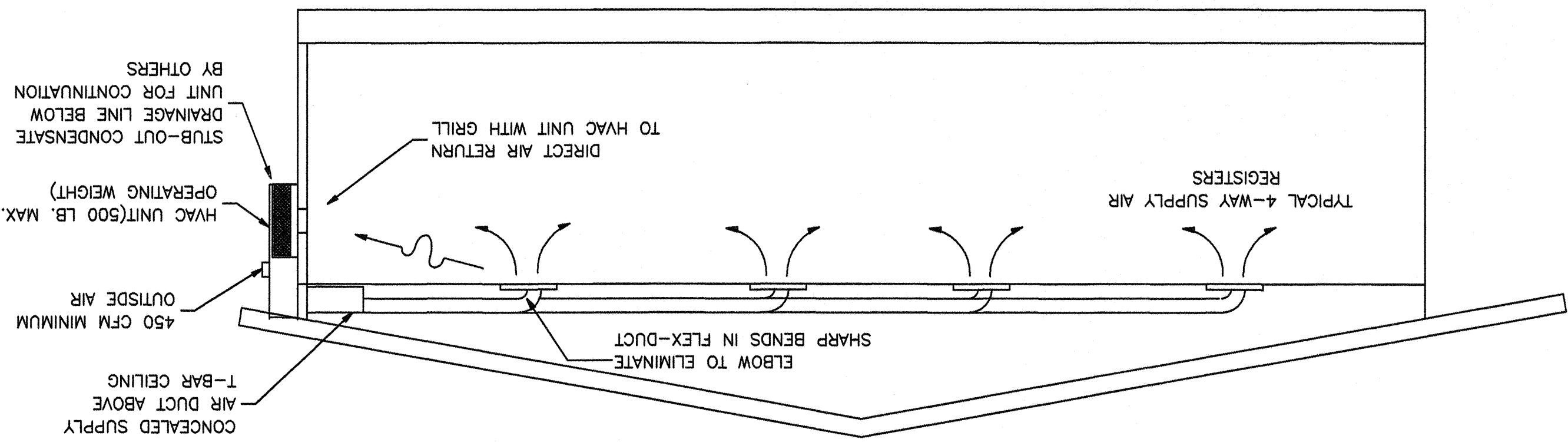


DATE: 04/21/08  
SCALE: NONE  
DRAWN BY: RS  
CHECKED BY:  
SERIAL NO.

