

MWPS-72695

Swine Breeding Building

This plan is for a 24' x 60' stud-frame building with 10 stimulus stalls, 8 boar pens, a sow-gilt pen, and a sow holding pen. Year-round mechanical ventilation, totally slotted floors, and liquid manure storage are provided.

CAUTION!

Additional professional services will be required to tailor this plan to your situation, including but not limited to: assurance of compliance with codes and regulations; review of specifications for materials and equipment; supervision of site selection, bid letting and construction; and provision for utilities, waste management, roads or other access. **Furthermore, any deviation from the given specifications may result in structural failure, property damage, and personal injury including loss of life.**

WARRANTY DISCLAIMER

This plan provides conceptual information only. **Neither midwest plan service nor any of the cooperating land-grant universities, or their respective agents or employees, have made, and do not hereby make, any representation, warranty or covenant with respect to the specifications in this plan.** Additional professional services will be required to tailor this plan to your situation, including but not limited to: assurance of compliance with codes and regulations; review of specifications for materials and equipment; supervision of site selection, bid letting and construction; and provision for utilities, waste management, roads or other access.

MIDWEST PLAN SERVICE
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating
Swine Breeding Building Totally Slotted Floor
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MIDWEST PLAN NO. 72695

**Plan MWPS-72695
Swine Breeding Building
Totally Slotted Floor**

This plan is for a 24'x60' stud-frame building with 10 simultaneous stalls, 8 boar pens, a sow-pig pen, and a sow holding pen. Mechanical ventilation, totally slotted floors, and liquid manure storage are provided.

General Specifications

Fans: Select exhaust fans for the slatted capacity at 1/4" static pressure, especially pit fans to prevent backdrafting when larger fans are running. In summer, fan speed can be increased with unpowered fans mounted on the roof. For additional advice, see building and blowing parallel to the sidewalls.

Pits: Use 3500 psi concrete with 7% air entrainment. Use steel of at least 40,000 psi yield. Install steel and concrete carefully and accurately.

Pump pits to within 6" of the bottom at least once a year. Check for solids buildup; increase agitation and pump from port nearest to solids buildup at next pumping.

Heat: Desired room temperature is 65°F or more. Because no bedding is used, provide a supplemental heater (50,000 Btu/hr capacity) for cold weather, especially when the building is less than full.

Protecting swine from fan failure

We know of no device that will successfully ventilate a hog house automatically in the case of failure of one or more fans or the whole electric supply system.

- Install a loud automatic warning system to alert anyone at or near the farmstead.
- Have someone baby-sit your animals if you are going to be away for more than a few hours, if there are storm warnings out, or if your herd is in an especially sensitive stage (a number of new-born litters, for example) for milk wash.
- Considerations on the roof include:
 - Prepare walk doors and perhaps summer ventilation panels to be propped open part way or fully.
 - Consider a stand-by generator to augment hand-operated doors, operate pit fans and, in hot weather, circulation fans.
 - Consider automatic telephone that dials selected numbers when power fails.

Manure storage pit

Pit depth is based on 0.15 cu ft/day manure per sow and 0.19 cu ft/day manure per boar. 6" left in pit after pumping, 10" freeboard, and 12" additional clearance to improve underfloor ventilation.

Building space and production cycles

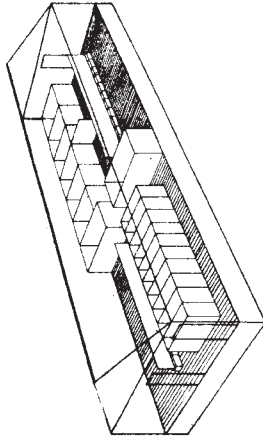
Although many variations are successful, the following are typical hog house production cycles. Pigs are raised on some extra animals to allow for large litter size or slow growth rate.

- Either:
- Move sows and litters to sow-pig nursing pens at 1-3 weeks, depending on how soon the farrowing stalls are needed for the next wean. Wean pigs at 3-6 weeks, putting 2-3 litters per pen. Return sows to breeding and gestation facilities.

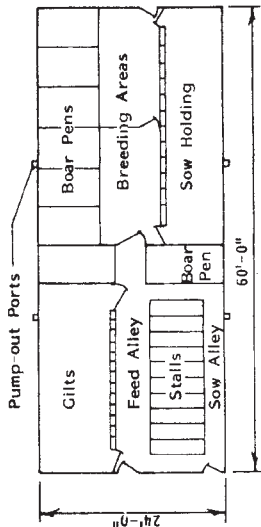
- Or:
- Wean pigs at 4-6 weeks (20-25 lb). Move pigs to nursery, putting 2-3 litters per pen. Return sows to breeding and gestation facilities.

