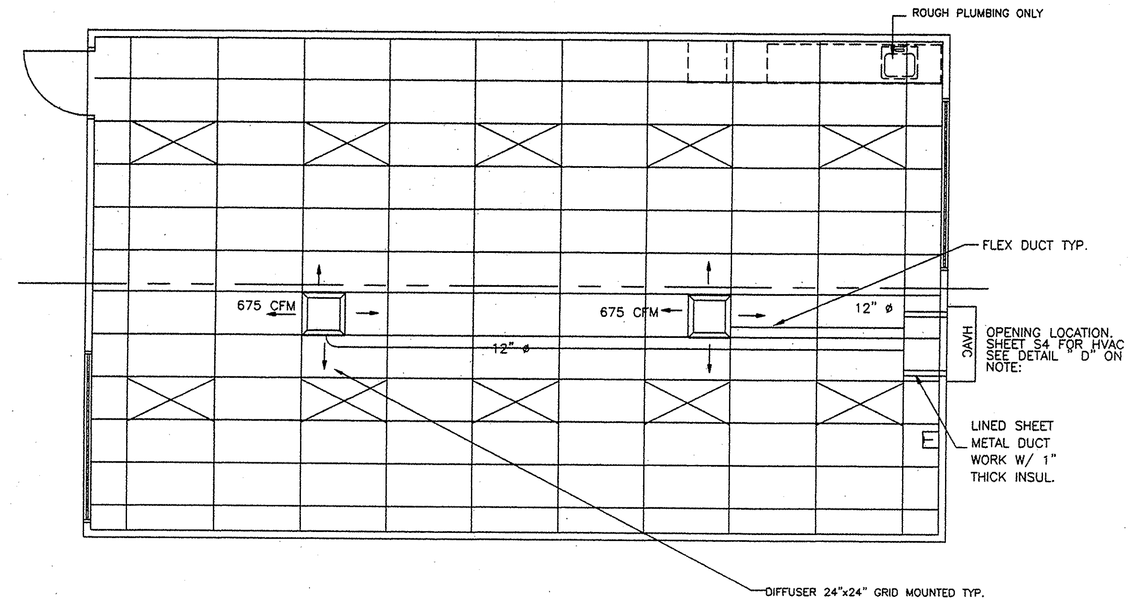
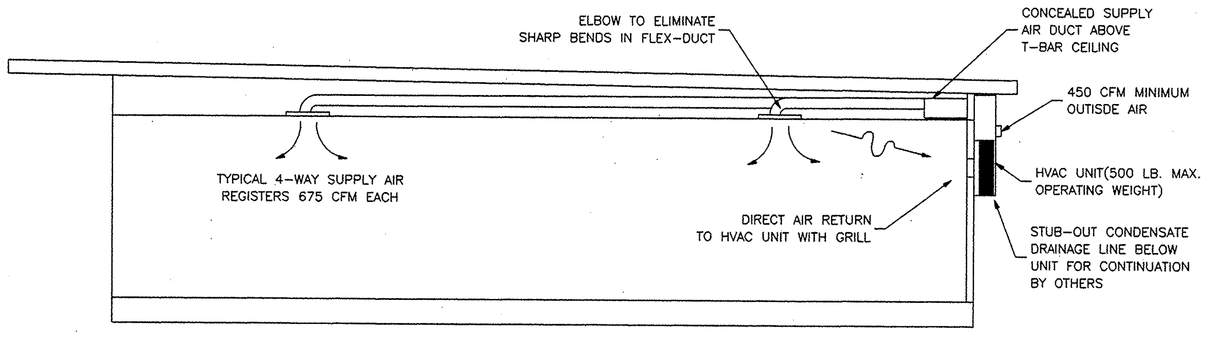


B / M1 HEAT/SUPPLY AIR DUCT LAYOUT

SCALE: 1/4"=1'-0"



A / M1 HEAT/SUPPLY AIR DUCT CROSS SECTION

SCALE: 1/4"=1'-0"

TITLE 24 ENERGY COMPLIANCE SUMMARY

PC # 02-104915

Note: See Title 24 Energy Compliance Report Booklet for More Details

BUILDING DESCRIPTION: 24X40 Relocatable Building

Manufacturer: American Modular Systems

Zones: 14, 15 & 16

Envelope Measures

INSULATION

Roof: R-19 (Batt)

Wall: R-11 (Batt)

Floor: R-11 (Batt)

GLAZING

Panes: Dual U-Factor: 0.65

Frames: Metal SHGC: 0.34

Tinting: Solarban 60

Lighting Measures

Code:	Quantity:	Description:	Lamp/Ballast:	Total Watts:
A	8	(3) 4ft fluorescent T8 Elec Tandem	F32T8 / Electronic	704
b	2	(3) 4ft fluorescent T8 Elec	F32T8 / Electronic	226

Controls for Credit: Occ Sensor > 250 sq ft

Mechanical Measures

Modular:	Type:	Qty:	OSA:	Cooling Eff.:	Heating Eff.:
24x40	BARD WH602-A	1	710	10.30 SEER	7.00 HSPF

HP T-Stat: ■ Electric Heat (KW): 0.0 kw Duct Location: Conditioned Space

Economizer: ☐ Duct Insulation: R-4.2

GENERAL NOTES

HEATING VENTILATING AND AIR CONDITIONING (HVAC)

1. Heat Pump: Single package wall mounted air to air electric heat pump unit shall be rated in accordance with ARI Standard 240-77.
   Reference Brands: BARD WH421A-XXXXXX
   BARD WH482A-XXXXXX
   BARD WH60A-XXXXXX

   MAXIMUM AC SIZE FOR THIS BUILDING WILL BE A 5-TON UNIT

   All units shall be 230/208 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.
2. Ductwork.
   A.) 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.

