

### HVAC SYMBOLS LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AAD	AUTOMATIC AIR DAMPER		CONNECTION - TOP		DOUBLE WALL LINED DUCT		SUPPLY / RETURN / EXHAUST AIR TAKEOFFS		ELECTRIC/PNEUMATIC SWITCH OR RELAY
ACC	AIR-COOLED CONDENSING UNIT		CONNECTION - BOTTOM		DUCT SECTION - SUPPLY		DUCT SECTION - RETURN/EXHAUST		PNEUMATIC/ELECTRIC SWITCH OR RELAY
AD	ACCESS DOOR		DIRECTION OF FLOW		DUCT SECTION - ROUND DUCT IN INCHES		DUCT SECTION - FLAT OVAL DUCT IN INCHES		CURRENT TRANSDUCER
AFF	ABOVE FINISHED FLOOR		REDUCER		ACOUSTIC THERMAL LINING		FLEXIBLE DUCTWORK		OPEN/CLOSED
AHU	AIR HANDLING UNIT		CAP OR PLUG		FLEXIBLE CONNECTION		FIRE DAMPER		START/STOP
BBD	BOILER BLOW DOWN		ELBOW DOWN		UNION		SMOKE DAMPER		ENABLE/DISABLE
BD	BACKDRAFT DAMPER		ELBOW UP		BALL VALVE		COMBINATION FIRE AND SMOKE DAMPER		TEMPERATURE SENSOR (DUCT OR PIPE MOUNTED)
CA	COMPRESSED AIR		TEE OUTLET - UP		BALANCING VALVE		VOLUME DAMPER		HUMIDITY SENSOR (DUCT MOUNTED)
CD	COOLING COIL CONDENSATE DRAIN		TEE OUTLET - DOWN		STRAINER		DAMPER CONTROL, PARALLEL BLADE		FLOW TRANSMITTER
CFM	CUBIC FEET PER MINUTE		GATE VALVE		STRAINER WITH BLOW-DOWN		DAMPER CONTROL, OPPOSED BLADE		PRESSURE TRANSMITTER
CHWR	CHILLED WATER RETURN		CHECK VALVE		AUTOMATIC AIR DAMPER		GLOBE VALVE		DIFFERENTIAL PRESSURE TRANSMITTER
CHWS	CHILLED WATER SUPPLY		TRIPLE DUTY VALVE		BACK DRAFT DAMPER		GAS COCK, PLUG VALVE		ELECTRIC/PNEUMATIC TRANSDUCER
CR	CONDENSER WATER RETURN		UNDERCUT DOOR 1"		BLAST GATE		LOUVERED DOOR W/ SQ. FT. OF FREE AREA		ELECTRIC/ELECTRONIC TRANSDUCER
CS	CONDENSER WATER SUPPLY		AIR VENT - MANUAL		AIR DUCT (FIRST FIGURE IS DUCT WIDTH/TOP, SECOND FIGURE IS DUCT DEPTH)		MULTI-BLADE AIR EXTRACTOR		DUCT SMOKE DETECTOR
CW	DOMESTIC COLD WATER		AIR VENT - AUTOMATIC		TURNING VANES		LONG RADIUS 90° ELBOW R/W=1.5		SPACE THERMOSTAT
D	DRAIN		FLANGE		LONG RADIUS 45° ELBOW R/W=1.5		90° ELBOW WITH TURNING VANES		SPACE TEMPERATURE SENSOR
(E)	EXISTING		CONTROL/SOLENOID VALVE, ELECTRIC 2-WAY		FILTER		90° VERTICAL SPLIT OFF (PLAN VIEW)		SPACE CARBON DIOXIDE SENSOR
EA	EXHAUST AIR		CONTROL VALVE, ELECTRIC 3-WAY		EXPANSION JOINT		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		SPACE NATURAL GAS SENSOR
EC	ELECTRICAL CONTRACTOR		CONTROL VALVE, PNEUMATIC 2-WAY		TRANSITION SQUARE TO ROUND		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		SPACE CARBON MONOXIDE SENSOR
EF	EXHAUST FAN		CONTROL VALVE, PNEUMATIC 3-WAY		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		SPACE SENSOR WITH GUARD
ERHC	ELECTRIC REHEAT COIL		RELIEF / SAFETY VALVE		MULTI-BLADE AIR EXTRACTOR		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		SPACE HUMIDISTAT
ETR	EXISTING TO REMAIN		EXISTING WORK TO BE REMOVED (HATCHED)		POINT OF CONNECTION		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		WATER FLOW SENSOR
EUH	ELECTRIC UNIT HEATER		POINT OF DISCONNECTION		AIR FLOW SENSOR		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		PNEUMATIC ACTUATOR
F&T	FLOAT AND THERMOSTATIC TRAP		AIR FLOW SENSOR		FILTER		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		ELECTRIC ACTUATOR
FCU	FAN-COIL UNIT		EXPANSION COMPENSATOR W/ GUIDES		EXPANSION JOINT		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		VARIABLE SPEED / FREQUENCY DRIVE
FFM	FEET PER MINUTE		PIPE ANCHOR		TRANSITION SQUARE TO ROUND		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		COOLING COIL
FT	FIN-TUBE		PIPE GUIDE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		HEATING COIL
GC	GENERAL CONTRACTOR		THERMOSTATIC TRAP		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		GAS FURNACE
GR	GLYCOL RETURN		NOT TO SCALE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		HUMIDIFIER
GS	GLYCOL SUPPLY		FLOAT & THERMOSTATIC TRAP		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		ALARM
HC	HVAC CONTRACTOR		PUMP DISCHARGE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		STATUS
HHWR	HEATING HOT WATER RETURN		THERMOMETER		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		FLOW SWITCH
HHWS	HEATING HOT WATER SUPPLY		WELL		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		DIFFERENTIAL STATIC PRESSURE SWITCH
HP	HEAT PUMP		PRESSURE GAUGE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		RELAY
HPC	HIGH PRESSURE CONDENSATE		STEAM PRESSURE GAUGE WITH 1/4" NEEDLE VALVE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		PRESSURE GAUGE
HPS	HIGH PRESSURE STEAM		SUPPLY DIFFUSER, 1-WAY, 2-WAY, 3-WAY		HUMIDifier DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		FREEZE-STAT
LF	LINEAR FOOTAGE OF FIN-TUBE RADIATION		CEILING DIFFUSER WITH NECK SIZE, TYPE, & CFM		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		DIGITAL INPUT (TO BUILDING MANAGEMENT SYSTEM)
LPC	LOW PRESSURE CONDENSATE		CEILING RETURN OR EXHAUST GRILLE WITH SIZE, TYPE, & CFM		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		DIGITAL OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)
LPG	LIQUEFIED PROPANE GAS		SUPPLY REGISTER WITH SIZE, TYPE, & CFM		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		ANALOG OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)
LPS	LOW PRESSURE STEAM		RETURN OR EXHAUST GRILLE WITH SIZE, TYPE, & CFM		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		ANALOG INPUT (TO BUILDING MANAGEMENT SYSTEM)
MBH	1,000 BTU/HR		DROP IN DUCT		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		ELECTRICAL INTERFACE
MC	MECHANICAL CONTRACTOR		SQUARE CEILING DIFFUSER (4 WAY)		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		SPEED FEED BACK
MPC	MEDIUM PRESSURE CONDENSATE		ROUND CEILING DIFFUSER		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		END SWITCH
MPS	MEDIUM PRESSURE STEAM		SQUARE OR RECTANGULAR CEILING GRILLE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		POSITION FEEDBACK
MRD	MONOFLO FITTING DOWN - HHWR		SUPPLY REGISTER, RETURN OR EXHAUST GRILLE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		TRAVERSE AVERAGING SENSOR
MSD	MONOFLO FITTING DOWN - HHWS		AIR FLOW		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		PROBE SENSOR
MUW	MAKE-UP WATER		ACOUSTIC/THERMAL DUCTWORK LINING - 1 INCH THICK		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		FREEZE STAT SENSOR
NC	NORMALLY CLOSED		ACOUSTIC/THERMAL DUCTWORK LINING - 2 INCH THICK		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
NG	NATURAL GAS		ACOUSTIC/THERMAL DUCTWORK PLENUM LINING - 1 INCH THICK		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
NO	NORMALLY OPEN		ACOUSTIC/THERMAL DUCTWORK PLENUM LINING - 2 INCH THICK		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
NTS	NOT TO SCALE		WALL TO WALL FIN TUBE ENCLOSURE		HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
OA	OUTSIDE AIR				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
PC	PUMPING CONTRACTOR				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
PD	PUMP DISCHARGE				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
PHWR	PRIMARY HEATING HOT WATER RETURN				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
PHWS	PRIMARY HEATING HOT WATER SUPPLY				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
RA	RETURN AIR				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
RD	REFRIGERANT DISCHARGE				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
RHC	HOT WATER REHEAT COIL				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
RLL	REFRIGERANT LIQUID PIPE				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
RSL	REFRIGERANT SUCTION PIPE				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
RTU	ROOFTOP UNIT				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
RV	ROOF VENT				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
SA	SUPPLY AIR				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
SHWR	SECONDARY HEATING HOT WATER RETURN				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
SHWS	SECONDARY HEATING HOT WATER SUPPLY				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
SSI	SPLIT SYSTEM INDOOR SECTION (EVAPORATOR SECTION)				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
SSO	SPLIT SYSTEM OUTDOOR SECTION (CONDENSING UNIT)				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
TC	TEMPERATURE CONTROLS CONTRACTOR				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
UH	UNIT HEATER				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
UV	UNIT VENTILATOR				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
V	VENT				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
WAHP	WATER-TO-AIR HEAT PUMP				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		
WWHP	WATER-TO-WATER HEAT PUMP				HUMIDIFIER DISPERSION TUBE		AIR TERMINAL UNIT-DUCTWORK U-UNIT TYPE		

