EQUIPMENT LAYOUT FOR VARIOUS SIZE HOUSES

SELECT LAYOUT SUITABLE FOR YOUR HOUSE

BASED ON UNIV OF KY PLAN NO II BII-7
PIPE FRAME IN GROUND

HEATER HUNG FROM
GREENHOUSE ROOF

UNIT HEATER INSTALLATION DETAILS
NO SCALE

NOTE: PLYWOOD OR
BOARDS FOR FRAME

END WALL
CAULK CRACK
COMMERCIAL METAL
HOUSING OR PAINTED
WOOD.

FAN EXTENDS OUTSIDE
BUILDING

FAN EXTENDS INSIDE
BUILDING
(FOR MIN. WINTER CONDENSATION
WITHIN HOUSING)

FAN & SHUTTER INSTALLATION DETAILS
NO SCALE

COVERING LAPS SHUTTER
FRAME FOR WATER DRAIN
ON TOP & SIDES, OR PUT SHUTTER
ON OUTSIDE & CAULK.

GRAVITY SHUTTER
AIR FLOW

INSIDE
OUTSIDE

ROUGH OPENINGS
PER EQUIPMENT SIZE

AIR FLOW

INSIDE
OUTSIDE

2X6 OR LARGER WOOD
RAFTERS, OR EQUAL
STRENGTH METAL FRAME.

HEATER SUPPORTED
BY TWO OR MORE
FRAMES

HEIGHT TO CLEAR CROP

METAL FLASHING

WINDPROOF VENT CAP MIN. 2' OR 3'
ABOVE RIDGE, OR PER LOCAL CODE.

CODE APPROVED VENT PIPE
ELBOW
METAL FLASHING

RIDGE
UNIT HEATER

METAL FLASHING
RAFTER FRAMES
REDUCER PIPE
LARGER TEE, ELBOWS
& VENT THRU ROOF FOR
BOTH HEATERS.

END VIEW

VENT PIPE FROM UNIT
HEATER

TOP VIEW

COMMON VENT THRU ROOF
AT RIDGE
(NOTE: INDIVIDUAL VENTS MAY BE USED AT
EACH HEATER IF DESIRED)

MOUNT RIGIDLY
FROM RAFTER OR
ON GROUND STAKE

PLYWOOD BOARDS
PAINTED WHITE ON
BOTH SIDES

BACK SIDE TOWARD
SOUTH TO PREVENT
SUN DIRECTLY ON
THERMOSTATS

THERMOSTATS
SPACED 1/2" FROM
BOARD TO ALLOW
FREE AIR CIRC.

SIZE APPROX.
12" X 12" OR
AS REQ'D

THERMOSTAT MOUNTING BOARD

COOPERATIVE EXTENSION WORK IN
AGRICULTURE AND HOME ECONOMICS
DEPARTMENT OF AGRICULTURE AND HOME ECONOMICS
COLLEGE OF AGRICULTURE
UNIVERSITY OF KENTUCKY
AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

GREENHOUSE HEATING
AND VENTILATING SYSTEM

KY '75 6197 SHEET 2 OF 3
ELECTRICAL WIRING DIAGRAMS

NO SCALE

GENERAL INFORMATION

1. Total fan ventilation capacity to be based on 3/4 to 1 air change per minute for plastic houses or fiber glass covered with removable plastic sides during summer. For totally enclosed houses, use 1 to 1/4 air change per minute. See Ky. 611-5 for chart of ventilation requirements for various house sizes. First stage of winter ventilation should be 25 to 35 percent of house volume (C.F.M.) with at least two more stages to reach maximum rate.

2. All fans to be mounted in end or side of house to exhaust with (not against) air flow of prevailing winds. Mount fresh air inlet shutters in opposite end, or side.

3. Heat requirements to be based on house type and size, type of covering, number of layers, and temperature differential to be maintained. See Ky. 111-3 for chart of heat requirements for greenhouses. Select size and number of unit heaters to give total heat output required.

4. Wire heater fans to operate continuously in winter to provide air circulation. Use manual switch or proper THST connections to stop operation during summer ventilation.

5. When two or more heaters are used in one house, recommend all heaters be connected to one thermostat through a small multi-pole relay or use the alternate wiring diagram shown so all heaters will operate together for a more uniform house temperature. (CAUTION: Two or more heater THST terminals cannot be connected directly on same SPST thermostat to operate properly, thus, the relay or alternate wiring is required.) Where individual thermostats are used for each heater, set them to operate as close to same temperature as possible for the most uniform house temperature.

6. Use optional booster fans or commercial poly-tube equipment to increase air circulation if unit heater fans are inadequate.

7. Evaporative pad cooling may be used with any plan shown install and use according to manufacturer's instructions. Be sure to obtain data and information on the water requirements, installation procedures, performance capacities, maintenance, costs, and feasibility for your use before purchasing pad cooling.

NOTES ON ELECTRICAL WIRING

1. Heat and ventilation fans wired as shown prevent operation at same time.

2. Set HEAT THSTS. at minimum temp desired in greenhouse.

3. Set FAN THSTS. at temperature desired for ventilation to begin, but at least 5°F above HEAT THST. setting.

4. Be sure total amperage of fan motors and other equipment connected to a THST does not exceed allowable load rating of THST contacts. If necessary, use proper power relays or motor controllers to handle required load. (CAUTION: Two separate relays are required to operate a 2-speed fan, thus, use 2-speed motors within amperage rating of a 2-stage THST.)