   B.) Non-metallic ductwork option: In accessible concealed portions of duct system rigid 1" fiberglass or insulated flex-duct with vapor barrier may be substituted for sheet metal ductwork. All ductwork within 2' of the HVAC unit and all interface connections shall be metal. Ductwork and reinforcement shall be designed for 2" static pressure.
   Reference Brands: Owens-Corning fiberglass ducttboard, 1" thick, and Micro-aire, TYPE 475.
   Non-metallic ductwork shall conform to NFPA 90-A and SMACNA Class 1 rating.
3. Air duct insulation and linings shall comply with flame spread less than or equal to 25, smoke generation less than or equal to 50.
4. Supply air diffusers shall be 675 CFM max. 12" round. 1" fiberglass or flexduct ductwork specifically designed to provide air thermal cooling systems. 24"x8"x1" Micro-Aire type #475 Owens-Corning, Knauf, Certainteed, or equal and 90- B: UL #131 test, class 1 rating with "SMACNA".
5. Registers and diffusers: Provide three (Min) 4-way throw air diffusers as manufactured Carnes, Titus, Hart and Cooley, Metalaire, Shoemaker, Barber-Coleman or Krueger commercial grade grills and registers
6. Air conditioning controls.
   Thermostat: Provide electronic programmable thermostat. Thermostat shall have the following functions.
   A.) 5 and 2 weekday/weekend programming with 4 separate time/temperature setting for 24-hour period.
   B.) Key board lockout switch.
   C.) Programmable display.
   D.) 2-hour override minimum.
   E.) Status Indicated Led's.
   F.) Battery back-up.
   Provide locking clear thermostat cover with thermostat cover with access hole for program override. White Rodgers IF92-371 @ +60" SEALED.
7. Thermal insulation
   A.) Roof Insulation: R-19 Unfaced.
   B.) Walls Insulation: R-11 Kraft Faced.
   C.) Floors Insulation: R-11 Kraft Faced.
   Flame spread and smoke development shall conform to California Building Code sec. 707.
8. 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 compliancewith 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.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP03 111193
AC ___ FLS ___ SS ___
DATE NOV 01 2007

THESE DRAWINGS AND / OR SPECIFICATIONS AND / OR CALCULATIONS FOR THE ITEMS LISTED BELOW HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS WHO ARE LICENSED AND AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. THESE DOCUMENTS HAVE BEEN EXAMINED AND HAVE BEEN FOUND TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS.
THE ITEMS LISTED BELOW ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT FOR WHICH I AM THE INDIVIDUAL DESIGNATED TO BE GENERALLY RESPONSIBLE (OR FOR WHICH I HAVE BEEN DELEGATED RESPONSIBILITY) FOR THIS PORTION OF THE WORK.
A LIST OF ITEMS HAS BEEN REVIEWED AND ACCEPTED. (FOR DRAWINGS, A LIST OF ALL ACCEPTED DRAWINGS ARE ATTACHED ON SHEET NO.)

LICENSED ARCHITECT STEPHEN J. COMBS, IKBAR, AIA — DATE

NOTE
STUB OUT LOCATIONS FOR WATER, WASTE AND GAS ARE DIAGRAMITICAL ONLY. EXACT LOCATIONS MAY VARY +/- SEVERAL FEET. PLEASE CONTACT AMERICAN MODULAR SYSTEMS FOR EXACT LOCATIONS. POINT OF CONNECTION WILL BE AT THE FACE OF THE BUILDING.

APPROVED
DIV. OF THE STATE ARCHITECT
LOS ANGELES BASIN REGIONAL OFFICE
AC ___ FLS ___ SS ___
APPL. NO. 105168 DATE 10/20/04

BASED ON PC# 02-104915

FILE NO.
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
AC ___ FLS ___ SS ___
DATE

24 X 40
RELOCATABLE
CLASSROOMS

AMS
American Modular Systems Inc.
787 Spreckels Ave. Manteca, CA 95336
(209)825-1921 Fax (209)825-7018
americanmodular.com

LICENSED ARCHITECT MARCIAL PATRICK CHANDLER No. C 12631 Exp. STATE OF CALIFORNIA

CUSTOMER:
BAKERSFIELD CITY SCHOOL DISTRICT
CAROLINE HARRIS SCHOOL

MECHANICAL PLAN & NOTES

DATE: 09-28-04
SCALE: NONE
DRAWN BY: M.H.
CHECKED BY:
CHECKED BY:
SERIAL NO.

REVISIONS

NO	DATE	DESCRIPTION	NO	DATE	DESCRIPTION
△			△		
△			△		
△			△		
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PROJECT No.

SHEET No. M1