

MWPS-72639

Swine Gestation Building

Modified open front. This plan is for a 28' x 48' pole-frame building housing gestating sows for a 20-sow farrowing house.

The plan is intended to house sows in a production system with a 20-sow farrowing house. Breeding with 12-sow units allows for the typical 20% excess to enough bred sows to fill the farrowing house.

The buildings shown in Plans A, B, and C have four pens of 12 gestating sows each, one pen for gilts, and replacement sows, and one pen for equipment feed cart, sick sows, etc. Separate breeding facilities are needed.

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 Gestation Building Modified Open Front
Title Page
MIDWEST PLAN NO. 72693

Plan MWPS - 72693
SWINE GESTATION BUILDING
 Modified Open Front

This plan is for a 28'x48' pole-frame building housing gestating sows for a 20-sow farrowing house.

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The buildings shown in Plans A, B, and C have four pens of 12 gestating sows each, one pen for gilts and replacement sows, and one pen for equipment, feed cart, sick sows, etc. Separate breeding facilities are needed.

Plan A shows a 10' wide by 8' deep manure storage pit under slats. Plan B shows a 10' wide by 1' deep flushed gutter under slats. Plan C shows a flushed open gutter.

Ventilation: Open front and ridge vents provide natural ventilation for this building. The open front can be closed down with doors, or rolled curtains.

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

Set one 8" diam. PVC pumping port to serve as an emergency overflow from each pit. The lip of the plastic pipe must be at least 6" below the slats. Discharge any overflow to an approved facility. Pump from pits often enough to prevent overflow.

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

Insulation

An "R" value measures the insulating quality of a material—larger R's mean better insulation. The R values shown on the plan are for the insulation only—plywood air spaces, etc., also add some insulation.

Full insulation, R=13 or more in the walls and roof, is recommended for animal comfort.

The minimum insulation for this building is R=5 under the roofing. This small amount will reduce condensation in cold weather and improve comfort somewhat in summer, compared with an un-insulated metal roof.

Slat designs

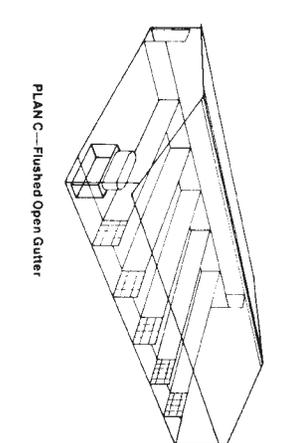
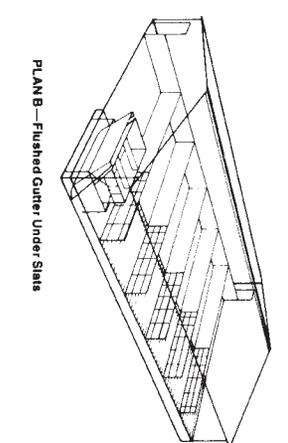
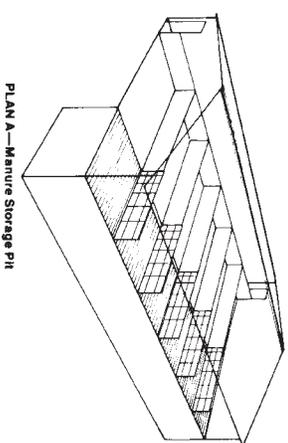
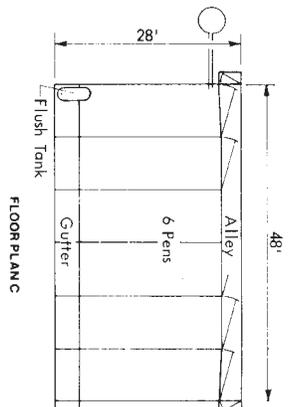
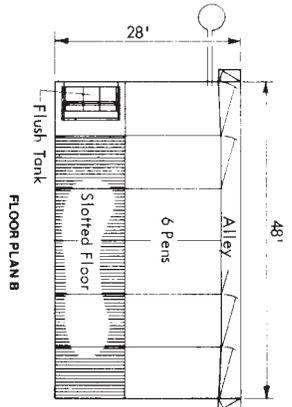
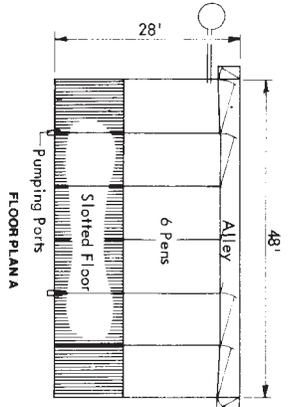
Dimensions in these plans assume concrete slats as listed below and may need to be adjusted for other designs or materials. About 1/2" is allowed at each end of a slat for construction variation and grouting.

Space slats 3/4" apart in farrowing stalls with the slot widened to 1" behind the sows. For other swine buildings use 1" slots.

Slat span	Pig nursery	Finishing	Farrowing sow-pig nursery, or gestation
4	4'x4" #3	4" width x depth, lower bar size #3	4'x4" #3
4	4'x4" #3	4'x4" #4	4'x4" #4
8	5'x4" #4	5'x5" #4	6'x5" #5
10	4'x5" #4	5'x5" #5	6'x6" #5

Design Loads

Slats	Per foot of slat	100 plf	150 plf
Beams	Per sq ft floor area	50 psf	65 psf
Columns		35 psf	



PLAN A—Manure Storage Pit

PLAN B—Flushed Gutter Under Slats

PLAN C—Flushed Open Gutter

Building space and production cycles.

