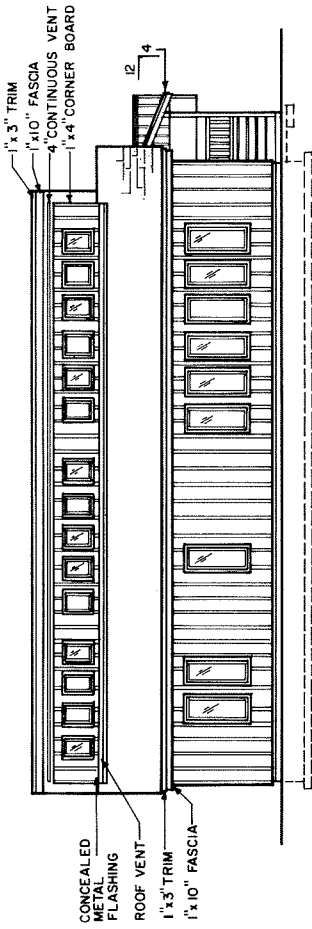


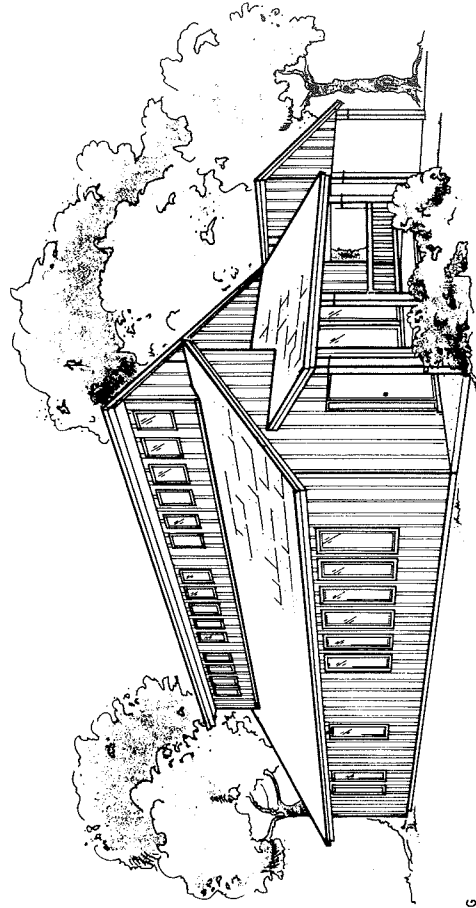
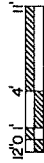
FLOOR PLAN

DOOR SCHEDULE			
MARK	SIZE	DESCRIPTION	QUANTITY
1	3'-0" x 6'-8"	EXTERIOR	2
2	2'-6" x 6'-8"	EXTERIOR	1
3	2'-6" x 6'-8"	EXTERIOR (GLASS)	1
4	2'-6" x 6'-8"	INTERIOR	5
5	2'-0" x 6'-8"	INTERIOR	1
6	2'-6" x 6'-8"	INTERIOR BIFOLD	1
7	5'-9" x 6'-8"	INTERIOR BIFOLD	1
8	7'-0" x 6'-8"	INTERIOR BIFOLD	1
9	8'-0" x 6'-8"	INTERIOR BIFOLD	2
10	3'-4" x 2'-0"	EXTERIOR ACCESS DOOR (JOB BUILT)	2

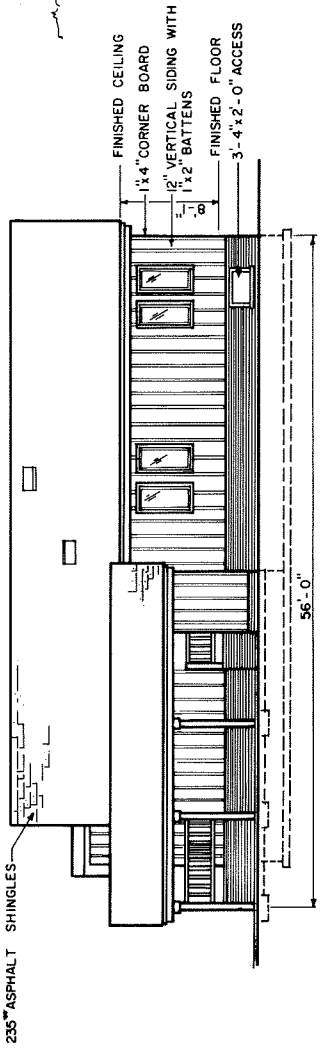
WINDOW SCHEDULE, INSULATED GLASS			
MARK	SIZE	DESCRIPTION	QUANTITY
A	2'-6" x 5'-11 3/4"	CASEMENT	9
B	2'-6" x 4'-11 3/4"	CASEMENT	4
C	2'-6" x 6'-8"	FIXED	1
D	10" x 6'-8"	FIXED (SIDE LIGHT)	1



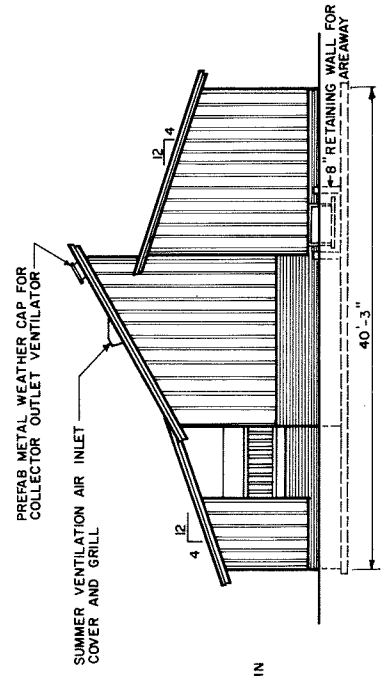
SOUTH ELEVATION



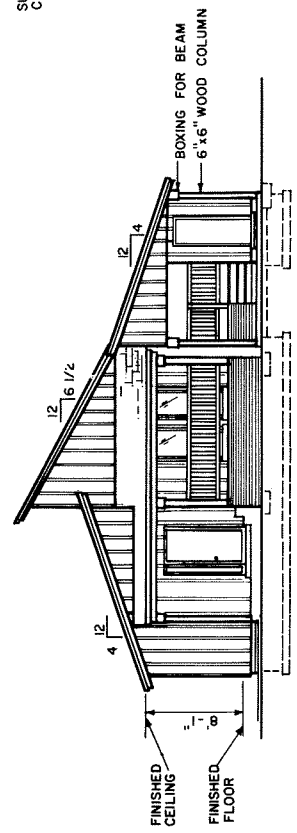
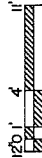
PERSPECTIVE (NO SCALE)