**SYMBOLS GENERAL NOTES:**

- VALVE AND DAMPER ACTUATOR TYPES (ELECTRIC OR PNEUMATIC) WHICH ARE INDICATED IN HVAC TEMPERATURE CONTROL DRAWINGS SHALL SUPERSEDE TYPE INDICATED ON ALL OTHER HVAC DRAWINGS.

**HVAC CONTRACTOR GENERAL NOTES:**

- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS WITHIN THE BUILDING PRIOR TO COMMENCEMENT OF ALL DEMOLITION AND NEW WORK.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE EXISTING CEILINGS, UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS, FOR PERFORMING DEMOLITION OR NEW WORK WITHIN THE BUILDING. THE EXISTING CEILINGS SHALL BE REMOVED IN A MANNER TO AVOID DAMAGE TO THE CEILING SYSTEMS. STORAGE OF CEILING SYSTEM COMPONENTS FOR REINSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE STORAGE OF ALL MATERIAL SHALL BE IN AREAS OR LOCATIONS APPROVED BY THE OWNER. THE OWNER WILL NOT COMPENSATE FOR ANY DAMAGED OR LOST MATERIAL WHILE IN STORAGE. AFTER COMPLETION OF ALL DEMOLITION OR NEW WORK, THE CONTRACTOR SHALL REINSTALL THE CEILING SYSTEMS TO MATCH THE ORIGINAL INSTALLATION.
- DEMOLITION DRAWINGS SHOW MAJOR EQUIPMENT, PIPING, AND DUCTWORK REMOVALS. THE INTENT IS NOT TO IDENTIFY ALL MISCELLANEOUS PIPING, PIPING ACCESSORIES, DUCTWORK ACCESSORIES, SUPPORTS, CONTROLS, CONTROL ACCESSORIES, CONTROL WIRING, CONDUIT, AND PNEUMATIC CONTROL TUBING TO BE DISCONNECTED AND REMOVED, BUT IS THE REQUIREMENT UNDER THIS CONTRACT. NO EQUIPMENT, PIPING, OR DUCTWORK SHALL BE ABANDONED IN PLACE, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL EQUIPMENT INDICATED TO BE TURNED OVER TO THE OWNER SHALL BE DISCONNECTED AND REMOVED FROM THE EXISTING SYSTEMS AND DELIVERED (INCLUDING LOADING AND UNLOADING) TO A STORAGE AREA WITHIN THE BUILDING AS SELECTED BY THE OWNER. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR ANY EQUIPMENT DAMAGED DURING REMOVAL AND DELIVERY. ANY DAMAGE TO EQUIPMENT PRIOR TO DISCONNECTING SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE. IF NOT REPORTED, THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR REPAIRS TO THE EQUIPMENT.
- BEFORE DISCONNECTING, REMOVING, OR SERVICING ANY AIR CONDITIONING EQUIPMENT OR SYSTEMS CONTAINING REFRIGERANTS, THE EQUIPMENT OR SYSTEMS SHALL BE EVACUATED OF ALL REFRIGERANT PER THE LATEST ADOPTED RULES AND REGULATIONS BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA). THE CONTRACTOR OR TECHNICIAN PERFORMING THE WORK SHALL BE CERTIFIED BY AN EPA APPROVED CERTIFYING AGENCY OR ORGANIZATION.
- ALL DUCTWORK, PIPING, AND CONDUIT PENETRATIONS THROUGH RATED WALLS OR FLOORS SHALL BE PROVIDED WITH FIRE/SMOKE STOPPINGS PER SPECIFICATION. REFER TO CODE ANALYSIS DRAWING FOR ALL RATED WALL LOCATIONS. ALL FLOORS SHALL BE CONSIDERED RATED.
- UNLESS SHOWN ON THE ARCHITECTURAL DRAWINGS, IT IS THE RESPONSIBILITY OF THIS CONTRACT TO PATCH AND FINISH ALL EXISTING DUCTWORK OR PIPE PENETRATIONS THROUGH FLOORS, ROOFS, INTERIOR WALLS, AND EXTERIOR WALLS AFTER DEMOLITION WORK. IN ADDITION, ALL NEW PENETRATIONS SHALL BE PROVIDED FOR INSTALLATION OF MECHANICAL SYSTEMS INCLUDING, BUT NOT LIMITED TO, EQUIPMENT, CURBING, DUCTWORK, PIPING, CONTROLS, ETC. PATCHING AND FINISHING SHALL MATCH EXISTING CONSTRUCTION INCLUDING FIRE RATINGS. PROVIDE LINTELS PER LINTEL SCHEDULE.
- IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL AIR VENTS AND DRAINS IN THE PIPING SYSTEM. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AIR VENTS AT ALL SYSTEM HIGH POINTS AND AT AREAS WITHIN THE PIPING SYSTEMS THAT COULD ACCUMULATE OR TRAP AIR WHICH WOULD PREVENT PROPER VENTING OR OPERATION OF THE SYSTEMS. DRAINS SHALL BE PROVIDED AT ALL LOW POINTS WITHIN THE PIPING SYSTEM TO FACILITATE COMPLETE DRAINING OF THE SYSTEM.
- PROVIDE THERMAL EXPANSION COMPENSATORS AND THERMAL EXPANSION LOOPS IN PIPING SYSTEM PER INDUSTRY STANDARDS.

