

FLOOR PLAN , ELECTRIC , PLUMBING , HEATING , COOLING & VENTILATION LAYOUT SCALE 1/8" = 1'-0"

FAN TYPE AND RATING

FAN	TYPE	CFM RATING AT 1/8 INCH STATIC PRESSURE
FAN A	SINGLE SPEED	10,000
FAN B	VARIABLE SPEED	2,100 - 10,000
FAN C	SINGLE SPEED	10,000

SUPPLEMENTAL HEATERS

MINIMUM REQUIREMENT 120,000 BTU PER HOUR OR 34 KW TOTAL  
60,000 BTU PER HOUR PER HEATER OR 17 KW

HEATER FANS SHOULD PROVIDE A 30 FT THROW AND  
HAVE A FLOW DIVIDER INSTALLED IN THE OUTLET

COOLING PAD

CONSULT MANUFACTURER

MOTORIZED SHUTTER

MINIMUM REQUIREMENT ONE SQUARE FOOT OF SHUTTER OPENINGS  
PER SQUARE FOOT OF FAN OPENING

THERMOSTATS

THERMOSTAT	TYPE (FOR LINE VOLTAGE APPLICATIONS)
HEAT	OPEN ON RISE
FAN A	CLOSE ON RISE
FAN B	SOLID STATE CONTROL , WITH MINIMUM CUTOFF
FAN C	CLOSE ON RISE
COOLING PAD PUMPS MOTORIZED SHUTTER*	DUAL ACTION (SINGLE POLE DOUBLE THROW)

THERMOSTAT LOCATION NEAR CENTER OF BUILDING AS LOW AS POSSIBLE  
BUT OUT OF ANIMAL REACH NOT IN A DIRECT LINE  
WITH THE HEATER OUTPUT

FAN, HEATER, COOLING PAD PUMP, AND MOTORIZED SHUTTER  
OPERATING SEQUENCE, AND BAFFLE SETTING

INSIDE TEMPERATURE	FAN A	FAN B	FAN C	HEATER	BAFFLE SETTING
ABOVE 75°	ON	MAXIMUM	ON	OFF	SEE BELOW
75° - 70°	ON	MAXIMUM	OFF	OFF	1"
70° - 60°	OFF	VARIABLE	OFF	OFF	1/2" - 1/8"
BELOW 60°	OFF	MINIMUM	OFF	ON	1/8"

OUTSIDE TEMPERATURE	MOTORIZED SHUTTERS	COOLING PAD PUMP	ADJACENT TO PAD	ADJACENT TO FANS
ABOVE 80°	CLOSED	ON	4"	CLOSED
BELOW 80°	OPEN	OFF	1 3/4"	1 3/4"

