

AIR HANDLER UNIT																		
AHU NO.	MANUFACTURER	MODEL	VOLTAGE	E.S.P.	OUTSIDE AIR (CFM)	CFM	UNIT FLA	REF LINES		SEER	HTR KW (240)	COOLING CAPACITY (MBH)				HSPF	MIN. CIRC. AMPACITY	M.O.C.P.
								GAS	LIQ.			TOTAL	SENS.	HIGH	LOW			
AHU-1,2	TRANE	TEM4AOC49M41	240/1/60	.46	-	1400	32.0	7/8	3/8	15.5	7.68	42.0	31.8	38.7	25.1	9.0	48	50
AHU-3,4	TRANE	TEM4AOC61M51	240/1/60	.46	-	2000	32.0	1-1/8	3/8	14.5	7.68	56.8	42.8	54.9	36.2	8.5	48	50

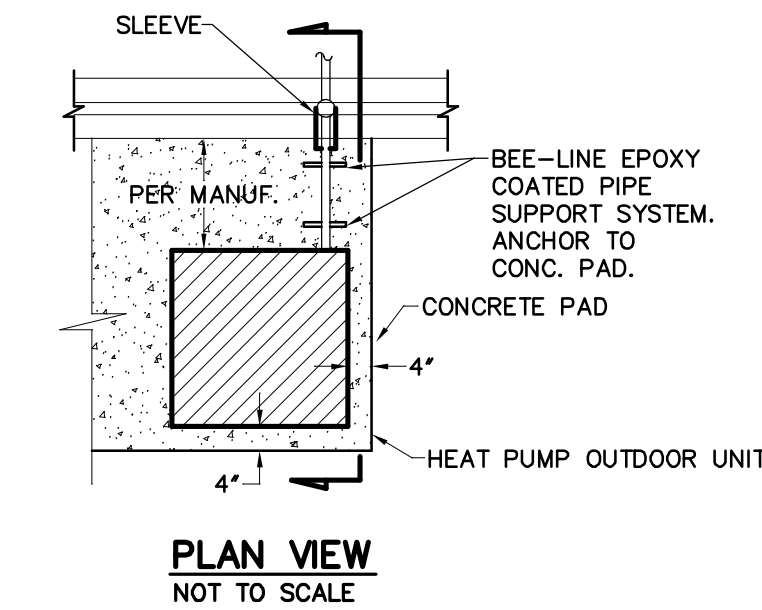
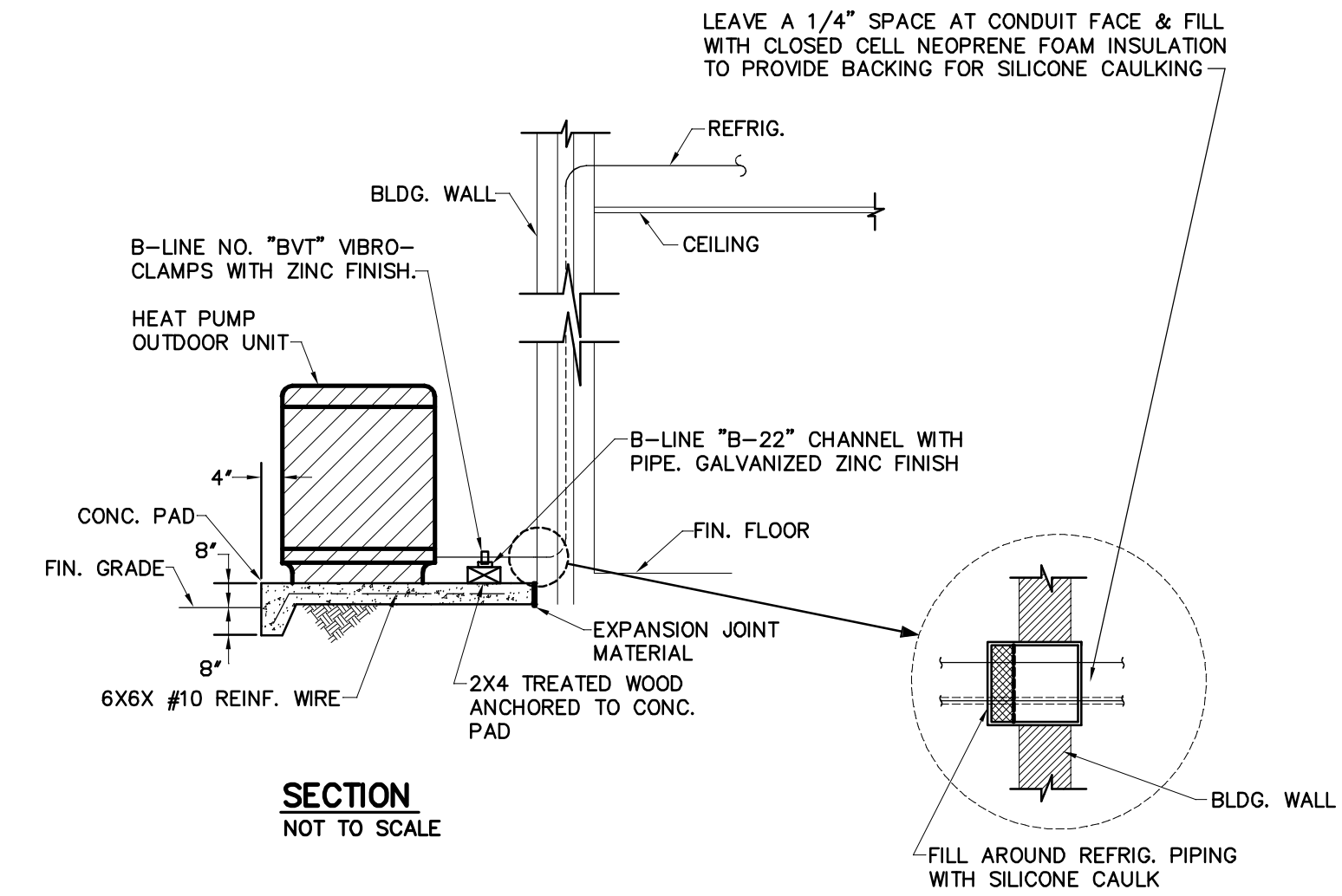
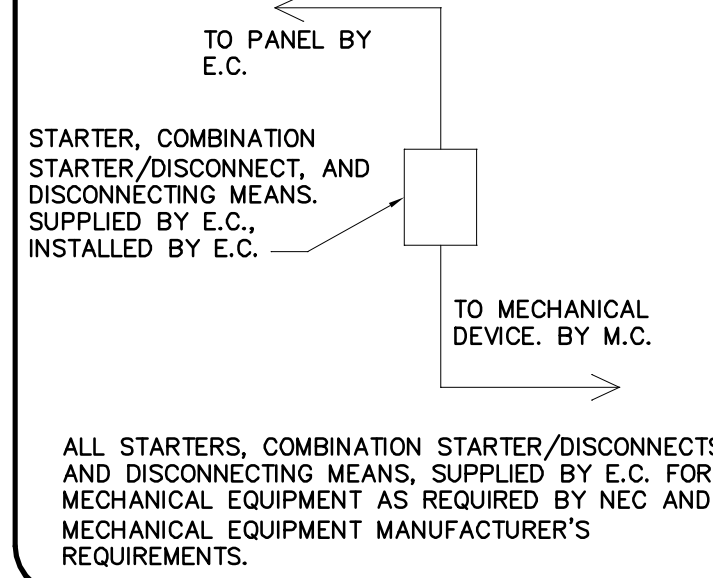
\*\* PROVIDE OUTDOOR THERMOSTAT TO LOCK OUT SUPPLEMENTAL ELECTRIC HEAT AT OUTDOOR TEMPERATURES ABOVE 40F.