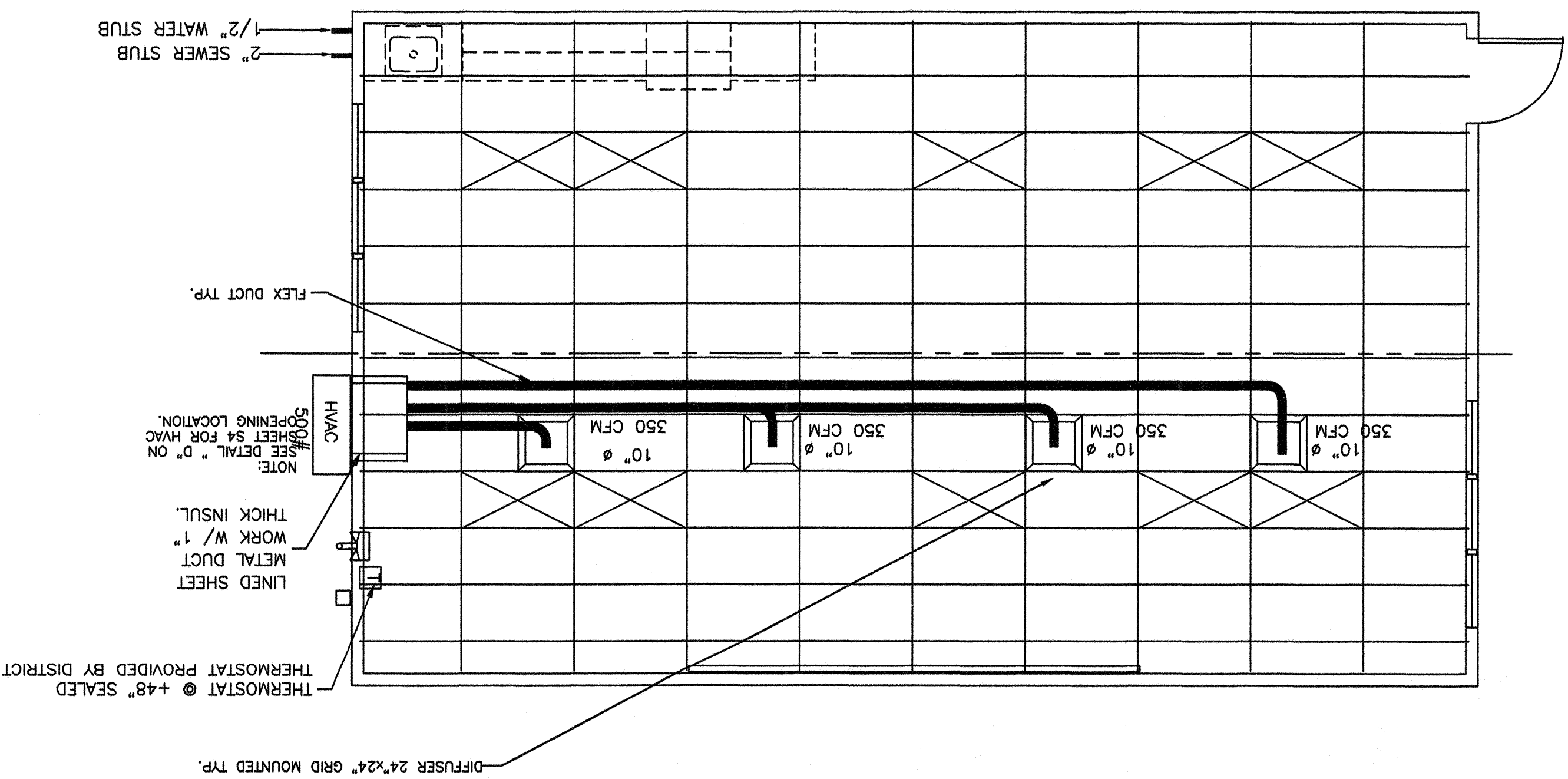
NO	DATE	DESCRIPTION	NO	DATE	DESCRIPTION

REVISIONS

HEAT/SUPPLY AIR DUCT CROSS SECTION  
SCALE: 1/4"=1'-0"



HEAT/SUPPLY AIR DUCT LAYOUT  
SCALE: 1/4"=1'-0"



**HVAC CFM CHART**

MODEL NUMBER	DESCRIPTION	MAX. CFM
WH431-A	3 1/2 TON HEAT PUMP	1400
WH432-A	4 TON HEAT PUMP	1550
WH662-A	5 TON HEAT PUMP	1700

DUCT SUPPORT  
Flex duct to be supported with 1-1/2" wide x 26 ga. gally. strap @ max 6'-0" o.c. Attach to rafter W/2 #8 SMS @ each end.  
Supply air plenum to be supported with 1-1/2" wide x 26 ga. gally. strips min. 2 per plenum.  
Supply air box and diffusers to be supported with (2) 12 ga. hanger wires to box @ opposite corners.  
Supply air box and diffusers to be braced with (2) 12 ga. slack wires to box @ opposite corners. Attach supply air diffusers to ceiling grid to resist a lateral load equal to the weight of the diffuser and supply air box W/2 #8 SMS.

**HP T-Stat:**  Electric Heat (kW): 0.0 kW  
**Duct Location:** Conditioned Space  
**Duct Insulation:** R-4.2

**TITLE 24 ENERGY COMPLIANCE SUMMARY**

PC # 02-104914 BUILDING DESCRIPTION: 24x40 Relocatable Building  
Manufacturer: American Modular Systems  
Zones: 14, 15 & 16

Code	Quantity	Description	Lamp/Ballast	Total Watts
A	8	(3) 4ft Fluorescent T8 Elec Tandem F32T8 / Electronic	704	704
B	2	(3) 4ft Fluorescent T8 Elec F32T8 / Electronic	228	228

**Lighting Measures**

Controls for Credit: Occ Sensor > 250 sq ft

**Envelope Measures**

Insulation: Roof: R-19 (Batt) Panels: Metal SHGC: 0.34  
Wall: R-11 (Batt) Framing: Dual U-Factor: 0.65  
Floor: R-11 (Batt) Titrng: Solarban 50

**Glazing**

Notes: See Title 24 Energy Compliance Report Booklet for More Details  
Manufacturer: American Modular Systems  
Zones: 14, 15 & 16