NORTH ELEVATION



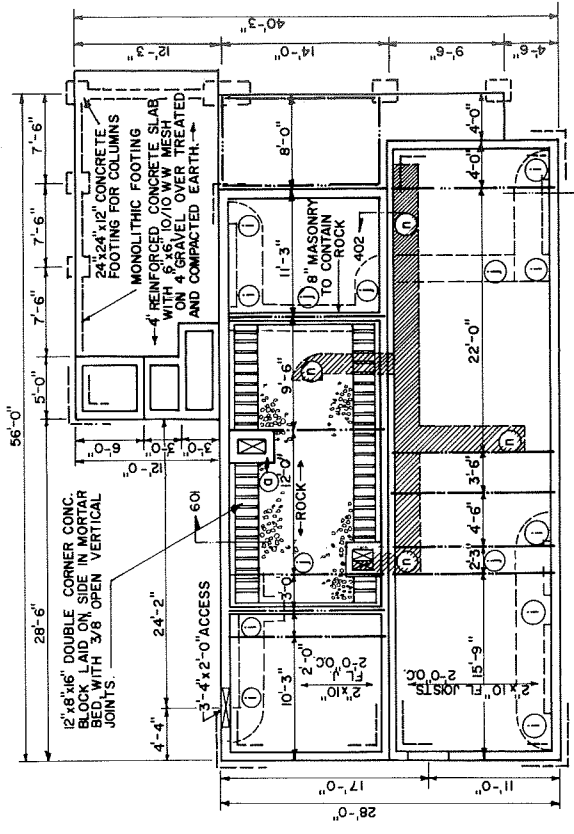
WEST ELEVATION



EAST ELEVATION

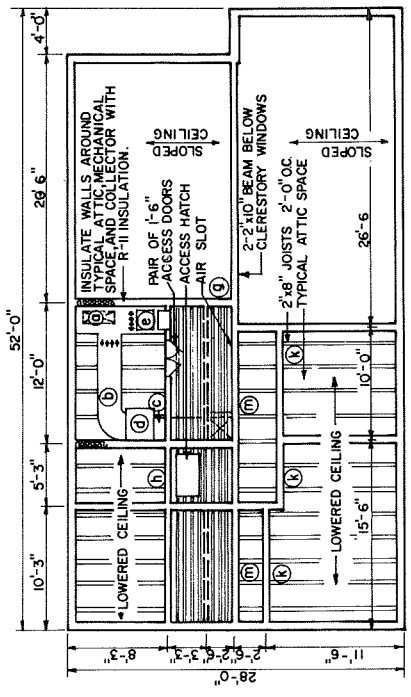


COOPERATIVE EXTENSION SERVICE AGRICULTURE AND HOME ECONOMICS	
AND UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING	
CONTEMPORARY 3-BEDROOM SOLAR ATTIC HOUSE	
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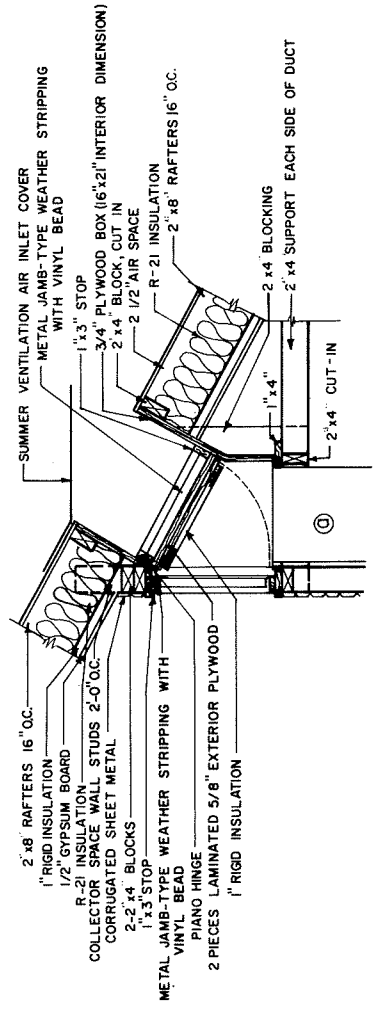
FOUNDATION PLAN 303

