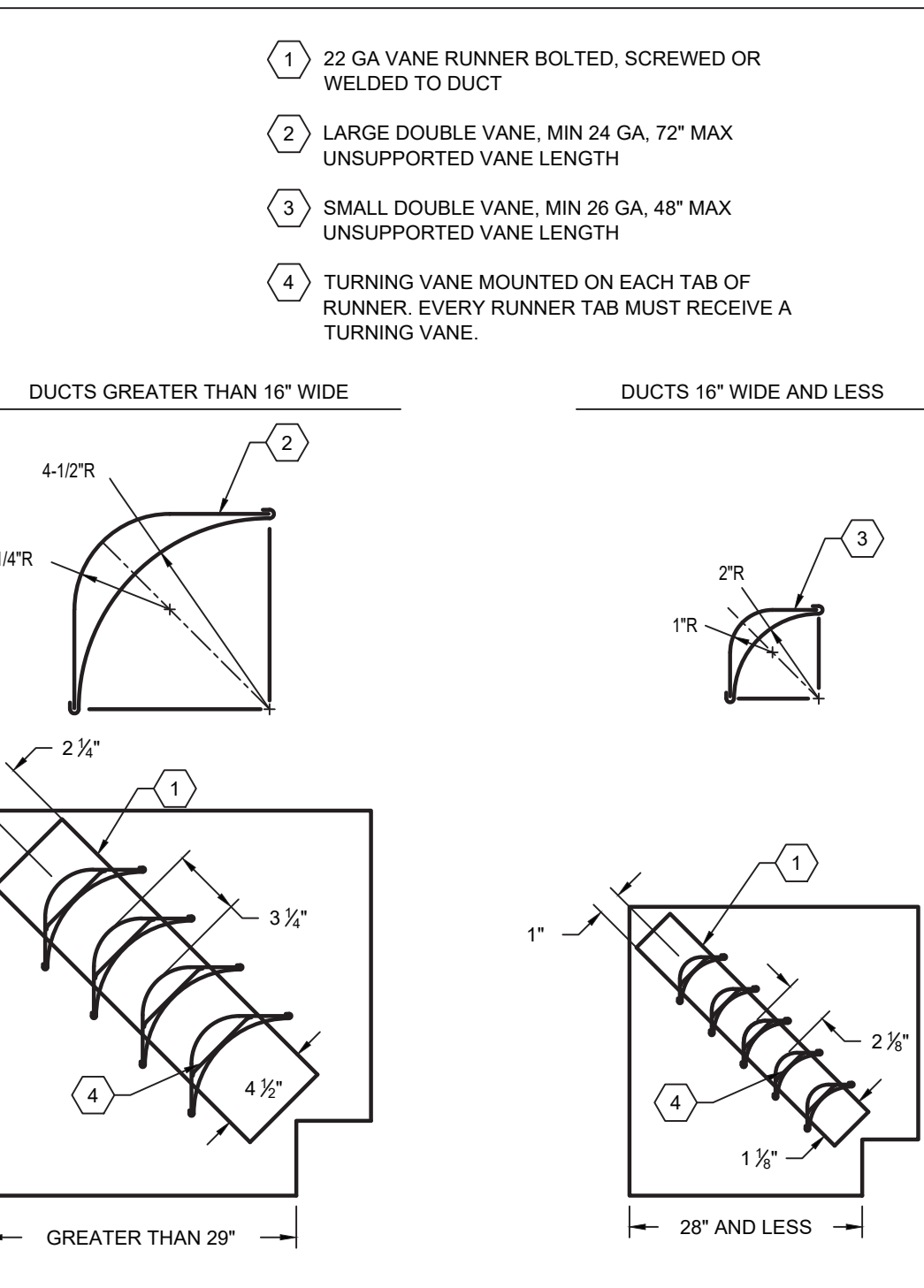
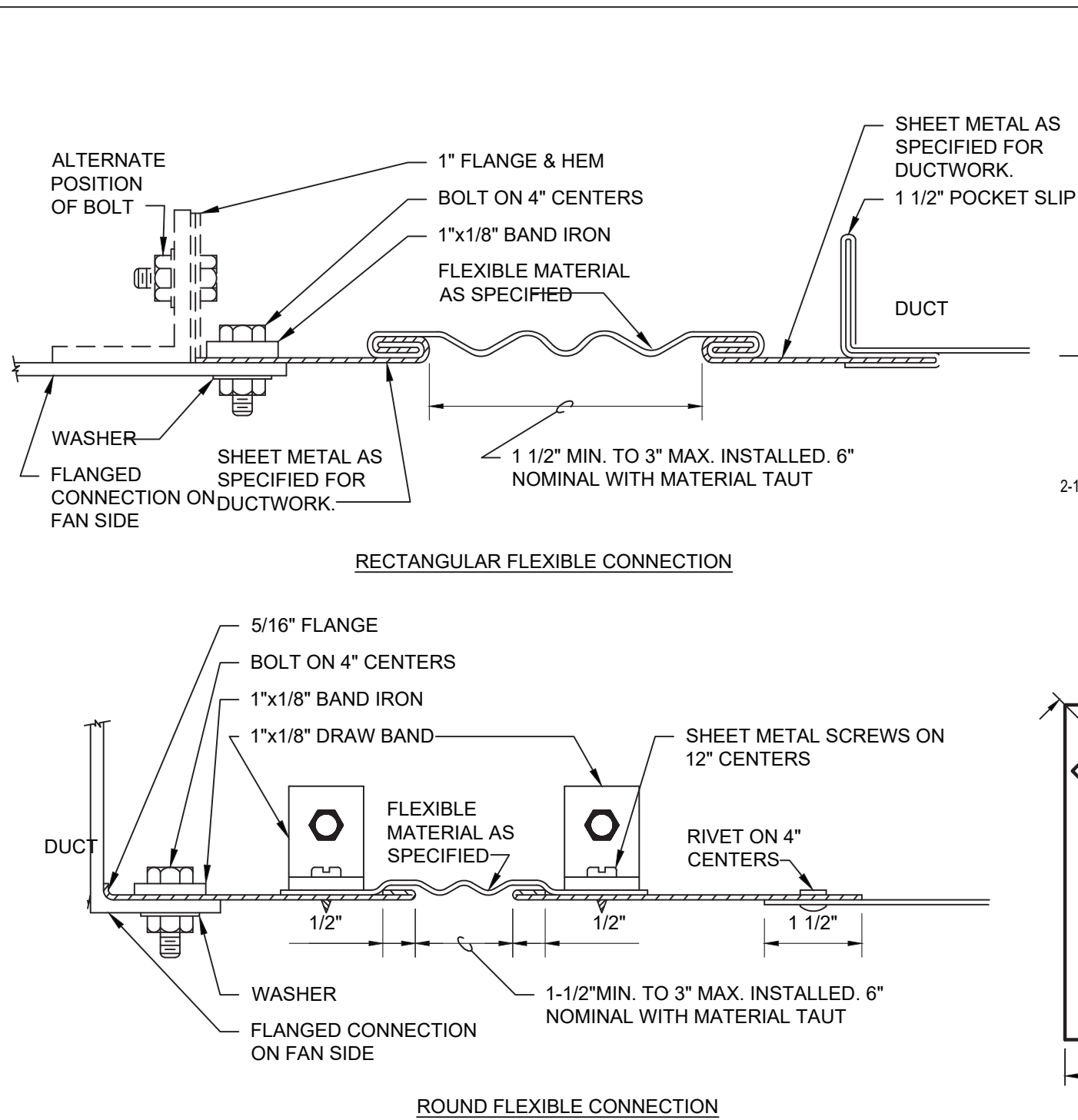
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Checked by	PV
Project No.	42054
Scale	NTS
Date	09-14-23

GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901
Mechanical & Electrical Engineer:	Structural Engineer:

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SCHOOL SED# 50-02-01-06-0-030-016 145 POND RD THERESA, NY 10984 COUNTY OF ROCKLAND
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Project No. 42054
Scale NTS
Date 09-14-23

REC. EXP. DATE: 04-30-24

Revisions

No. Date

3 09-14-23 BIDDING DOCUMENTS
2 06-09-23 SED ADDENDUM #1
1 12-28-22 BIDDING DOCUMENTS

GREENMAN PEDERSEN, INC
2 EXECUTIVE BOULEVARD
SUITE 200
SUFFERN, NY 10901

Mechanical Engineer:

GREENMAN PEDERSEN, INC
2 EXECUTIVE BOULEVARD
SUITE 200
SUFFERN, NY 10901

Structural Engineer:

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY
SED# 50-02 SCH001-030-016
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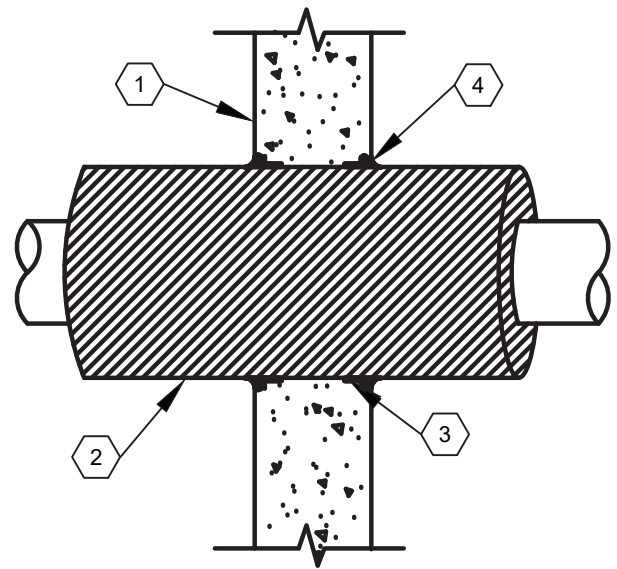
COUNTY OF ROCKLAND

MSA
MICHAEL SHILALE ARCHITECTS, LLP
140 Park Avenue New York, NY 10065 Tel 845-708-9200
www.shilale.com

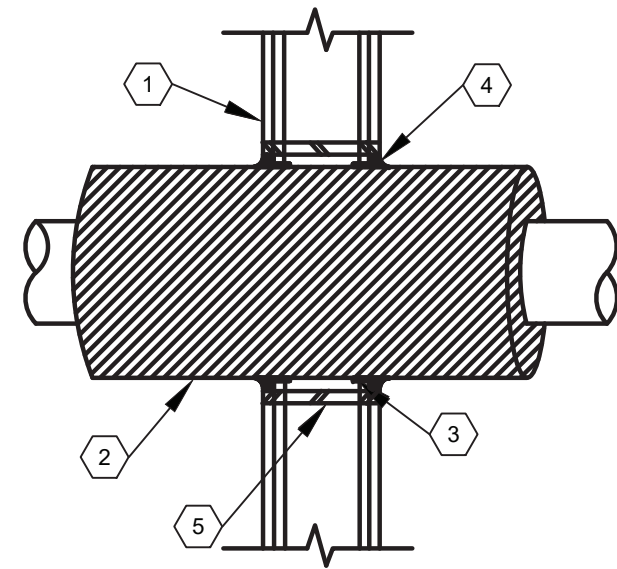
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Drawing Title
MECHANICAL DETAILS
- 1

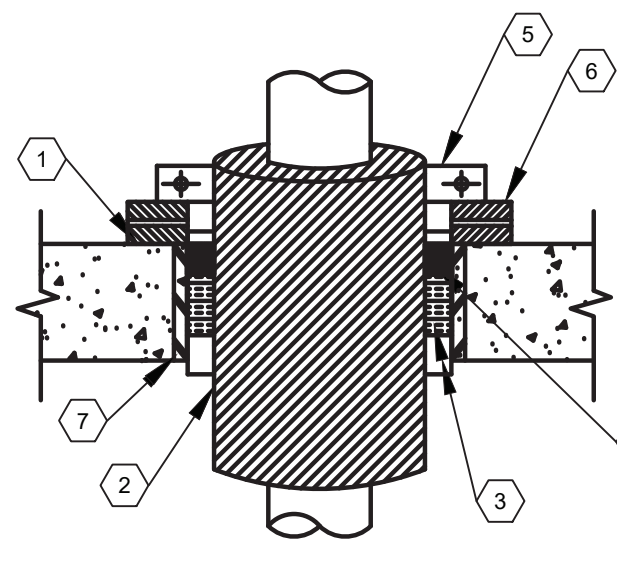
Drawing No.
WGEM-M-501



- 1 CONCRETE OR CONCRETE BLOCK WALL.
- 2 STEEL OR IRON PIPE TO 12" OR COPPER PIPE UP TO 6" WITH UP TO 3" FIBERGLASS OR MINERAL WOOL INSULATION.
- 3 WRAP STRIP. WRAP PRODUCT AROUND PIPE, SECURE WITH STEEL TIE WIRE, AND RECESS 1-3/4" INTO WALL CAVITY.
- 4 SEALANT. INSTALL 1/4" BEAD AROUND WRAP STRIP/INSULATION INTERSTICES. ANNULUS AFTER INSTALLATION OF WRAP STRIP(S) SHALL RANGE FROM POINT CONTACT TO 1/4" MAXIMUM.



- 1 CONCRETE OR CONCRETE BLOCK WALL.
- 2 STEEL OR IRON PIPE TO 12" OR COPPER PIPE UP TO 6" WITH UP TO 3" FIBERGLASS OR MINERAL WOOL INSULATION.
- 3 WRAP STRIP. WRAP PRODUCT AROUND PIPE, SECURE WITH STEEL TIE WIRE, AND RECESS 1-3/4" INTO WALL CAVITY.
- 4 SEALANT. INSTALL 1/2" BEAD AROUND WRAP STRIP/INSULATION INTERSTICES. ANNULUS AFTER INSTALLATION OF WRAP STRIP(S) SHALL RANGE FROM POINT CONTACT TO 1/2" MAXIMUM.
- 5 STEEL SLEEVE.