- Or:
- Wean pigs at 3-4 weeks (12-15 lb) to a pre-nursery, putting 1-2 litters per pen. At 6-8 weeks move pigs to a nursery, putting 2-3 litters per pen. Return sows to breeding and gestation facilities.

Move (and gestation facilities) at 10-12 weeks (60-75 lb). Move pigs to larger pens, or reduce number of pigs per pen, at about 20 weeks (150 lb). As they approach market weight, and if the finishing unit is crowded, larger hogs may have to be marketed early. Sows are rebred during the first or second heat period after weaning. They farrow about 16 weeks later.



Totally Slotted Floor



General Floor Plan

Slat designs

Dimensions in these plans assume concrete slats as listed below and may need to be adjusted for other designs or materials. Allow about 1/8" at each end of a slat for construction variation and grouting.

Use 4" wide slats spaced 1' apart in pen and stall areas. In breeding area, use roughened 4" wide slats spaced 3/4" apart.

Slat span	Pig nursery*	Finishing	Farrowing, Sow-pig Nursery, Gestation (stalls)**	Gestation (pens), Boar (pens)	
				Width x depth, lower bar size	
4'	4'x4' #3	4'x4' #3	4'x4' #3	4'x4' #3	
6'	4'x5' #3	5'x5' #4	4'x5' #4	4'x4' #4	
8'	4'x5' #3	5'x5' #4	4'x6' #4	5'x5' #5	
10'	4'x5' #4	5'x5' #5	4'x6' #5	6'x6' #5	

Design Loads

Slats	Per foot of slat	150 plf	150 plf
Beams, Per sq ft floor area	100 psf	65 psf	85 psf
columns	35 psf		

*Concrete slats are not recommended for pigs under 40 lb.
**For sows in stalls, use a maximum of 4" wide slats.

Lumber Specifications

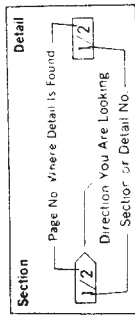
Roof Purlins and Studs
Construction Grade (Doug Fir, Southern Pine or Hem Fir)
Trusses
See Truss Page

FRP Plywood
FRP Plywood is a composite material using plywood overlaid with plastic. It is moisture resistant and more durable and easier to clean than plywood.

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Stalls and Fascia
Pressure-Reservative Treated (Southern Yellow Pine or equivalent) Crosswise—10 pct. Penta—0.50 pct. ACC—0.50 pct. ACA or CCA (Type A or B)—0.40 pct.

P. T. means lumber pressure preservative treated against insect and fungus attack.



Section & Detail Indicator

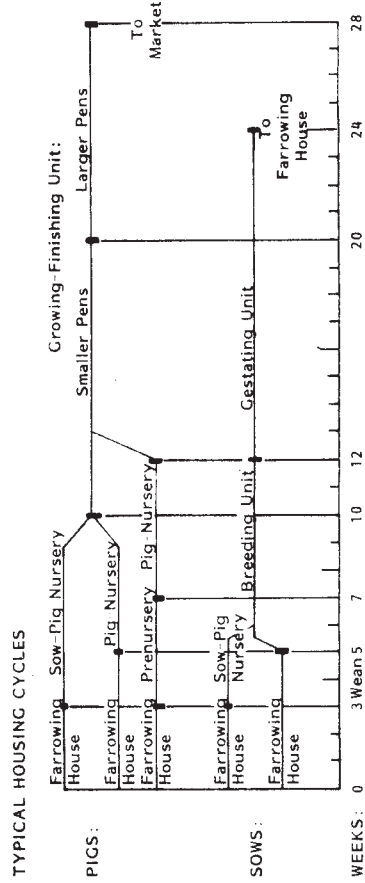
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Cooperative Extension & Research in Agriculture & Home Economics in the 12 North Central Universities—USDA Cooperating