1" = 4' SCALE



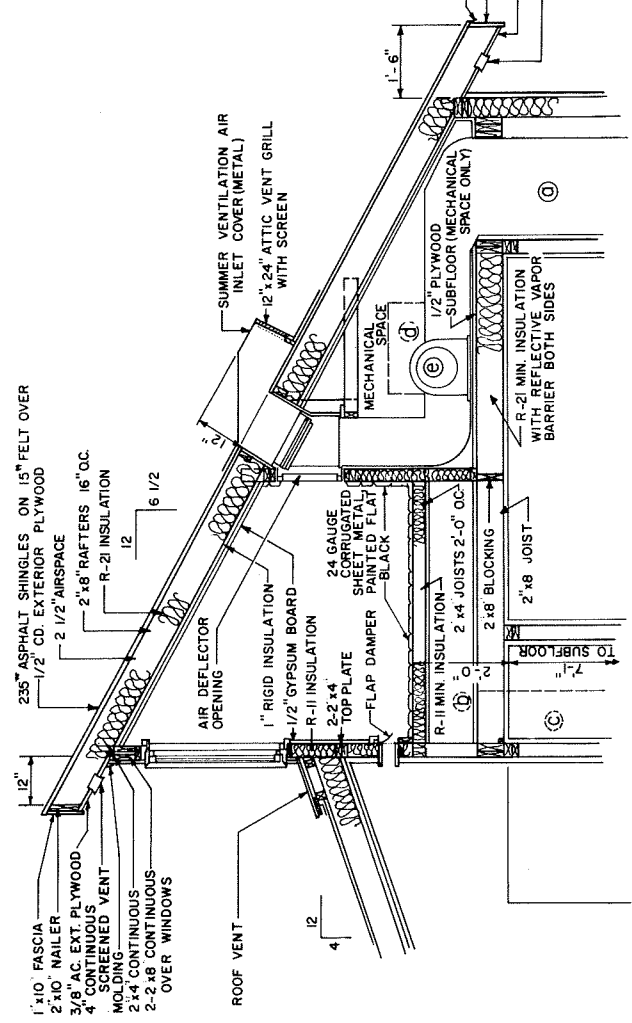
COLLECTOR SPACE AND MECHANICAL PLAN 304

1" = 4' SCALE



AIR DEFLECTOR DETAIL 302

1/2" = 6' SCALE



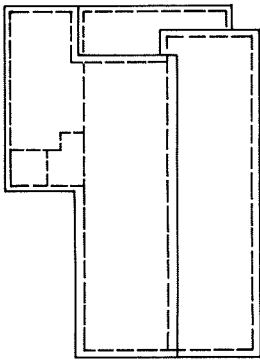
SECTION THRU COLLECTOR, MECHANICAL SPACE AND RETURN AIR PLENUM 301

1/2" = 6' SCALE

COOPERATIVE EXTENSION SERVICE AGRICULTURE AND HOME ECONOMICS	
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING	
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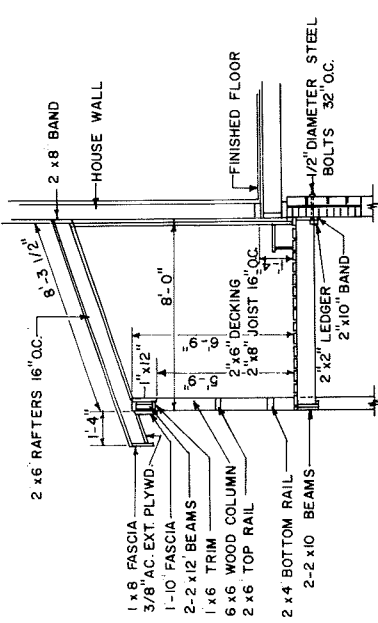
CONSTRUCTION CHECK LIST

- CHECK LOCAL BUILDING CODE AND LOAN CRITERIA (RAFTERS MEET 20 LB/FT² SNOW LOAD CRITERIA).
- ADEQUATELY NAIL AND ANCHOR JOINTS.
- DOUBLE JOISTS UNDER TUBS AND OTHER HEAVY LOADS.
- SHEATH CORNERS WITH 1/2" PLYWOOD OR HIGH DENSITY FIBERBOARD OR USE DIAGONAL BRACING
- USE EXTERIOR GLUED PLYWOOD WHEREVER IT MAY BE WETTED DURING OR AFTER CONSTRUCTION.
- PRESSURE TREAT ALL WOOD WITH GROUND CONTACT AND PROVIDE OTHER NEEDED TERMITE CONTROL.
- PROVIDE 1 SQ FT OF ATTIC VENT OPENINGS FOR EACH 150 SQ FT OF CEILING.
- WEATHERIZE ALL OPENINGS AND JOINTS.
- SEAL CRACKS WHERE DUCT WORK PASSES THRU WALL OR FLOOR OF MECHANICAL SPACE WITH SILICONE SEALANT.
- FILL CORES OF TOP COURSE MASONRY WITH CONCRETE.
- FILL CORES OF MASONRY WITH CONCRETE AT ANCHOR BOLT LOCATIONS.



ROOF PLAN

SECTION THRU PORCH 403



SECTION THRU PORCH 403



MECHANICAL SCHEDULE	
a.	12"x24" METAL SUPPLY DUCT TO ROCK STORAGE
b.	12"x24" METAL SUPPLY DUCT TO FURNACE
c.	12"x24" METAL SUPPLY DUCT TO HOUSE DISTRIBUTION SYSTEM
d.	FURNACE
e.	BLOWER
f.	4"x20" AIR RETURN REGISTERS
g.	16"x12" AIR RETURN GRILLE FROM CLERESTORY TO COLLECTOR SPACE WITH MANUAL CLOSURE ON CLERESTORY SIDE AND FLAP DAMPER ON COLLECTOR SIDE
h.	12"x20" THERMOSTICALLY CONTROLLED COLLECTOR SPACE VENTILATOR: DAMPER OPENS AT 160 - CLOSSES AT 140 (WINTER) CONTINUOUSLY OPEN (SUMMER)
i.	4"x20" METAL AIR SUPPLY DUCT
j.	6"x20" METAL AIR SUPPLY DUCT
k.	4"x20" AIR RETURN GRILLE
m.	4" CONTINUOUS AIR SLOT IN WALL TO ALLOW AIR TO ENTER COLLECTOR SPACE
n.	4"x20" METAL AIR RETURN DUCT
p.	4"x20" AIR SUPPLY REGISTER

