

**AIR-COOLED CONDENSER/COMPRESSOR UNIT SCHEDULE**

TAG	CU-1	CU-2	CU-3	CU-4
UNIT SERVED	AH-1	AH-2	AH-3	AH-4
NOMINAL CAPACITY MBH	36.0	180.0	24.0	24.0
AMBIENT TEMPERATURE °F	95.0	95.0	95.0	95.0
REFRIGERANT	R-410A	R-410A	R-410A	R-410A
<b>COMPRESSOR</b>				
NUMBER/TYPE	1/SCROLL	2/SCROLL	1/SCROLL	1/SCROLL
RLA (EA)	10.4	25.0	13.5	13.5
VOLTAGE	208V-3ø	208V-3ø	208V-1ø	208V-1ø
<b>CONDENSER</b>				
FANS (NUMBER/TYPE)	1/PROP	2/PROP	1/PROP	1/PROP
SIZE (DIA)	7/8	2/8	1/8	1/8
H.P. (EA)	1/8	1/8	1/8	1/8
FLA	0.56	5.0	0.9	0.9
<b>ELECTRICAL</b>				
MINIMUM CIRCUIT AMPACITY	14.0	66.3	18.0	18.0
MAXIMUM OVERLOAD PROTECTION	20.0	80.0	30.0	30.0
<b>REFRIGERANT PIPE SIZE</b>				
LIQUID LINE	3/8"	1/2"	3/8"	3/8"
SUCTION LINE (VERTICAL RISE)	3/4"	1-3/8"	3/4"	3/4"
SUCTION LINE (HORIZONTAL RISE)	3/4"	1-3/8"	3/4"	3/4"

NOTES:  
1. VERIFY EXACT REFRIGERANT PIPE SIZES WITH UNIT MANUFACTURER.

**AIR HANDLING UNIT SCHEDULE**

TAG	AH-1	AH-3	AH-4
TYPE	HORIZONTAL DISCHARGE CONSTANT VOLUME SPLIT SYSTEM	HORIZONTAL DISCHARGE CONSTANT VOLUME SPLIT SYSTEM	HORIZONTAL DISCHARGE CONSTANT VOLUME SPLIT SYSTEM
TOTAL CFM	1,200	800	800
<b>OUTDOOR AIR CFM</b>			
MINIMUM	200	75	75
MAXIMUM	200	75	75
S.P. IN H2O			
EXTERNAL	0.6	0.6	0.6
<b>COIL FACE AREA SQ. FT.</b>			
COOLING COIL	5.04	3.67	3.67
<b>COOLING (DX COIL)</b>			
TOTAL MBTUH	36.0	24.0	24.0
SENSIBLE MBTUH	30.0	18.9	18.9
ENT. AIR D.B. °F	77.6	76.4	76.4
ENT. AIR W.B. °F	64.5	63.8	63.8
REFRIGERANT TEMP °F	45.0	45.0	45.0
AMBIENT TEMP °F	95.0	95.0	95.0
NO. OF ROWS	3	3	3
FINS PER INCH	14	14	14
<b>SUPPLY FAN</b>			
SIZE (IN.) / TYPE	11x10/CENTRIFUGAL	11x8/CENTRIFUGAL	11x8/CENTRIFUGAL
MOTOR H.P.	1/2	1/3	1/3
VOLTAGE	208/230-1ø	208/230-1ø	208/230-1ø
AMPACITY	5.0	4.0	4.0
MOP	15.0	15.0	15.0
<b>FILTER</b>			
TYPE	THROWAWAY	THROWAWAY	THROWAWAY
NO./SIZE (IN.)	1/20x20x1	1/16x20x1	1/16x20x1

NOTES:  
1. PROVIDE ALL AIR HANDLING UNITS WITH A WATER-LEVEL DETECTION DEVICE AT A POINT HIGHER THAN THE CONDENSATE DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF THE DRAIN PAN.  
2. PROVIDE ALL AIR HANDLING UNITS WITH A 120V-1ø CONDENSATE DRAIN PUMP.

**Thomas Horlacher, A.I.A.**  
Architecture and Historic Preservation  
P.O. Box 581  
Scranton, Pennsylvania 18501  
Phone (570) 346-7914  
Fax (570) 346-1769

**hsa associates**  
consulting engineers  
434 Lackawanna Avenue  
Scranton, Pa. 18506-2014  
tel: 570-346-9782  
fax: 570-344-3674

