

# 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**

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<b>MIDWEST PLAN SERVICE</b>
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.

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.

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**

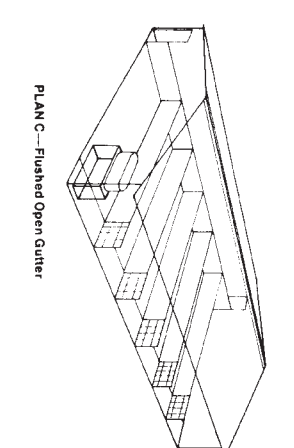
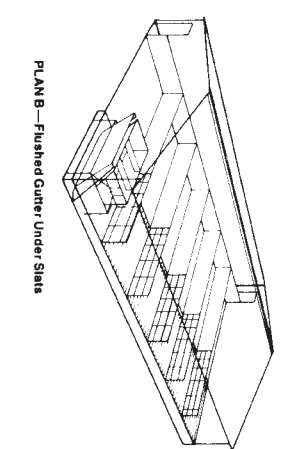
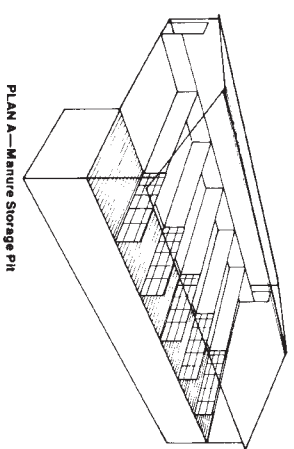
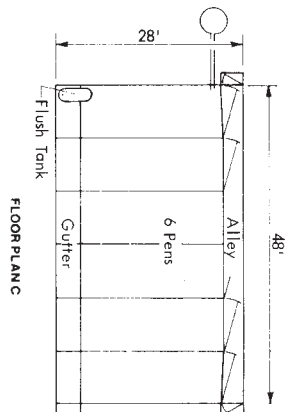
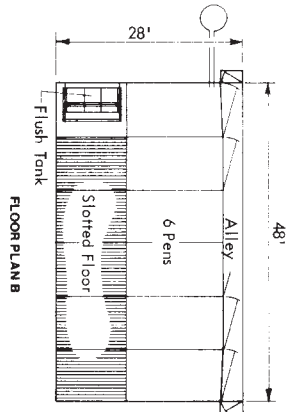
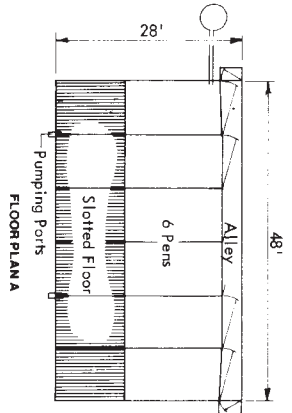
Dimensions in these plans assume concrete slats as listed below and may need to be adjusted for other designs or materials. About 1/2" is allowed at each end of a slat for construction variation and grouting.

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 1/2" #4
8	5'x4" #4	5'x5" #4	6'x5" #5
10	4'x5" #4	5'x5 1/2" #5	6'x6 1/2" #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

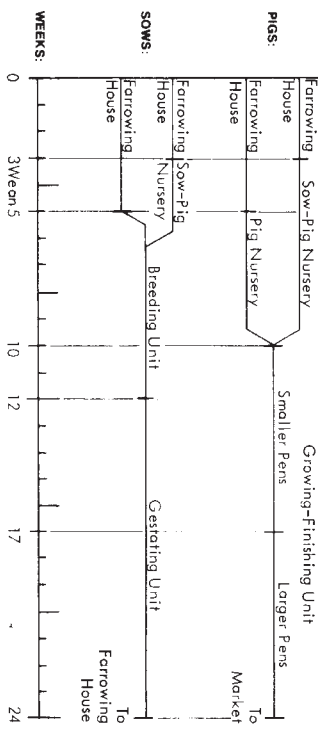
**Building space and production cycles.**  
 Although many variations are successful, the following are typical, meet hog production systems. Plan building capacity for some extra animals to allow for large litter size or slow growth rate.

- 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.
  - Wear 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**

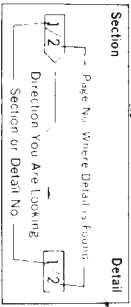


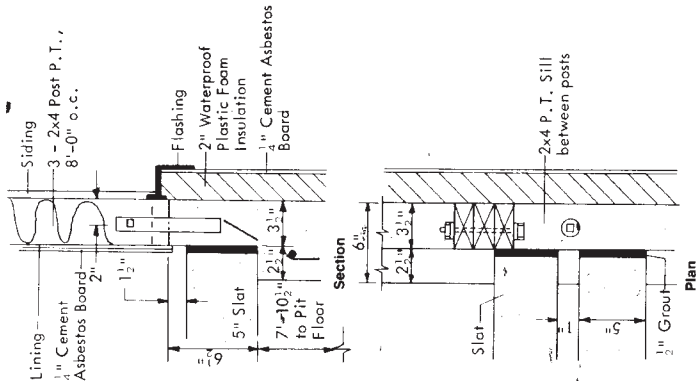
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 Universities—USDA Cooperating

**SWINE GESTATION BUILDING**  
 Modified Open Front

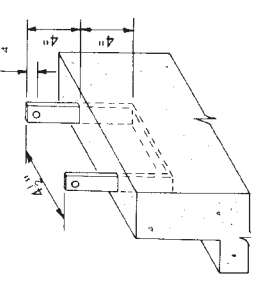
12 Pages plus	Plan No.	Page
28" Truss Sheet	MWPS-72693	1 of 14