Although many variations are successful, the following are typical, meet hog production systems. Plan building capacity for some extra animals to allow for large litter size or slow growth rate.

Farrow during 3 weeks. Some stalls can be used twice.

Either:

a) 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 sows.

Wean pigs at 3-6 weeks, putting 3-4 litters together.

Return sows to breeding and gestation facilities.

Or:

b) Wean pigs at 4-6 weeks (50-25 lb). Move sows to nursery.

Return sows to breeding and gestation facilities.

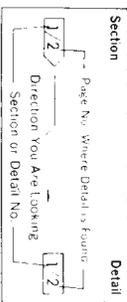
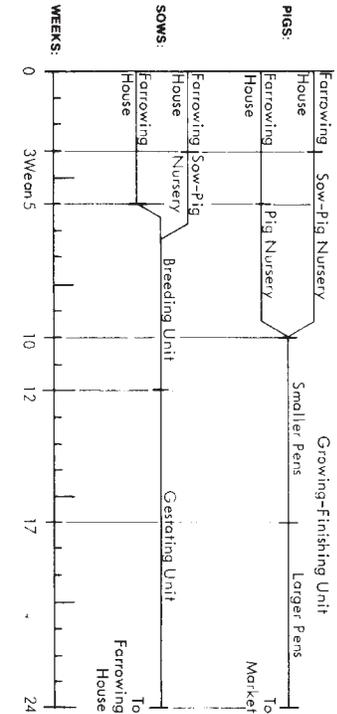
Move pigs to finishing unit at 10 weeks (60 lb). As farrowing intensifies to more than 6 times per year, pigs may be moved at about 8 weeks. Put into smaller pens if you have two pen sizes. Put more pigs per pen if you have only one pen size.

Move pigs to larger pens, or reduce number of pigs per pen, at about 17 weeks (125 lb).

As they approach market weight, and if the finishing unit is crowded, larger hogs can be marketed early.

Sows are often rebred during the first or second heat period after weaning, and farrow about 16 weeks later.

