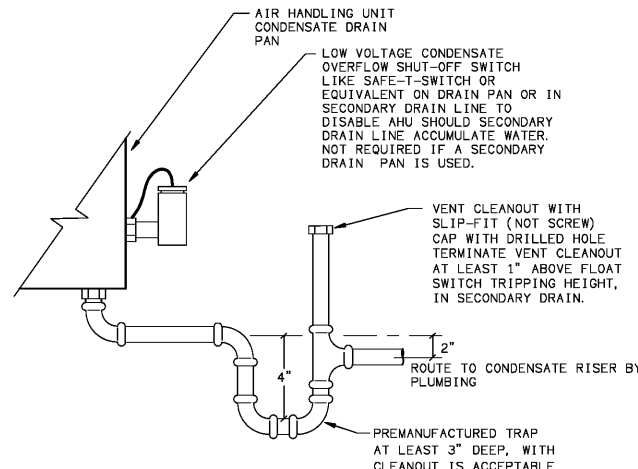


# HVAC GENERAL NOTES

- MECHANICAL EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE 2018 KENTUCKY BUILDING CODE, WHICH IS BASED ON THE 2015 INTERNATIONAL CODES, INCLUDING THE 2015 MECHANICAL CODE, BUT WITH THE EXCEPTION THAT THE 2012 INTERNATIONAL ENERGY CONSERVATION CODE IS STILL IN EFFECT PER THE 2018 KENTUCKY BUILDING CODE.
- SUBMIT SHOP DRAWINGS IN ACCORD WITH SPECIFICATIONS FOR ALL MATERIALS AND EQUIPMENT.
- GUARANTEE MECHANICAL EQUIPMENT AND SYSTEMS FOR ONE YEAR AFTER ACCEPTANCE BY OWNER.
- PROVIDE COMPRESSORS WITH 4 YEAR EXTENDED MANUFACTURER'S WARRANTY FOR A 5-YEAR TOTAL WARRANTY.
- DUCT MATERIAL AND INSTALLATION SHALL CONFORM TO SMACNA.
- PROVIDE ALL CONTROL WIRING AND CONDUIT IN COMPLIANCE WITH NEC AND ELECTRICAL SPECIFICATIONS.
- PROVIDE MATERIALS WHICH HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOP RATING OF 50 OR LESS WHEN TESTED IN ACCORD WITH ASTM E84.
- INSULATE SUPPLY AND RETURN DUCTS TO A MINIMUM R-VALUE OF 8 UNLESS INSTALLED IN A MECHANICALLY COOLED SPACE OR IN A CAVITY WHOSE EXTERIOR WALLS ARE INSULATED, IN WHICH CASE THE R-VALUE MAY BE 4.
- IN HANDICAPPED ACCESSIBLE AND FAIR HOUSING AREAS, MOUNT TOP OF CONTROLS AT 48" MAXIMUM ABOVE FINISHED FLOOR.
- PROVIDE PLEATED MEDIA FILTERS DURING CONSTRUCTION. REPLACE WITH MERV 8 FILTERS AT SUBSTANTIAL COMPLETION.
- LOCATE WALL AND ROOF TERMINATIONS AT THE SAME RELATIVE ELEVATION AND HORIZONTAL POSITION TO MAINTAIN A UNIFORM APPEARANCE. WHEN IN DOUBT, COORDINATE PLACEMENT WITH ARCHITECT. PRIME COAT AND PAINT EXTERIOR TERMINATIONS TO MATCH BUILDING COLOR.
- SLEEVE AND FIRE STOP PENETRATIONS THROUGH FIRE RATED SYSTEMS TO MAINTAIN RATING OF SYSTEM. USE MINIMUM GALVANIZED STEEL GAUGE DUCT TO MAINTAIN RATING OF SYSTEM.
- PROVIDE TEMPORARY COVERS ON UNFINISHED DUCT ENDS DURING CONSTRUCTION.
- PROVIDE ENGRAVED TAGS FOR ALL CU'S. MOUNT TAGS PERMANENTLY ON CU AND ON DISCONNECT.
- PROVIDE OUTSIDE AIR DUCTS AS GALVANIZED STEEL, EXTERNALLY INSULATED WHERE IN CONDITIONED SPACE, WHERE IN AHU ROOMS, AND WHERE IN CAVITIES BETWEEN CONDITIONED FLOORS.
- SUPPORT SPACING FOR ALL PIPES SHALL COMPLY WITH TABLE 305.4 OF THE MECHANICAL CODE. SPECIFICALLY, REFRIGERANT PIPING SHALL BE SUPPORTED ON 6 FOOT CENTERS AND CONDENSATE PIPING SHALL BE SUPPORTED ON 3 FOOT CENTERS IF 1 INCH OR SMALLER, AND 4 FOOT CENTERS IF OVER 1".
- COMPLY WITH MANUFACTURER'S SPECIFICATIONS AND CLEARANCE REQUIREMENTS WHEN INSTALLING EQUIPMENT AND MATERIALS.
- PROVIDE CLEAR VENTED LOCK BOXES FOR ALL PUBLIC AREA THERMOSTATS OR PASSWORD PROTECT (CORRIDORS AND AMENITIES).
- SECURE FIBROUS DUCT BOARD SECTIONS TOGETHER WITH STAPLES AND SEAL WITH FABRIC AND MASTIC.
- DUCT ROUTING SHOWN IS SCHEMATIC. PROVIDE ADDITIONAL OFFSETS AND FITTINGS REQUIRED FOR PROPER INSTALLATION AND TO MAINTAIN CLEARANCES. DIVIDE DUCTS AS REQUIRED TO AVOID OBSTACLES IN THE FIELD. DUCT SIZES MAY BE REVISED TO FIT STRUCTURAL SYSTEMS SO LONG AS THE EQUIVALENT INSIDE CROSS-SECTIONAL AREA IS NOT DECREASED.
- PROVIDE FULL TEST AND BALANCE FOR NON APARTMENT AIR CONDITIONERS AND FANS PER NEBB OR AABC STANDARDS.
- FLASH ALL EXTERIOR FLANGED PENETRATIONS (VENTS, LOUVERS) PER WINDOW FLASHING DETAILS FOR WATERPROOFING PURPOSES.
- PROVIDE ACCESS DOORS IN COMPLIANCE WITH NFPA 80, INCLUDING SELF CLOSING ACCESS DOORS IN FIRE RATED WALLS OR CEILINGS.