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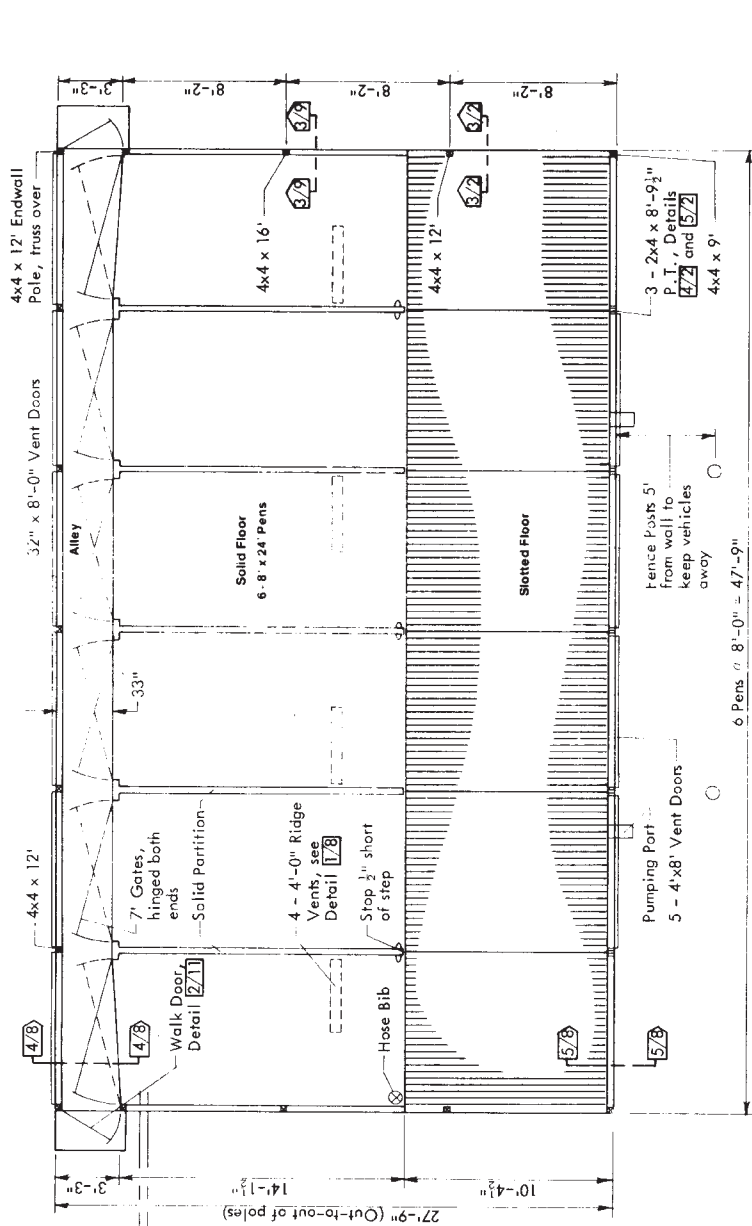


**POLE & WALL DETAIL—4/2**

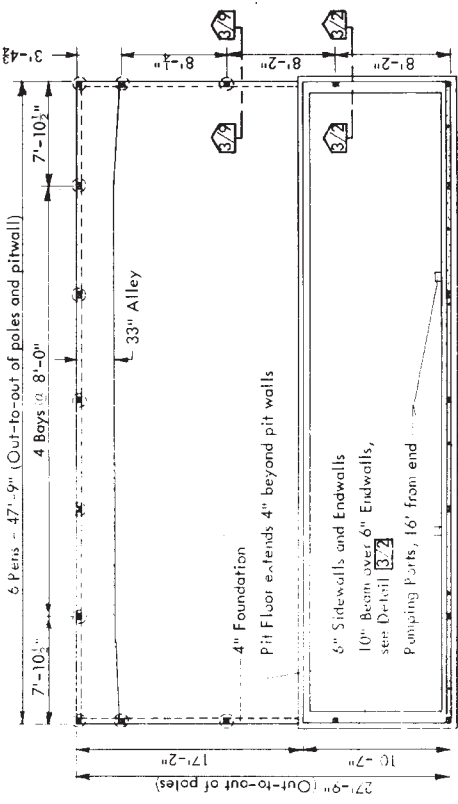


**POLE ANCHOR DETAIL—5/2**  
 1/2" x 1 1/2" x 22" Steel. Drill 9/16" Holes for 1/2" x 1 1/2" Machine Bolt.

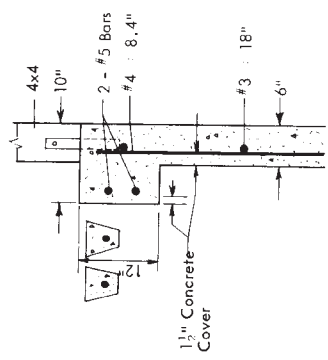
<b>MWDPS MIDWEST PLAN SERVICE</b>	
<b>SWINE GESTATION BUILDING</b>	
Plan No.	Page
mwdps-72693	2 of 14
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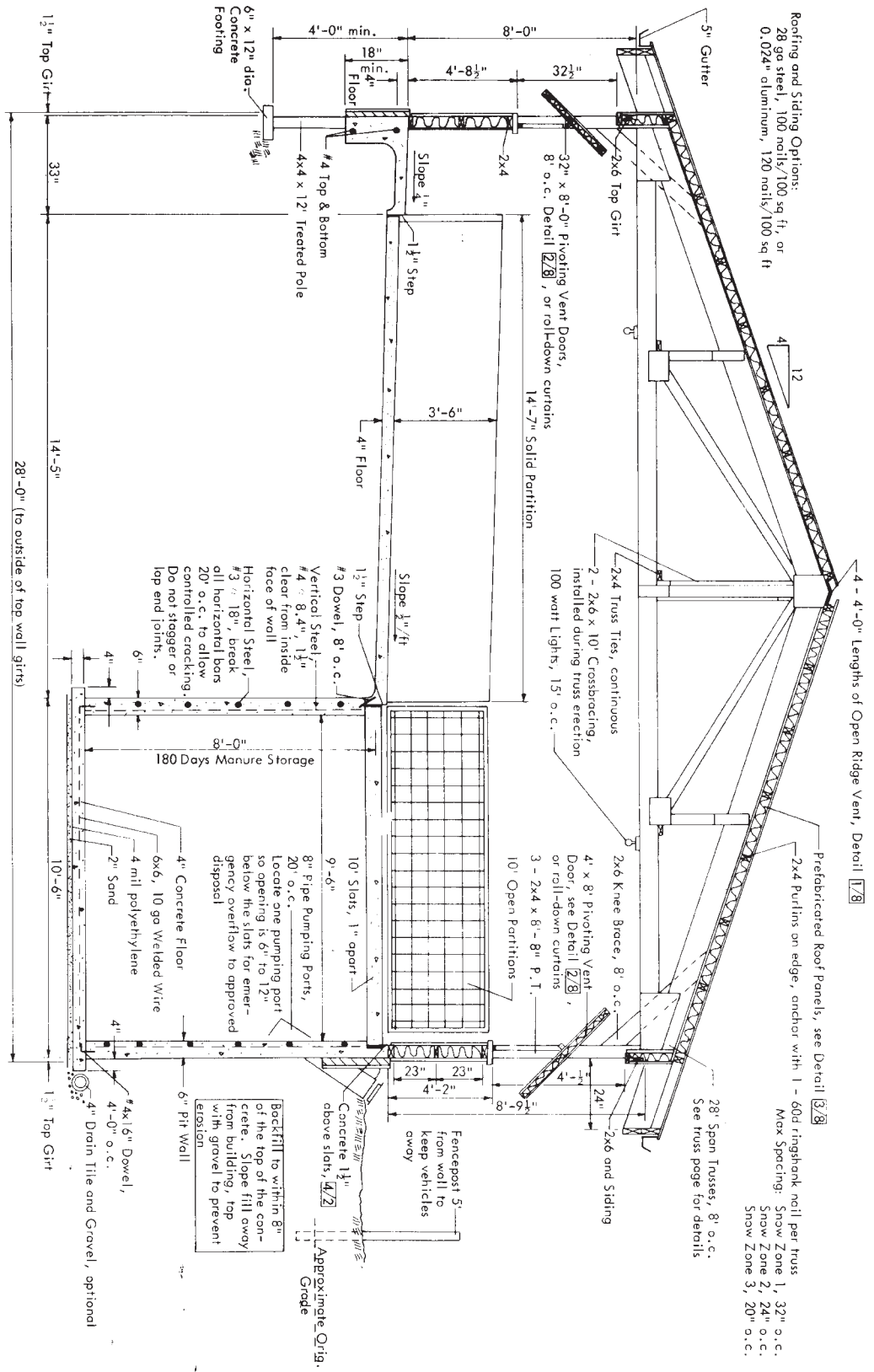
**PLAN A. FLOOR PLAN—1/2**  
 Slats over Storage Pit