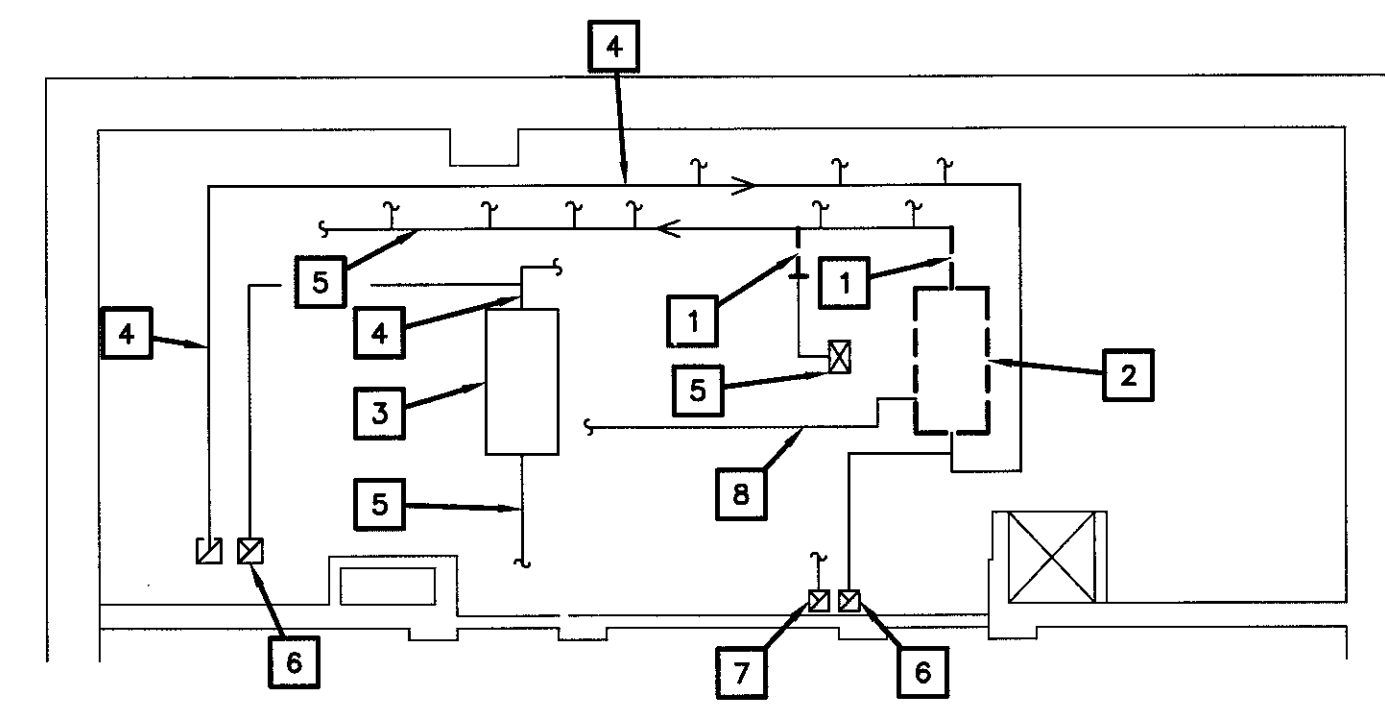
**LACKAWANNA COUNTY LIBRARY SYSTEM**  
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520 VINE STREET SCRANTON, PA. 18503

**ROOF REPLACEMENT AND HVAC RENOVATIONS**

**HVAC PLANS**

JOB NO.	13132	DRAWING NO.	H-1
DRAWN BY	C.T.	CHECKED BY	R.J.H.
SCALE	AS NOTED	DATE	08-03-15

- HVAC PLAN NOTES:**
- EXISTING AIR HANDLING UNIT LOCATED AT BASEMENT CEILING TO BE REMOVED AND REPLACED WITH AIR HANDLER AH-1 AND PROVIDED WITH CONNECTIONS TO EXISTING SUPPLY AIR DUCT AND RETURN AIR DUCT. RECONNECT TO EXISTING POWER SOURCE FOR AIR HANDLER.
  - NEW CONDENSING UNIT SERVING AIR HANDLING UNIT AH-1. REMOVE EXISTING AND PROVIDE NEW ELECTRICAL SERVICE FROM EXISTING PANEL AND NEW REFRIGERANT LINE SET TO THE NEW AIR HANDLING UNIT IN BASEMENT SPACE.
  - NEW CONDENSING UNIT SERVING AIR HANDLING UNIT AH-2. REMOVE EXISTING AND PROVIDE NEW ELECTRICAL SERVICE FROM EXISTING PANEL AND NEW REFRIGERANT LINE SET TO THE NEW AIR HANDLING UNIT IN ATTIC SPACE.
  - NEW CONDENSING UNIT SERVING AIR HANDLING UNIT AH-3. REMOVE EXISTING AND PROVIDE NEW ELECTRICAL SERVICE FROM EXISTING PANEL AND NEW REFRIGERANT LINE SET TO THE NEW AIR HANDLING UNIT IN ATTIC SPACE.
  - NEW CONDENSING UNIT SERVING AIR HANDLING UNIT AH-4. REMOVE EXISTING AND PROVIDE NEW ELECTRICAL SERVICE FROM EXISTING PANEL AND NEW REFRIGERANT LINE SET TO THE NEW AIR HANDLING UNIT IN ATTIC SPACE.
  - NEW SUPPLY AIR DUCT. CONNECT TO EXISTING DUCTWORK SERVING FIRST FLOOR SYSTEM.
  - NEW THERMOSTAT WITH PROGRAMMING SYSTEM FOR OPERATION OF UNIT SERVING EACH FLOOR AREA.
  - EXISTING SUPPLY/RETURN AIR DUCTWORK, DIFFUSERS AND GRILLES TO REMAIN.
  - NEW SUPPLY AND RETURN AIR DUCT. CONNECT TO EXISTING DUCTWORK SERVING SECOND FLOOR SYSTEM.
  - EXISTING AIR HANDLING UNIT AH-2 TO BE REBUILT IN FIELD WITH NEW MOTOR, BELT DRIVES, COOLING COIL, FAN, AND MOTORIZED OUTDOOR AIR DAMPER.
  - CAP EXISTING DUCT MAIN.
  - NEW FIXED OUTDOOR AIR DAMPER AND MOTORIZED OUTDOOR AIR DAMPER.
  - EXTEND EXISTING CONCRETE PAD TO SUPPORT NEW UNIT.
  - EXISTING CONCRETE PAD TO REMAIN.