- 1 CONCRETE SLAB OR CONCRETE OVER STEEL DECK.
- 2 STEEL, IRON OR COPPER PIPE WITH UP TO 2" THICK FIBERGLASS INSULATION.
- 3 TIGHTLY PACKED MINERAL WOOL, NOMINAL 4 PCF, TO A 3" DEPTH.
- 4 SEALANT INSTALLED TO A 1" DEPTH. ANNULUS RANGING FROM 1/4" MINIMUM TO 3" MAXIMUM.
- 5 STANDARD PIPE CLAMP.
- 6 STEEL BEARING PLATE.
- 7 STEEL SLEEVE.

1 PIPE THRU MASONRY WALL

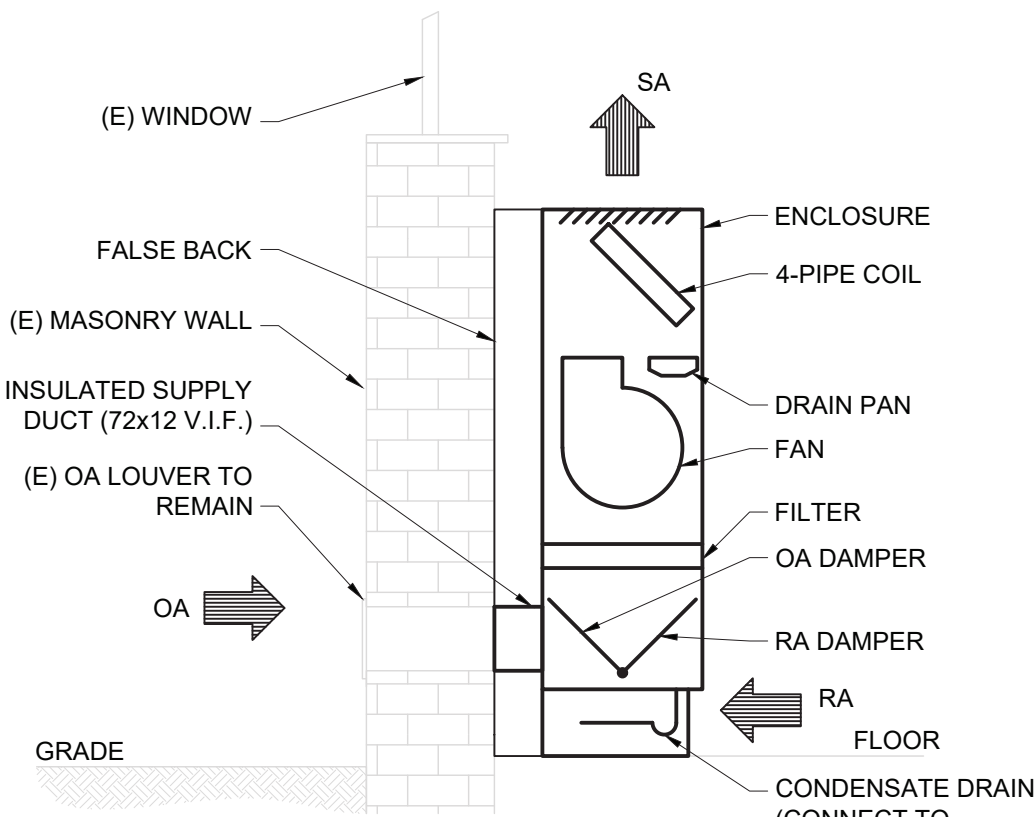
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2 PIPE THRU GWB WALL

SCALE: N.T.S.

3 PIPE THRU FLOOR

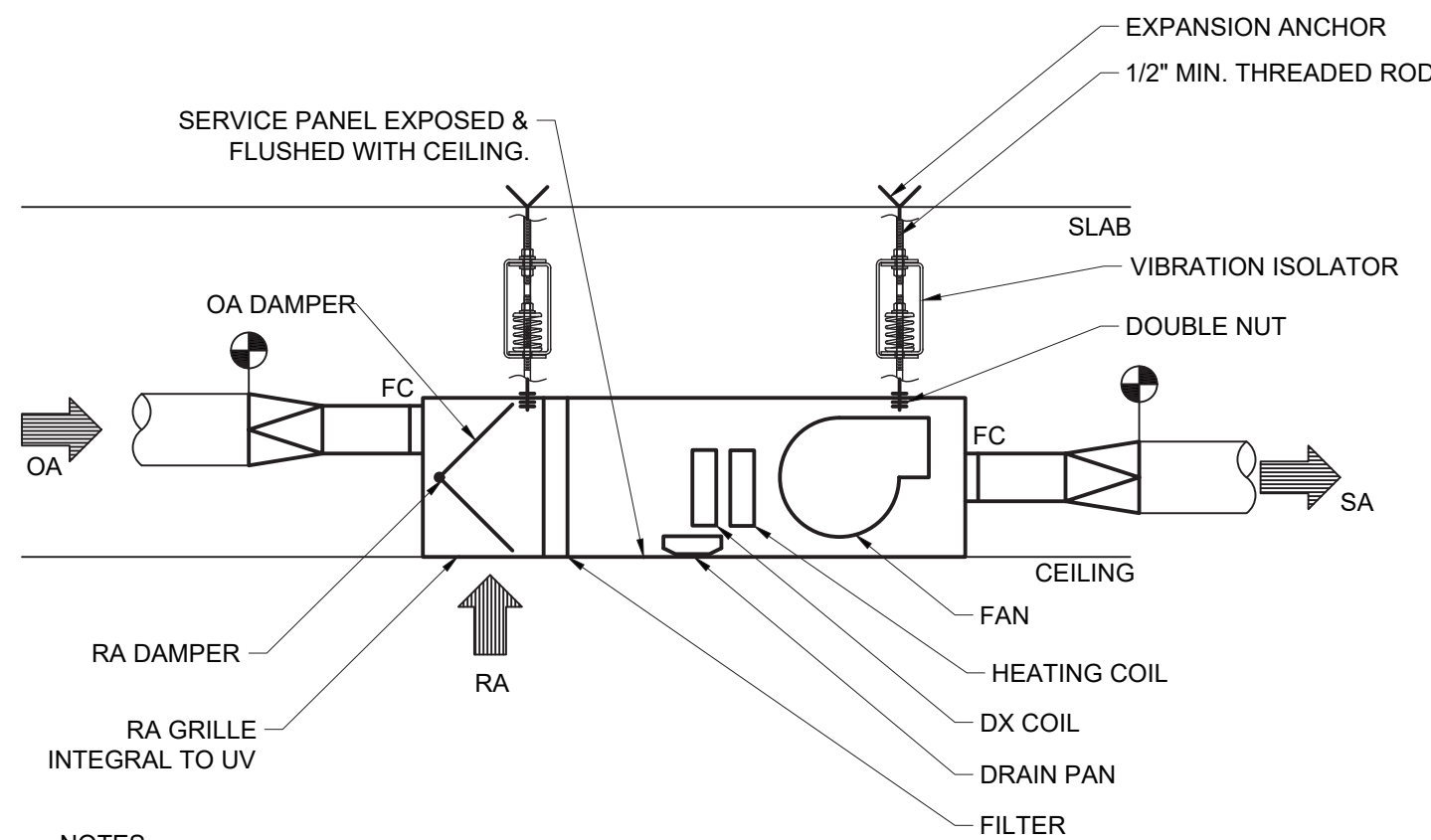
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- NOTES:
1. DEMOLITION: REMOVE THE EXISTING UNIT VENTILATOR WHERE SHOWN ON THE PLANS. THE EXISTING OUTSIDE AIR LOUVER AND WALL SLEEVE SHALL REMAIN.
 2. CONSTRUCTION: PROVIDE THE UNIT VENTILATOR IN THE SAME LOCATION AS EXISTING WHERE SHOWN ON THE PLANS. CONNECT THE OUTSIDE AIR DUCT TO THE EXISTING OUTSIDE AIR LOUVER AND WALL SLEEVE. PROVIDE A LOW-LEAKAGE DAMPER, END PANELS, AND SUB-BASE AS NECESSARY FOR A COMPLETE INSTALLATION. VERIFY MEASUREMENTS IN FIELD PRIOR TO FABRICATION.