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OSSINING UNION FREE SCHOOL DISTRICT

HVAC IMPROVEMENTS

PARK EARLY CHILDHOOD CENTER SED #66-14-01-03-0-004-023

OSSINING HIGH SCHOOL SED #66-14-01-03-0-003-042

DATE	DRAWN	CHECKED
8/28/2020	KAB	JJM
SCALE	AS NOTED	
SHEET TITLE		
HVAC LEGEND AND ABBREVIATIONS		

PROJECT NUMBER  
14428.16/17

PES

H000

DRAWING NUMBER

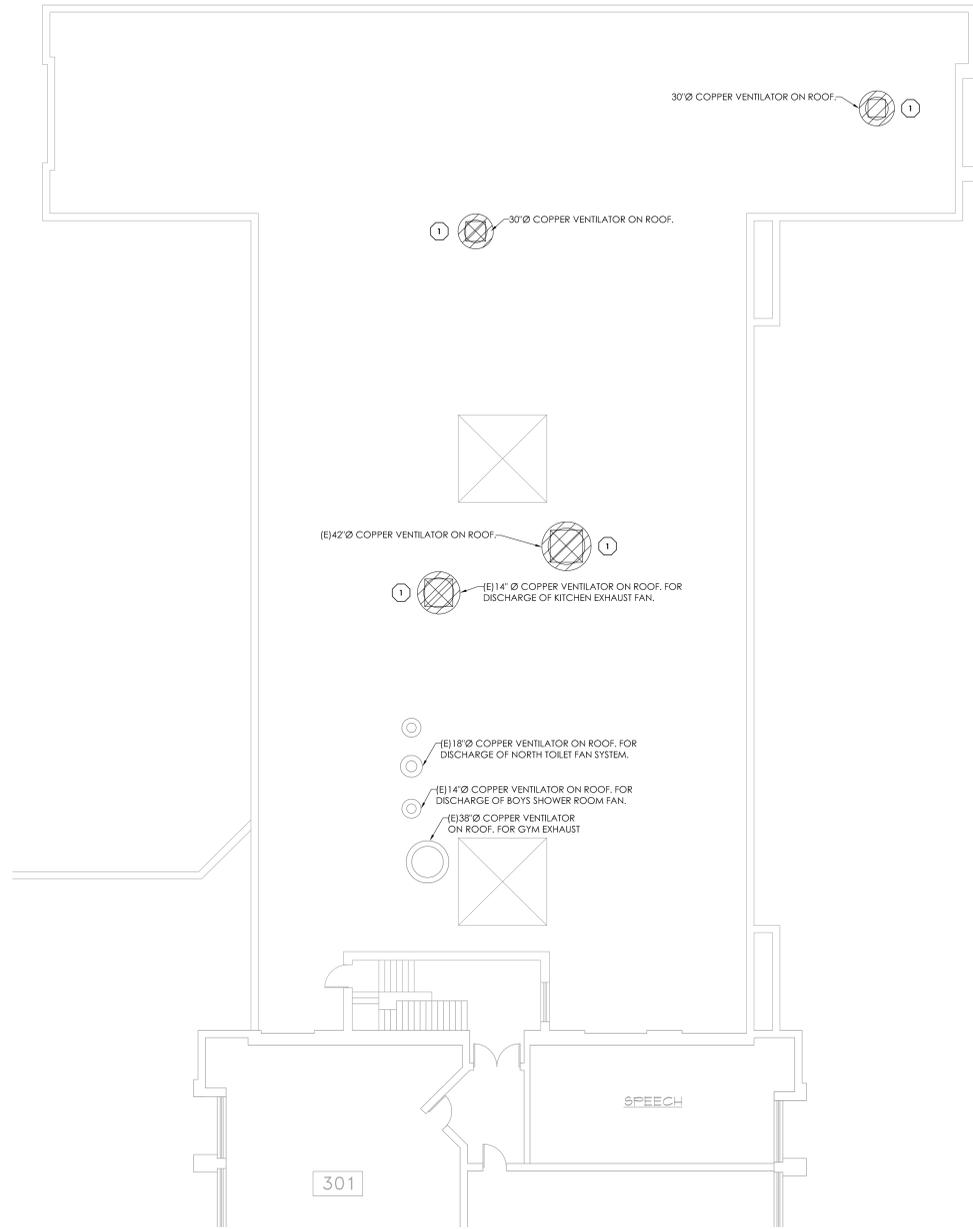




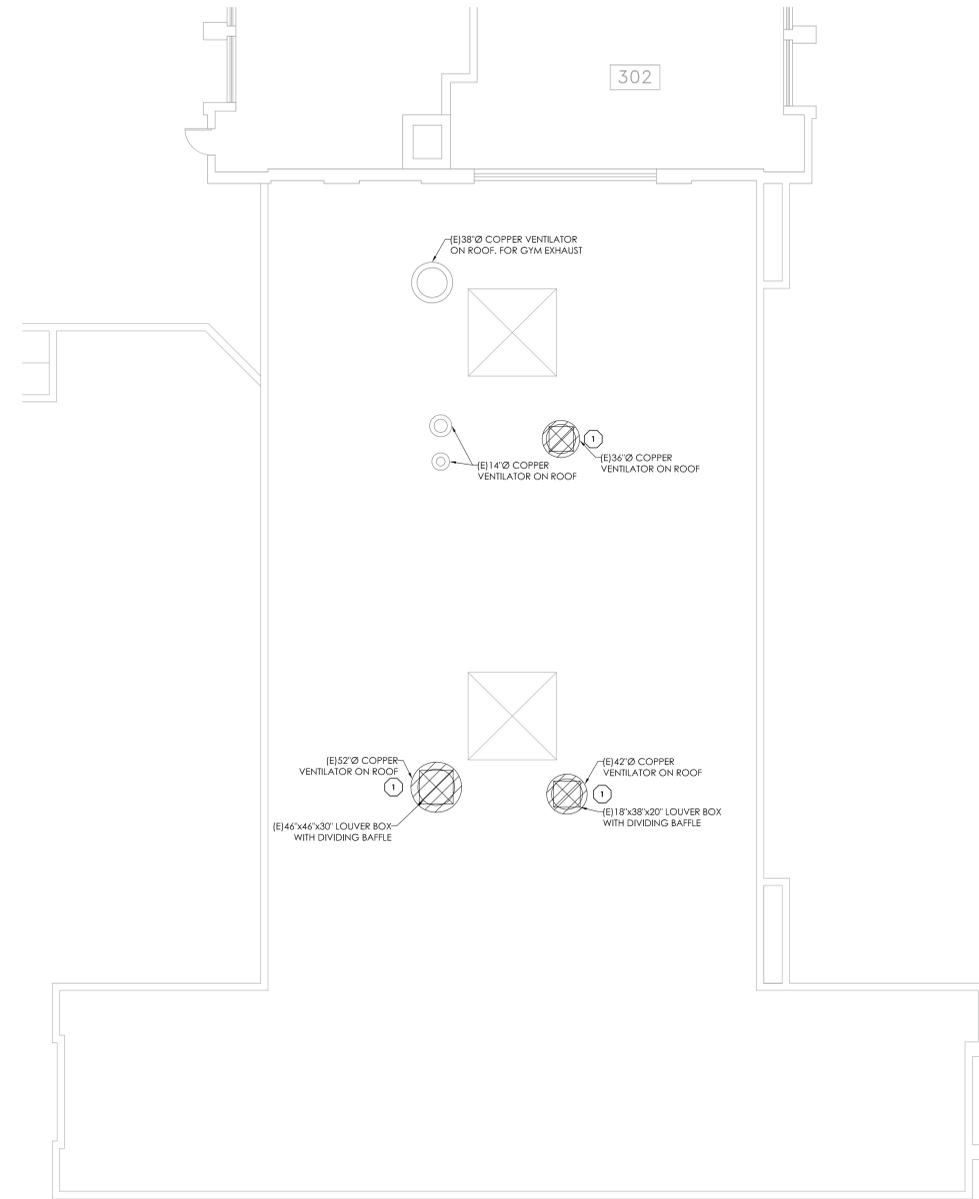


**KEY NOTES:**

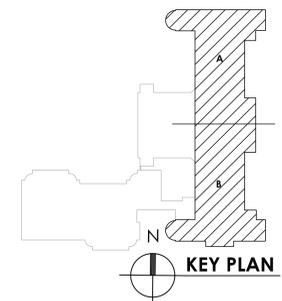
- 1 REMOVE EXISTING GRAVITY VENT AND CURB. PREPARE FOR NEW CURB. INFILL DECKING MATERIAL AS REQUIRED. REFER