**5 PARTIAL ATTIC SPACE HVAC EXISTING DUCT AND DEMOLITION PLAN**  
SCALE: 1/8"=1'-0"

- HVAC EXISTING DUCT AND DEMOLITION PLAN NOTES:**
- EXISTING DUCTWORK TO BE REMOVED.
  - EXISTING AIR HANDLING UNIT TO BE REMOVED.
  - EXISTING AIR HANDLING UNIT.
  - EXISTING RETURN AIR DUCTWORK TO REMAIN.
  - EXISTING SUPPLY AIR DUCTWORK TO REMAIN.
  - EXISTING OUTDOOR AIR DUCTWORK TO REMAIN.
  - EXISTING EXHAUST AIR DUCTWORK TO REMAIN.
  - EXISTING CONDENSATE DRAIN PIPING TO REMAIN.

**MECHANICAL SPECIFICATIONS:**

THIS CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF HEATING VENTILATING AND AIR CONDITIONING EQUIPMENT. THIS CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF EXISTING CEILING AND THE REPLACEMENT OF SAME AS REQUIRED TO ACCOMPLISH THE WORK.

ANY DAMAGE DONE TO EXISTING FACILITIES DURING THE INSTALLATION PROCESS SHALL BE REPAIRED OR REPLACED BY THIS CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT.

DEMOLITION - ALL EXISTING DUCTWORK AND PIPING AND EQUIPMENT NOT APPLICABLE TO THE NEW INSTALLATION SHALL BE REMOVED BY THIS CONTRACTOR. ALL DUCTWORK, DIFFUSERS AND OTHER EQUIPMENT INDICATED TO BE REMOVED OR REQUIRED TO BE REMOVED TO ACCOMPLISH THE WORK SHALL BE REMOVED BY THIS CONTRACTOR AND SHALL BECOME HIS PROPERTY, EXCEPT FOR THAT EQUIPMENT AS INDICATED TO BE REINSTALLED AND REUSED.

ALL LOW PRESSURE SUPPLY AIR DUCT AND ALL RETURN AIR DUCTWORK SHALL BE BUILT IN ACCORDANCE WITH SMACNA STANDARDS FOR 1 INCH POSITIVE STATIC PRESSURE. ALL SUPPLY AIR DUCT LOW PRESSURE SHALL BE PROVIDED WITH 1 1/2 INCH THICK FIBERGLASS EXTERIOR DUCT INSULATION BLANKET WITH FLAME SPREAD NOT MORE THAN 25 AND A SMOKE RATING NOT OVER 50. DUCTWORK INSULATION SHALL BE OWENS CORNING, MANVILLE OR APPROVED EQUAL.

INSULATED ROUND FLEXIBLE DUCT SHALL BE SIMILAR TO WIREMOLD TYPE WG FOR POSITIVE STATIC PRESSURES UP TO 6" OF WATER COLUMN AND A VELOCITY UP TO 4000 FEET PER MINUTE. DUCTWORK SHALL HAVE A CONTINUOUS WIRE CORD WRAPPED IN POLYETHYLENE SHEET WITH A 1" THICK FIBERGLASS INSULATION LINER WRAPPED IN A POLY FORM OUTER CASING.

SUPPLY AIR DIFFUSERS - CEILING SUPPLY AIR DIFFUSERS SHALL BE LOUVER FACE LAY-IN TYPE DIFFUSERS FOR INSTALLATION IN A T BAR CEILING AND GYPSUM BOARD CEILING AS APPLICABLE. UNIT SHALL BE SIMILAR TO ANEMOSTAT EPLA OR APPROVED EQUAL IN WHITE BAKED ENAMEL WITH VOLUME DAMPER.

EXHAUST AIR REGISTERS AND RETURN AIR GRILLES SHALL BE ANEMOSTAT X300D OR APPROVED EQUAL ALUMINUM HORIZONTAL BAR 45 DEGREE FIXED BLADES FINISHED IN WHITE BAKED ENAMEL.

REFRIGERANT LINES SHALL BE ACR REFRIGERANT TUBING AND SHALL BE PROVIDED WITH 3/4" CLOSED CELL URETHANE TYPE INSULATION ON SUCTION LINE. LIQUID LINE SHALL BE UNINSULATED AND SHALL BE STRAPPED TO SUCTION LINE. PITCH SUCTION LINE TO COMPRESSOR.