**PLAN A. FOUNDATION—2/2**



**PIT ENDWALL DETAIL—3/2**  
 Increase Thickness to 10" in Endwalls Only and Add 2-#5 Bars.



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

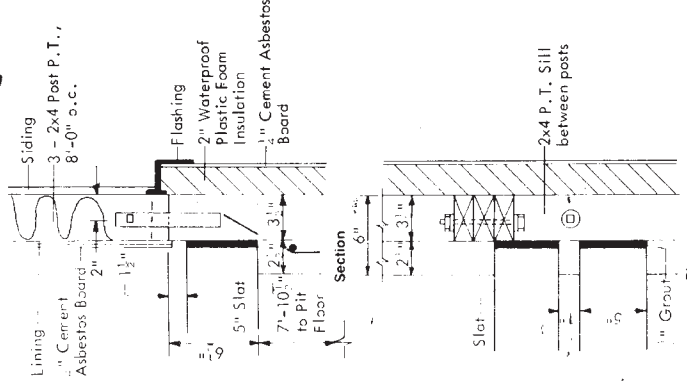
**PLAN A CROSS SECTION—1/3**  
 Slats over Storage Pit

Consider commercial automatic door openers.

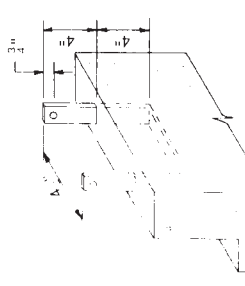
**MWPS MIDWEST PLAN SERVICE**  
**SWINE GESTATION BUILDING**  
 Modified Open Front

Plan No	mwps-72893
Page	3 of 14

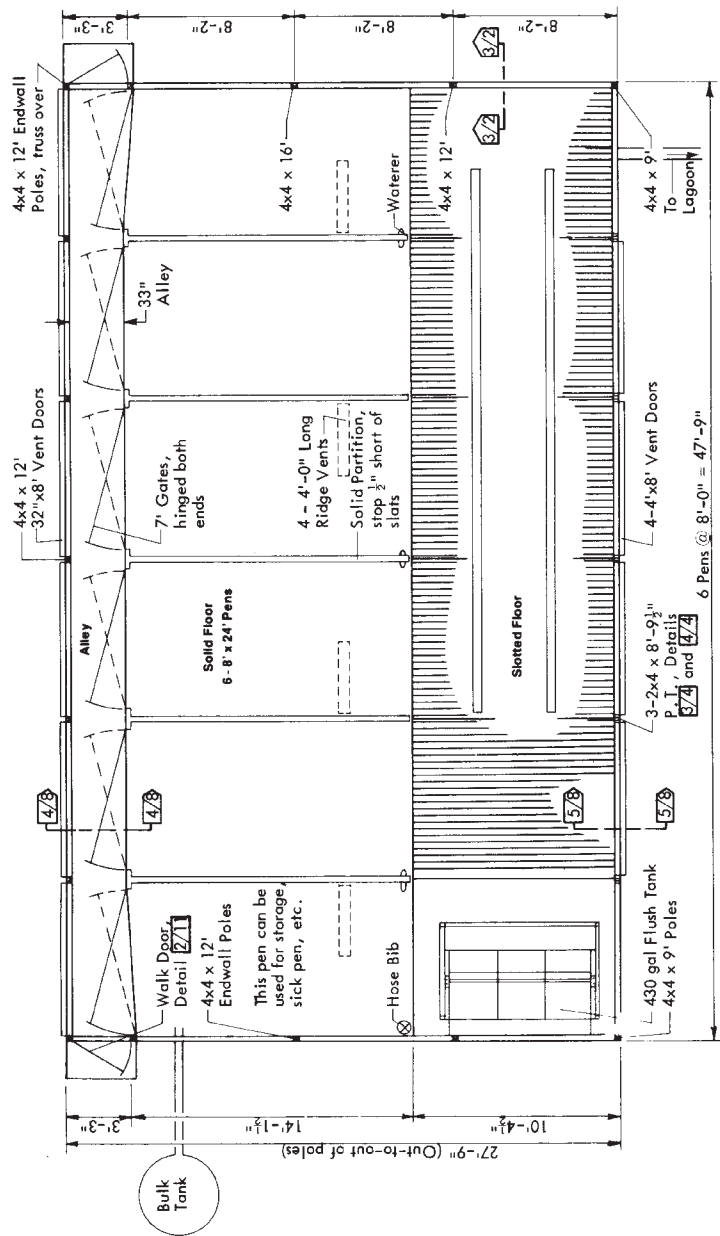
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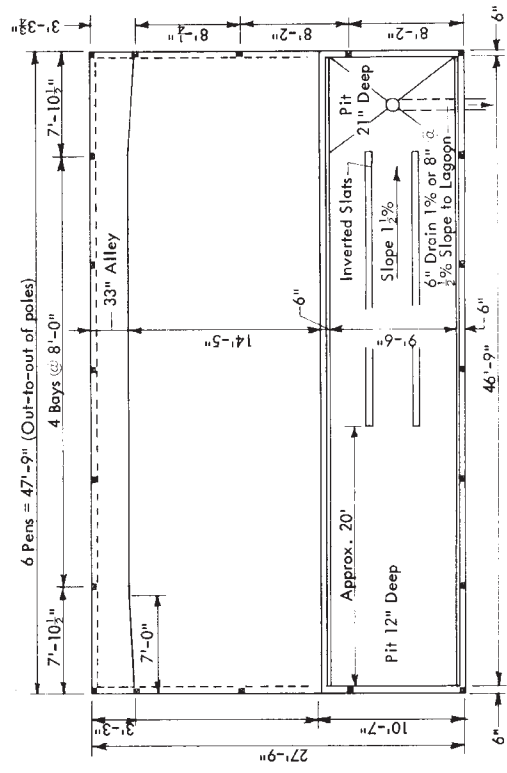
**POLE & WALL DETAIL—3/4**