TO ROOF SUPPORT DETAILS FOR ADDITIONAL REQUIREMENTS. COORDINATE WITH THE OWNER AND THE EXISTING ROOFING MANUFACTURER TO MAINTAIN THE WARRANTY ON THE ROOF. ALL ROOFING WORK SHALL BE PER THE ROOFING MANUFACTURER'S AND NRCA REQUIREMENTS AND RECOMMENDATIONS.



1  
H103  
**ROOF HVAC DEMOLITION PLAN - AREA A**  
SCALE: 1/8" = 1'-0"



2  
H103  
**ROOF HVAC DEMOLITION PLAN - AREA B**  
SCALE: 1/8" = 1'-0"



DATE	DRAWN	CHECKED
8/28/2020	KAB	JJM
SCALE	AS NOTED	
SHEET TITLE		
ROOF HVAC DEMOLITION PLAN		

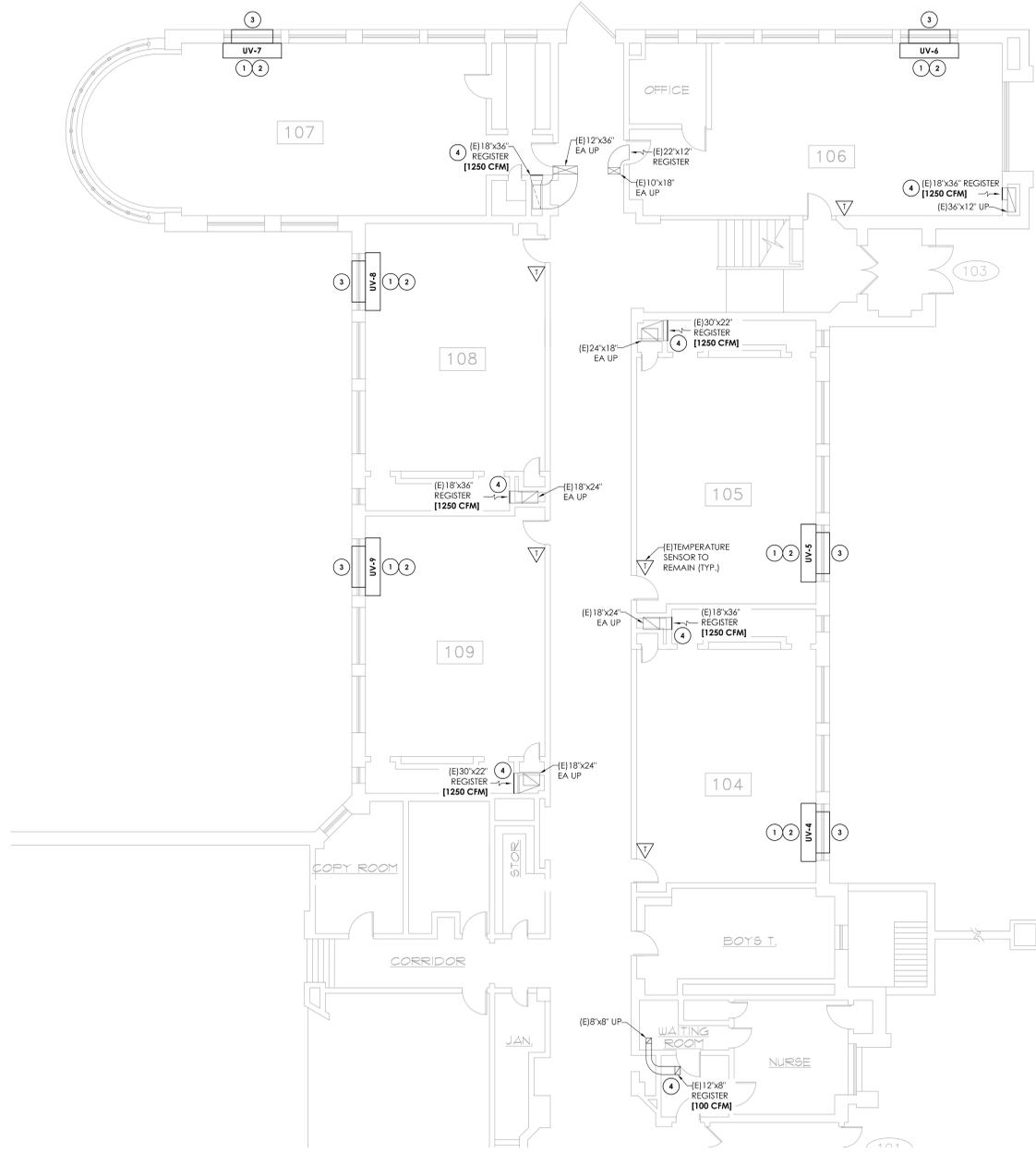
PROJECT NUMBER
14428.16/17
<b>PES</b>
<b>H103</b>
DRAWING NUMBER