TYPICAL HOUSING CYCLES

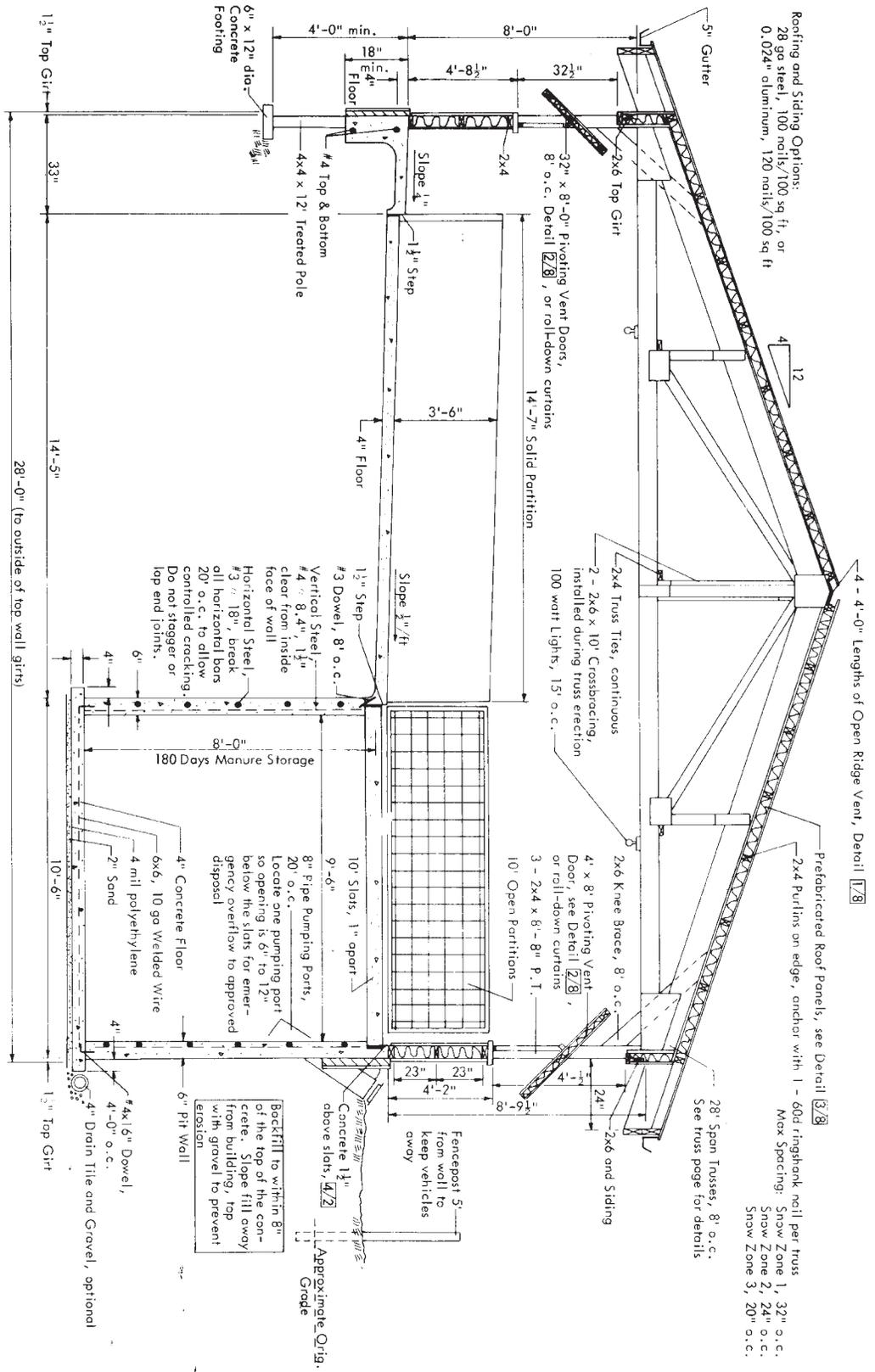


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 Cooperative Extension & Research in Agriculture
 & Home Economics in the 12 North Central
 Universities—USDA Cooperating

SWINE GESTATION BUILDING
 Modified Open Front

12 Pages plus	Plan No.	Page
28" Truss Sheet	MWPS-72693	1 of 14

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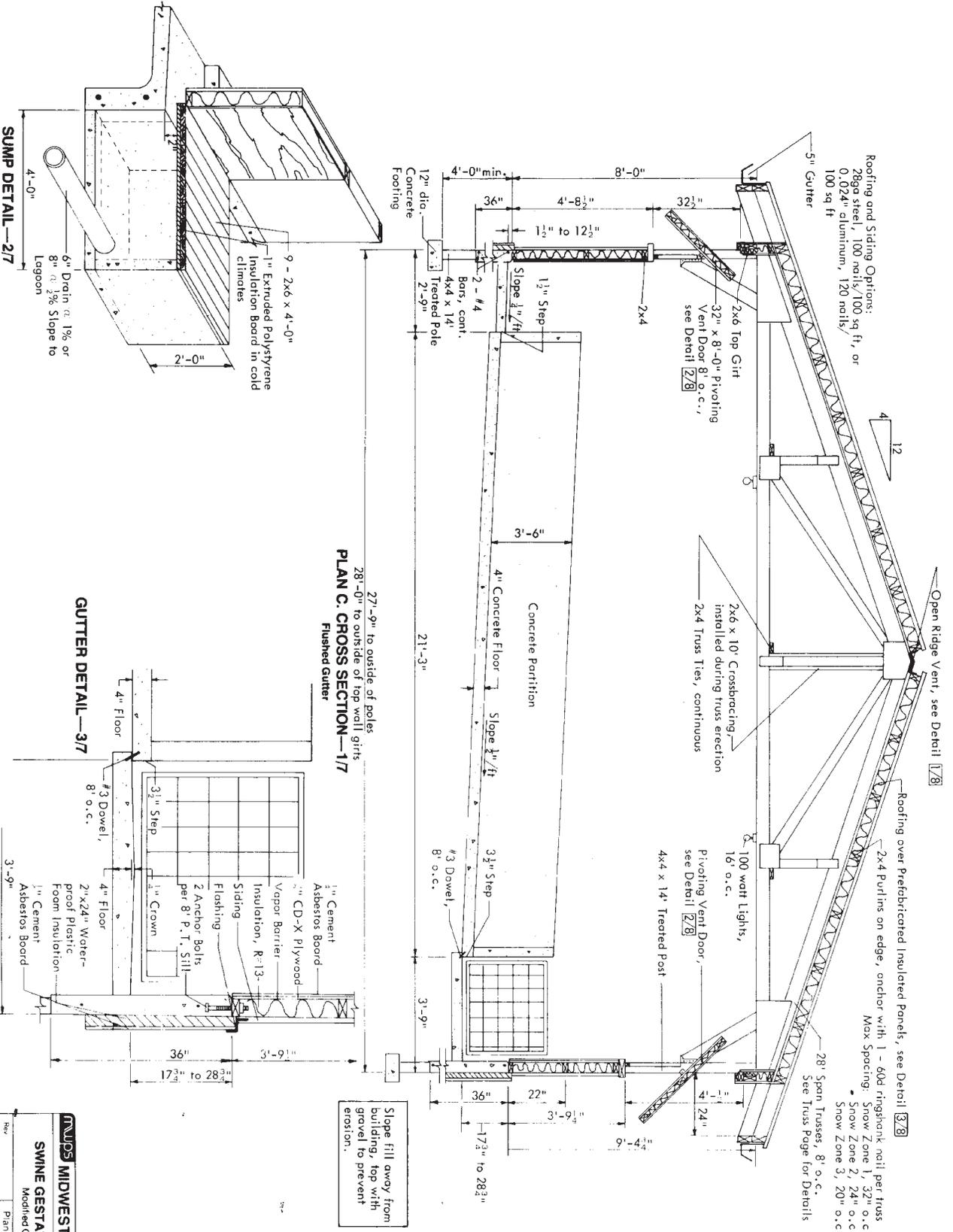
Roofing and Siding Options:
 28 ga steel, 100 mil/100 sq ft, or
 0.024" aluminum, 120 mil/100 sq ft

PLAN A CROSS SECTION—1/3
 Slats over Storage Pit
 Consider commercial automatic door openers.