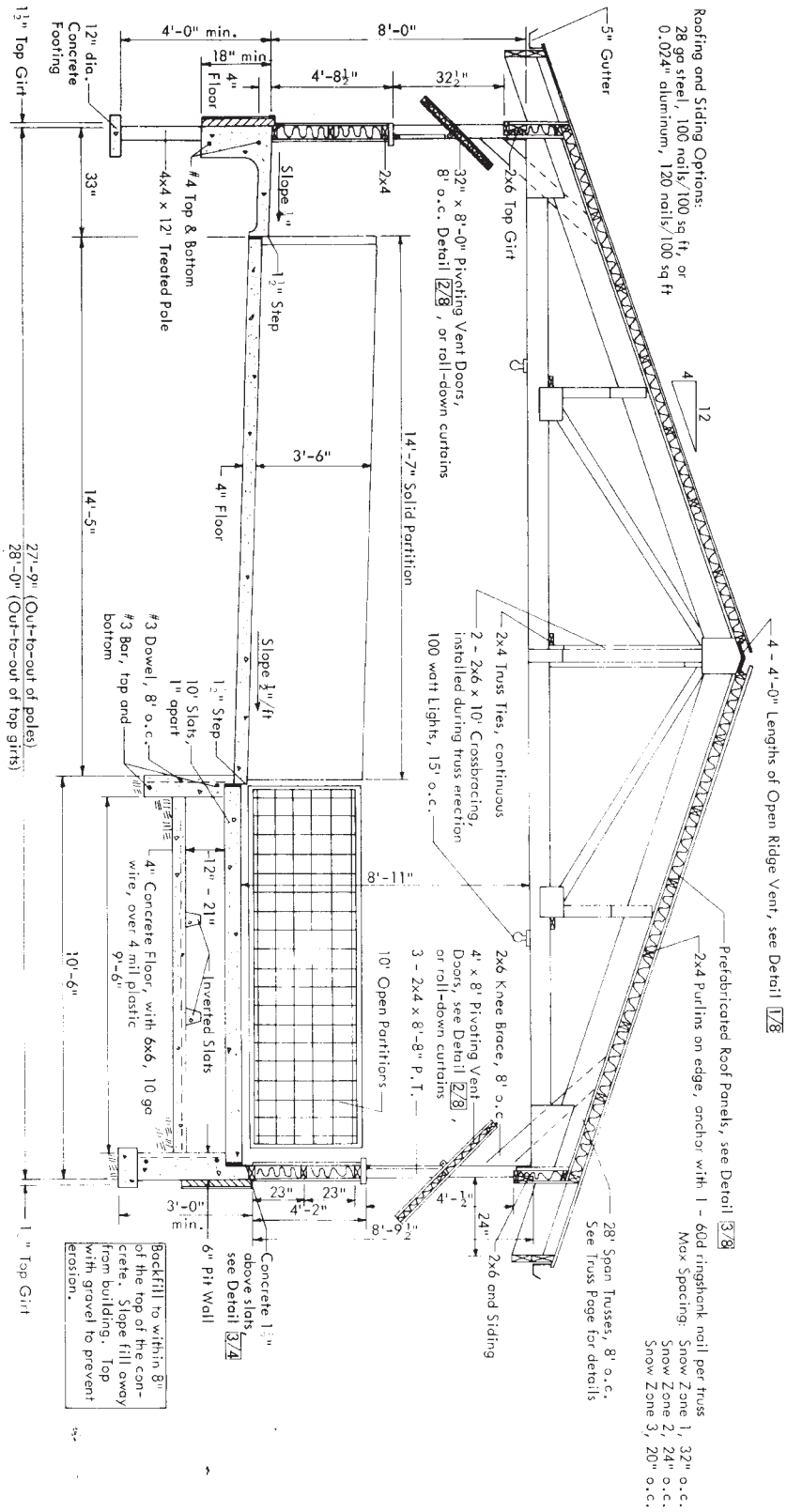
**POLE ANCHOR DETAIL—4/4**  
 1/2" x 1 1/2" x 22" Steel. Drill 9/16" Holes for 1/4" x 8" Machine Bolt.