SPLIT SYSTEM HEAT PUMP UNITS									
MARK	MANUF.	MODEL	VOLTAGE	# COMP.	MIN. CIRC. AMPACITY	M.O.C.P.	UNIT FLA.	ACCESSORIES	
HP-1,2	TRANE	4TWR5042H1000A	240/1/60	1	22	35	17.7	EXCLUDE 8,18	
HP-3,4	TRANE	4TWR5060H1000A	240/1/60	1	32	50	26.5	EXCLUDE 8,18	

ACCESSORIES

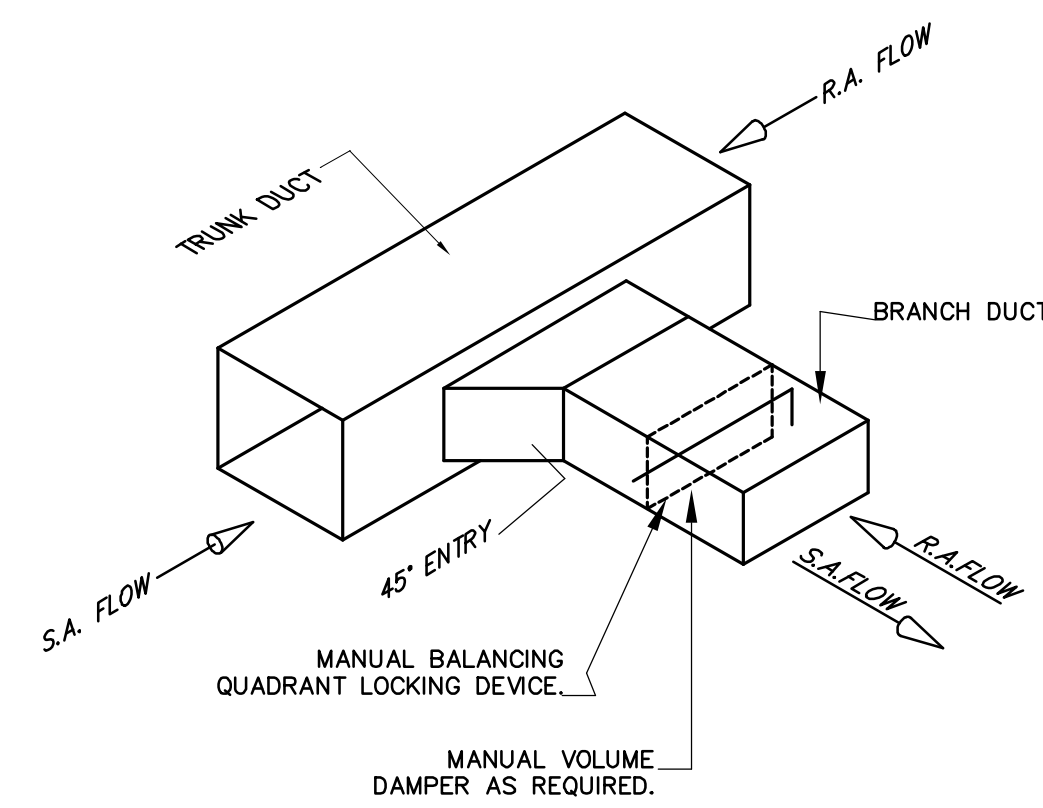
- |                               |  |  |
|-------------------------------|--|--|
| 1 TIME-DELAY RELAY            | 7 LIQUID SOLENOID VALVE                                  | 13 DISCHARGE LINE MUFFLER                  |
| 2 CYCLE PROTECTOR             | 8 LOW-AMBIENT CONTROLLER                                 | 14 SUCTION AND LIQUID LINE SHUT OFF VALVES |
| 3 EVAPORATOR FREEZE PROTECTOR | 9 FILTER DRIER (LIQUID LINE)                             | 15 THERMOSTAT (SEE NOTE)                   |
| 4 ISOLATION RELAY             | 10 OUTDOOR T-STAT TO LOCK OUT AUX. HT. (SET @ 40° F ADJ) | 16 SUPPORT FEET                            |
| 5 TXV                         | 11 LOW PRESSURE CONTROL                                  | 17 COIL GUARDS                             |
| 6 HIGH PRESSURE SWITCH        | 12 CRANKCASE HEATER                                      | 18 HUMIDISTAT                              |
- COOLING CAPACITY @ 80 DEG. F DB/67 DEG WB AIR ENTERING INDOOR UNIT & 95 DEG. F DB AIR ENTERING OUTDOOR UNIT  
 HEATING CAPACITY: HIGH TEMP = 70 DEG F DB INDOOR EAT & 47 DEG F DB/43 DEG F WB AIR ENTERING OUTDOOR UNIT  
 LOW TEMP = 70 DEG F DB INDOOR EAT & 17 DEG F DB/15 DEG F WB ENTERING OUTDOOR UNIT
- T-STAT: THE NUMBER OF STAGES OF HEATING/COOLING SHALL MATCH THE NUMBER OF STAGES OF HEAT AVAILABLE IN THE HPIU OR THE NUMBER OF STAGES OF COOLING AVAILABLE IN THE HPOU. PROVIDE WITH T-STAT; 7 DAY PROGRAMMABLE, DIGITAL.