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SWINE GESTATION BUILDING
 Modified Open Front

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Roofing and Siding Options:
 28ga steel, 100 nails/100 sq ft, or
 0.024" aluminum, 120 nails/
 100 sq ft

Open Ridge Vent, see Detail 2/8

Roofing over Prefabricated Insulated Panels, see Detail 2/8

2x4 Purlins on edge, anchor with 1 - 60d ringshank nail per truss.
 Max Spacing:
 • Snow Zone 1, 32" o.c.
 • Snow Zone 2, 24" o.c.
 • Snow Zone 3, 20" o.c.

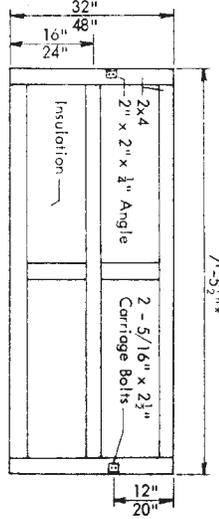
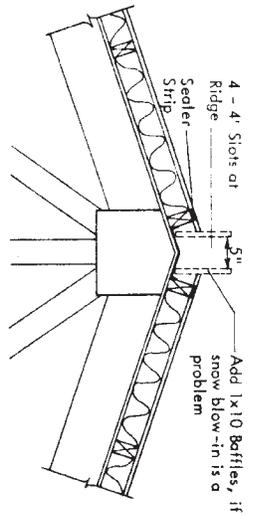
28" Span Trusses, 8' o.c.
 See Truss Page for Details

PLAN C. CROSS SECTION—1/7

SUMP DETAIL—2/7

GUTTER DETAIL—3/7

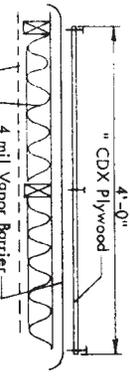
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SWINE GESTATION BUILDING	
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72693	
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Glue and nail "CC Exterior Plywood on the inside. Install insulation. Nail metal siding on the outside.

* Alter this dimension for other than 4" wide building posts or other than 8' o.c.

VENTILATION DOOR—2/6
Use similar dimensions for 4'x8' door. Consider commercial automatic door openers.

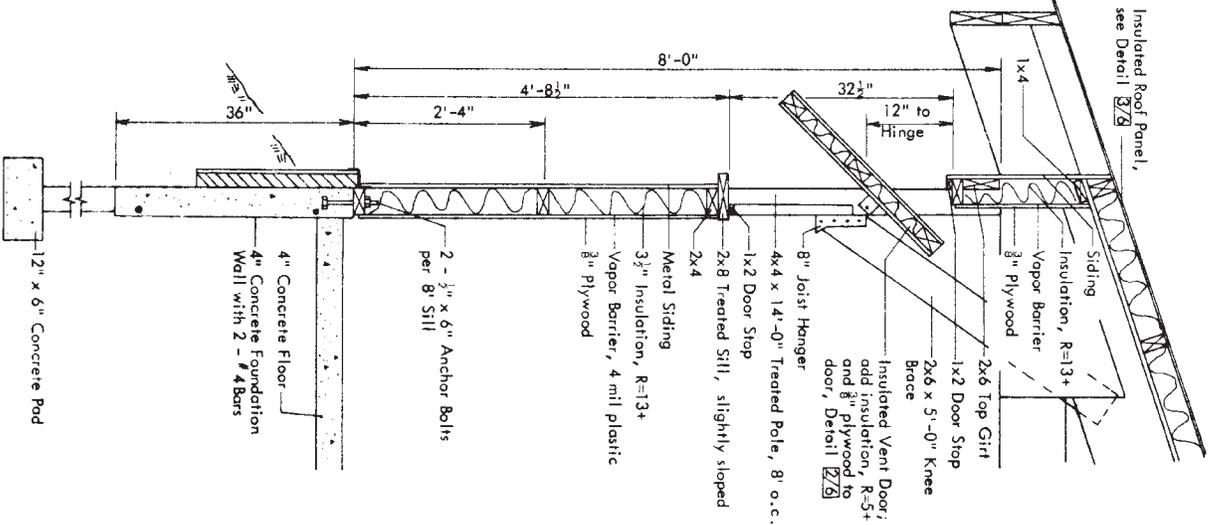


Fabricate 4x8 and 4x16 panels upside down. Invert and install the panels, staggering the end joints.