PROVIDE AS 3" UNLESS OTHERWISE NOTED

PROVIDE AS COPPER IN PLENUM RETURN CEILING SPACES. ALTERNATES INCLUDE CPVC IF THE PIPING MANUFACTURER SPECIFICALLY ALLOWS IT, OR WRAPPING PIPE IN PLENUM RATED INSULATION IF ALLOWED BY THE INSPECTOR.

TRAP IS NOT REQUIRED FOR DUCTLESS AND MINISPLIT AHU'S IF THEY ARE EQUIPPED WITH A BACKWATER VALVE.

**CONDENSATE TRAP FOR AHU**  
SCALE: N.T.S.

LIVING UNIT HEAT PUMP SPLIT SYSTEMS						
MARK AHU/CU	A	B	BB	C	CT	S
NOMINAL TONS OF CU	1.5	1.5	2	1.5	2	1.5
TOTAL COOLING LOAD (MBH)	5-9.5	8-14.0	15.9	11-12.7	15.4-18.2	5-8.3
SENSIBLE COOLING LOAD (MBH)	3.9-7.7	6-11.2	13.2	8.5-10.1	12.4-14.7	3.9-6.3
AHU MODEL#	AWUF31	AWUF31	AWUF31	AWUF31	AWUF31	AWUF31
AHU CONFIGURATION	VERTICAL FRONT RETURN	VERTICAL FRONT RETURN	VERTICAL FRONT RETURN	VERTICAL FRONT RETURN	VERTICAL FRONT RETURN	VERTICAL FRONT RETURN
AHU DIMENSIONS D X W X H (IN)	21 X 24 X 36	21 X 24 X 36	21 X 24 X 36	21 X 24 X 36	21 X 24 X 36	21 X 24 X 36
SUPPLY AIR (CFM)	525	525	700	525	700	525
EXTERNAL STATIC PRESS. (IN. W.C.)	.5	.5	.5	.5	.5	.5
ENTERING AIR DRY BULB (°F.)	75	75	75	75	75	75
ENTERING AIR WET BULB (°F.)	63	63	63	63	63	63
EVAPORATOR FAN	HP VOLT/Ø	1/2 208/1	1/2 208/1	1/2 208/1	1/2 208/1	1/2 208/1
ELECTRIC HEAT	LOAD (MBH)	5.7-8.1	9-12.9	14.5	10.5-16.5	14.5-18
	KW @ 240 VOLT/Ø/STAGES	5 208/1/1	5 208/1/1	8 208/1/1	8 208/1/1	5 208/1/1
CONDENSING UNIT	VOLT/Ø	208/1	208/1	208/1	208/1	208/1
	MODEL# L X W X H (IN)	GSZ14-018-1K 29 X 29 X 35	GSZ14-018-1K 29 X 29 X 35	GSZ14-024-1K 29 X 29 X 35	GSZ14-018-1K 29 X 29 X 35	GSZ14-024-1K 29 X 29 X 35
LIVING UNIT TYPE SERVED	A	EXCEPT B5 TOP	B5 TOP	C LOWER FLOORS	C TOP	S
MANUFACTURER	GOODMAN	GOODMAN	GOODMAN	GOODMAN	GOODMAN	GOODMAN
MINIMUM EFFICIENCY AT ARI	14 SEER/8.2HSPF	14 SEER/8.2HSPF	14 SEER/8.2HSPF	14 SEER/8.2HSPF	14 SEER/8.2HSPF	14 SEER/8.2HSPF
REMARKS	1 THRU 9	1 THRU 9	1 THRU 9	1 THRU 9	1 THRU 9	1 THRU 9