CONNECTION SCHEDULE



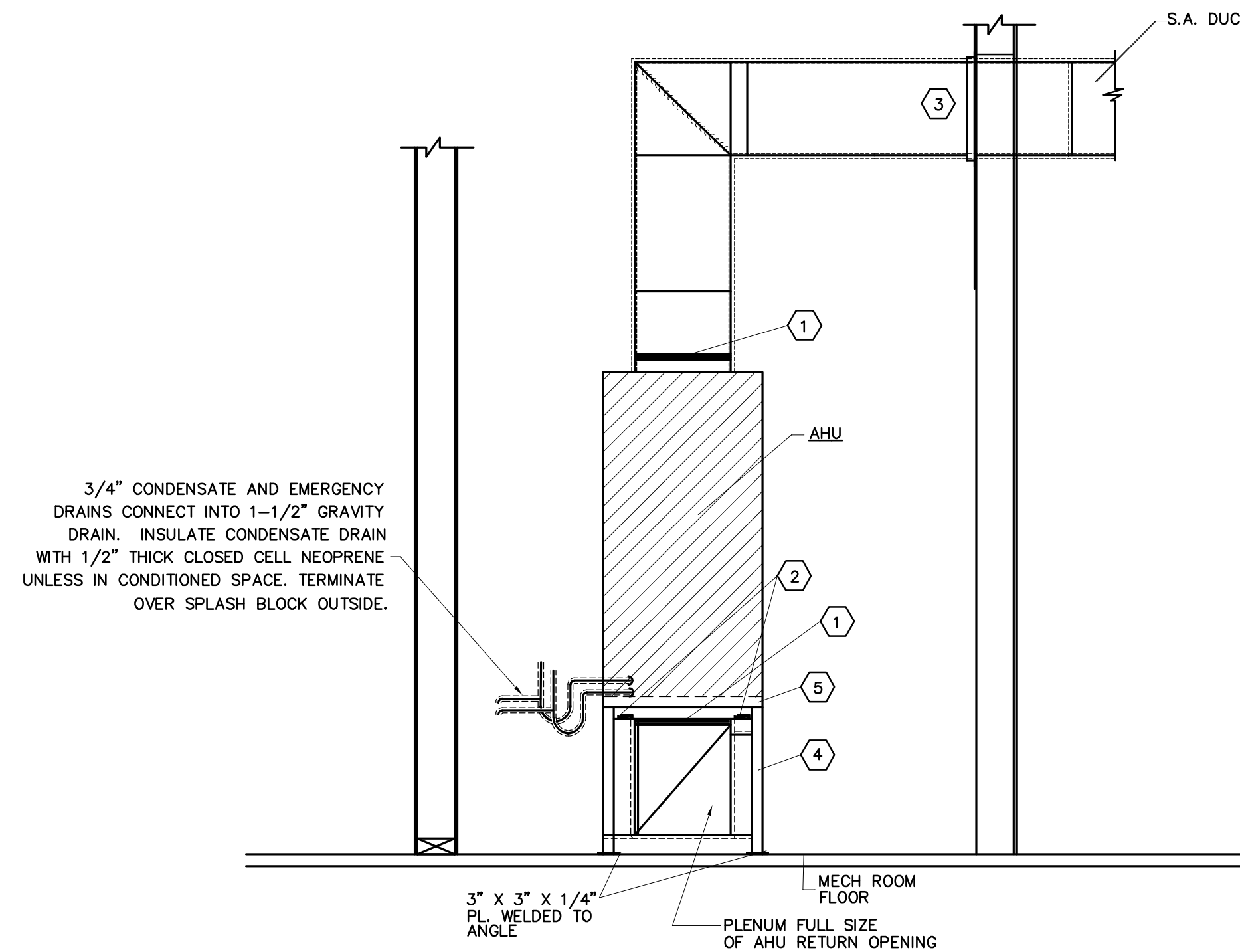
DETAIL-TYPICAL HEAT PUMP OUTDOOR UNIT

NOT TO SCALE



BRANCH DUCT TAKE-OFF DETAIL

NOT TO SCALE



TYPICAL DETAIL AT FLOOR MOUNTED AHU

NOT TO SCALE

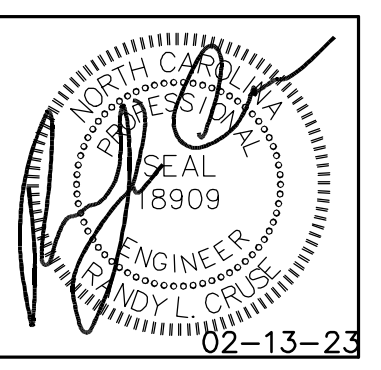
NOTES:

- |  |                     |
|--|---------------------|
| 1 FLEXIBLE CONNECTION  | 5 1" PLEATED FILTER |
| 2 NEOPRENE-IN-SHEAR VIBRATION ISOLATORS  | 6 NOTE DELETED      |
| 3 SHEET METAL COLLAR AT WALL PENETRATION   |                     |
| 4 1-1/2" X 1-1/2" X 3/16" ANGLE HPIU SUPPORT STAND WITH ALL WELDED CONSTRUCTION. PAINT WITH 1 COAT OF PRIMER AND FINISH WITH (2) COATS GRAY HIGH GLOSS MACHINE ENAMEL, MARTIN SENOIR OR EQUAL. |                     |

PROVIDE PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM.