**PLAN B. FLOOR PLAN—1/4**  
 Slats over Flushed Pit

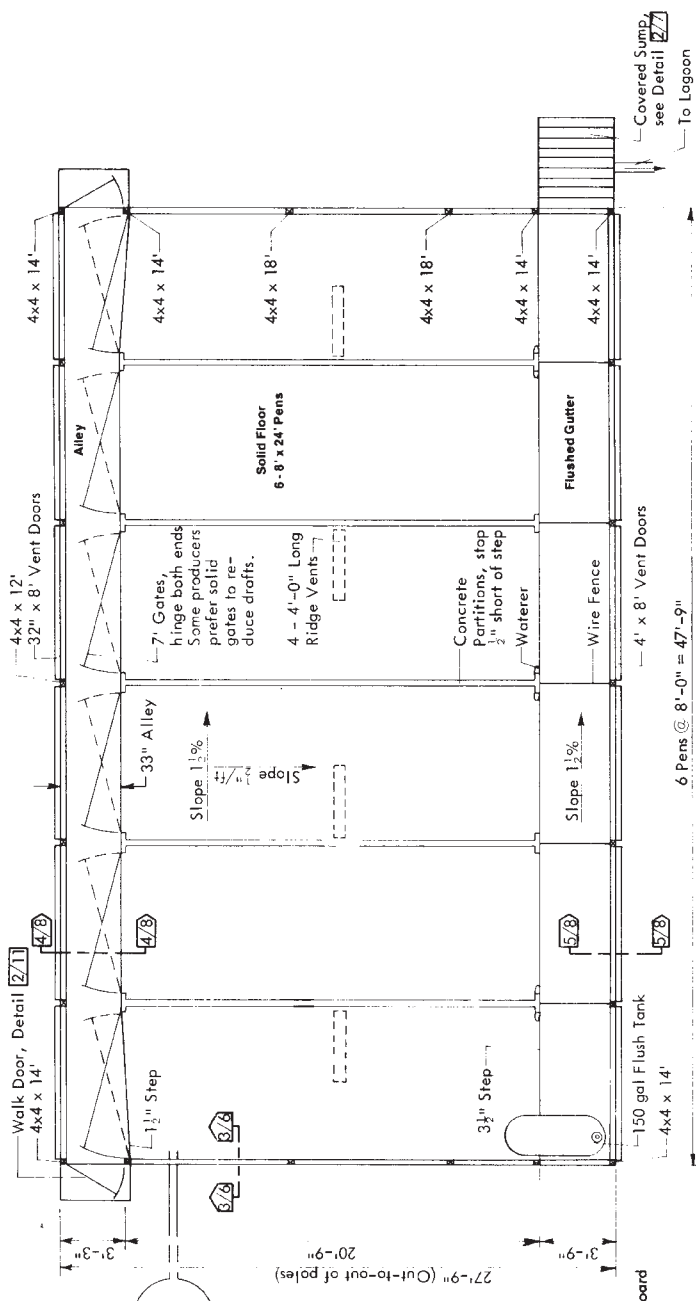


**PLAN B. FOUNDATION & GUTTER—2/4**

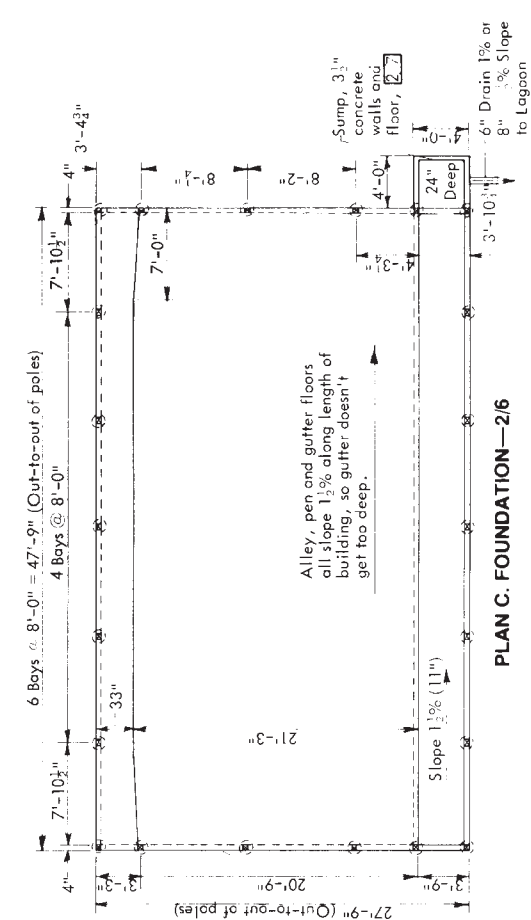


**PLAN B. CROSS SECTION—1/5**  
 Slats over Flushed Pit

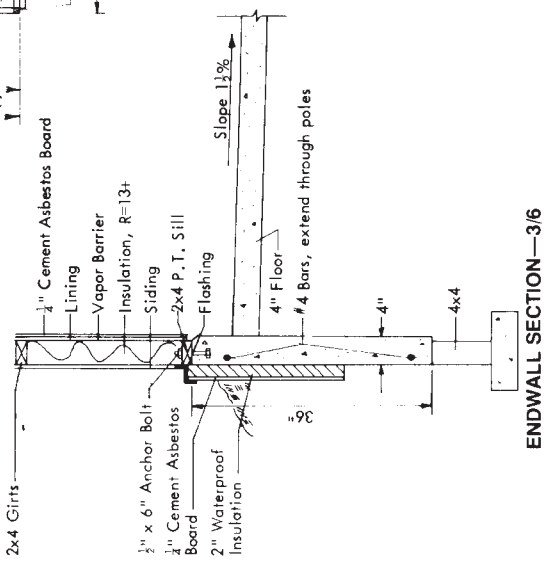
Consider automatic opener for ventilation doors.