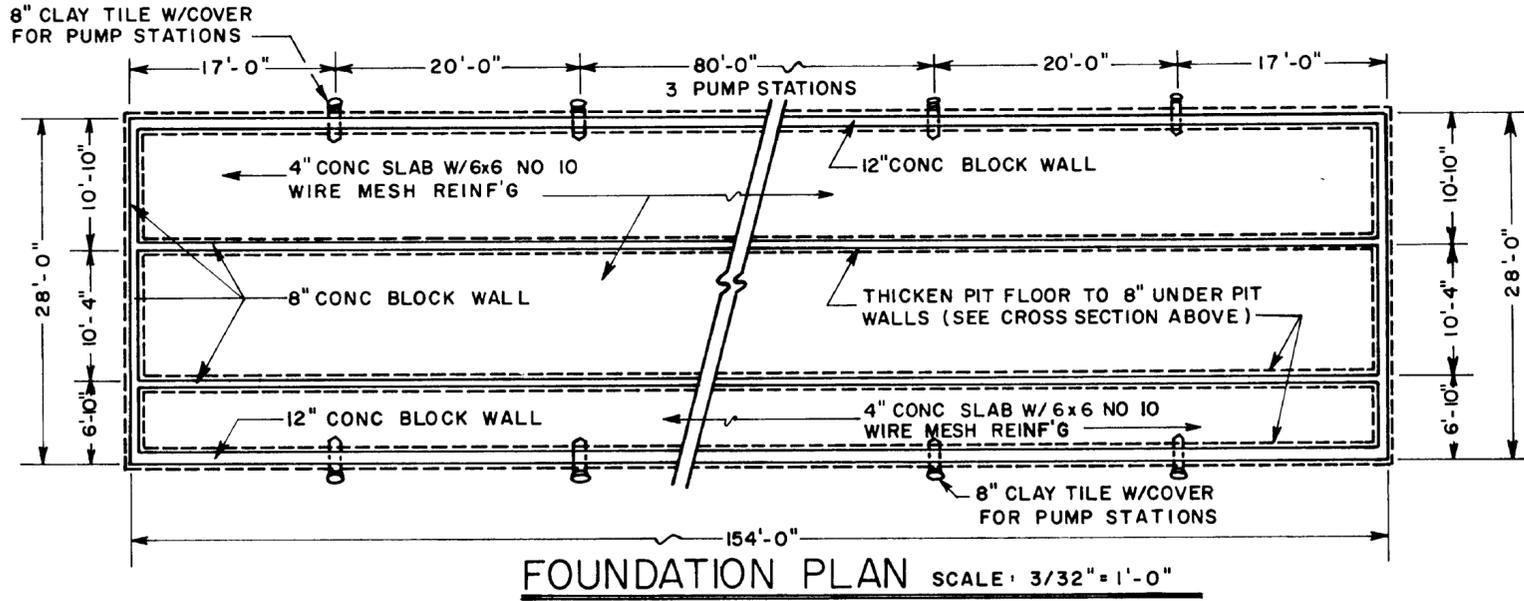
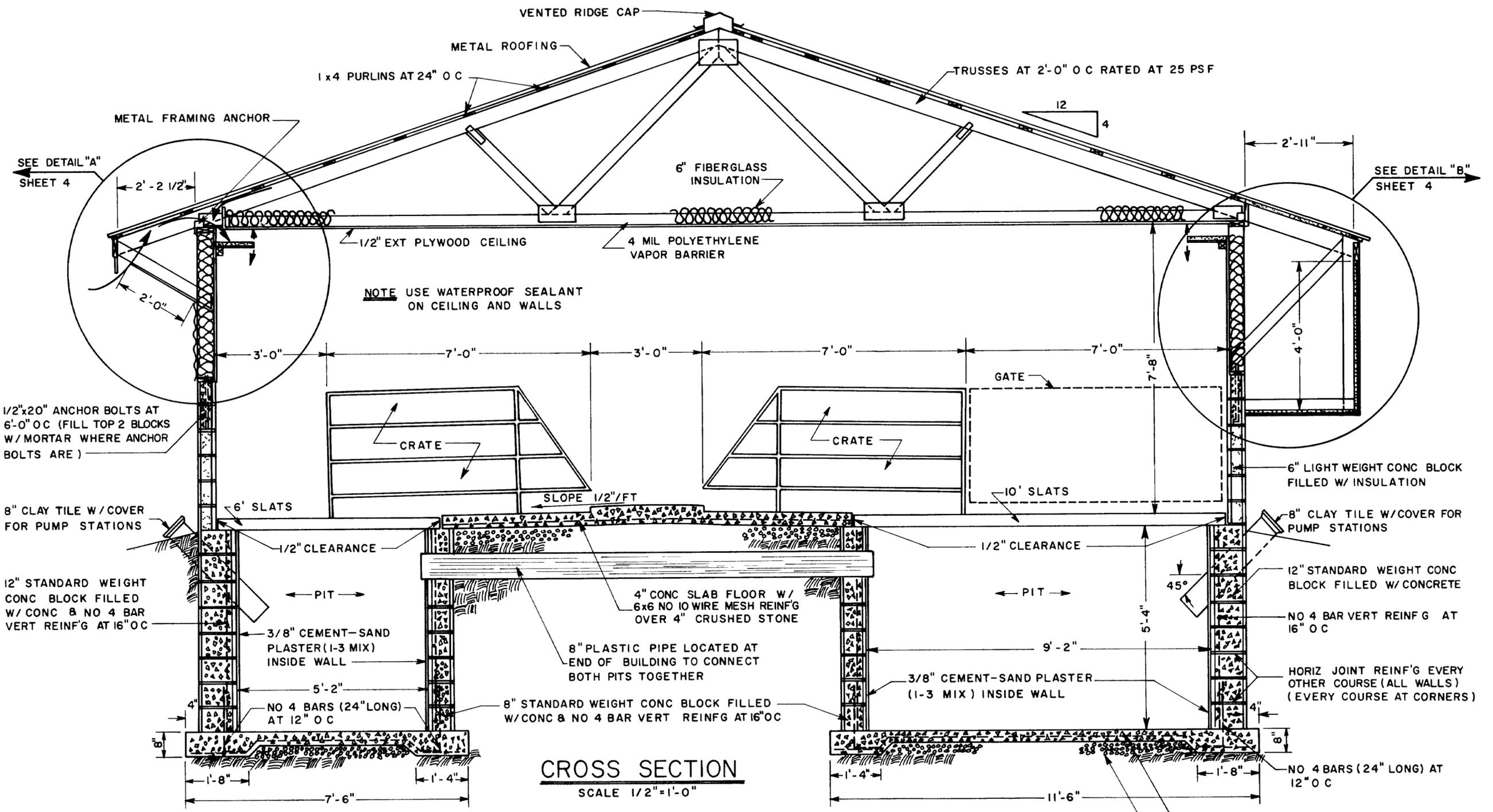
\* THE COOLING PAD PUMP AND MOTORIZED SHUTTER THERMOSTAT SHOULD BE  
INSTALLED OUTSIDE IN A LOCATION PROTECTED FROM DIRECT SUNLIGHT AND  
RAIN