4 VERTICAL UNIT VENTILATOR

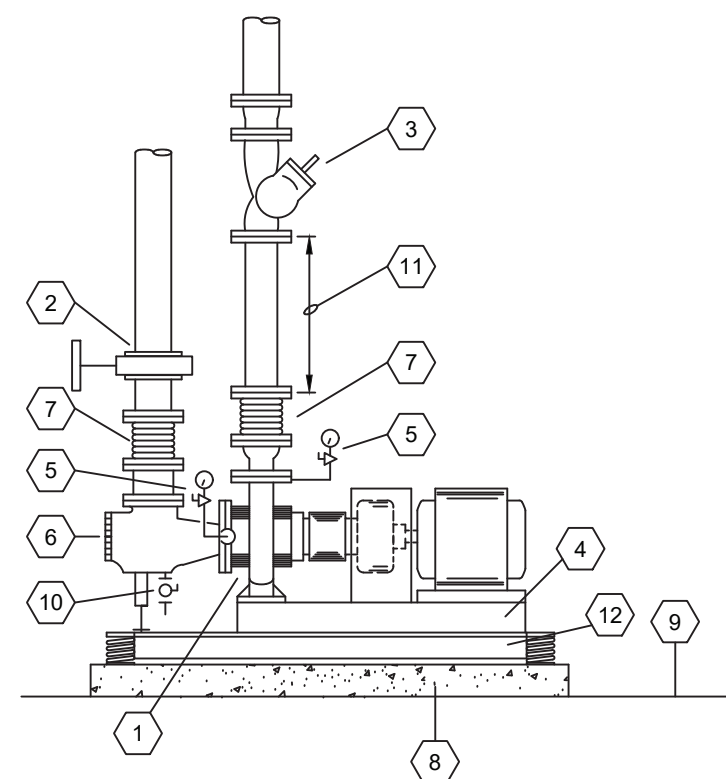
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- NOTES:
1. REFER TO THE UNIT VENTILATOR SCHEDULE ON FES-M-503 FOR FURTHER INFORMATION.

5 HORIZONTAL UNIT VENTILATOR

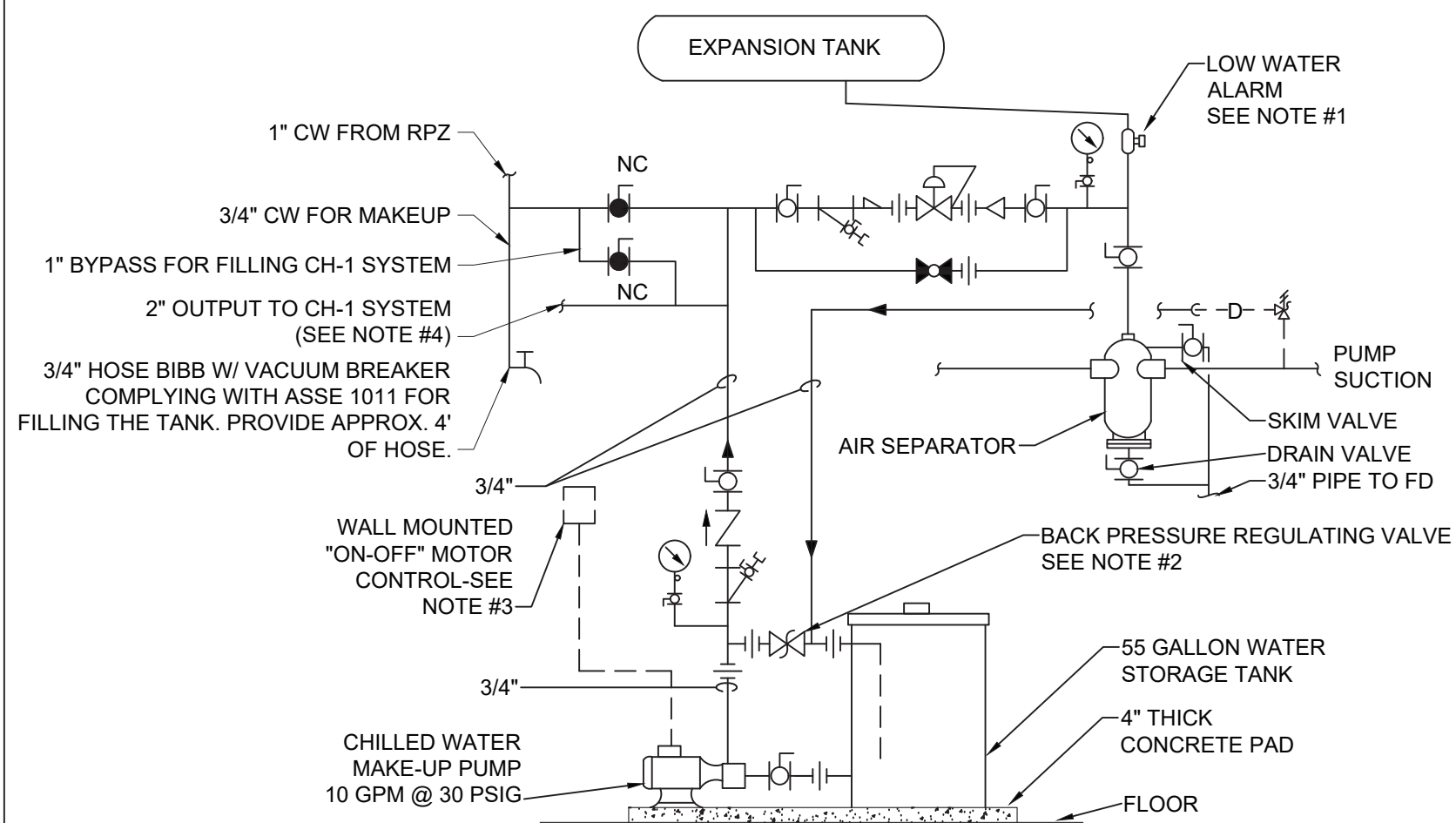
SCALE: N.T.S.