**GENERAL NOTES:**

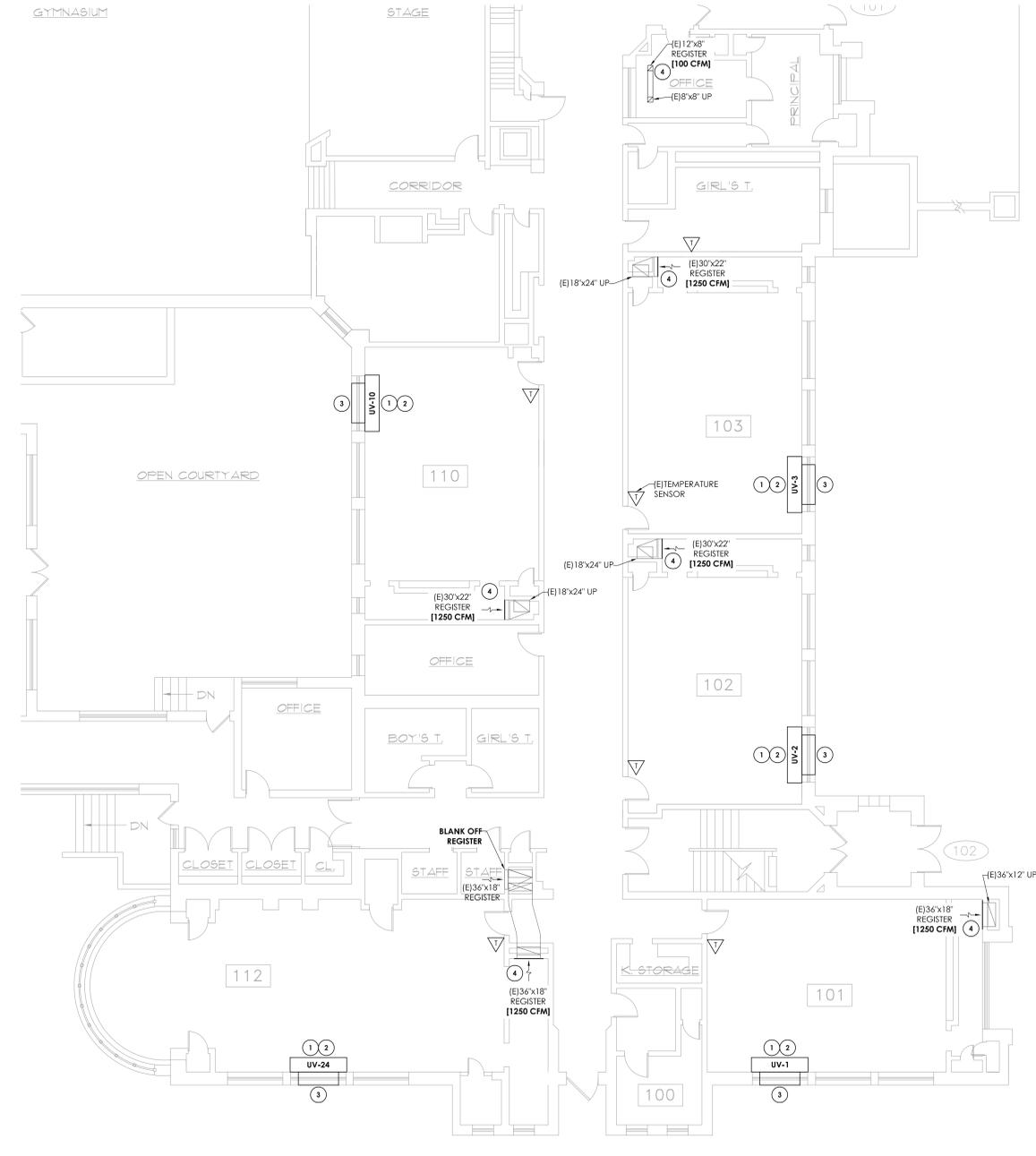
- 1. REBALANCE ALL GRILLES TO AIRFLOW RATES INDICATED IN BRACKETS [ ].

**KEY NOTES:**

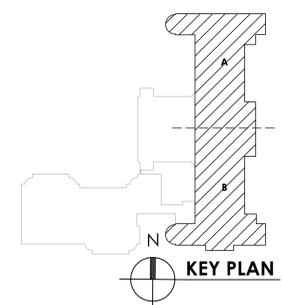
- 1. PROVIDE NEW UNIT VENTILATOR, LOUVER, AND LOUVER SLEEVE. UNIT VENTILATOR SHALL INCLUDE A TWO-INCH STEP DOWN TO ALLOW INSTALLATION BELOW THE EXISTING WINDOW SILL. MODIFY VERTICAL SILL TRIM AS REQUIRED TO FACILITATE UNIT INSTALLATION FLUSH WITH WALL. FIELD VERIFY THE REQUIRED STEP DOWN HEIGHT AND CABINET DEPTH PRIOR TO SUBMITTING AND ORDERING EQUIPMENT. ROUTE PIPING IN UNIT VENTILATOR PIPE PORTAL. AVOID ROUTING PIPING IN FRONT OF LOUVERS. PROVIDE HARD DUCTED SLEEVE TO NEW LOUVER AND SEAL WEATHER TIGHT. PATCH AND REPAIR ALL DISTURBED PORTIONS OF EXISTING WALLS AND FLOOR TO MATCH EXISTING MATERIALS AND FINISHES.
- 2. PROVIDE NEW FLOOR PENETRATIONS ALIGNING WITH NEW UNIT VENTILATOR END POCKET PIPE PORTAL. EXTEND AND CONNECT STEAM AND CONDENSATE RETURN PIPING FROM CRAWL SPACE TO UNIT VENTILATOR. REINSTALL EXISTING CONTROLS AND PROVIDE NEW STEAM TRAPS.
- 3. MODIFY EXISTING OUTDOOR AIR OPENING IN EXTERIOR WALL TO ACCOMMODATE NEW LOUVER. PROVIDE NEW LINTEL. SEE UV AND LINTEL SCHEDULE FOR SIZES.
- 4. PROVIDE NEW OPPOSED BLADE DAMPER SIZED TO MATCH EXISTING REGISTER. INSTALL CONCEALED BEHIND EXISTING REGISTER.



1 H201 SCALE: 1/8" = 1'-0"



2 H201 SCALE: 1/8" = 1'-0"



OSSINING UNION FREE SCHOOL DISTRICT  
HVAC IMPROVEMENTS  
PARK EARLY CHILDHOOD CENTER SED #66-14-01-03-0-004-023  
OSSINING HIGH SCHOOL SED #66-14-01-03-0-003-042

DATE	DRAWN	CHECKED
8/28/2020	DLB	AMT
SCALE	AS NOTED	
SHEET TITLE		
FIRST FLOOR HVAC NEW WORK PLAN		

PROJECT NUMBER  
14428.16/17  
**PES**  
H201  
DRAWING NUMBER

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ROSSING UNION FREE SCHOOL DISTRICT