COOPERATIVE EXTENSION WORK IN  
AGRICULTURE AND HOME ECONOMICS

AND  
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

**SWINE BREEDING &  
GESTATION BUILDING**

KY '80 EX 6333 SHEET 2 OF 4

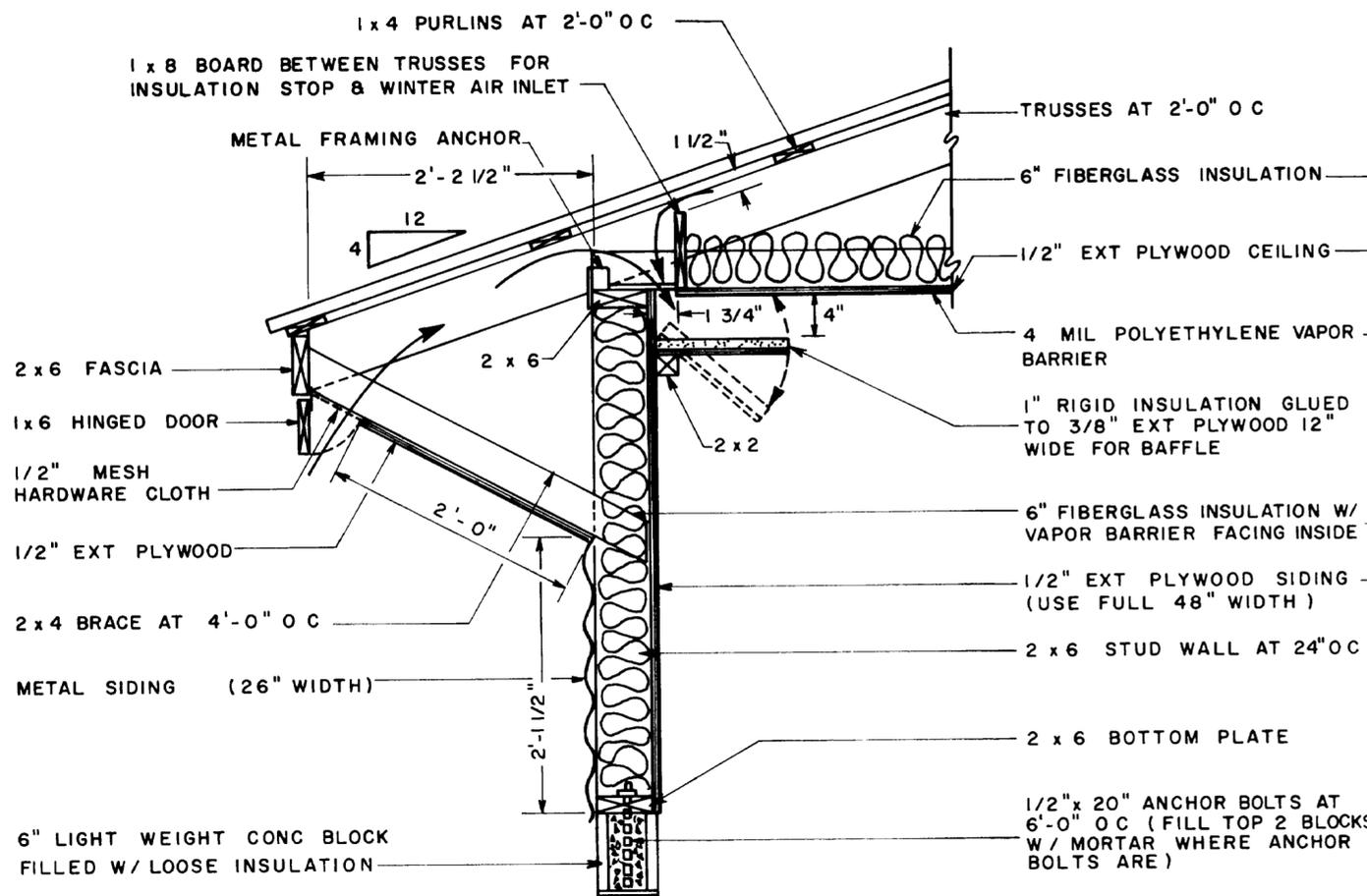


COOPERATIVE EXTENSION WORK IN  
AGRICULTURE AND HOME ECONOMICS