**GENERAL NOTES**

- Heat Pump: Single package wall mounted air to air electric heat pump unit shall be rated in accordance with ARI Standard 240-77.  
Reference: BARD WH431A-XXXXXX 12 SEER Brands: BARD WH431A-XXXXXX 12 SEER  
MAXIMUM AC SIZE FOR THIS BUILDING WILL BE A 5-TON UNIT
- All units shall be 250/208 volt, 1 phase system, UL tested & approved or comparable and meet current energy standards.  
A) The system shall maintain an automatically controlled indoor classroom temperature of 78 degrees F. When the outdoor dry bulb temperature varies between 100 degrees F. in the summer  
B) The system must maintain the above temperature when the damper is adjusted to use approximately one third fresh air.  
C) Construct all ductwork of galvanized sheet metal in accordance with C.M.C., Ashrae Guide Equipment volume and Smacna Low Velocity Duct Construction manual latest editions. All ductwork shall be insulated with 1" thick fiberglass duct wrap with vapor barrier. Provide 1" duct attenuation at all ductwork within 2'-0" of HVAC unit.  
D) Non-metallic ductwork option: In accessible concealed portions of duct system rigid 1" fiberglass ductwork shall be used. Ductwork and reinforcement connections shall be metal. Ductwork and reinforcement within 2' of the HVAC unit and all interface substituted for sheet metal ductwork. All ductwork or insulated flex-duct with vapor barrier may be used. Ductwork and reinforcement connections shall be metal. Ductwork and reinforcement within 2' of the HVAC unit and all interface substituted for sheet metal ductwork. All ductwork connections shall be metal. Ductwork and reinforcement shall be designed for 2" static pressure. Reference Brands: Owens-Corning fiberglass ductboard, 1" thick, and Micro-ore, TYPE 475.  
E) Non-metallic ductwork shall conform to NFPA 90-A and SMACNA Class 1 rating.  
F) Air duct insulation and linings shall comply with flame spread less than or equal to 25, smoke generation less than or equal to 50.  
G) Supply air diffusers shall be 675 CFM max. 12" round. 1" fiberglass or flexduct.  
H) Ductwork specifically designed to provide air thermal cooling systems. 24"x8"x1" Micro-ore, Certainteed, or Aire type #475 Owens-Corning, Knaut, Certainteed, or "SMACNA".  
I) Registers and diffusers: Provide three (Min) 4-way throw air diffusers as manufactured Comes, Ttus, Hart and Cooley, Metairie, Shoemaker, Barber-Coleman or Krueger commercial grade grills and registers.  
J) Air conditioning controls.  
K) Thermostat: Provide electronic programmable thermostat. Thermostat shall have the following functions:  
L) 5 and 2 weekday/weekend programming with 4 separate time/temperature setting for 24-hour period.  
M) Key board lockout switch.  
N) Programmable display.  
O) 2-hour override minimum.  
P) Status indicated Led's.  
Q) Battery back-up.  
R) Provide locking clear thermostat cover with thermostat cover with access hole for program override. White Rodgers R92 @ +48" SEALED.  
S) Thermal insulation:  
T) Root insulation: R-19 Unfaced.  
U) Walls insulation: R-11 Kraft faced.  
V) Floors insulation: R-11 Kraft faced.  
W) Flame spread and smoke development shall conform to California Building Code sec. 707.  
X) Factory-made air ducts. Factory-made air ducts shall be approved for the use intended or shall conform to the requirements of U.M.C. Standard No. 6-1. Each portion of a factory-made air duct system shall be identified by the manufacturer with a label or other suitable identification indicating compliance with U.M.C. Standard No. 6-1 and its class designation. These ducts shall be listed and shall be installed in accordance with the terms of their listing and the requirements of UMC STD. 6-1.

**NOTE**  
STUB OUT LOCATIONS FOR WATER, WASTE AND GAS ARE DIAGRAMICAL ONLY. SEVERAL EXACT LOCATIONS MAY VARY +/- FEET. PLEASE CONTACT AMERICAN MODULAR SYSTEMS FOR EXACT LOCATIONS. POINT OF CONNECTION WILL BE AT THE FACE OF THE BUILDING.  
BASED ON PC #02-104921  
DATE: 03-11-08

**IDENTIFICATION STAMP**  
DIV. OF THE STATE ARCHITECT  
APPROX: 111734  
DATE: APR 29 2008

**IDENTIFICATION STAMP**  
STATE OF CALIFORNIA  
No. C 12831  
Professional Seal