- REMARKS:
- EXTERNAL STATIC PRESSURE EXCLUDES LOSSES DUE TO AHU CASING, DIRT ON FILTER, AND WET COOLING COIL
  - 95°F INSIDE AIR AMBIENT AT CONDENSING UNIT
  - COOLING LOADS EXCLUDE EVAPORATOR FAN HEAT.  
PROVIDE SYSTEM WITH R-410A TYPE REFRIGERANT  
PROVIDE AHU WITH SINGLE POINT ELECTRICAL CONNECTION, INCLUDING HEATER AND FACTORY DISCONNECT.
  - PROVIDE PROGRAMMABLE THERMOSTAT FULLY COMPLIANT WITH THE ENERGY CODE.
  - PROVIDE WITH ACCESSORIES AND SUCTION LINE UP-SIZING AS REQUIRED FOR LONG REFRIGERANT LINE RUNS UP TO 150 FEET EQUIVALENT ONE WAY WITH A 45 FOOT LIFT WITH MINIMUM 0.97 CAPACITY MULTIPLIER.
  - PROVIDE AHU'S WITH THERMAL EXPANSION VALVES OR OTHER ACCESSORIES AS REQUIRED TO MEET OR EXCEED THE STATED EFFICIENCY ABOVE.
  - FOR ALL AHU'S, SET SPEED TAP OR DIP SWITCHES AT THE LOWEST SETTING THAT WILL ACHIEVE THE STATED AIR FLOW.

LOADS ARE BASED ON R-20 EXTERIOR WALL INSULATION, R-38 ROOF INSULATION, 24" VERTICAL R-10 SLAB INSULATION AND R-30 INSULATION ABOVE UNCONDITIONED SPACES

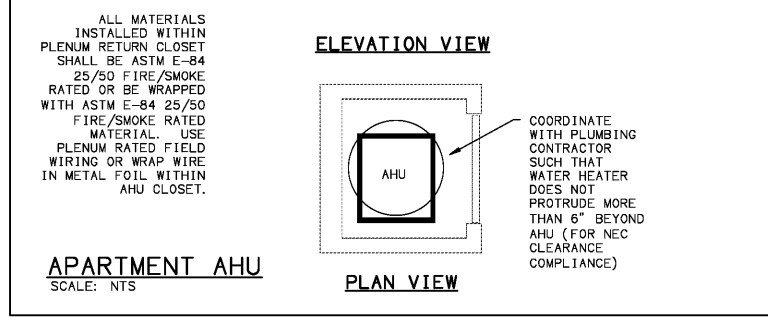
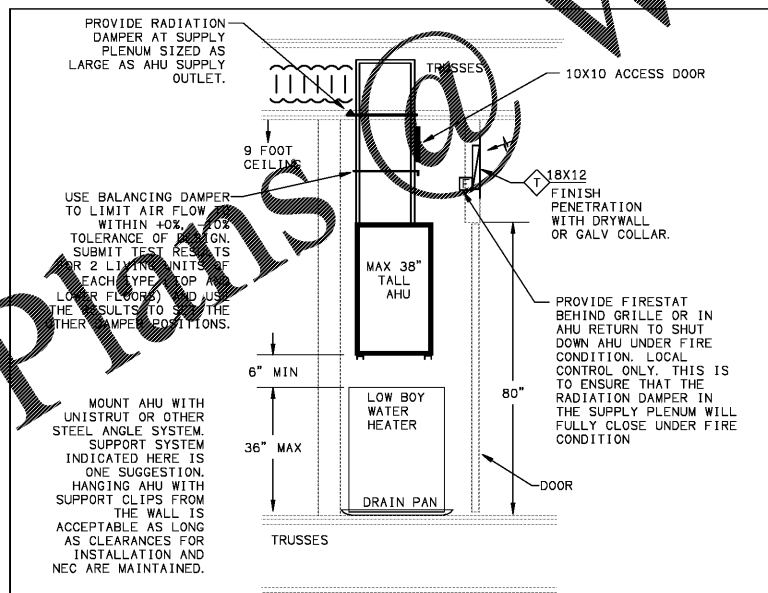
LOADS ARE BASED ON OPERABLE WINDOWS WITH A U-FACTOR OF NO MORE THAN 0.35 AND SHGC: 0.26