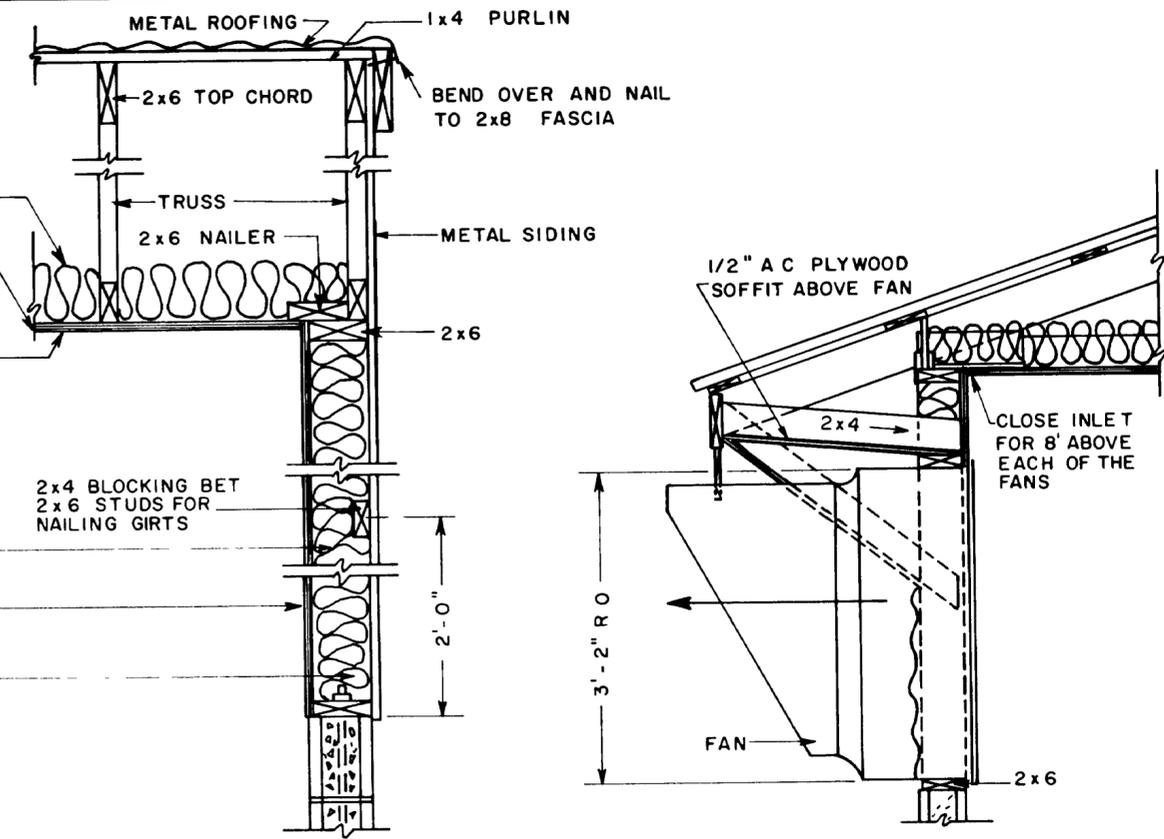
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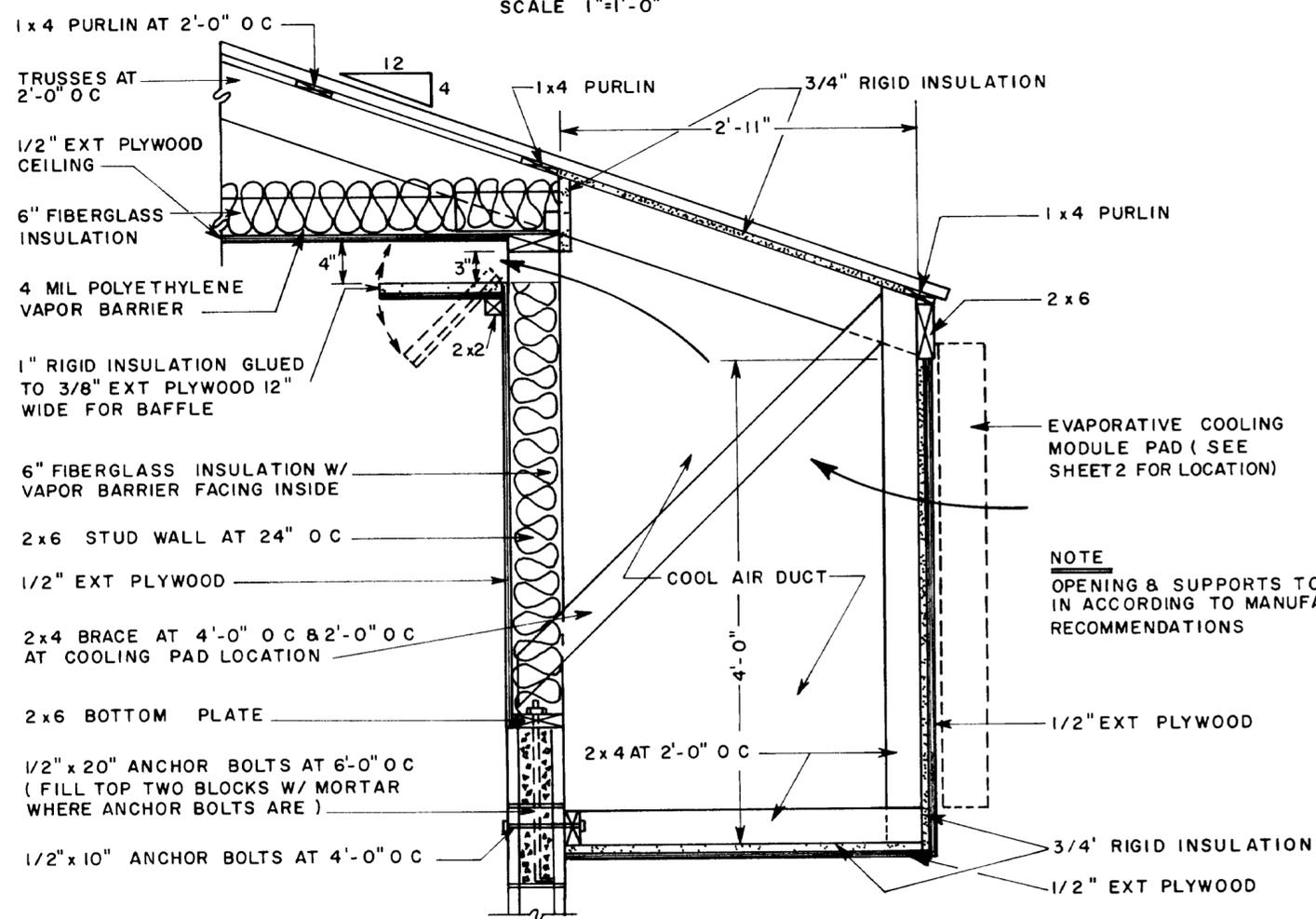