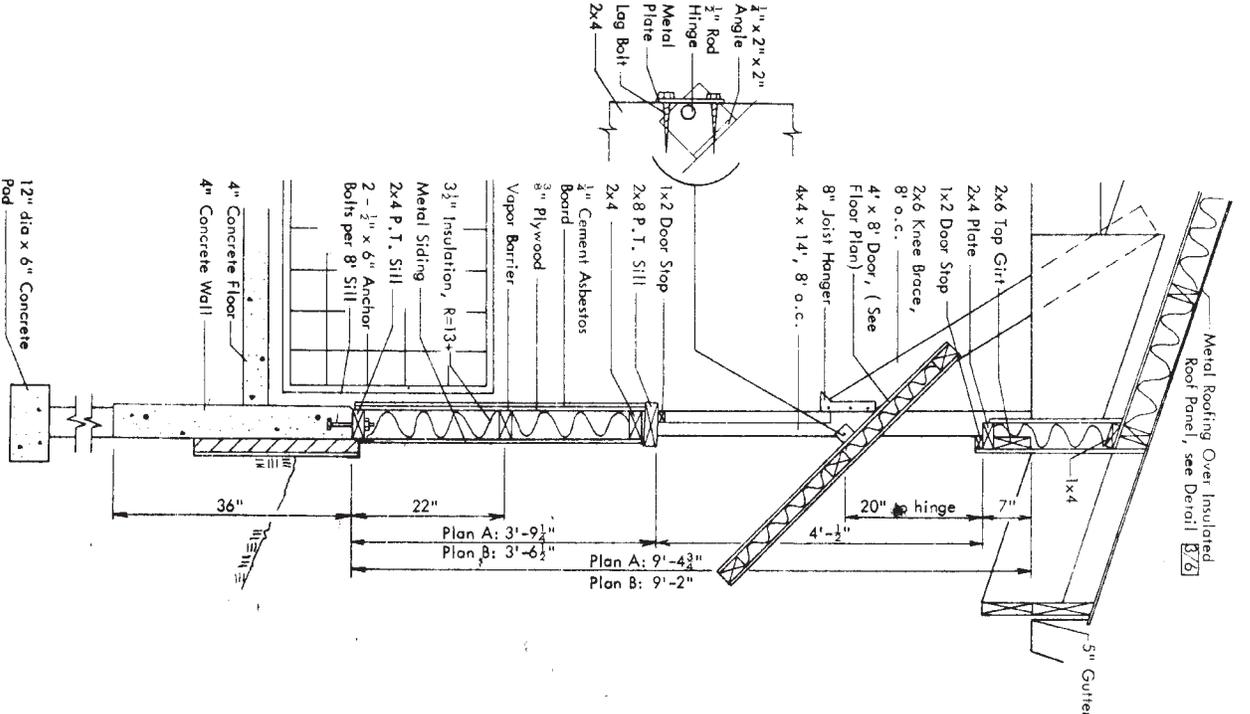
INSULATED ROOF PANELS—3/6
Reduce heat gain in summer and heat loss in winter.

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Cooperative Extension & Research in Agriculture & Home Economics in the 12 North Central Universities—USDA Cooperating			
SWINE FINISHING HOUSE			
Flushed or Scraped Gutter, 160 Pys			
8 Pages plus	Plan No.	Page	
28' Truss Sheet	Image 72688	6 of 18	

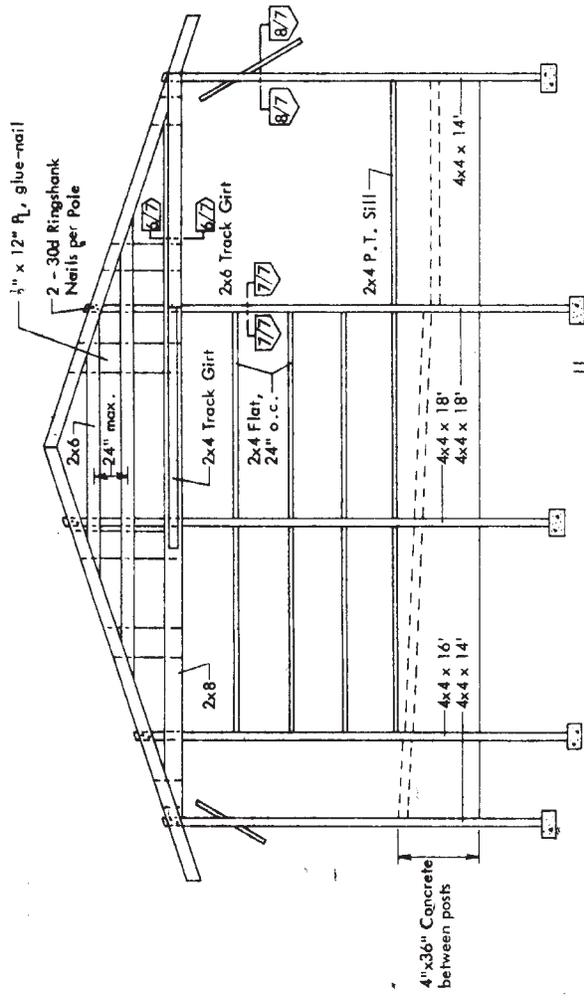
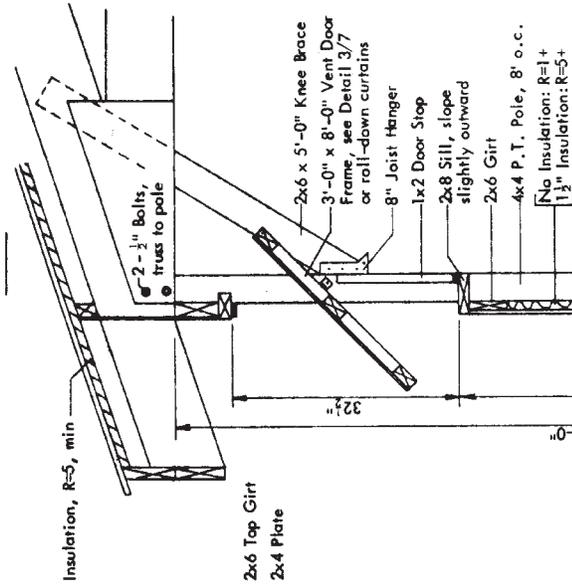
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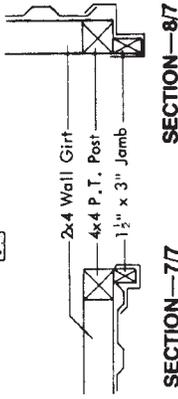
REAR WALL SECTION—4/6