SWINE BREEDING BUILDING
Totally Slotted Floor

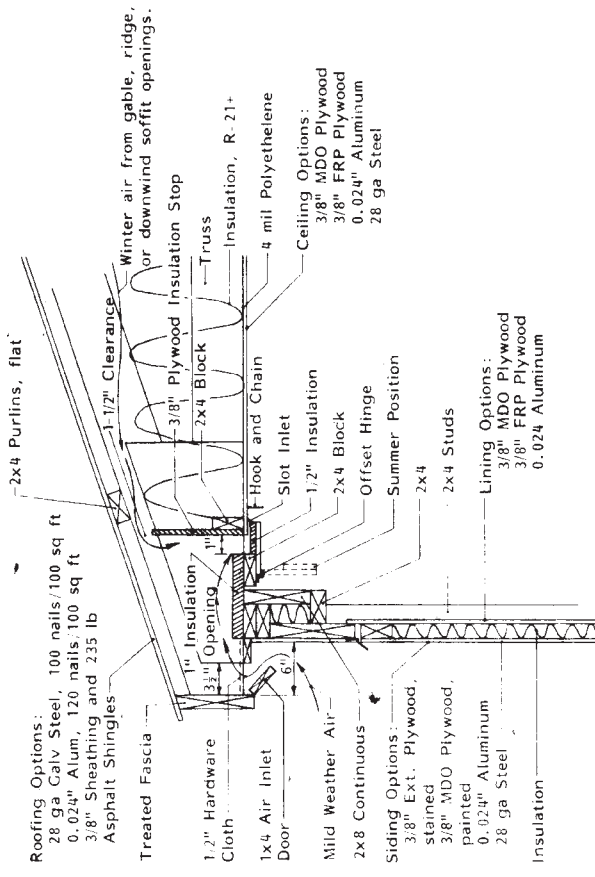
6 Pages plus
24 Truss Sheet
Plans - 72695

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maps - 72695

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TYPICAL HOUSING CYCLES



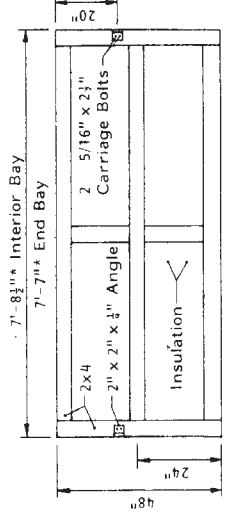
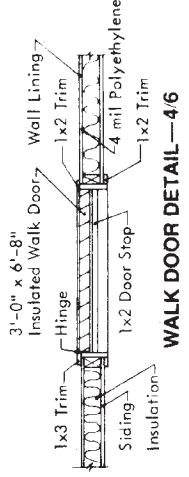
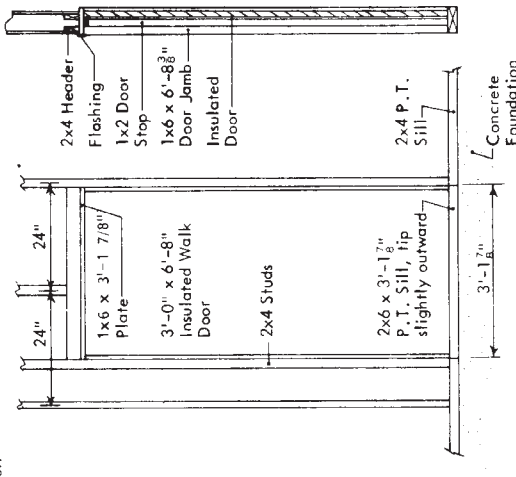
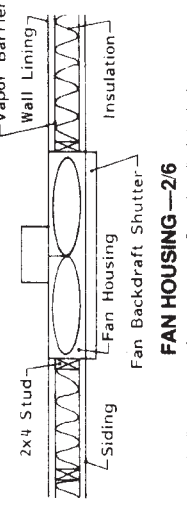
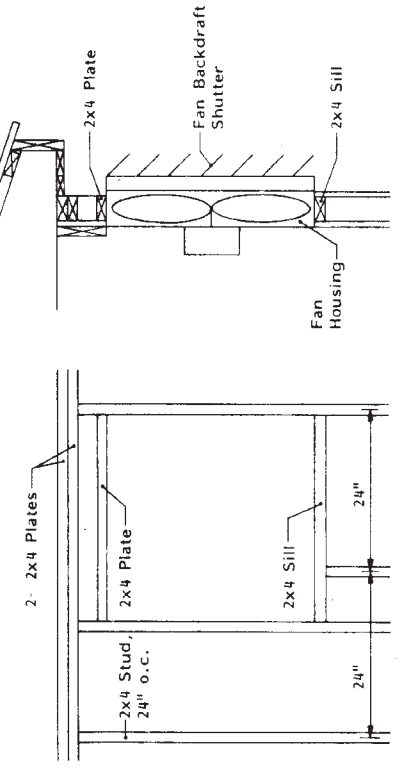
EAVE INLET
SLOT INLET
CONSTRUCTION DETAIL—1/6

Install eave inlet and slot inlet along both long walls. Install fans on the long wall opposite winter prevailing winds. Do not install slot inlet at fans or 8' from fans.