**DETAIL "A"**  
 SCALE 1"=1'-0"

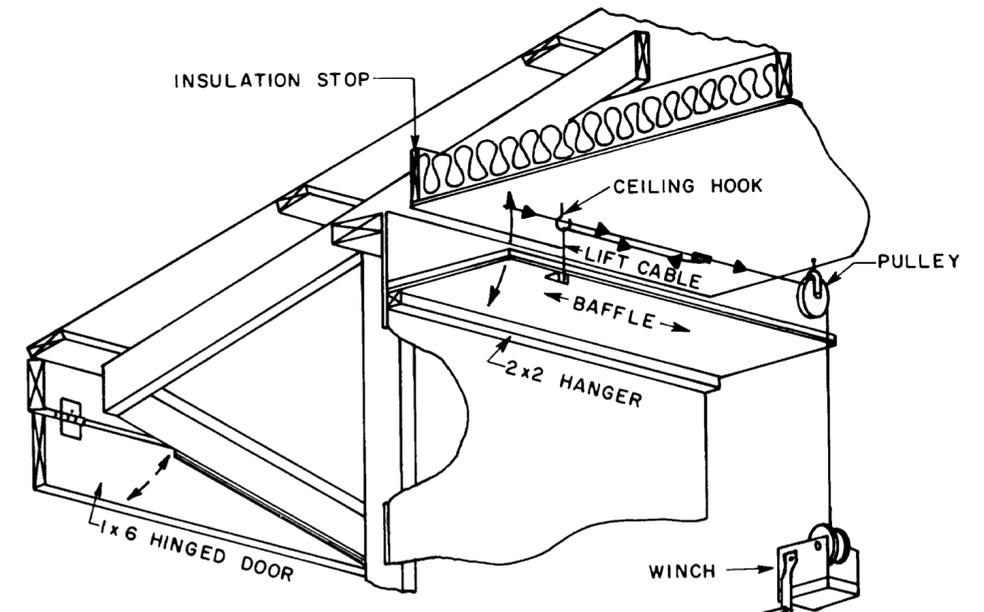


**END WALL DETAIL "C"**  
 SCALE 1"=1'-0"

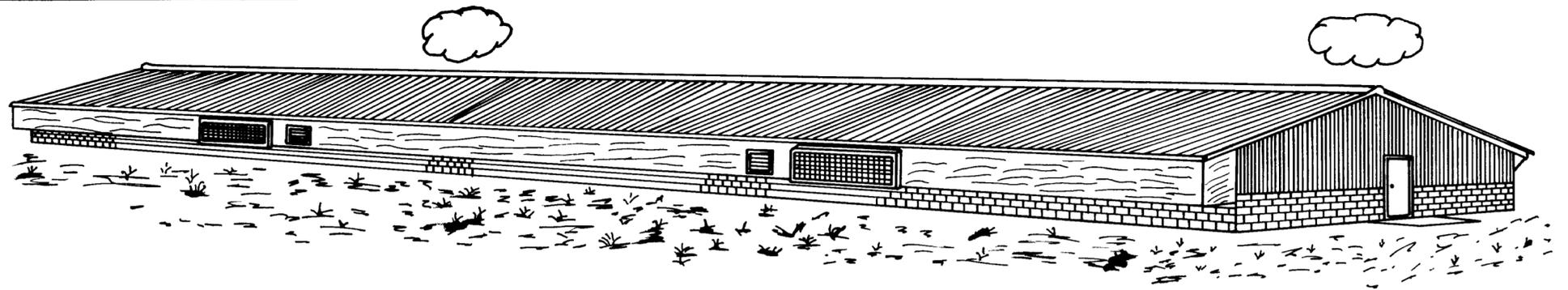
**CROSS SECTION AT FAN**  
 SCALE 3/4"=1'-0"



**DETAIL "B"**  
 SCALE 1"=1'-0"



**DETAIL FOR BAFFLE INSTALLATION**  
 N T S



THIS PLAN IS FOR A 28'x154' BUILDING HOUSING 117 GESTATION STALLS FOR SOWS, 9 STALLS FOR BOARS AND 5 PENS FOR GILTS READY FOR BREEDING AND YOUNG BOARS. THE BUILDING IS COMPLETELY FAN VENTILATED WITH BOTH VARIABLE SPEED AND SINGLE SPEED FANS. SUPPLEMENTAL HEAT IS PROVIDED TO MAINTAIN A MINIMUM WINTER TEMPERATURE OF 55° TO 60°. IN ADDITION, THE DESIGN CALLS FOR EVAPORATIVE COOLING PADS BE INSTALLED TO MODERATE THE EXTREME HOT SUMMER WEATHER. RESEARCH HAS SHOWN THAT CONCEPTION RATES CAN DROP BELOW 50% DURING LATE SUMMER IF THE PRODUCER DOES NOT TAKE STEPS TO KEEP HIS SOWS AND BOARS COOL. NEAR TOTAL CONTROL OF THE ENVIRONMENT SHOULD PREVENT MONTHLY VARIATIONS IN BREEDING PERFORMANCE FROM ENVIRONMENTAL CAUSES.

THE PLAN CALLS FOR GESTATION STALLS FOR THE SOWS AND BOAR. RESEARCH HAS SHOWN THAT ANIMALS REMAIN PRODUCTIVE LONGER WHEN CONFINED TO STALLS. THE PRODUCER CAN BETTER CONTROL FEED INTAKE AND SHOULD HAVE FEWER PROBLEMS THAT ARE NORMALLY ASSOCIATED WITH FIGHTING AND GROUP HANDLING OF SOWS.

THE BREEDING AREA IS DESIGNED TO ACCOMMODATE HAND MATING WITH A MINIMUM OF LABOR. EACH ESTRUS SOW IS BACKED FROM HER STALL INTO THE BREEDING AREA IMMEDIATELY BEHIND HER.

THE BREEDING AREA IS GATED SO THAT 5 MATINGS MAY TAKE PLACE AT ONCE. IT SHOULD BE VERY SIMPLE FOR A PRODUCER TO EXPOSE EVERY SOW WITHIN A GROUP TO A BOAR TWICE DAILY FROM WEANING UNTIL MATING. THE NUMBER OF BOAR STALLS MAY SEEM EXCESSIVE, HOWEVER, DIRECT BOAR-SOW CONTACT SHOULD HASTEN THE ONSET OF ESTRUS AND MANY BREEDING PROBLEMS OBSERVED IN THE FIELD HAVE BEEN DUE TO INSUFFICIENT BOAR POWER.