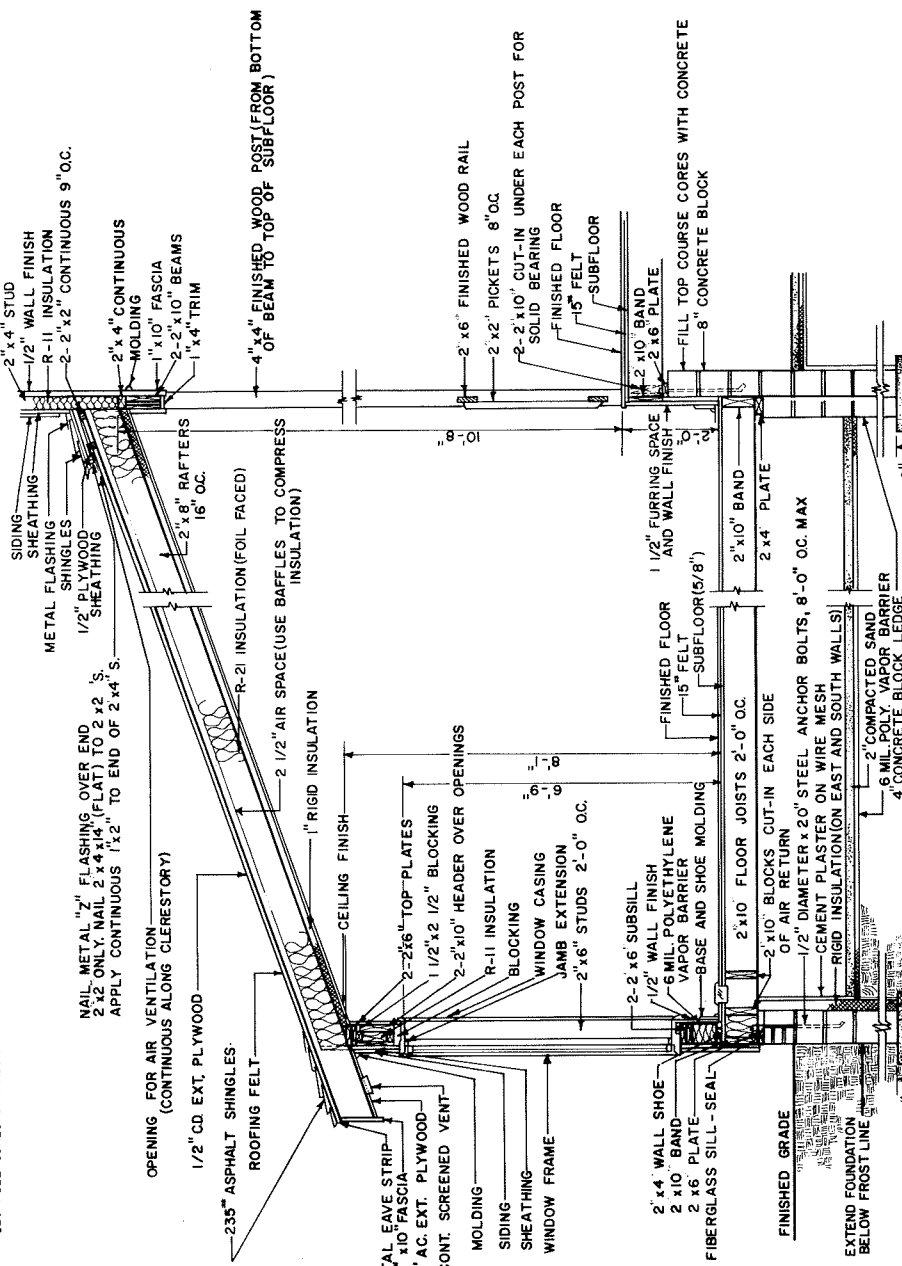
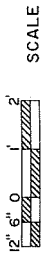
COOPERATIVE EXTENSION SERVICE
AGRICULTURE AND HOME ECONOMICS

AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

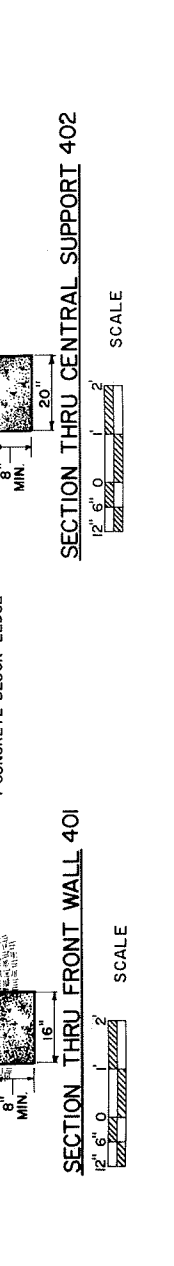
CONTEMPORARY 3-BEDROOM
SOLAR ATTIC HOUSE