AIR CONDITIONING UNITS SHALL BE PROVIDED WITH A CONDENSATE PUMP WHERE REQUIRED SPECIFICALLY DESIGNED FOR THE DISPOSAL OF CONDENSATE FROM AIR CONDITIONING COILS SIMILAR TO THAT AS MANUFACTURED BY LITTLE GIANT OR EQUAL. THE UNIT SHALL BE PROVIDED WITH A FLAT SWITCH AND SHALL DISCHARGE PIPING TO DISCHARGE CONDENSATE TO EXTERIOR OF THE BUILDING IN 3/4" PVC PLASTIC. UNITS SHALL BE PROVIDED WITH THE HIGH WATER ALARM WITH AUDIBLE SOUND ALARM.

AIR HANDLING UNIT - AIR HANDLING UNIT SHALL BE A TRANE OR APPROVED EQUAL CAPACITY AS INDICATED IN SCHEDULE. BOLTED FRAME, GALVANIZED CASING, INSULATED CABINET, ACCESS DOORS WITH HANDLES, SLOPED DRAIN PAN, REFRIGERANT COOLING COIL, MOTOR, FILTER MOUNTING BOXES AND LOW LEAKAGE DAMPERS, FORWARD CURVED FAN.

AIR COOLED CONDENSING UNITS - AIR COOLED CONDENSING UNITS SHALL BE TRANE T1X/T1B OR APPROVED EQUAL. UNIT SHALL CONSIST OF SCROLL COMPRESSOR, COPPER TUBE, ALUMINUM FIN CONDENSER COIL, DIRECT DRIVE VERTICAL DISCHARGE PROPELLER FANS, LOW AMBIENT CONTROL, FACTORY WIRING AND CONTROLS.

AUTOMATIC TEMPERATURE CONTROLS:  
CONTROL WIRING: ALL CONTROL EQUIPMENT AND CONTROL WIRING REQUIRED FOR OPERATION OF THE SYSTEM SHALL BE BY THIS CONTRACTOR.

ALL CONTROL WIRING SHALL BE CONCEALED WHERE POSSIBLE. ALL CONTROL WIRING RUN EXPOSED IN FINISHED SPACES SHALL BE RUN WITHIN ADEQUATELY SUPPORTED SYSTEM.

ALL WORK SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THERMOSTATS FOR ADMINISTRATION AREA SHALL BE ADJUSTABLE BY THE OFFICE OCCUPANT.

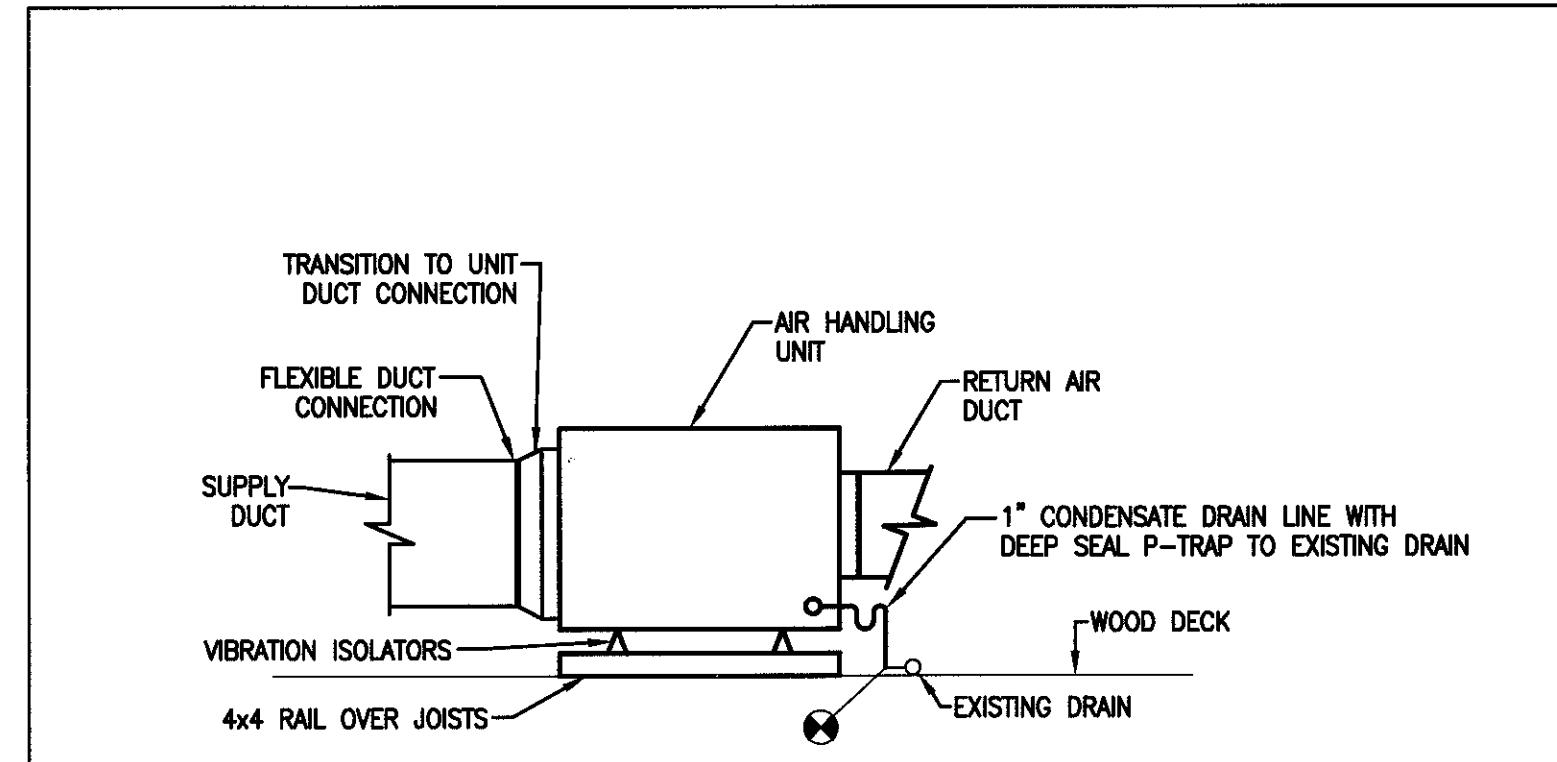
THERMOSTATS FOR ALL OTHER AREAS SHALL BE EQUIPPED WITH LOCKING TYPE COVER LESS THERMOMETER.