#### ELECTRICAL POWER OUTAGES

SERIOUS PROBLEMS CAN BE ENCOUNTERED IN TOTALLY ENCLOSED SWINE BUILDING DURING AN ELECTRICAL POWER OUTAGE, WHEN THE VENTILATION FANS STOP. TO AVOID POSSIBLE PROBLEMS AN ENCLOSED SWINE BUILDING SHOULD BE EQUIPPED WITH AN AUTOMATIC WARNING SYSTEM TO ALERT YOU WHEN A POWER FAILURE HAS OCCURED AND A STANDBY ELECTRICAL GENERATOR SHOULD BE AVAILABLE.

#### THERMOSTAT ADJUSTMENT

THE THERMOSTAT SETTINGS GIVEN ABOVE ALLOW THE BUILDING TEMPERATURE TO VARY FROM A MINIMUM OF 60°F IN THE WINTER TO A MAXIMUM OF 85°F IN THE SUMMER.

#### THERMOSTAT

	<u>NORMAL SETTING</u>
FAN B (LOW TEMPERATURE CUT OFF)	55°F
HEATER	60°F
FAN B (SET POINT ON VARIABLE SPEED CONTROLLER)	65°F
FAN A	70°F
FAN C	75°F
COOLING PAD PUMP AND MOTORIZED SHUTTER	80°F

NOTE: CHECK THE AIR TEMPERATURE AT THE LEVEL OF THE PIGS AND ADJUST THE THERMOSTATS IF YOUR READING IS SUBSTANTIALLY DIFFERENT FROM THE DESIRED TEMPERATURE. DOES NOT APPLY TO COOLING PAD PUMP THERMOSTAT.

#### WASTE STORAGE REQUIREMENTS

0.50 CUBIC FEET OF STORAGE PER DAY PER SOW. THIS FACILITY PROVIDES 30 DAYS OF MANURE STORAGE PER USEFUL FOOT OF PIT DEPTH, 90 DAYS STORAGE TOTAL.

NOTE: TWO FEET OF PIT DEPTH IS GENERALLY NOT CONSIDERED USABLE STORAGE VOLUME, BECAUSE SOME OF THE SOLIDS ARE NOT REMOVED DURING CLEANING AND THE LIQUID LEVEL SHOULD NOT BE ALLOWED WITHIN ONE FOOT OF THE BOTTOM OF THE SLATS.

#### DESIGN VENTILATION RATES AND SUPPLEMENTAL HEAT

MINIMUM 15 CFM PER SOW  
 MAXIMUM 210 CFM PER SOW  
 SUPPLEMENTAL HEAT 420 BTU PER HOUR PER SOW

#### FEED AND WATER REQUIREMENTS

FEED: 4 # PER SOW PER DAY = 4200 # TOTAL PER WEEK  
 WATER: 4.5 GAL PER DAY PER SOW  
 675 GAL PER DAY TOTAL  
 MINIMUM PUMPING RATE: 8 GAL PER MINUTE

#### WATER LINES

WATER LINES ARE GENERALLY INSTALLED BY ATTACHING THEM BELOW THE CEILING.

#### SLATS

SLOT OPENING: 1 INCH  
 SLAT TOP WIDTH: 5 INCH MAXIMUM

#### ESTIMATED MATERIAL LIST

1/2" EXT PLYWOOD	228 PC
3/8" EXT PLYWOOD	10 PC
LUMBER (EXCLUDING TRUSSES)	3642 BF
28' TRUSSES (4/12 PITCH)	78
6" LIGHT WEIGHT CONCRETE BLOCK	1620
8" STANDARD WEIGHT CONCRETE BLOCK	2046
12" STANDARD WEIGHT CONCRETE BLOCK	1848
CONCRETE (FLOOR, FOOTINGS & BLOCK FILL)	140 YDS
6" INSULATION (CEILING & WALLS)	5768 SQ FT
10' SLATS	1530 SQ FT
METAL ROOFING & SIDING	7000 SQ FT
6' SLATS	918 SQ FT

#### COOLING PAD SYSTEM

IT IS IMPORTANT THAT YOU CONTACT THE PAD MANUFACTURER FOR DETAILED DESIGN ASSISTANCE AND PROPER INSTALLATION PROCEDURE.

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