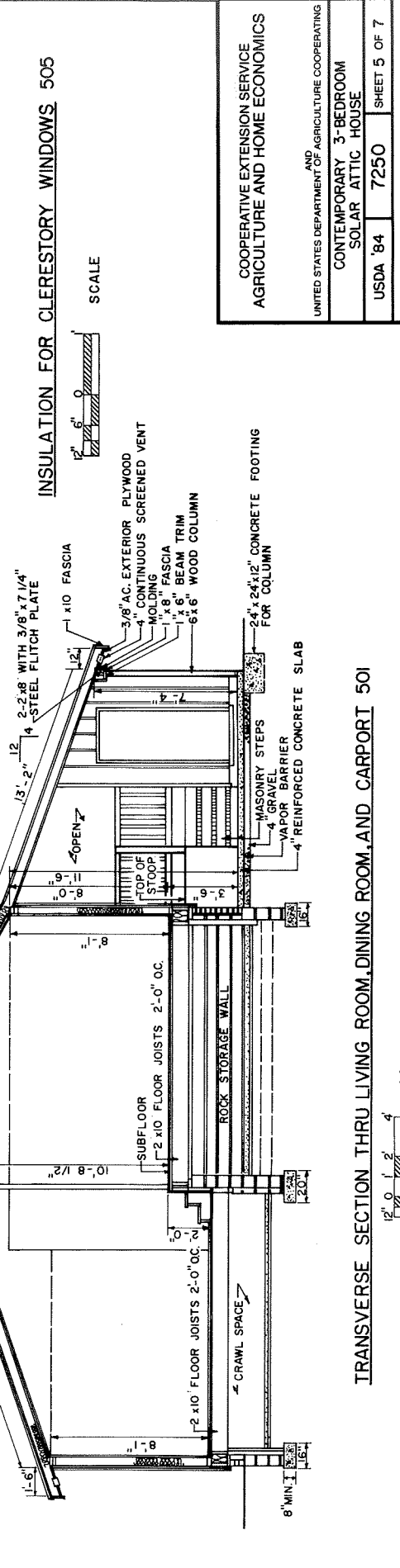
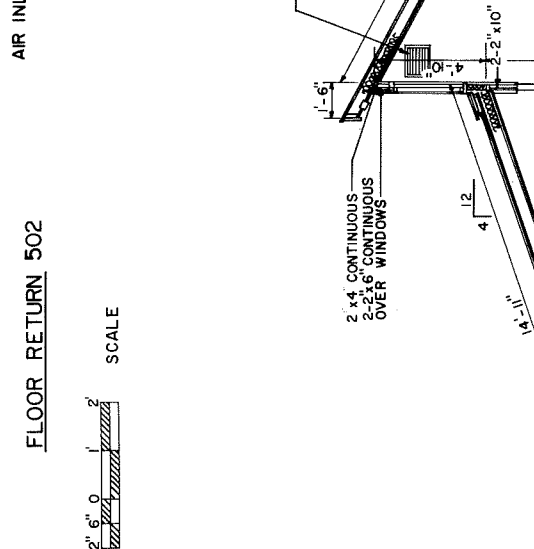
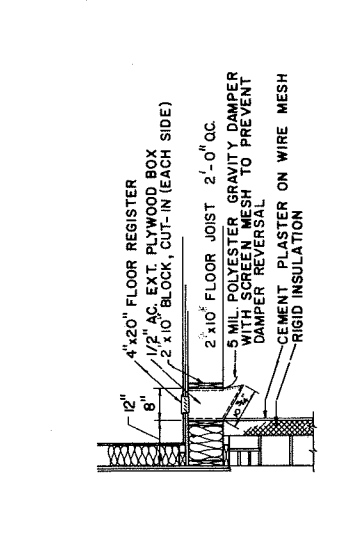
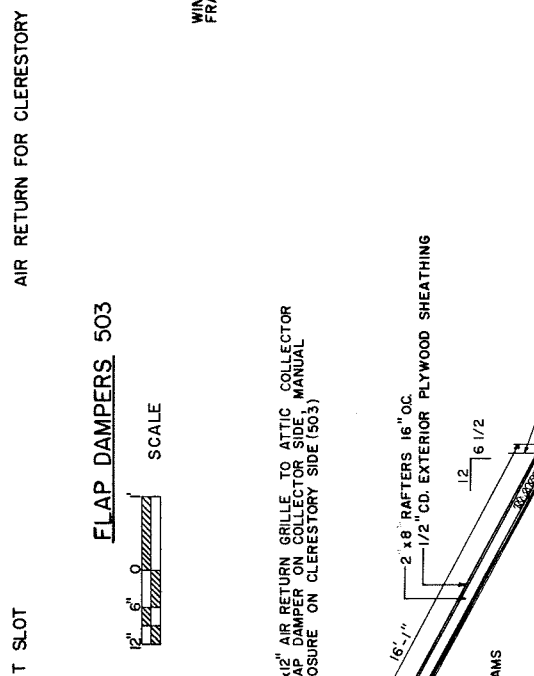
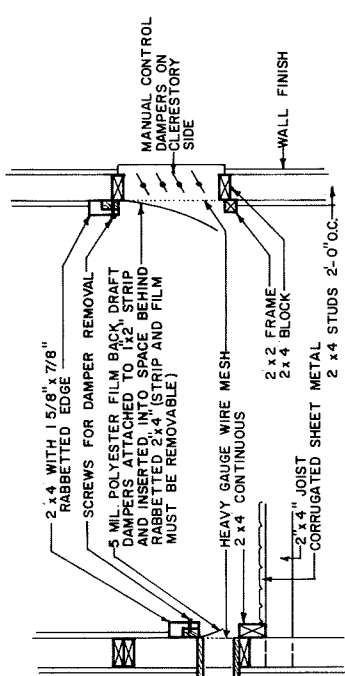
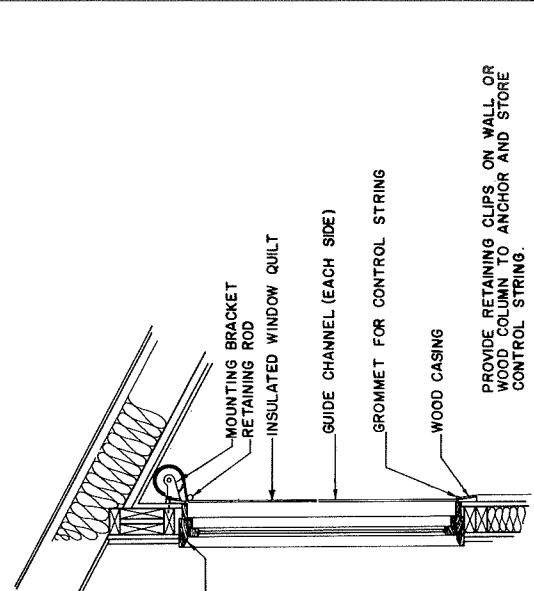
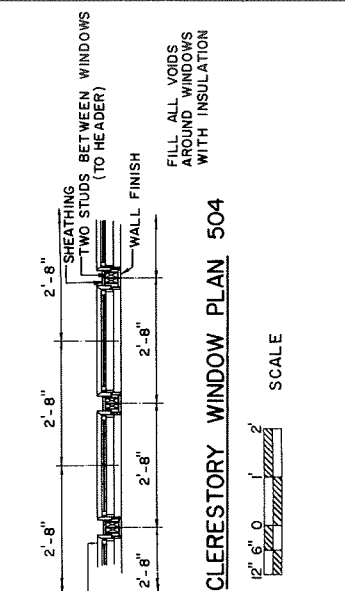
USDA 84 7250 SHEET 4 OF 7