EACH OF THE FOUR ZONES SHALL BE PROVIDED WITH A 7 DAY 24 HOUR PROGRAMMABLE SYSTEM FOR OCCUPIED-UNOCCUPIED OPERATION. IN THE OCCUPIED MODE THE UNIT SHALL RUN CONTINUOUSLY. THE OUTDOOR AIR DAMPER SHALL OPEN AND THE REFRIGERATION SHALL CYCLE TO MAINTAIN SET POINT.

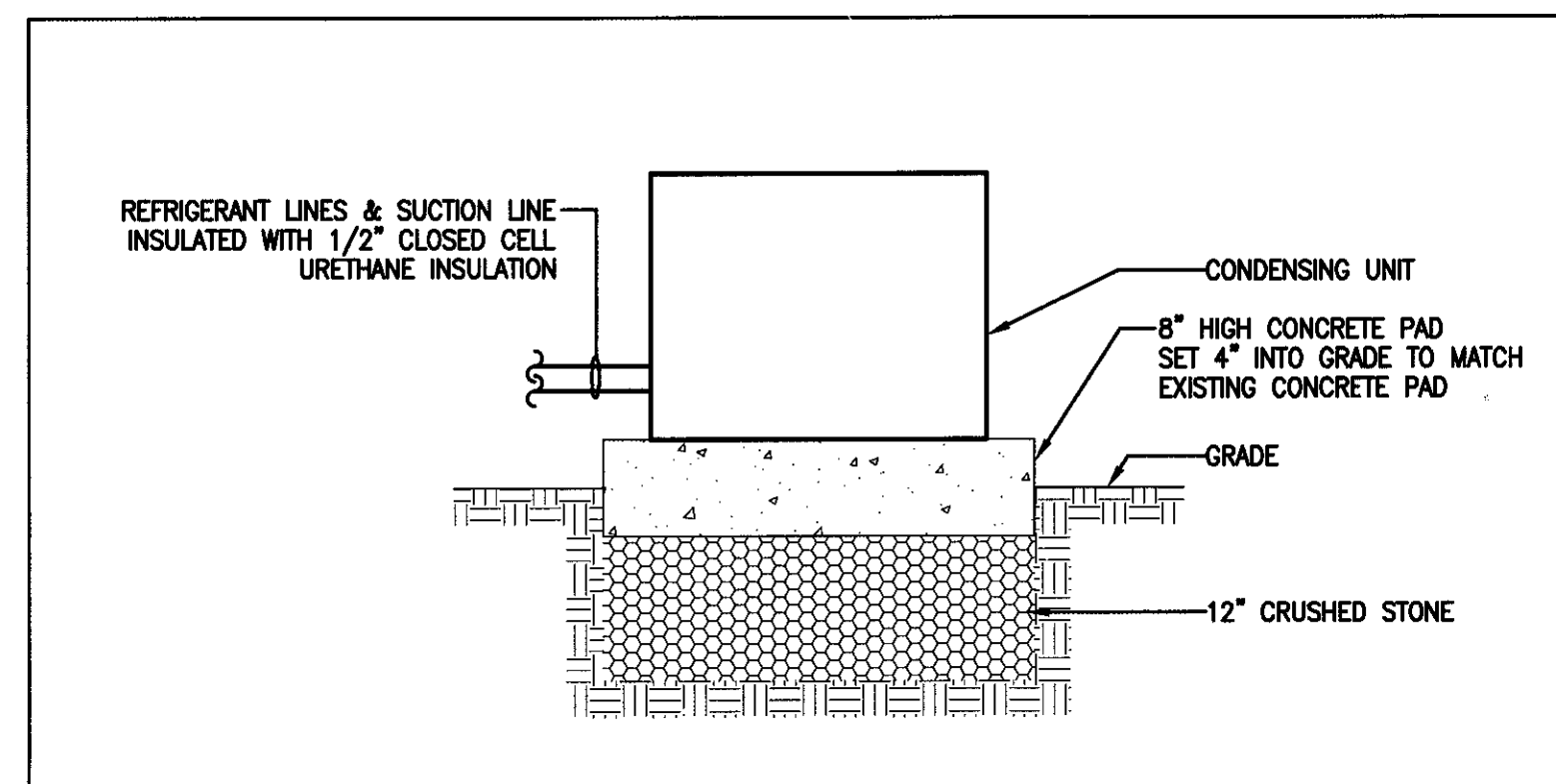
AIR BALANCING: THIS CONTRACTOR IS RESPONSIBLE FOR THE BALANCING OF THE AIR HANDLING SYSTEMS, WITH FLOWS AS INDICATED ON THE DRAWINGS.