FRONT WALL SECTION—5/6

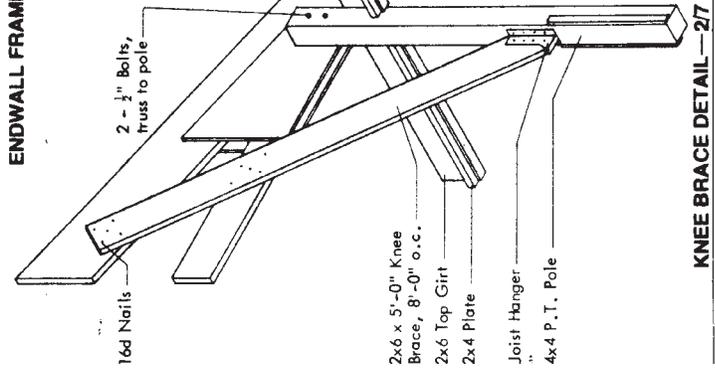


ENDWALL FRAMING—17

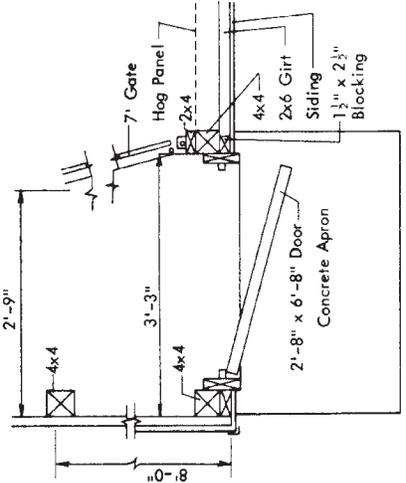


SECTION-77

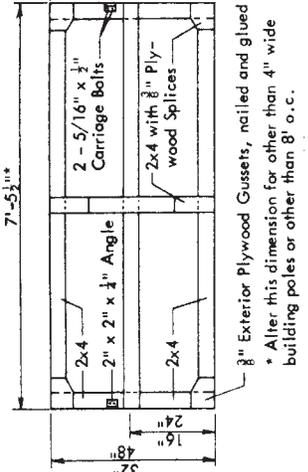
SECTION-87



KNEE BRACE DETAIL—27



WALK DOOR DETAIL—37



3' x 8' VENT DOOR FRAME—47

Use similar dimensions for 4' x 8' door. Consider commercial automatic openers.

OPTION—UNINSULATED WALL—57

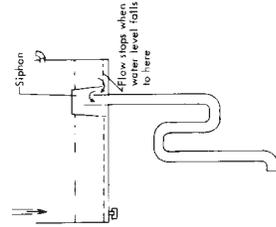
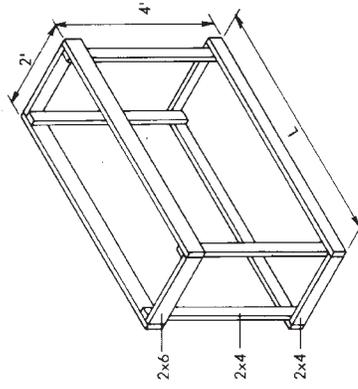
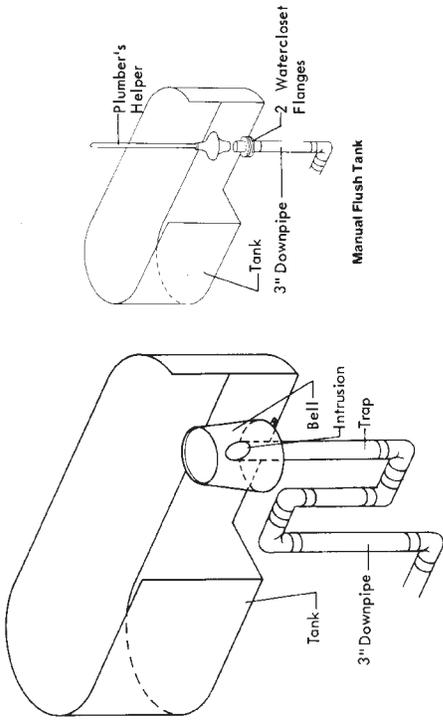
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SWINE FINISHING HOUSE	
Flushed or Scraped Gutter, 160 Pigs	
8 Pages plus	Plan No.
28 Truss Sheet	mwp-72688
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Variable Dimensions