- 1 BASE MOUNTED PUMP
- 2 BUTTERFLY VALVE
- 3 TRIPLE DUTY VALVE
- 4 INFILL PUMP BASE WITH CONCRETE
- 5 PRESSURE GAUGE WITH NEEDLE VALVE
- 6 SUCTION DIFFUSER AND BASE LEG
- 7 FLEXIBLE CONNECTOR
- 8 6" CONCRETE BASE
- 9 FINISHED FLOOR
- 10 1" BALL VALVE
- 11 DISTANCE AS REQUIRED BY MFR.
- 12 CONCRETE FILLED INERTIA BASE (CHWP-3 & CHWP-4 ONLY).

6 CHILLED WATER PUMP PIPING

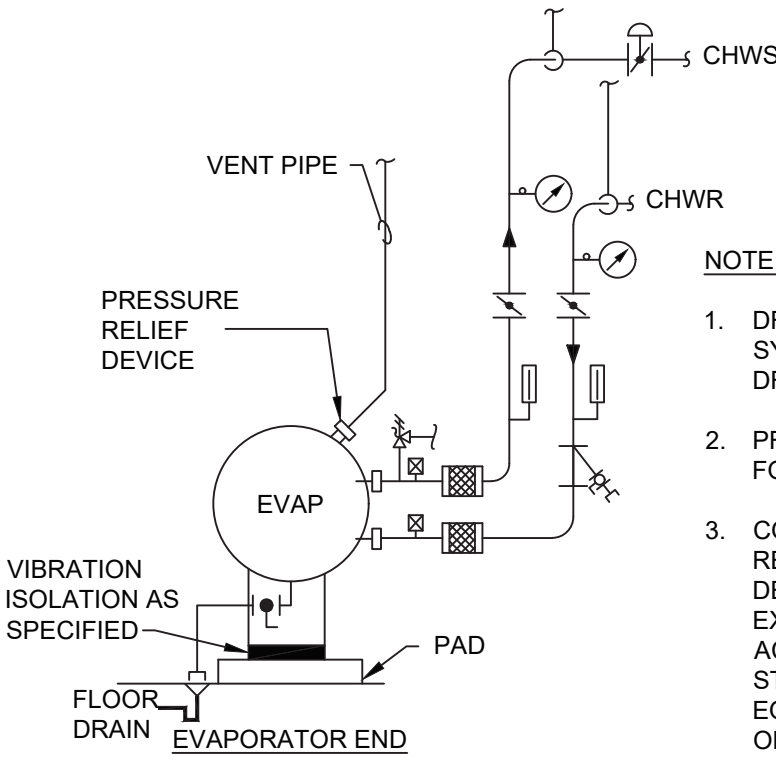
SCALE: N.T.S.



- NOTES:
1. PROVIDE LOW WATER LEVEL ALARM. RELIEF VALVE DRAIN SHALL RETURN TO TANK AS SHOWN ON THIS DETAIL.
 2. SET REGULATING VALVE TO MAINTAIN MAKE-UP PRESSURE AT 15 PSIG ABOVE HIGHEST SYSTEM PRV SETTING.
 3. OPERATE PUMP MANUALLY AS REQUIRED TO FILL.
 4. PROVIDE A GLYCOL MAKEUP UNIT WITH TWO SEPARATE PRV'S CAPABLE OF FEEDING TWO SEPARATE SYSTEMS.

7 GLYCOL MAEKUP UNIT PIPING

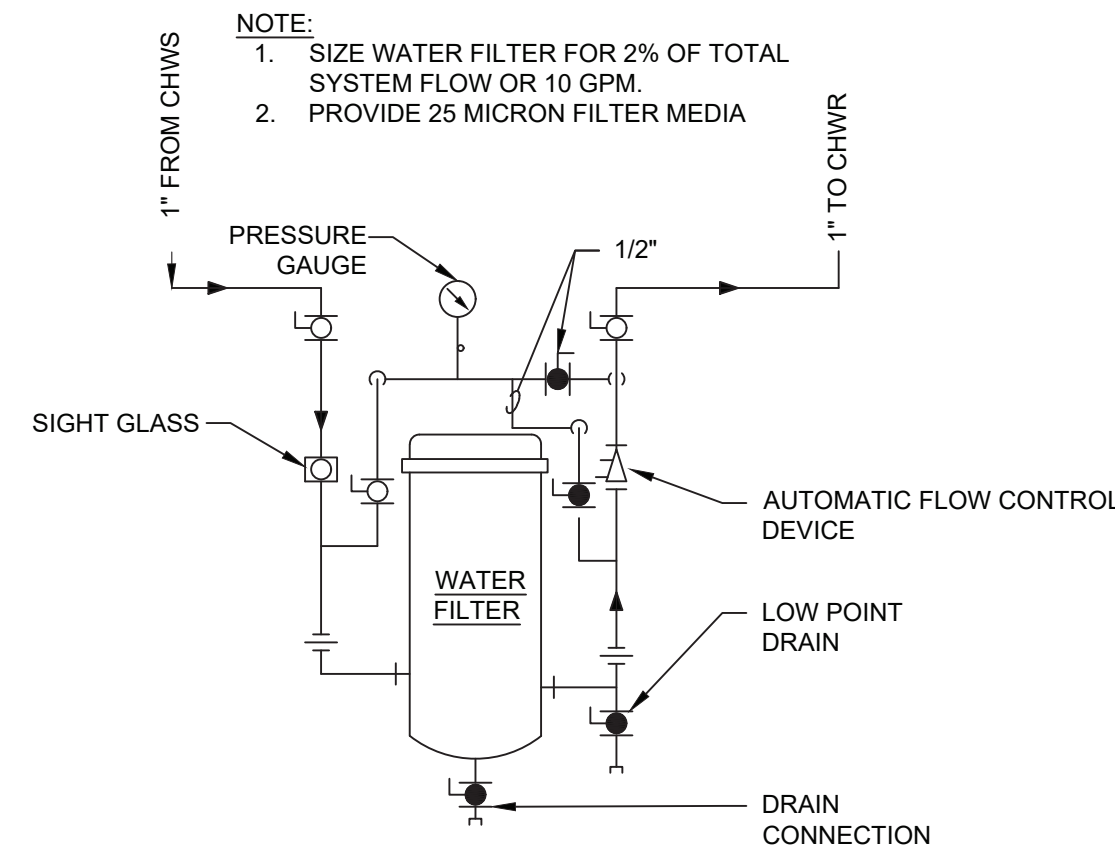
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- NOTE:
1. DRAIN ALL LOW POINTS OF SYSTEMS TO NEAREST FLOOR DRAIN.
 2. PROVIDE MARINE WATER BOXES FOR EVAPORATOR.
 3. COLLECT VENT PIPES FROM ALL REFRIGERANT PRESSURE RELIEF DEVICES AND EXTEND TO EXTERIOR OF BUILDING IN ACCORDANCE WITH ASHRAE STANDARD 15. HEADER SIZE TO EQUAL OR EXCEED TOTAL AREA OF DEVICES CONNECTED TO THE HEADER.

8 CHILLER PIPING CONNECTIONS

SCALE: N.T.S.



- NOTE:
1. SIZE WATER FILTER FOR 2% OF TOTAL SYSTEM FLOW OR 10 GPM.
 2. PROVIDE 25 MICRON FILTER MEDIA.