PLAN C. FLOOR PLAN—1/6  
Flushed Gutter

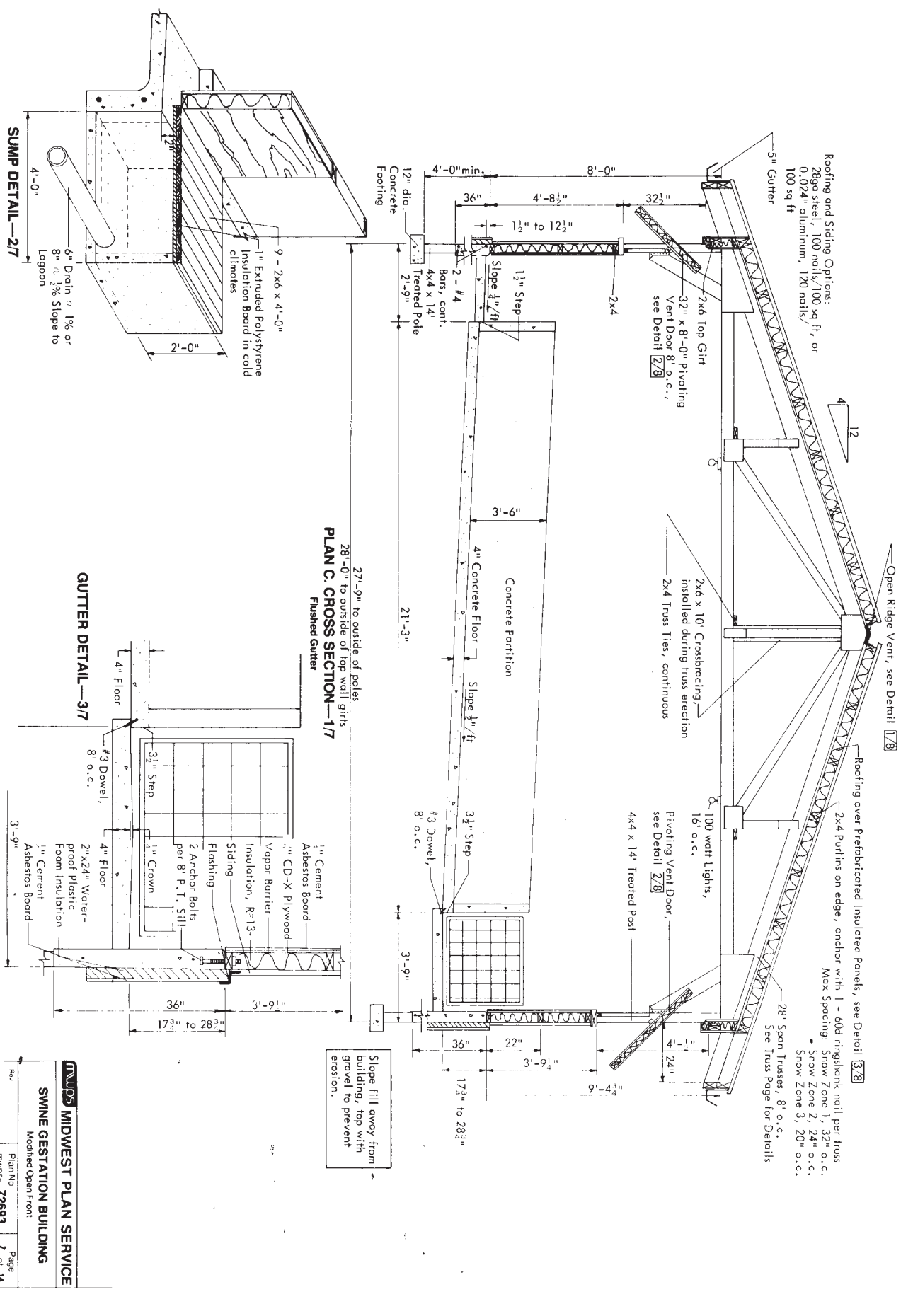


PLAN C. FOUNDATION—2/6

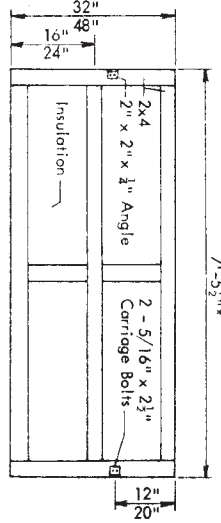
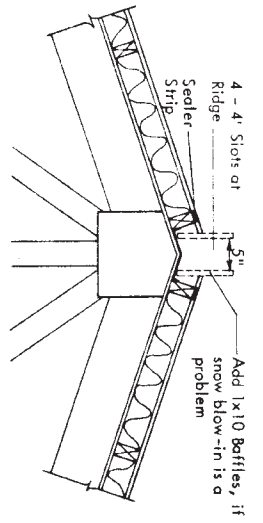


ENDWALL SECTION—3/6

<b>MIDWEST PLAN SERVICE</b>	
SWINE GESTATION BUILDING Modified Open Front	
Rev	Plan No
rwps-72693	6
Page	6 of 14
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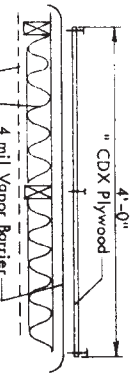




Glue and nail "CC Exterior Plywood on the inside. Install insulation. Nail metal siding on the outside.

\* 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.

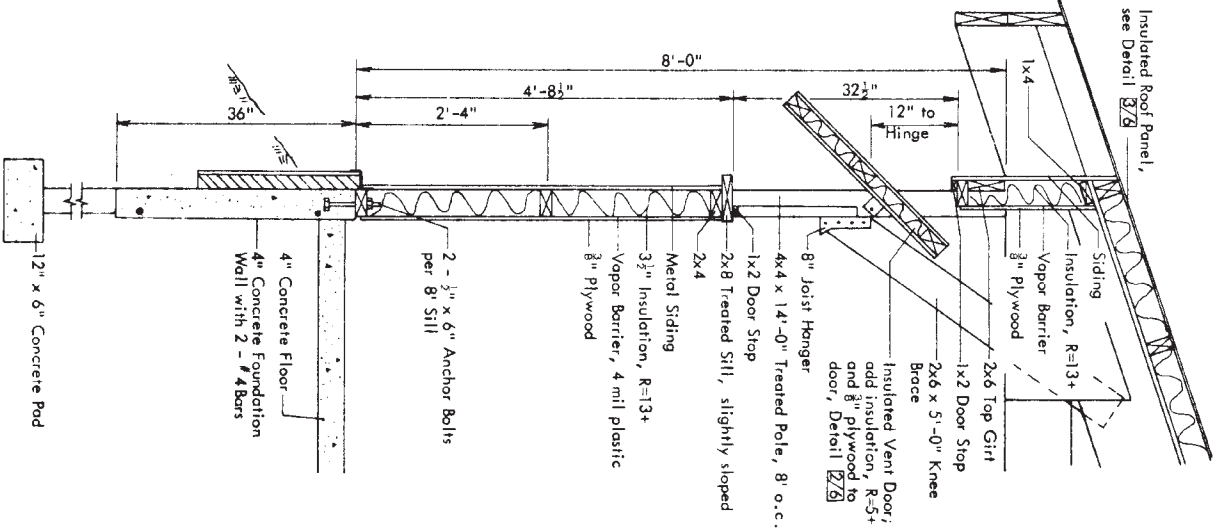


Roofing Installed Later  
Fabricate 4x8 and 4x16 panels upside down. Invert and install the panels, staggering the end joints.