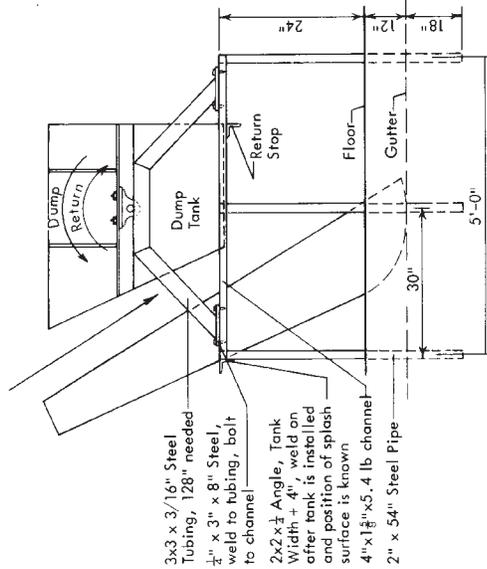
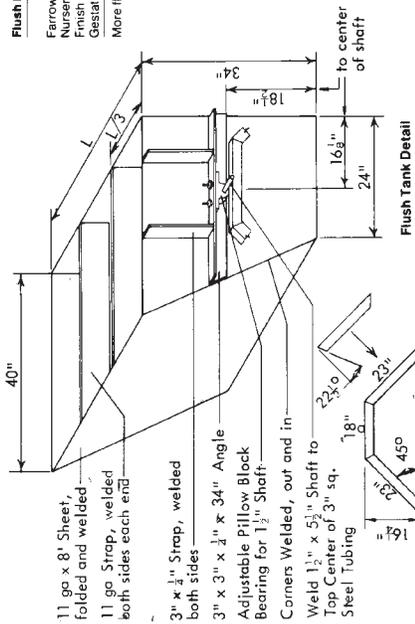
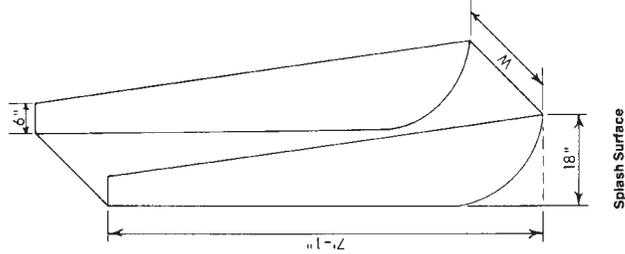
Gutter width	2 1/2	4	6	8	and over
Tank length, L	23"	41"	65"	89"	113"
Back splash width, W	29"	47"	71"	95"	119"
Flush volume, gal.	100	190	300	400	500

Flush Frequency—minimum flushes per day	Under slats	Open gutter
Farrow	2	4
Nursery	4	6
Finish	6	12
Gestation	4	6

More flushes per day tend to decrease odors.



SIPHON FLUSH TANK—217
See MWPS AED-17

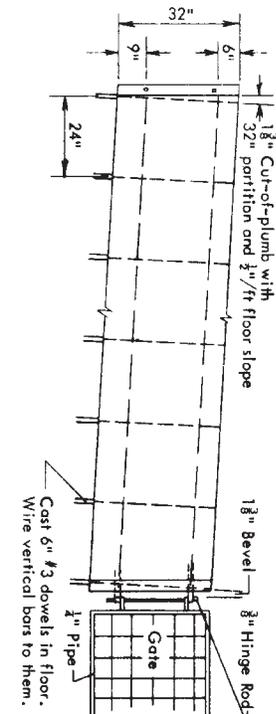
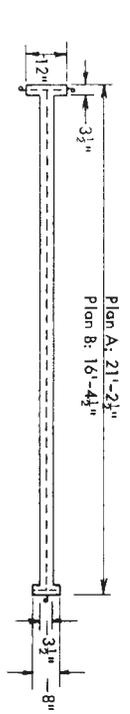


FLUSH TANK, Self Dumping—17

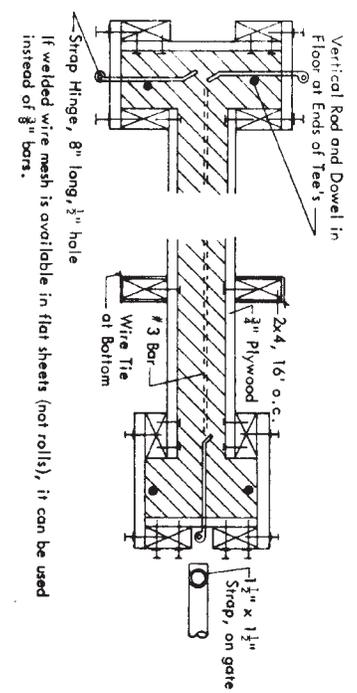
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FARROWING HOUSE Flushed under slats, 20 sows	
7 Pages plus	Plan No.
24 Truss Sheet	Drawings 72681
Page 7 of 10	

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3/79 5/78



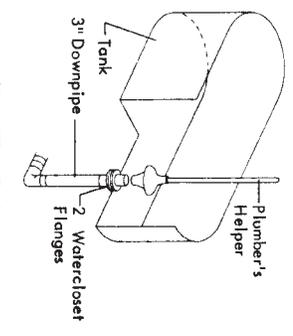
Bend, put small bolt in 1 hole or weld to #3 rods.



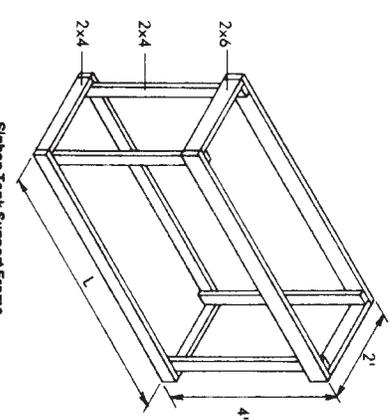
CONCRETE PARTITION DETAIL—1/8

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CONCRETE PARTITION DETAIL: Finished or Shaped Outer, 180 Pgs			
9 Stages plus	Plankings	2	9 of 10
28' Truss Sheet	Diagram	72288	