HVAC IMPROVEMENTS

PARK EARLY CHILDHOOD CENTER SED #66-14-01-03-0-004-023

ROSSING HIGH SCHOOL SED #66-14-01-03-0-003-042

DATE 8/28/2020

DRAWN KAB

CHECKED JJM

SCALE AS NOTED

SHEET TITLE

SECOND FLOOR HVAC

NEW WORK PLAN

PROJECT NUMBER

14428.16/17

PES

H202

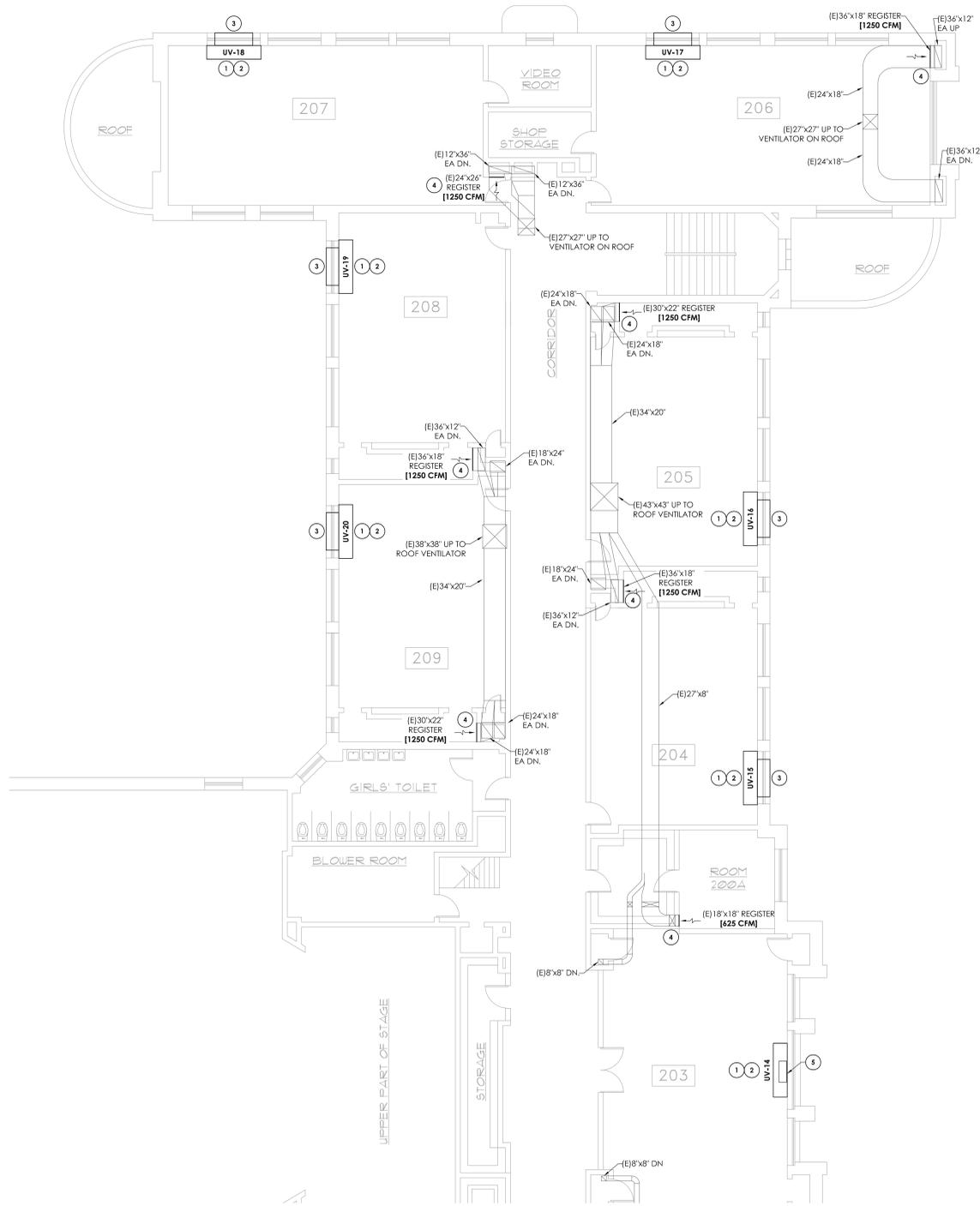
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**GENERAL NOTES:**

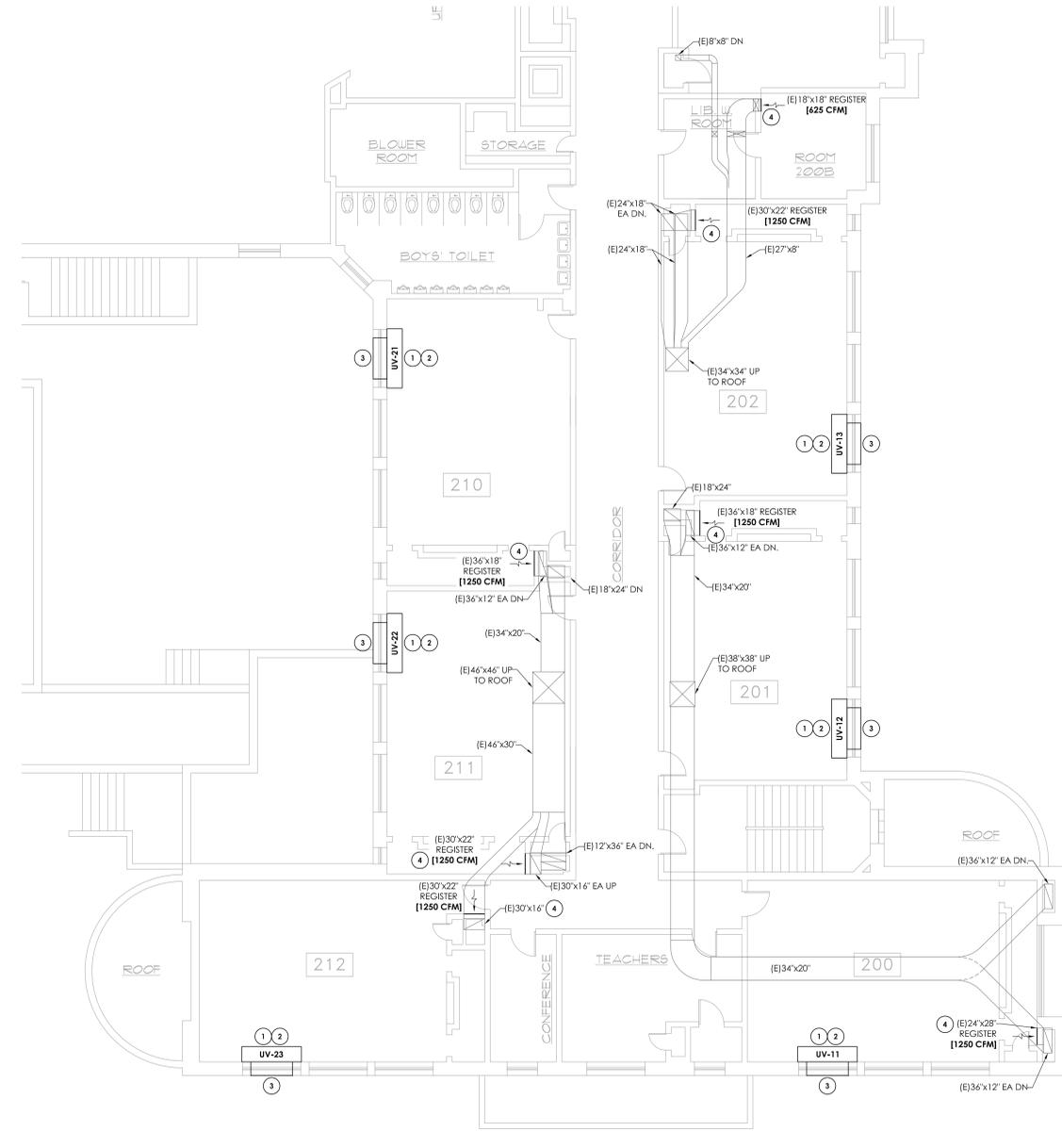
1. REBALANCE ALL GRILLES TO AIRFLOW RATES INDICATED IN BRACKETS [ ].