A COMPLETE BALANCING REPORT IN DUPLICATE SHALL BE FORWARDED TO THE ENGINEER.

WARRANTY - THE NEW SYSTEM AND EQUIPMENT SHALL HAVE A ONE YEAR WARRANTY FOR PARTS AND LABOR BEGINNING AFTER FINAL ACCEPTANCE.



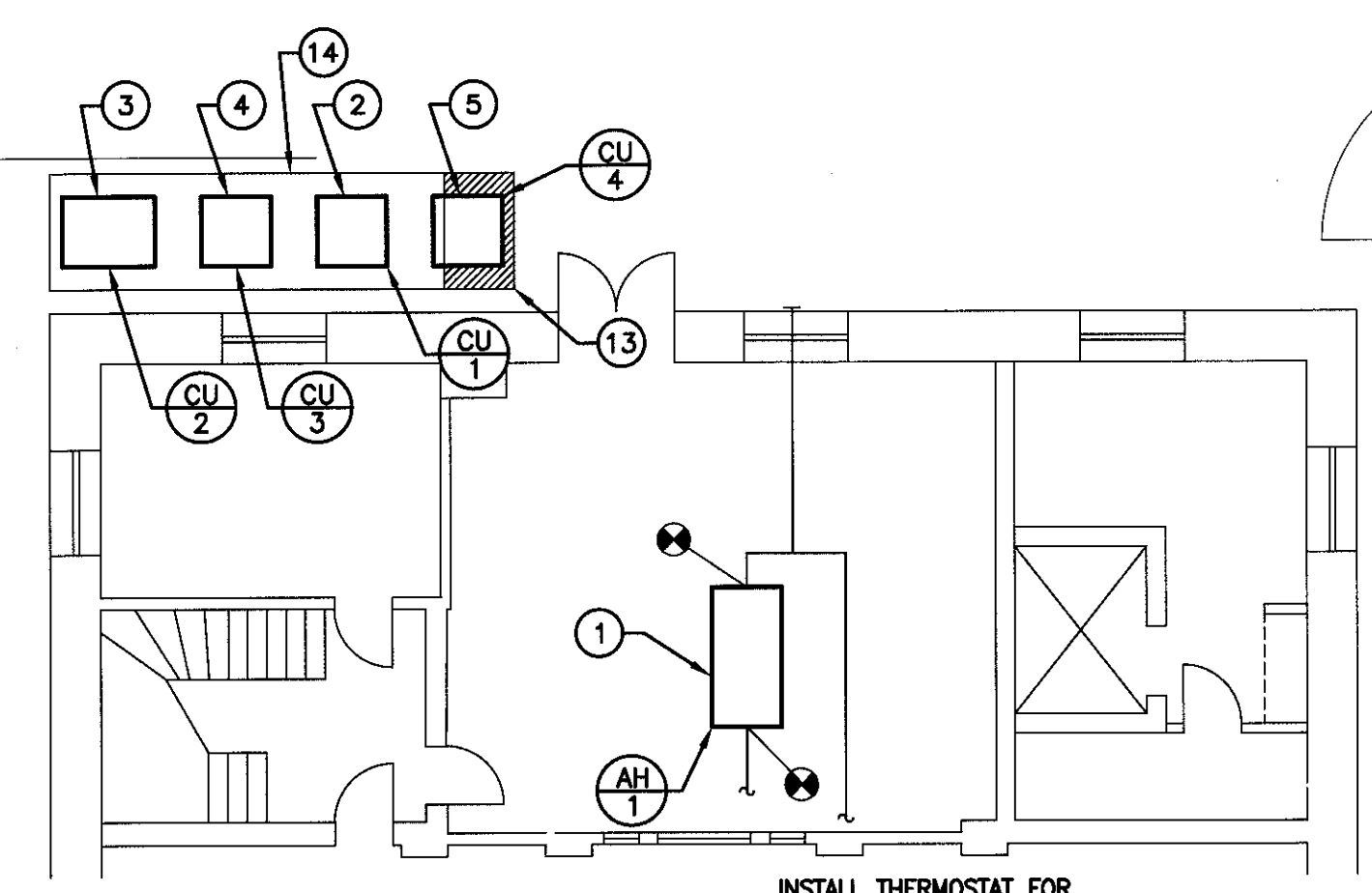
**6 AIR HANDLING UNIT DETAIL**  
SCALE: NOT TO SCALE