SECTION THRU CENTRAL SUPPORT 402

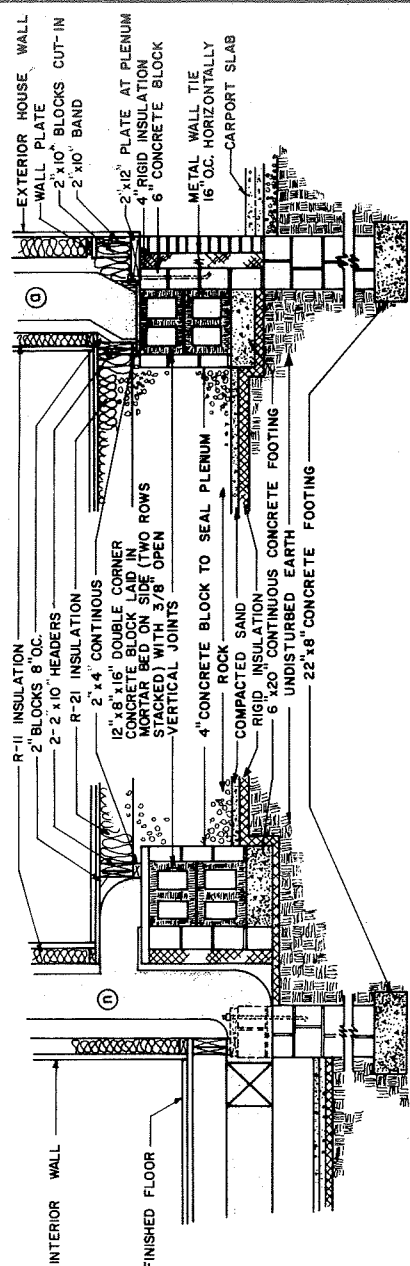


SECTION THRU FRONT WALL 401

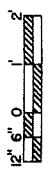




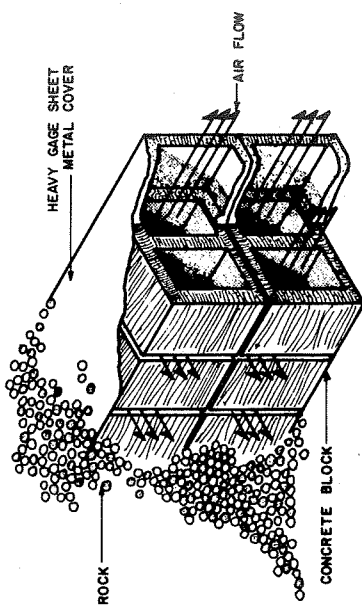
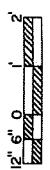
COOPERATIVE EXTENSION SERVICE AGRICULTURE AND HOME ECONOMICS	
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CONTEMPORARY 3-BEDROOM SOLAR ATTIC HOUSE	
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PLENUM SECTION 603A

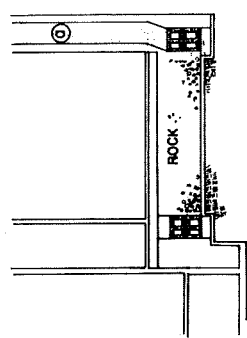


PLENUM SECTION 603B

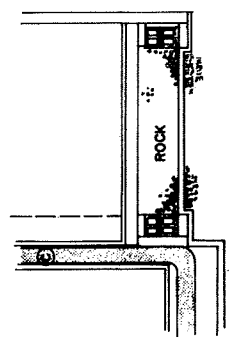
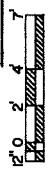


PLENUM VIEW (NO SCALE)

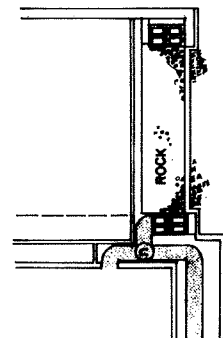
ILLUSTRATION OF AIR DISTRIBUTION FROM PLENUM TO ROCK STORAGE



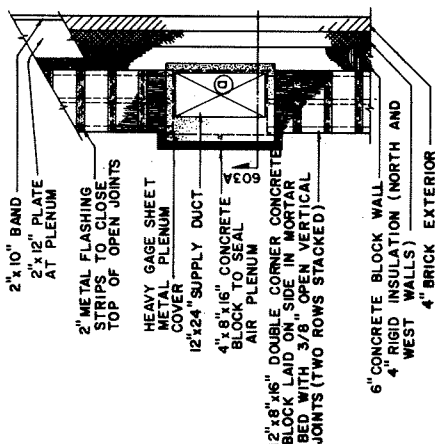
SECTION 602A



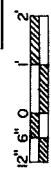
SECTION 602B



SECTION 602C



PLENUM PLAN 604



COOPERATIVE EXTENSION SERVICE AGRICULTURE AND HOME ECONOMICS	
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING	
CONTEMPORARY 3-BEDROOM SOLAR ATTIC HOUSE	
USDA '84	7250 SHEET 6 OF 7

SYMBOLS AND DEFINITIONS
 T₁, B-2 : 24 V. HEAT, NO COOLING, THERMOSTATS, HEAT OFF, COOL SELECTION.
 HONEYWELL, T87F AND Q539 A SUBBASE
 DAYTON, 2E096 AND 2E151 SUBBASE (E.G.), SUBBASE
 WHITE ROGERS, IF 36-30 AND S20-1, SUBBASE