Winter: Close upwind soffit doors so all the air is drawn in from the ridge, gable or downwind soffit openings (18 sq ft total opening into attic needed).
 Fasten all the slot inlet baffles in up position to force cold air across the ceiling. Keep vent doors closed and tightly sealed. Minimum Slot Openings: 1/2"

Mild Weather: Open in eave inlets. Open slot inlet baffles to 1/2"

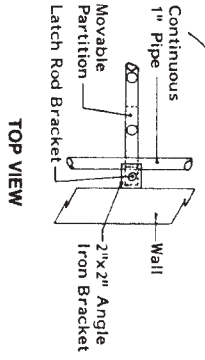
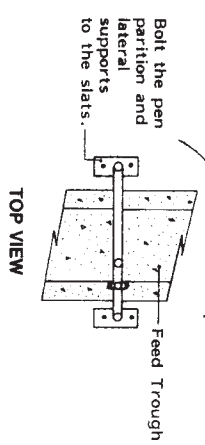
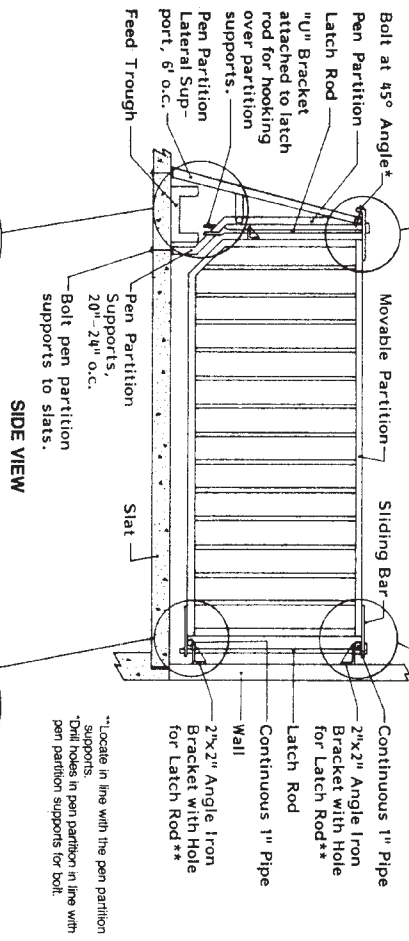
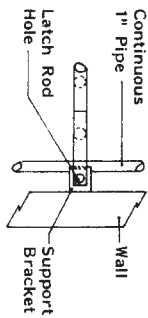
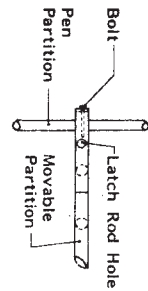
Summer: Open 4 x 8 vent doors—both sides. Shut fans off.



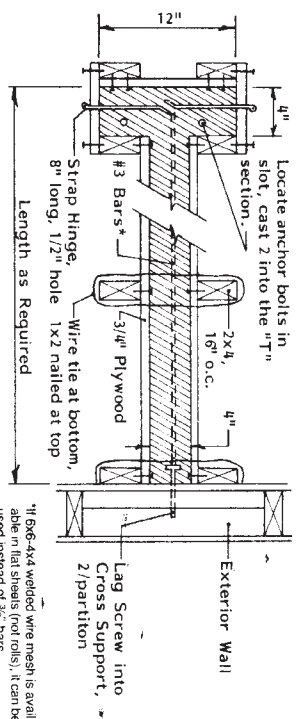
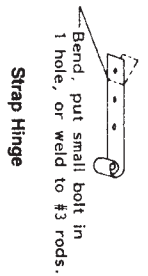
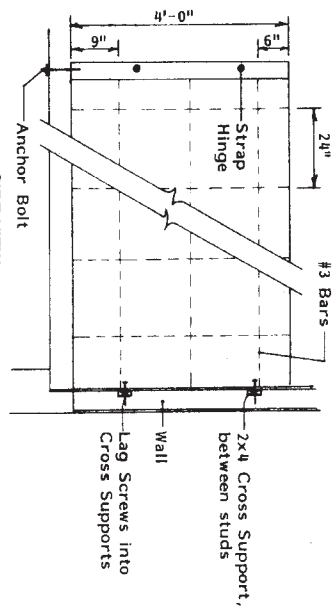
VENTILATION DOOR—3/6

Consider commercial automatic door openers.
 Size and material: CC Exterior Plywood on the inside. Insulation on 1 1/2" metal siding on the outside.
 *Alter this dimension for other than 8' o.c.