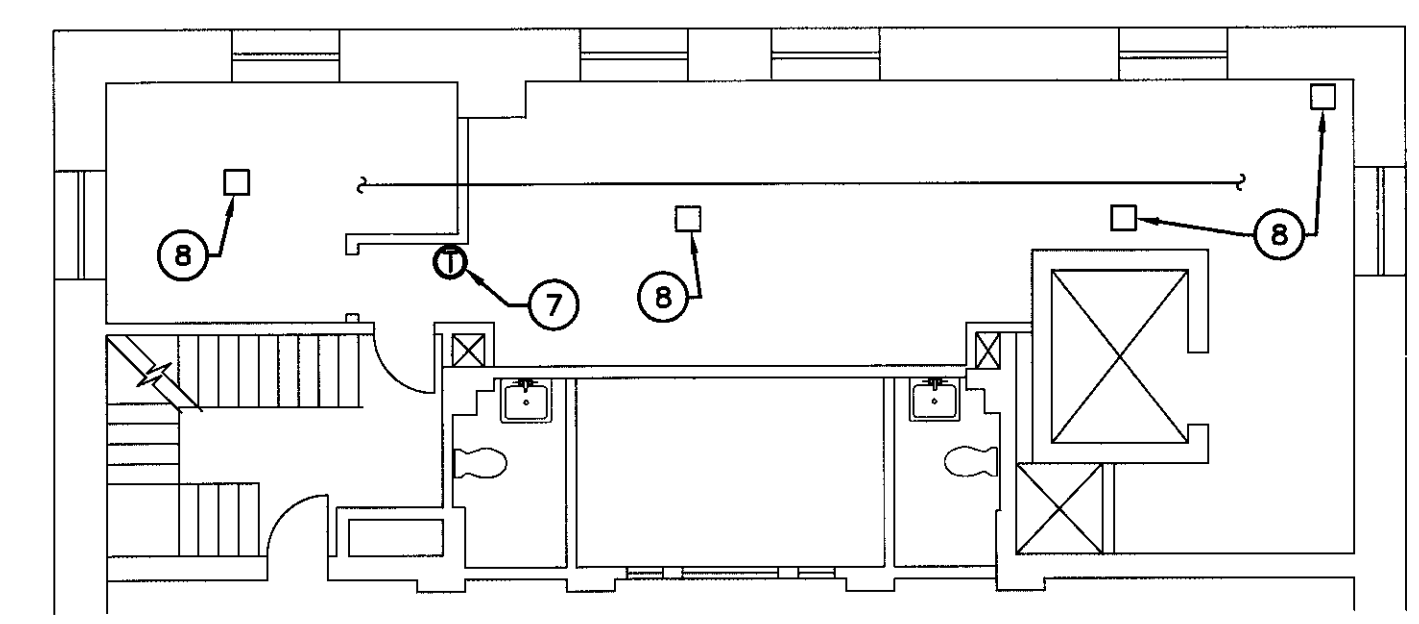
**7 CONDENSING UNIT DETAIL**  
SCALE: NOT TO SCALE

**HVAC LEGEND**

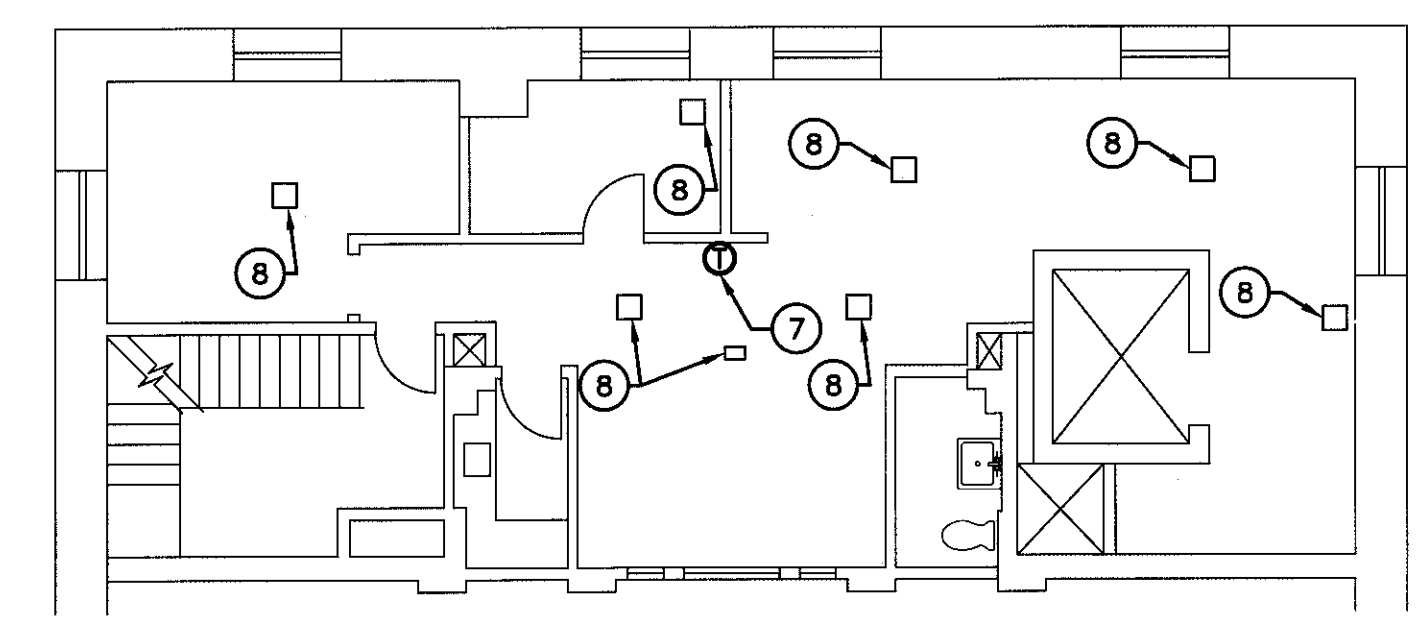
- ⊙ THERMOSTAT
- NEW PIPING, DUCTWORK OR EQUIPMENT
- - - EXISTING PIPING, DUCTWORK OR EQUIPMENT
- - - EXISTING PIPING, DUCTWORK OR EQUIPMENT TO BE REMOVED
- NEW CONNECTION POINT TO EXISTING PIPING OR DUCTWORK
- ⊞ VOLUME DAMPER
- ⊞ SUPPLY AIR DUCT
- ⊞ RETURN/EXHAUST/RELIEF AIR DUCT
- ⊞ OUTDOOR AIR DUCT
- ⊞ MOTORIZED DAMPER