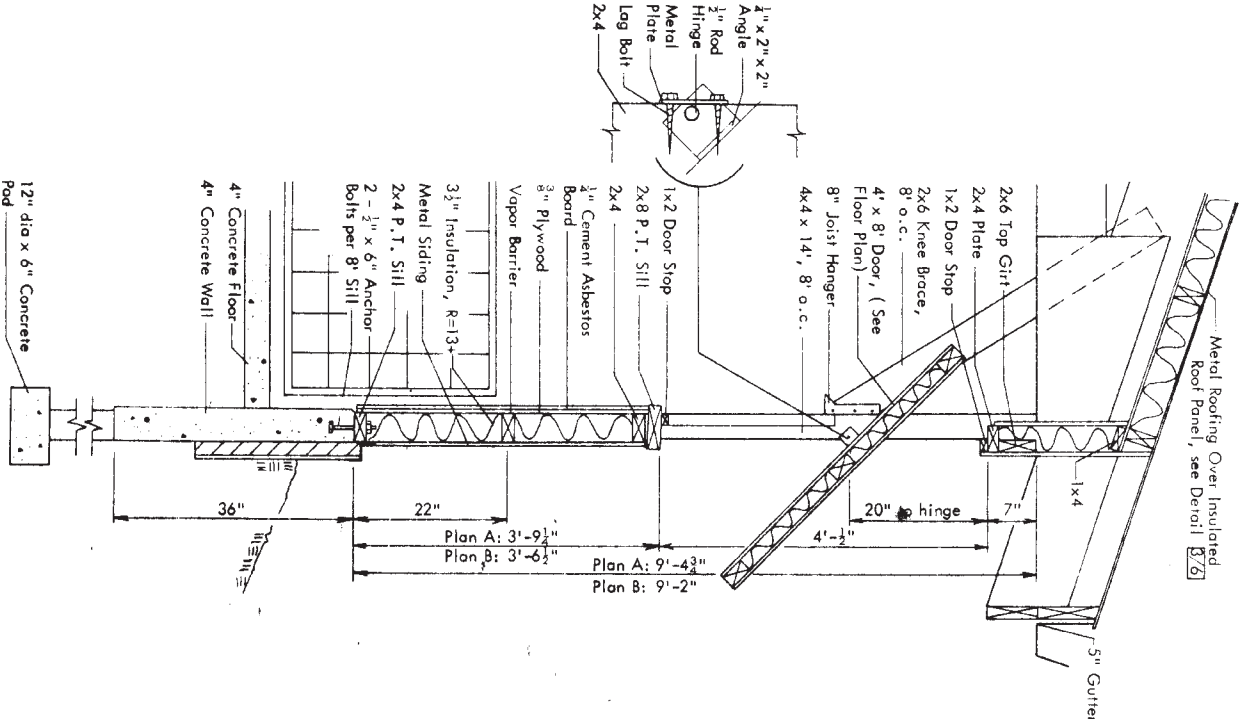
**INSULATED ROOF PANELS—3/6**  
Reduce heat gain in summer and heat loss in winter.

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<b>SWINE FINISHING HOUSE</b>			
Flushed or Scraped Gutter, 160 Pys			
8 Pages plus	Plan No.	Page	
28' Truss Sheet	Image 72688	6 of 18	

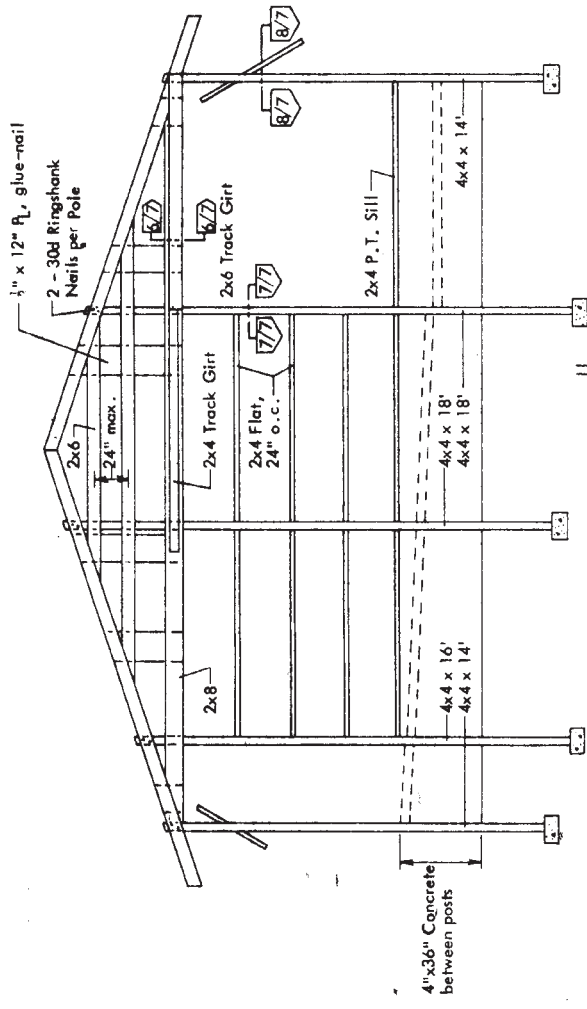
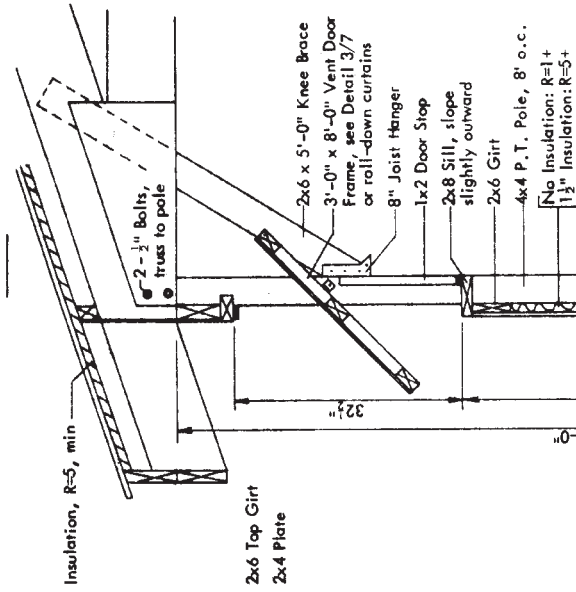
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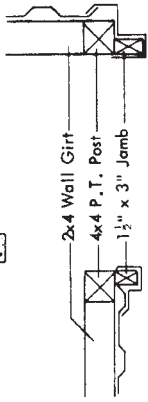
**REAR WALL SECTION—4/6**