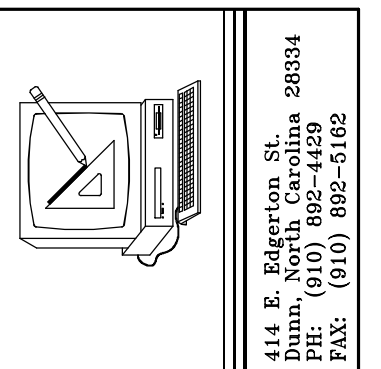
MECHANICAL NOTES (GENERAL)

- DUCTWORK LAYOUTS ARE SCHEMATIC. ALL RISES, DROPS, OFFSETS, AND TRANSITIONS REQUIRED BUT ARE NOT SHOWN SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH SMACNA STANDARDS FOR LOW VELOCITY DUCTWORK. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE RUNOUTS SHALL NOT EXCEED 15' AND SHALL NOT BE USED TO FORM ELBOWS. CONNECTIONS FROM RECTANGULAR TO ROUND DUCT SHALL BE MADE WITH MANUFACTURED 45 DEG. LATERAL TAPS.
- ALL DUCTWORK SHALL BE SEALED AIR TIGHT WITH SEALING COMPOUND.
- ALL ELBOWS IN DUCTWORK SHALL BE RADIUS ELBOWS, UNLESS NOTED OTHERWISE. WHERE SQUARE ELBOWS ARE SHOWN, INSTALL TURNING VANES. DUCT SIZES SHOWN ARE NET INTERIOR DIMENSIONS.
- THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER TRADES PRIOR TO INSTALLATION OF ANY OF HIS PIPING, DUCTWORK, OR EQUIPMENT.
- THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
- IT WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE AND INTENT MEANING OF THE PLANS AND SPECIFICATIONS. HE SHALL PROVIDE THE ENGINEER SCALED DRAWINGS OF ALL MECHANICAL DRAWINGS.
- ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
- PROVIDE FACTORY OR FIELD INSTALLED DRAIN PANS UNDER ALL COOLING COIL UNITS. INSTALL DRAIN PAN FLOAT TO SHUT DOWN UNIT FAN IN EVENT THAT CONDENSATE BEGINS TO FILL EMERGENCY DRAIN PAN. RUN ALL CONDENSATE DRAIN LINES TO APPROPRIATE DRAIN.



PLANS FOR:  
 UNIVERSITY STORAGE  
 HWY 421  
 ERWIN, NORTH CAROLINA

NO.	REVISIONS



Cruse and Associates, P.A.  
 License No.: C-1721

METHOD OF COMPLIANCE:

PRESCRIPTIVE  ENERGY COST BUDGET

THERMAL ZONE 4A - HARNETT COUNTY, NC

EXTERIOR DESIGN CONDITIONS

WINTER DRY BULB 16 DEG. F.  
 SUMMER DRY BULB 93 DEG. F.

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB 59 DEG. F.  
 SUMMER DRY BULB 80 DEG. F.

RELATIVE HUMIDITY 55%

BUILDING HEATING LOAD 98 MBH

BUILDING COOLING LOAD 17 TONS

MECHANICAL SPACE CONDITIONING SYSTEM

UNITARY DESCRIPTION OF UNIT - HEAT PUMP  
 HEATING EFFICIENCY - 8.5 HSPF  
 COOLING EFFICIENCY - 14.5 SEER  
 SIZE CATEGORY OF UNIT - <65K  
 BOILER - NOT APPLICABLE IN THIS PROJECT  
 CHILLER - NOT APPLICABLE IN THIS PROJECT

LIST EQUIPMENT EFFICIENCIES

THESE DOCUMENTS ARE INSTRUMENTS OF SERVICE AND AS SUCH THESE DRAWINGS, DESIGNS, AND DESIGN CONCEPTS PRESENTED REMAIN THE PROPERTY OF THE ENGINEER. PUBLISH OR DUPLICATE THE DRAWINGS OR DESIGNS ONLY WITH THE WRITTEN PERMISSION OF THE ENGINEER.  
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DATE 02-13-23  
 DRAWN BY BAM  
 JOB NO. 22-15

SHEET NO.  
 M-2 OF 2