T₃
 : TWO SPEED BLOWER THERMOSTAT, SPDT LINE VOLTAGE, RATED TEMPERATURE RANGE, 10° TO 150° F.
 PENN. CONTROLS - A19BAC-1
 DAYTON, 2E208
 HONEYWELL - T83C1103A

T₄
 : FAN AND LIMIT CONTROL SUPPLIED WITH FURNACE. USE FURNACE MANUFACTURER'S SUGGESTED SETTINGS.
 : SPRING RETURN DAMPER MOTOR, TWO POSITION, OPEN-CLOSE.
DM-1
DM-2
DM-3
DM-4
DM-5
 BARBER COLMAN, MA-405
 HONEYWELL - M436A1116
 PENN. CONTROLS - MB1ACB-1 AND 24 V TRANSFORMER
 : DAMPERS (SEE AIR FLOW DIAGRAMS) LOW LEAK QUALITY SPECIFY END AND BLADE SEALS, FULL OPEN AND FULL CLOSED USE.
 AMERICAN WARNING AND VENTILATING - DAA-P-10
 DORBIN ENGINEERING CORPORATION
 HONEYWELL
 JOHNSON SERVICE CO. - D-1300

SDT-1
S1
S2
 : DIFFERENTIAL THERMOSTAT AND SENSORS FOR WINTER SOLAR HEATING. SPECIFY 1/2 HP TURN-ON DIFFERENTIAL AND 5:1 F TURN-OFF DIFFERENTIAL. RATED 1/2 HP 115 V.
 SOLAR CONTROL CORPORATION
 RHO SIGMA
 HELLO & SONS
 SOLAR ENERGY RESEARCH CORPORATION

SDT-2
S3
S4
 : DIFFERENTIAL THERMOSTAT AND SENSORS FOR SUMMER NOCTURNAL HEATING AND 3:1 F TURN-ON DIFFERENTIAL. RATED 1/2 HP 115 V (OPTIONAL, PRIMARILY FOR DRY CLIMATE AREAS.)
 SOLAR ENERGY RESEARCH CORPORATION
 RHO SIGMA
 HELLO & SONS
 SOLAR CONTROL CORPORATION

B-2
 : COLLECTION BLOWER - 115 V 60 CYCLE MULTI-OR TWO-SPEED, PERMANENT SPLIT CAPACITOR TYPE. THESE ARE 40% TO 50% HIGHER EFFICIENCY THAN STANDARD SPEED COLLECTOR BLOWERS. SURFACE AT 3/8 INCHES WATER COLUMN AT 100° F AIR TEMPERATURE, HIGH SPEED BLOWER OUTPUT SHOULD BE 4 TO 5 CFM/FT² OF COLLECTOR SURFACE AT 3/8 INCHES WATER COLUMN AT 100° F AIR TEMPERATURE. SIMILAR TO DAYTON 4 C08B

B-1
 : FURNACE BLOWER - 115 V 60 CYCLE, ONE CFM/FT² OF FLOOR AREA AT 120° F AIR TEMPERATURE. SUGGEST PERMANENT SPLIT CAPACITOR MOTOR.
SW-1
SW-2
SW-3
SR-1
 : SWITCH SPST RATED 1/2 HP AT 115 V.
 : SWITCH SPST 24 V FOR CONTROL CIRCUIT AT 115 V.
 : SPDT RELAY, 24 VOLT COIL, RATED 1/2 HP AT 115 V.
 : 24 V TRANSFORMER.

NOTE: MENTION OF PROPRIETARY ITEMS DOES NOT IMPLY ANY GUARANTEE OR WARRANTY, AND IS NOT INTENDED TO EXCLUDE OTHER SUITABLE PRODUCTS.

OPERATIONS
 1. TWO STANDARD HEAT-COOL THERMOSTATS LOCATED IN HALLWAY.
 2. THERMOSTATS LOCATED IN ATTIC SET AT 68° F WINTER AND 75° F SUMMER.
 3. CONTROLS AUXILIARY HEAT OR COOL AND IS SET AT 65° F WINTER AND 75° F SUMMER.
NOTE: AUXILIARY FURNACE OR HEAT PUMP SHOULD BE SIZED BY LOCAL SUPPLIER.

B. DAMPER OPERATION
 1. DAMPER MOTOR DM-1 IS ENERGIZED WHEN BLOWER B-1 IS ON AND IS CONTROLLED BY THE DISTRIBUTION CONTROL SYSTEM HEATING OR COOLING THE HOUSE.
 2. DAMPER MOTOR DM-2 IS ENERGIZED WHEN B-2 IS ENERGIZED AND IS CONTROLLED BY THE COLLECTION CONTROL SYSTEM.
C. TWO DIFFERENTIAL THERMOSTATS CONTROL COLLECTION BLOWER B-2.
 1. SENSORS S1 AND S2 ARE LOCATED IN ATTIC NEAR RIDGE AND SHADED.
 2. SENSORS S3 AND S4 ARE LOCATED IN ROCK, ONE FOOT IN ON COOL SIDE.
 3. WHEN S1 IS 15° F HOTTER THAN S2, BLOWER STARTS AT LOW SPEED.
 4. TWO SPEED BLOWER THERMOSTAT T₃ IS SET AT 100° F FOR HIGH SPEED BLOWER OPERATION WITH A 5° F ON DIFFERENTIAL.
 5. SPEED BLOWER BLOWER B-2 DURING COOLING.
 6. LOCATED NEAR COIL IN ROCK IN ATTIC INTAKE VENT; SENSOR S4 IS LOCATED NEAR COIL THROUGH ROCK OR HOUSE.
 7. CIRCULATES COOL AIR THROUGH ROCK OR HOUSE.
 8. SENSORS S1 AND S2 THERMOSTATS S1, S2, S3, HEAT-COOL SWITCH SW-1, BLOWER B-2, CONTROL MOTOR DM-2 OR EXPOSED TO THE COOLER ENVIRONMENT OF THE LOWER ATTIC.
MANUAL CHANGE-OVER FROM SOLAR HEATING TO COOLING
 A. OPEN ROOF VENT TO BLOWER B-2 AND CLOSE OFF ATTIC TO BLOWER.
 B. POSITION HEAT-COOL SWITCH SW-1 & SW-2 TO COOL.
 C. CHANGE BOTH HOUSE THERMOSTATS TO COOL.
 D. CONVENTIONAL FORCED AIR COOLING.