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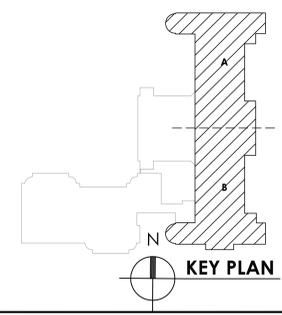
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- 2. PROVIDE NEW FLOOR PENETRATIONS ALIGNING WITH NEW UNIT VENTILATOR END POCKET PIPE PORTAL LOCATION. EXTEND AND CONNECT STEAM AND CONDENSATE RETURN PIPING FROM CRAWL SPACE TO UNIT VENTILATOR. REINSTALL EXISTING CONTROLS AND PROVIDE NEW STEAM TRAPS.
- 3. MODIFY EXISTING OUTDOOR AIR OPENING IN EXTERIOR WALL TO ACCOMMODATE NEW LOUVER. PROVIDE NEW LINTEL. SEE UV AND LINTEL SCHEDULE FOR SIZES.
- 4. PROVIDE NEW OPPOSED BLADE DAMPER SIZED TO MATCH EXISTING REGISTER. INSTALL CONCEALED BEHIND EXISTING REGISTER.
- 5. ALIGN NEW UV OUTSIDE AIR INTAKE PLENUM DIRECTLY OVER EXISTING INTAKE OPENING IN FLOOR. OWNER SHALL FUR OUT WALL AS NECESSARY TO FACILITATE UV INSTALLATION OVER INTAKE OPENING.



1 SECOND FLOOR HVAC NEW WORK PLAN - AREA A  
SCALE: 1/8" = 1'-0"



2 SECOND FLOOR HVAC NEW WORK PLAN - AREA B  
SCALE: 1/8" = 1'-0"







MARK	MANUFACTURER	MODEL	SERVCS	CFM	MOTOR					WINDUP			STEAM COIL CAPACITY		TYPE	NOMINAL DIMENSIONS (LxWxH)	O.A. LOUVER DIMENSIONS (LxW)	ARRANGEMENT	FILTER RATING	REMARKS:				
					HP	FAN SPEED	TYPE	WINDUP (A)	FLA	VOLTS	MBR. O.A. CFM	O.A. FT.	BA. FT.	COL. ROWS							NAT. FT.	INLET (PSI)	MBH	
UV-1	DAIKIN	UAV5SH13	CLASSROOM 101	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-2	DAIKIN	UAV5SH13	CLASSROOM 102	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-3	DAIKIN	UAV5SH13	CLASSROOM 103	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-4	DAIKIN	UAV5SH13	CLASSROOM 104	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-5	DAIKIN	UAV5SH13	CLASSROOM 105	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-6	DAIKIN	UAV5SH13	CLASSROOM 106	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-7	DAIKIN	UAV5SH13	CLASSROOM 107	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-8	DAIKIN	UAV5SH13	CLASSROOM 108	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-9	DAIKIN	UAV5SH13	CLASSROOM 109	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-10	DAIKIN	UAV5SH13	CLASSROOM 110	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-11	DAIKIN	UAV5SH13	CLASSROOM 200	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-12	DAIKIN	UAV5SH13	CLASSROOM 201	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-13	DAIKIN	UAV5SH13	CLASSROOM 202	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-14	DAIKIN	UAV5SH13	CLASSROOM 203	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-15	DAIKIN	UAV5SH13	CLASSROOM 204	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-16	DAIKIN	UAV5SH13	CLASSROOM 205	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-17	DAIKIN	UAV5SH13	CLASSROOM 206	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-18	DAIKIN	UAV5SH13	CLASSROOM 207	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-19	DAIKIN	UAV5SH13	CLASSROOM 208	1200	1/3	HIGH	ECM	15	4.2	115/1	440	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-20	DAIKIN	UAV5SH13	CLASSROOM 209	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-21	DAIKIN	UAV5SH13	CLASSROOM 210	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-22	DAIKIN	UAV5SH13	CLASSROOM 211	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-23	DAIKIN	UAV5SH13	CLASSROOM 212	1200	1/3	HIGH	ECM	15	4.2	115/1	435	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UV-24	DAIKIN	UAV5SH13	CLASSROOM 112	1200	1/3	HIGH	ECM	15	4.2	115/1	490	2.0	68.0	1	46.9	97.9	2	69.5	FACE & BYPASS	66 X 21-7/8 X 30-1/8	60 X 10.5	1	MERV 13	1.2,3,4,5
UVH-1/2	ARDALE	UVH40	WEIGHT ROOM	750	1/2	MEDIUM	ECM	15	9.2	115/1	345	2.0	68.0	1	43	148.9	5	86.2	FACE & BYPASS	10X30X30	35/10	2	MERV 13	1.2,5,6

REMARKS: 1. BACHNET NETWORKS: ALL EQUIPMENT TO BE CONNECTED TO THE EXISTING BMS (SCHNEIDER ELECTRIC, ANDOVER SYSTEM).  
 2. MOTOR AND ELECTRICAL RHP/FD BOX INCLUDES FAN SPEED SWITCH, ON/OFF SWITCH AND NON-FUSED DISCONNECT.  
 3. PROVIDE WITH MANUFACTURER'S 2" SOLID TYPHOON ACCESSORY AND TALL ADAPTER BACK WITH ENCLOSED PIPE FUNNEL.  
 4. PROVIDE TWO 12-INCH END COMPARTMENTS, FULL 30" HIGH WITH 2" STEP DOWN.  
 5. EXTERIOR LOUVER SHALL BE CUSTOM COLOR AS SELECTED BY THE ARCHITECT TO MATCH THE COLOR OF THE SURROUNDING BRICK.  
 6. PROVIDE REAR PLUNUM BOX.

ARRANGEMENTS: 1. RETURN AIR - FRONT RECESSED AIR-BOX PANEL OUTDOOR AIR - REAR DUCT COLLECT SUPPLY AIR - TOP RECHARGE GRILLE.  
 2. FRONT RETURN GRILLE BACK OUTDOOR AIR CONNECTION; TOP RECHARGE COIL AS HIGH AS POSSIBLE.