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SWINE GESTATION BUILDING
 Three Rows of Stalls, 120 Stalls
 Plan No. 72601 6
 Date 6-10
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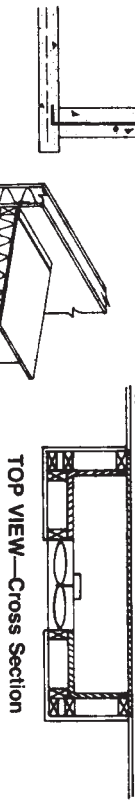
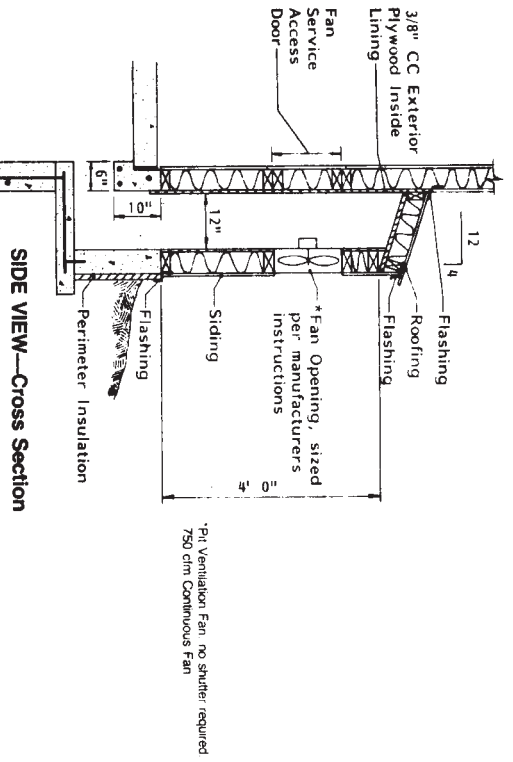
**Locate in line with the pen partition supports.
 Drill holes in pen partition in line with pen partition supports for bolt.



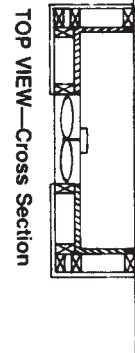
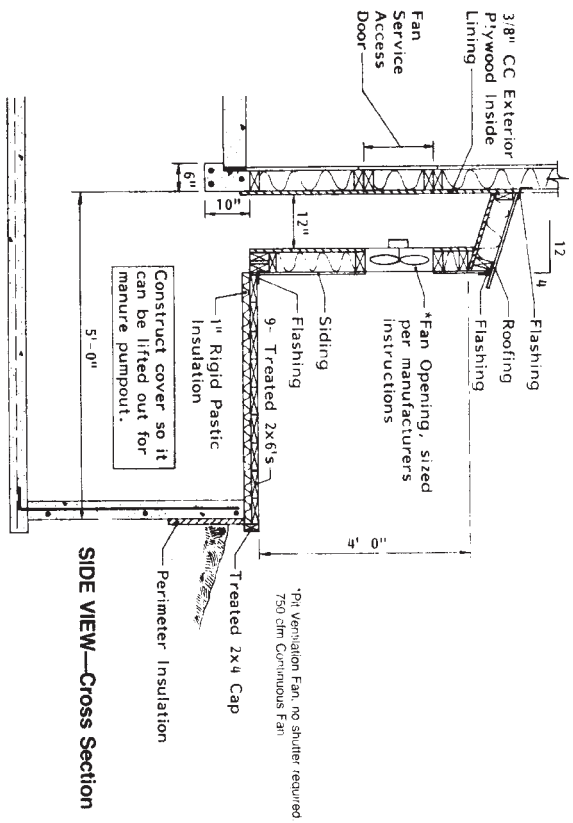
** 6/16-4x4 welded wire mesh is available in flat sheets (not rolls). It can be used instead of #3 bars.

MOVABLE PARTITION—1/5

CONCRETE PARTITION—2/5



PIT FAN ANNEX DETAIL—1/7
Annex is about 4' wide inside.



OPTIONAL PIT FAN AND CHOPPER PUMP ANNEX—2/7
Annex is about 4' wide inside.

MIDWEST PLAN SERVICE
SWINE GESTATION BUILDING

Three Rows of Stalls, 120 Sows

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Rev. **7/26/01** mvs