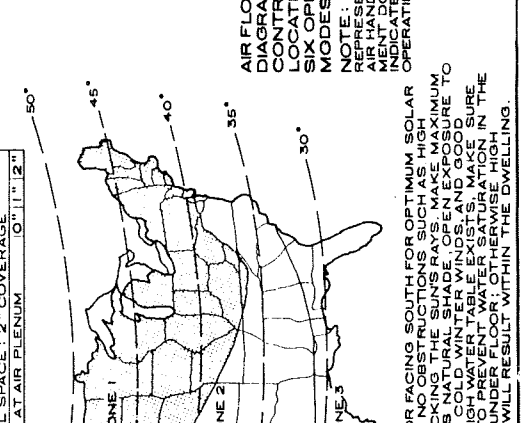
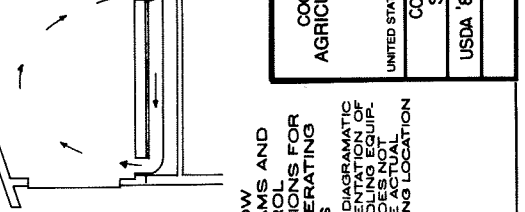
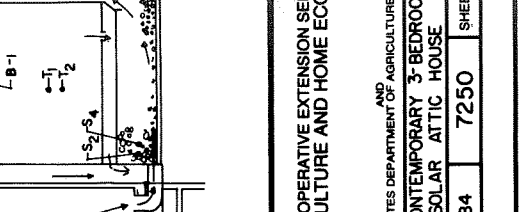
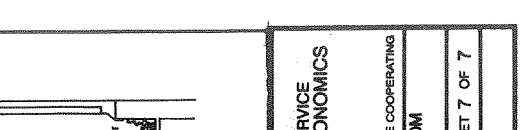
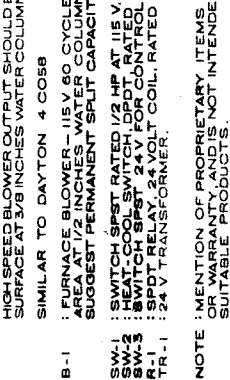
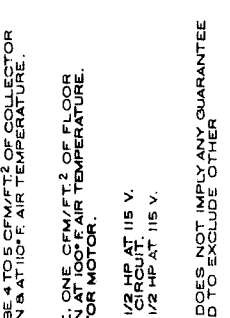
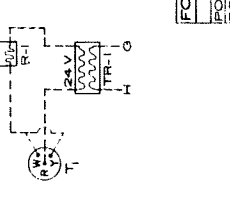
MANUAL CHANGE-OVER FROM SOLAR COOLING TO HEATING
 A. MANUAL DAMPER ON CEILING RETURN IS OPEN AT ALL TIMES.
 B. POSITION HEAT-COOL SWITCH SW-1 & SW-2 TO HEAT.
 C. CHANGE BOTH HOUSE THERMOSTATS TO HEAT.
 D. CLOSE ROOF VENT TO BLOWER B-2 AND OPEN ATTIC TO BLOWER.

WIRING DIAGRAM
DISTRIBUTION SYSTEM
 ELECT. FURNACE
 HEAT PUMP
STAGE 1
 NATURAL HEAT
 COOLING
STAGE 2
 MECHANICAL HEAT
 COOLING
 T₁ AND T₂ - 24 V. SYSTEM SWITCH, HEAT OFF, HEATING AND COOLING MODES.
 HONEYWELL THERMOSTAT T87F OR EQUAL - SUBBASE Q539 J OR CR
 SW-3 - ON-OFF MANUAL SWITCH FOR AUXILIARY STRIPS FOR HEAT PUMP STRIPS ACTIVATE HEAT PUMP.
 DM-1 AND DM-2 - DAMPER VOLTAGE TO BE THE SAME AS BLOWER MOTOR FOR HEAT PUMP OR ELECTRIC FURNACE.

DISTRIBUTION SYSTEM FOR WARM AIR GAS OR OIL FURNACE
 115 V FURNACE CONTROL
 SW-1 LOCATE WITH
 SW-2 LOCATE WITH
 DM-1
 DM-2
 DM-3
 DM-4
 DM-5
 INLET MOTOR DM-4
 OUTLET MOTOR DM-5
 ALL COLLECTOR OR SPACE VENTILATORS MULTISIMULTANEOUS ACTION.

FOUNDATION INSULATION TABLE

HOUSE ZONE	1	2	3
POLYSTYRENE IN FOUNDATION WALL	1" & 2"	2" & 3"	3" & 4"
POLYSTYRENE BELOW ROCK	1" & 2"	2" & 3"	3" & 4"
SAND IN CRAWL SPACE	2"	2"	2"
CVERAGE	10" x 11" x 12"		



SITE PLANNING
 ORIENT HOUSE WITH COLLECTOR SOUTH FOR OPTIMUM SOLAR ENERGY ABSORPTION MAKING SURE NO OBSTRUCTIONS SUCH AS HIGH TREES OR BUILDINGS WILL BE BLOCKING THE SUNRAYS. MAKE MAXIMUM SUMMER BREEZES SHELTER FROM COLD WINTER WINDS, AND GOOD DRAINAGE AWAY FROM HOUSE. IF HIGH WATER TABLE EXISTS, MAKE SURE ADEQUATE DRAINAGE IS PROVIDED UNDER FLOOR. MAKE SURE HIGH IN THE DEGREE OF HUMIDITY DISCOMFORT WILL RESULT WITHIN THE DWELLING.