MARK	LOCATION	SERVICE	TYPE	CFM	SP (IN. W.G.)	DIAMETER (IN.)	FAN RPM	ELECTRICAL DATA			TYPICAL UNIT MFG.	REMARKS:	
								BHP/HP	VOLTS	PHASE			VFD
EF-1	ROOF	RELIEF	DOWNBLAST	5,000	0.50	24.5	692	2	208	3	INTEGRAL	GREENHECK-G-240-CVSD	1.2,3,4,5
EF-2	ROOF	RELIEF	DOWNBLAST	6,250	0.70	24.5	846	2	208	3	INTEGRAL	GREENHECK-G-240-CVSD	1.2,3,4,5
EF-3	ROOF	RELIEF	DOWNBLAST	3,225	0.50	16.625	1277	2	208	1	INTEGRAL	GREENHECK-G-14SVG	1.2,3,4,5
EF-4	ROOF	RELIEF	DOWNBLAST	5,500	0.60	24.5	722	2	208	3	INTEGRAL	GREENHECK-G-240-CVSD	1.2,3,4,5
EF-5	ROOF	RELIEF	DOWNBLAST	5,725	0.60	24.5	776	2	208	3	INTEGRAL	GREENHECK-G-240-CVSD	1.2,3,4,5
EF-6	ROOF	RELIEF	DOWNBLAST	2,500	0.50	14.625	1522	1	208	1	INTEGRAL	GREENHECK-G-14SVG	1.2,3,4,5
EF-7	ROOF	RELIEF	DOWNBLAST	2,500	0.40	14.625	1490	1	208	1	INTEGRAL	GREENHECK-G-14SVG	1.2,3,4,5
EF-HS-1	GYM	RELIEF	WALL INTD	700	0.25	14	1616	06/25	115	1	INTEGRAL	GREENHECK-SEL-14KRWG	1.2,4,5

REMARKS: 1. PROVIDE WITH MANUFACTURER'S DISCONNECT SWITCH.  
 2. PROVIDE WITH MANUFACTURER'S EC MOTOR WITH INTEGRAL VFD AND 0-10 VDC INPUT SIGNAL CONTROL.  
 3. PROVIDE WITH MANUFACTURER'S 14" HIGH ROOF CURB.  
 4. PROVIDE WITH MANUFACTURER'S LOW VOLTAGE NOTICED DAMPER.  
 5. PROVIDE WITH MANUFACTURER'S ALUMINUM BRIDGESCREEN.

MARK	LOCATION	SERVICE	FREE AREA (SQ. FT.)	CFM	SP (IN. WG)	SIZE (IN. WG)	TYPICAL UNIT MFG. & MODEL NO.	REMARKS:
L-1	GYM	INTAKE	1.95	315	0	35X10	RUSKIN ELF375DX	1
L-2	GYM	RELIEF	0.97	630	0.06	18X18	RUSKIN ELF375DX	

REMARKS: 1. MATCH EXISTING OPENING SIZE, FIELD VERIFY.

NEW TAG	WORST CASE ROOM	CFM**2 AT MAXIMUM	TOTAL OCCUPANCY FOR VENTILATION	TOTAL SQ. FT.	O.A. PER SQ. FT. (CFM)	O.A. PER SW. FT. (CFM)	V <sub>in</sub> (CFM)	E <sub>z</sub>	OVER VENTILATION FOR LOUVER CROSSCONTAMINATION	V <sub>out</sub> (cfm)	SPACE MAXIMUM SUPPLY (CFM)
Park ECC - First Floor											
	Park ECC - Rm 101	0.00	30	774	10	0.12	393	0.9	0%		437
	Park ECC - Rm 102	0.00	30	749	10	0.12	390	0.9	0%		433
	Park ECC - Rm 103	0.00	30	776	10	0.12	393	0.9	0%		437
	Park ECC - Rm 104	0.00	30	744	10	0.12	389	0.9	0%		433
	Park ECC - Rm 105	0.00	30	774	10	0.12	393	0.9	0%		437
	Park ECC - Rm 106	0.00	30	969	10	0.12	416	0.9	0%		463
	Park ECC - Rm 107	0.00	30	1120	10	0.12	434	0.9	0%		483
	Park ECC - Rm 108	0.00	30	776	10	0.12	393	0.9	0%		437
	Park ECC - Rm 109	0.00	30	757	10	0.12	391	0.9	0%		434
	Park ECC - Rm 110	0.00	30	763	10	0.12	392	0.9	0%		435
	Park ECC - Rm 112	0.00	30	1147	10	0.12	438	0.9	0%		486
Park ECC - Second Floor											
	Park ECC - Rm 200	0.00	30	765	10	0.12	392	0.9	0%		435
	Park ECC - Rm 201	0.00	30	744	10	0.12	389	0.9	0%		433
	Park ECC - Rm 202	0.00	30	780	10	0.12	394	0.9	0%		437
	Park ECC - Rm 203	0.00	30	920	10	0.12	410	0.9	0%		456
	Park ECC - Rm 204	0.00	30	744	10	0.12	389	0.9	0%		433
	Park ECC - Rm 205	0.00	30	774	10	0.12	393	0.9	0%		437
	Park ECC - Rm 206	0.00	30	941	10	0.12	413	0.9	0%		459
	Park ECC - Rm 207	0.00	30	899	10	0.12	408	0.9	0%		453
	Park ECC - Rm 208	0.00	30	776	10	0.12	393	0.9	0%		437
	Park ECC - Rm 209	0.00	30	757	10	0.12	391	0.9	0%		434
	Park ECC - Rm 210	0.00	30	759	10	0.12	391	0.9	0%		435
	Park ECC - Rm 211	0.00	30	757	10	0.12	391	0.9	0%		434
	Park ECC - Rm 212	0.00	30	753	10	0.12	390	0.9	0%		434

Outdoor Air Ventilation Calculations										
EQUIPMENT TAG	SPACE	AREA O.A. RATE (CFM/ft <sup>2</sup> )	TOTAL OCCUPANCY	TOTAL SQ.FT.	O.A. PER PERSON (CFM)	O.A. PER SQ.FT. (CFM)	V <sub>in</sub> (CFM)	E <sub>z</sub>	Louver Crosscontamination	V <sub>out</sub> (cfm)
UVH-12	HEIGHT ROOM	0.29	24	2340	20	0.08	620	0.9	0%	689

LOOSE LINTEL SCHEDULE		
WALL TYPE	SPAN	LINTEL
4" MASONRY / VENEER	1'-4" to 4'-6"	L 4 x 3 1/2 x 5/16 (L.L.V.)
	4'-7" to 5'-6"	L 4 x 3 1/2 x 5/16 (L.L.V.)
	5'-7" to 6'-6"	L 5 x 3 1/2 x 5/16 (L.L.V.)
	6'-7" to 7'-6"	L 6 x 3 1/2 x 5/16 (L.L.V.)
8" BLOCK	1'-4" to 4'-6"	(2) - L 4 x 3 1/2 x 5/16 (L.L.V.)
	4'-7" to 5'-6"	(2) - L 4 x 3 1/2 x 5/16 (L.L.V.)
	5'-7" to 6'-6"	(2) - L 5 x 3 1/2 x 5/16 (L.L.V.)
	6'-7" to 7'-6"	(2) - L 6 x 3 1/2 x 5/16 (L.L.V.)
4" BRICK & 8" BLOCK OR 12" BLOCK	1'-4" to 4'-6"	(3) - L 4 x 3 1/2 x 5/16 (L.L.V.)
	4'-7" to 5'-6"	(3) - L 4 x 3 1/2 x 5/16 (L.L.V.)
	5'-7" to 6'-6"	(3) - L 5 x