9 WATER FILTER PIPING

SCALE: N.T.S.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
11	12-28-22	BIDDING DOCUMENTS

REG. EXP. DATE: 04-30-24

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Checked by	PV
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Date	09-14-23

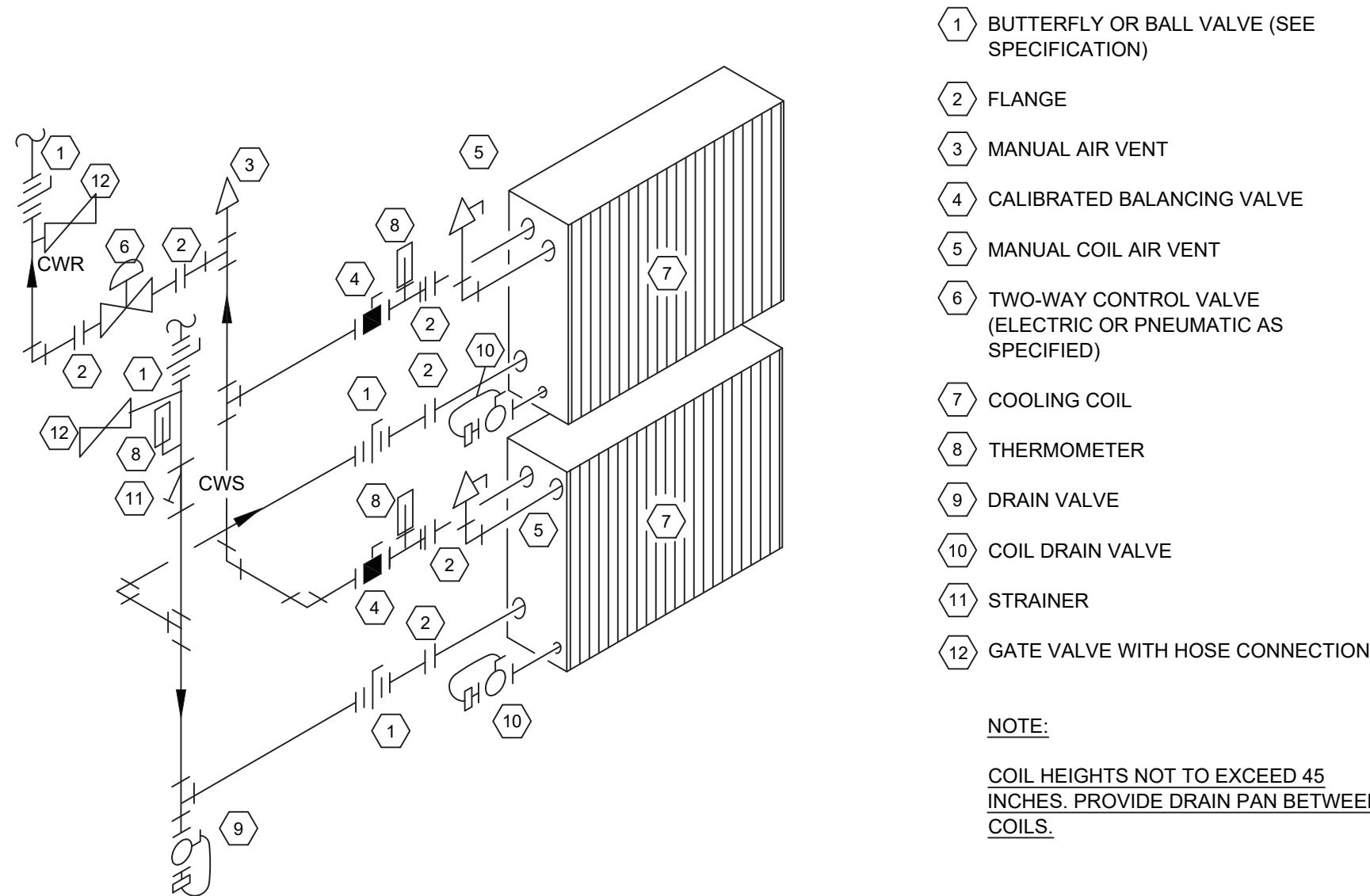
Mechanical Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901
Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 200 SUDBURY, NY 10901