ELECTRIC FAN FORCED HEATERS						
MARK	MANUFACTURER & MODEL	TYPE	KW	ELECTRIC VOLTS PHASE	DIMENSIONS H X W X D	REMARKS
WH-3	Q-MARK CHW3404F	WALL	3	208 1	20 X 16 X 4	1, 2, 3, 4, 6, 7
WH-4	Q-MARK CWH3408F	WALL	4	208 1	20 X 16 X 4	1, 2, 3, 4, 6, 7
WH-1	Q-MARK CWH1101DS	WALL	1	120 1	12 X 10 X 4	1, 2, 3, 4, 6, 7
CH-5	Q-MARK CU93505201FT	CABINET	5	208 1	27 X 35 X 10	1, 2, 3, 4, 6
UH-5	Q-MARK MUH05B1	UNIT	5	208 3	16 X 14 X 8	1, 2, 3, 4, 5, 6

- REMARKS:
- PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
  - PROVIDE UNIT MOUNTED DISCONNECT.
  - PROVIDE UNIT MOUNTED THERMOSTAT SET FOR 45°F IN STAIRWELLS AND UTILITY AREAS, 65°F IN CORRIDORS AND VESTIBULES
  - HEATER SHALL BE UL LISTED.
  - PROVIDE WITH MOUNTING BRACKET.
  - PROVIDE WITH FAN
  - PROVIDE WITH SURFACE MOUNT OR RECESS ACCESSORIES PER NOTES ON DRAWINGS

ELECTRIC RADIANT HEATER						
MARK	MANUFACTURER & MODEL	TYPE	KW	ELECTRIC VOLTS PHASE	DIMENSIONS L X W X D (INCHES)	REMARKS
RH-P	QMARK RCC18008C	RADIANT COVE	1	208	132 X 3 X 5	1 THRU 4

- REMARKS:
- PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
  - PROVIDE THERMOSTAT SET FOR 45°F.
  - HEATER SHALL BE UL LISTED
  - PROVIDE WITH MOUNTING KIT



LIVING UNIT AIR DEVICES						
MARK	DESCRIPTION	OBD	MOUNTING	COLOR	MATERIAL	REMARKS
G	CURVED BLADE STAMPED FACE SUPPLY	Y	CEILING	WHITE	STEEL	1, 2, 3, 4
T	STAMPED FACE TRANSFER	N	WALL/CEILING	WHITE	STEEL	1, 2, 3, 4, 5
D	SIDEWALL SUPPLY WITH ADJUSTABLE VERT BLADES	Y	WALL	WHITE	STEEL	1, 3, 4, 5
R	STAMPED FACE RETURN	Y	WALL/CEILING	WHITE	STEEL	1, 2, 3, 4, 5

REMARKS:

- SEE HVAC PLANS FOR NECK SIZES AND CFMS.
- 4-WAY UNLESS NOTED OTHERWISE ON PLAN BY ARROWS.
- MAXIMUM PRESSURE DROP OF .06 IN WC.
- TRANSITION DUCTS TO AIR DEVICES AS REQUIRED.
- HORIZONTAL DIMENSION GIVEN FIRST.

LIVING UNIT EXHAUST FAN												
MARK	MANUFACTURER TYPE & MODEL	CFM	E. S. P.	DRIVE	ELECTRICAL			MOUNTING	MAXIMUM SONES ALLOWED	HOUSING DEPTH (INCHES)	SERVES	REMARKS
					WATTS	HP	VOLT/PHASE					
EF-1	BROAN LP-80	50	.3	DIRECT	26	-	120/1	WALL OR CEILING	3	4	BATHROOM	1 THRU 3

REMARKS:

- PROVIDE WITH UNIT MOUNTED DISCONNECT.
- PROVIDE WITH WHITE OR OFF-WHITE GRILLE.
- PROVIDE WITH BACKDRAFT DAMPER.

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**HVAC SCHEDULES AND DETAILS**

date: 06-04-2019  
job no: 3789.15  
drawn by: GMK  
reviewed by: GMK  
file: 18025-H-SCHEDS  
issue history:

**H6.01**