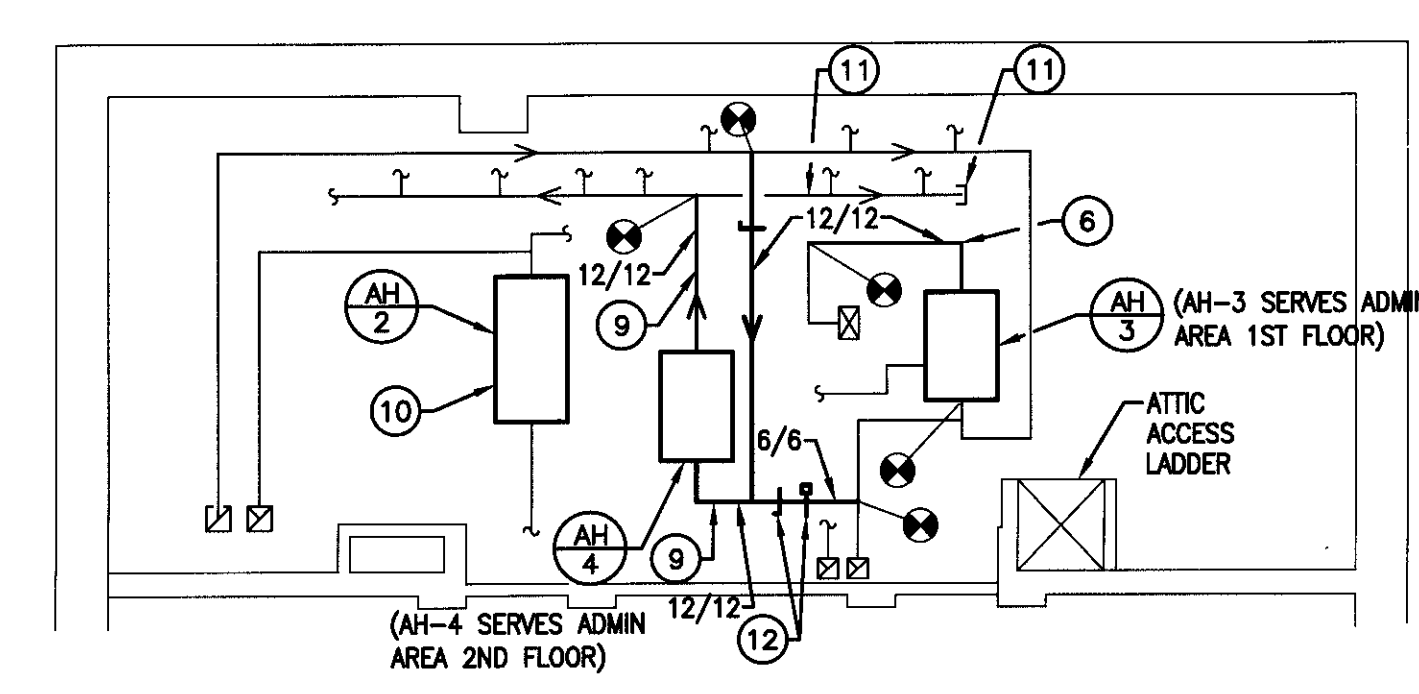
**1 PARTIAL BASEMENT HVAC PLAN**  
SCALE: 1/8"=1'-0"



**2 PARTIAL FIRST FLOOR HVAC PLAN**  
SCALE: 1/8"=1'-0"



**3 PARTIAL SECOND FLOOR HVAC PLAN**  
SCALE: 1/8"=1'-0"



**4 PARTIAL ATTIC SPACE HVAC PLAN**  
SCALE: 1/8"=1'-0"