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SED# 50-02 SCH001-08-010-030-016 ###
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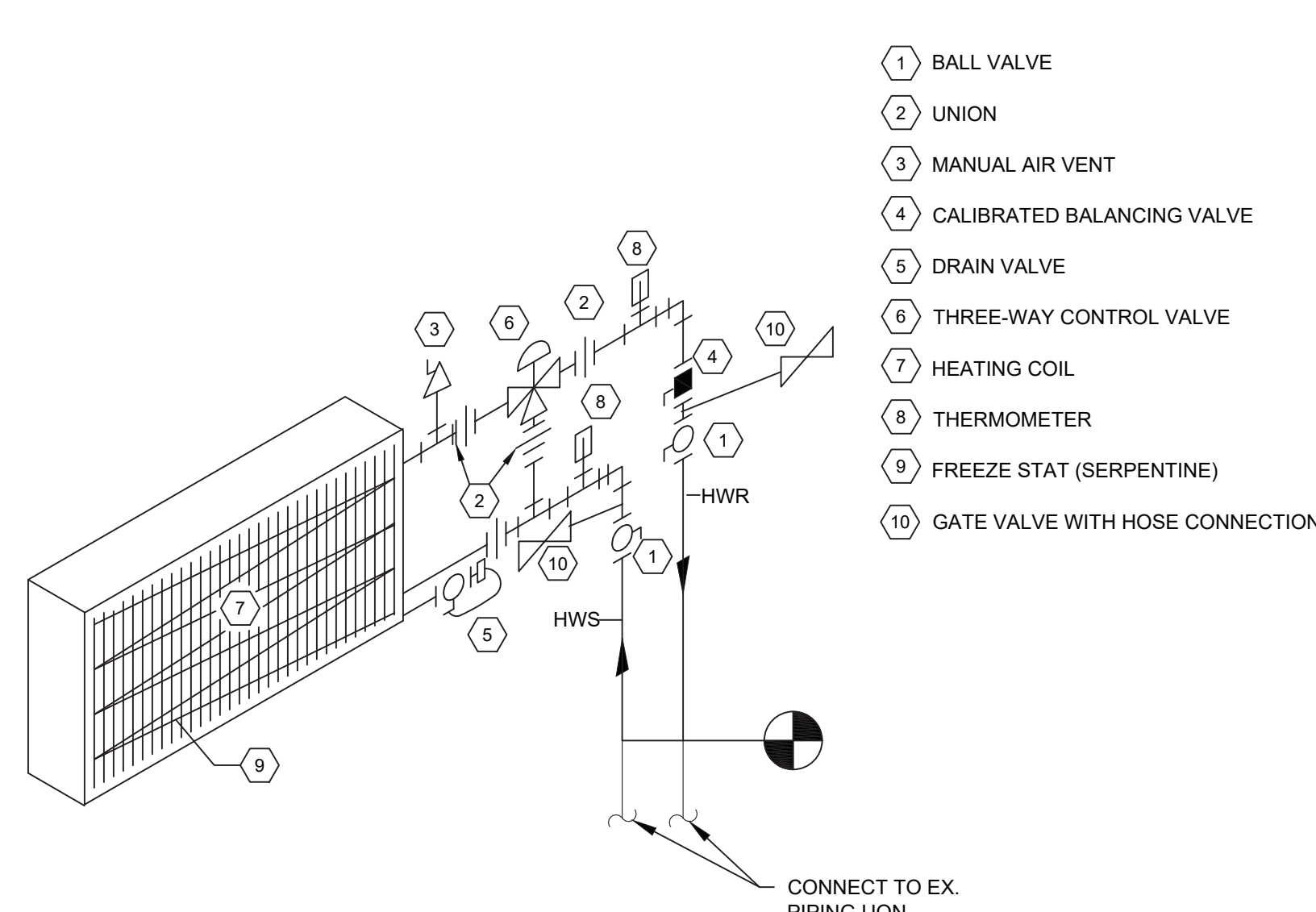
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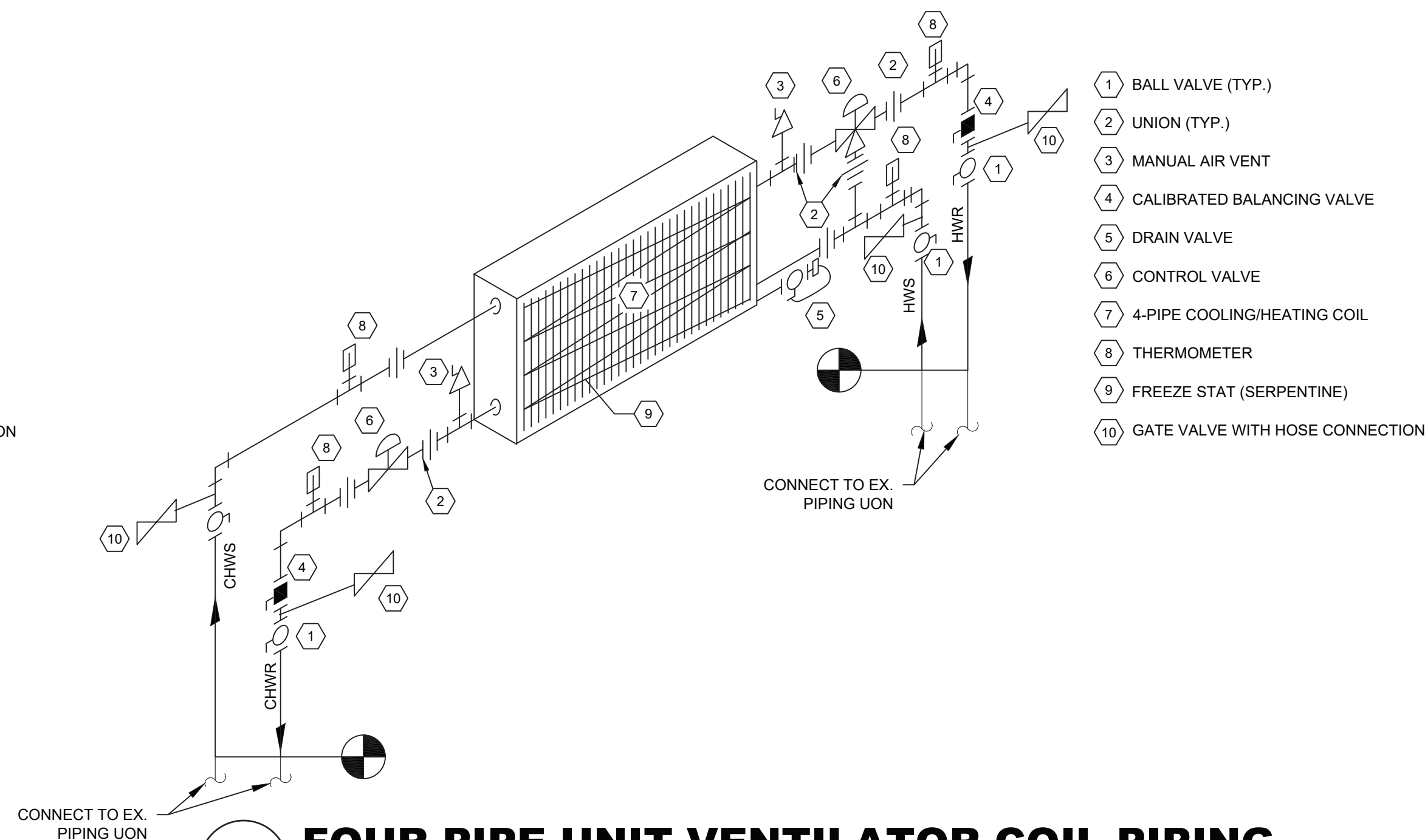
1 CHILLED WATER COIL PIPING

SCALE: N.T.S.