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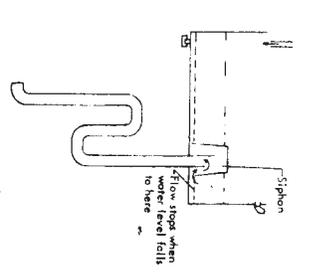
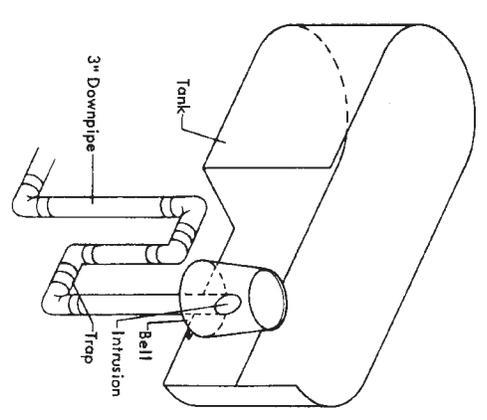


Manual Flush Tank



Siphon Tank Support Frame
L = Tank length - 1'. If L is greater than 6', install 2x4 post near center of span. Provide cross-bracing if frame not attached to wall. Cover top with 1" plank.

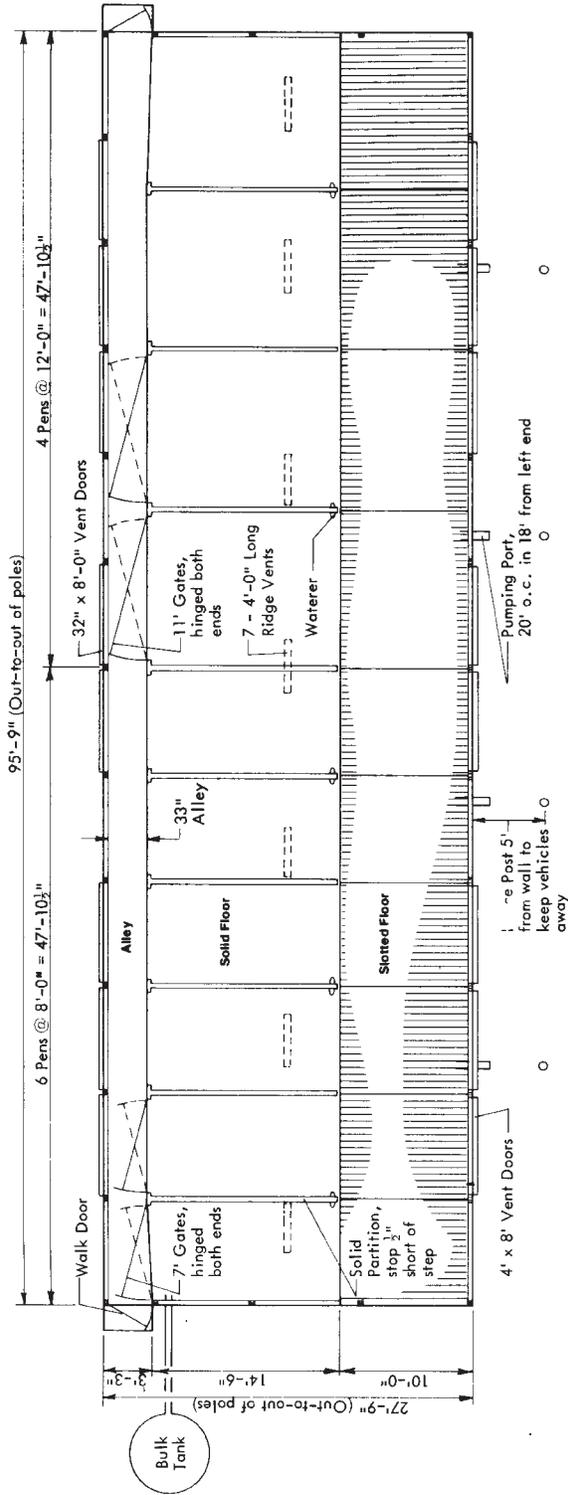
SIPHON FLUSH TANK—2/8
See MWPS AED-17



Flush Frequency—minimum flushes per day

Flow	Under eaves	Open gutter
Errow	2	—
Masonry	4	—
Finish	6	12
Calculation	4	8

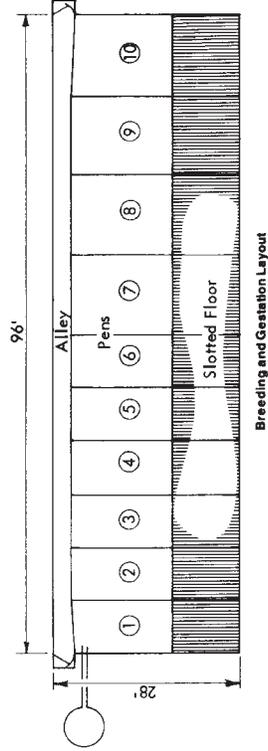
More flushes per day tend to decrease odors.



BREEDING & GESTATION LAYOUT—1/12

Plan Options A or B

Use Gestation Building Construction Details.



Breeding and Gestation Layout

During Breeding:

- Pens 1, 3: 2 Boars each
- Pen 2: 12 Gills
- Pen 4: 12 Extra Sows
- Pens 5, 6: 12 Bred or Unbred Sows
- Pens 7-10: 1 Boar and 6 Sows or 12 Bred Sows

Pen Breeding Notes:

- Some additional boar housing increases flexibility by freeing pens for more sows or gills.
- Breeding not recommended in pens with flushed open gutters.