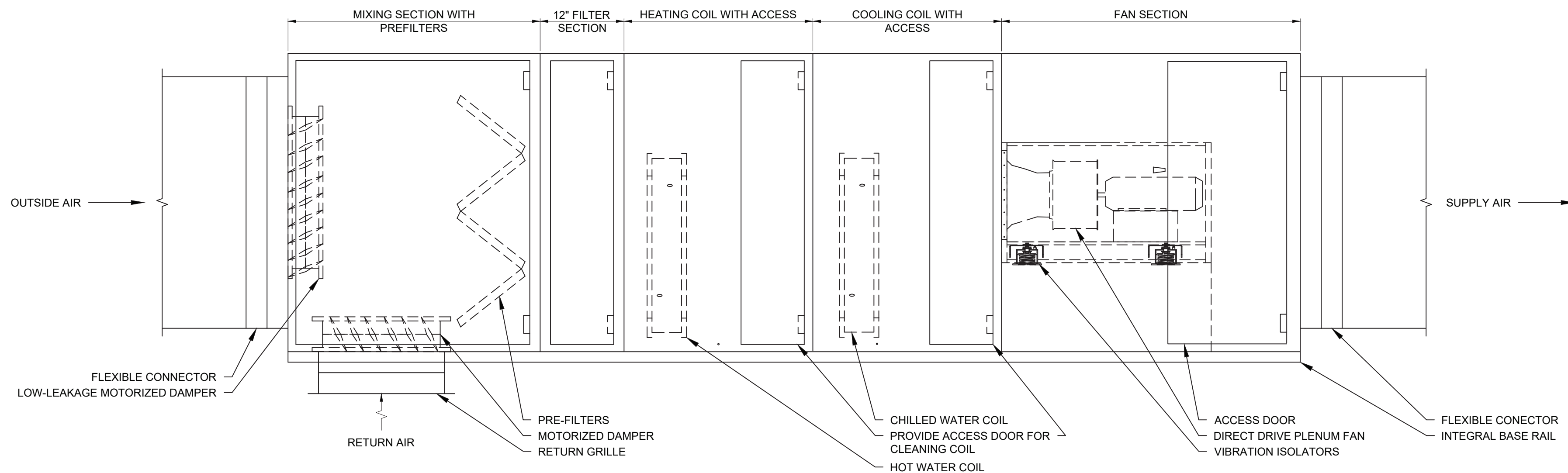
2 HOT WATER COIL PIPING

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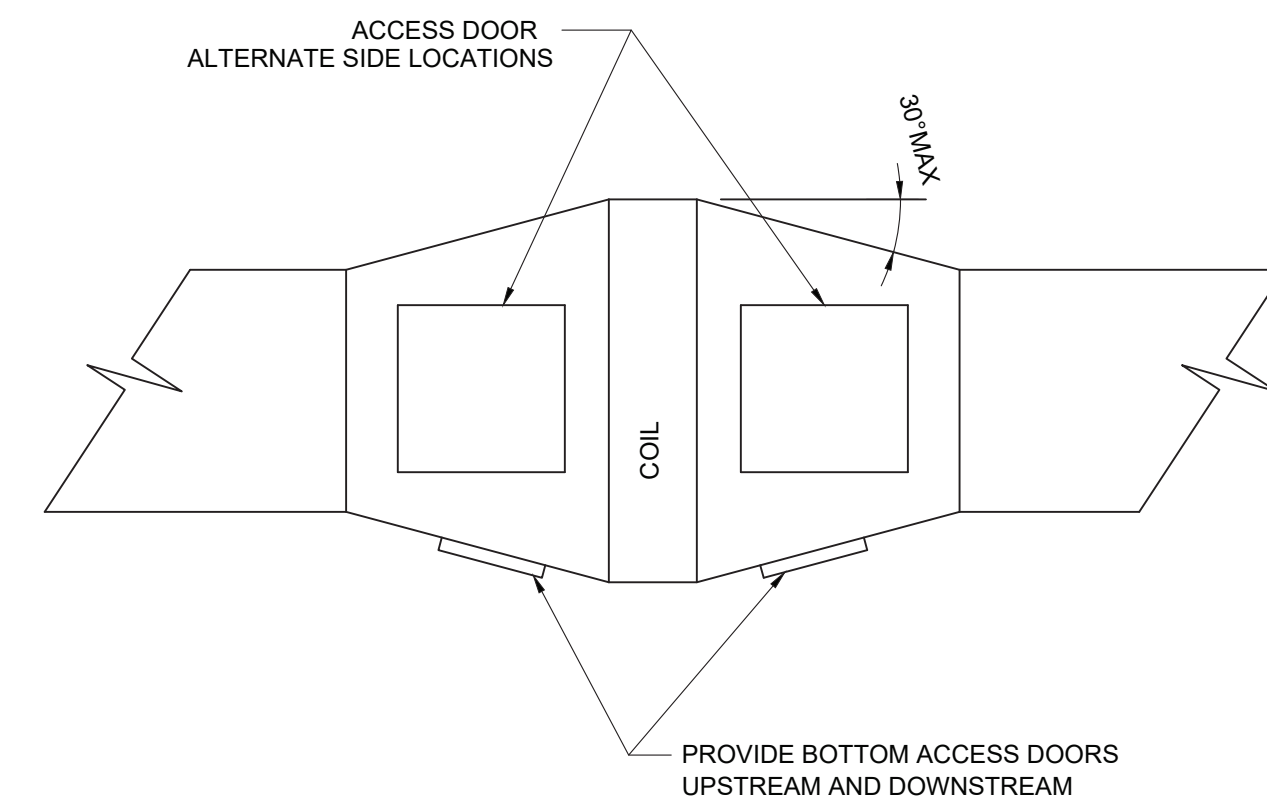
3 FOUR PIPE UNIT VENTILATOR COIL PIPING

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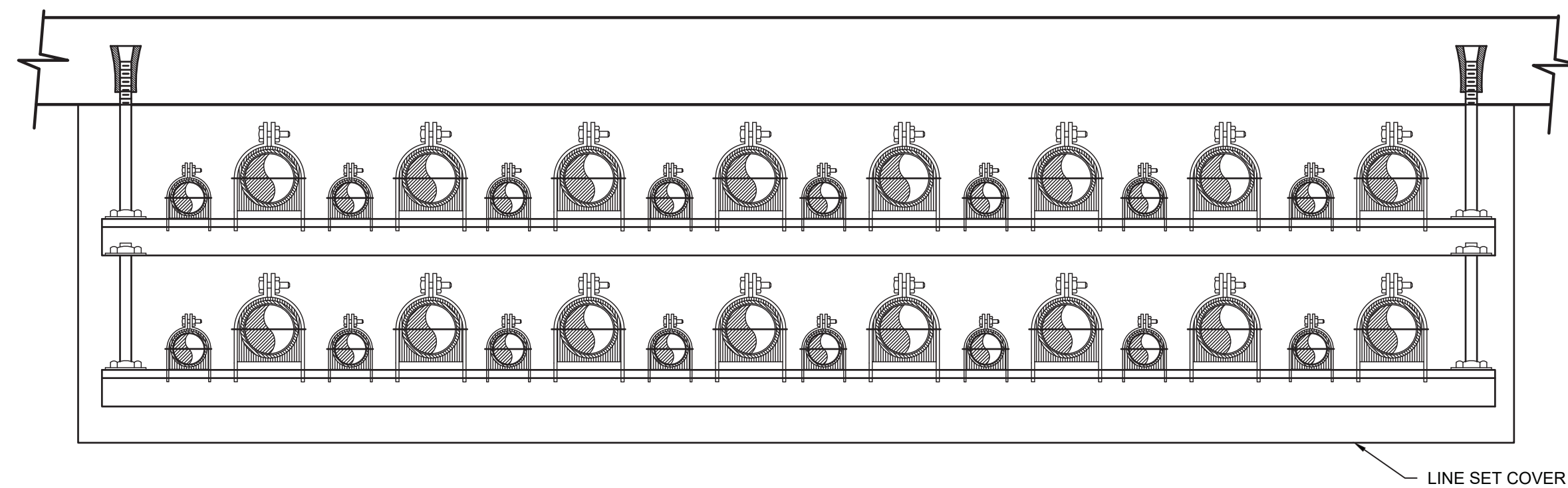
4 AHU-20 CONFIGURATION

SCALE: N.T.S.



5 DUCT-MOUNTED COIL ACCESS DOORS

SCALE: N.T.S.



6 REFRIGERANT PIPING SUPPORT

SCALE: N.T.S.

No.	Date	Revisions
3	09-14-23	BIDDING DOCUMENTS
2	06-09-23	SED ADDENDUM #1
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MECHANICAL ENGINEER	GREENMAN PEDERSEN, INC. 2 EXECUTIVE BOULEVARD SUFFERN, NY 10901
STRUCTURAL ENGINEER	GREENMAN PEDERSEN, INC. 2 EXECUTIVE BOULEVARD SUFFERN, NY 10901

UNIVENT REPLACEMENT AT WILLOW GROVE ELEMENTARY SED# 50-02 SCH 001-0-030-016 COUNTY OF ROCKLAND
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MECHANICAL DETAILS - 3
WGES-M-503

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