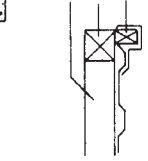
**FRONT WALL SECTION—5/6**



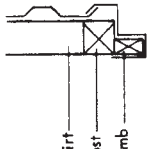
ENDWALL FRAMING—17



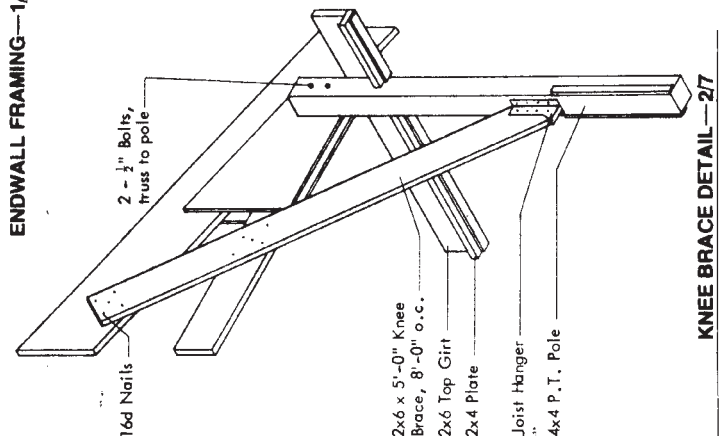
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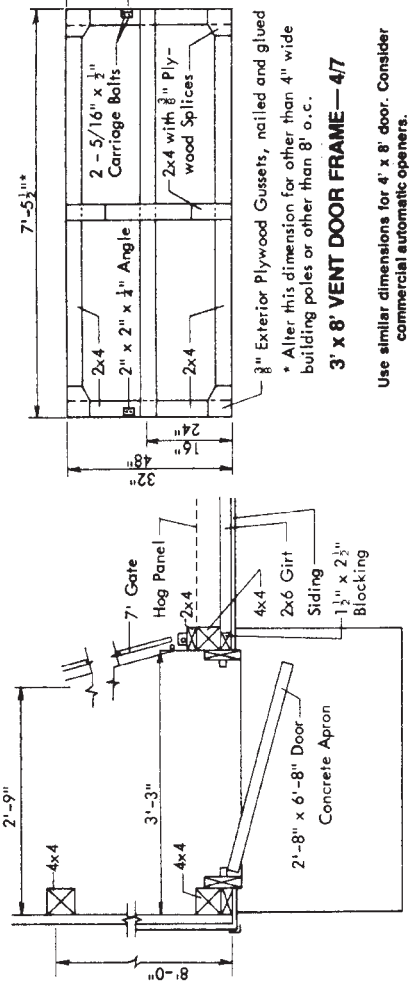
SECTION—77



SECTION—87



KNEE BRACE DETAIL—27



OPTION—UNINSULATED WALL—57

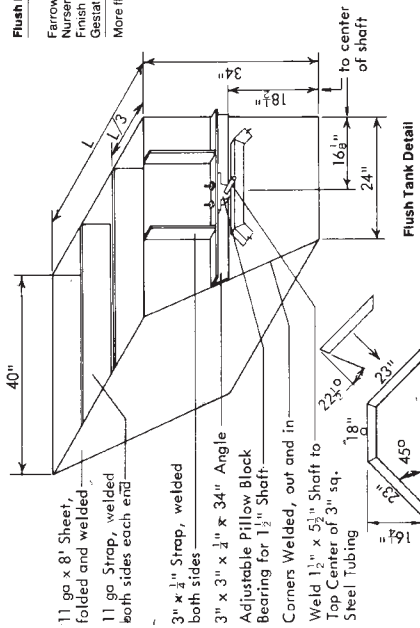
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Cooperative Extension & Research in Agriculture & Home Economics in the 12 North Central Universities—USDA Cooperating	
<b>SWINE FINISHING HOUSE</b>	
Flushed or Scraped Gutter, 160 Pigs	
8 Pages plus	Plan No.
28 Truss Sheet	mwp-72688
Page	7 of 10

**Variable Dimensions**

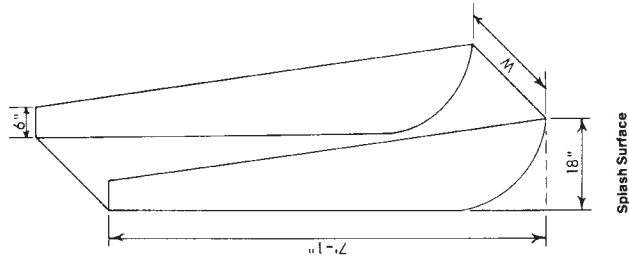
Gutter width	2 1/2	4	6	8	and
Tank length, L	23"	41"	65"	89"	
Back splash width, W	29"	47"	71"	95"	
Flush volume, gal.	100	190	300	400	

<b>Flush Frequency—minimum flushes per day</b>					
Under-slabs	2				
Open gutter	4				
Farrow	6				
Nursery	6				
Finish	12				
Gestation	4				
	4				
	6				

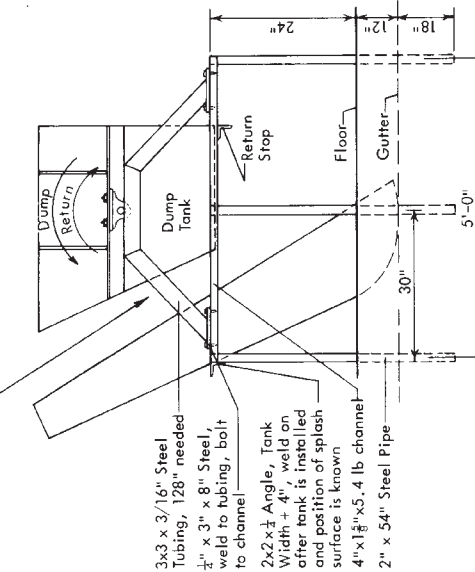
More flushes per day tend to decrease odors.



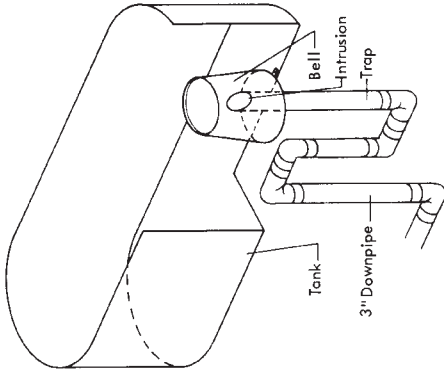
**Flush Tank Detail**



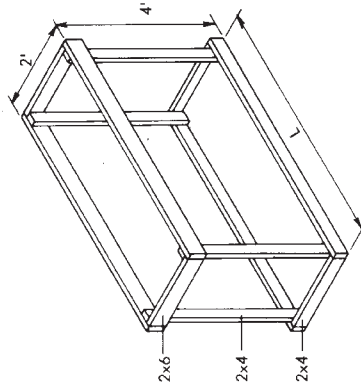
**Splash Surface**



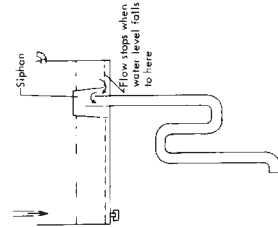
**FLUSH TANK, Self Dumping—1/7**



**Manual Flush Tank**



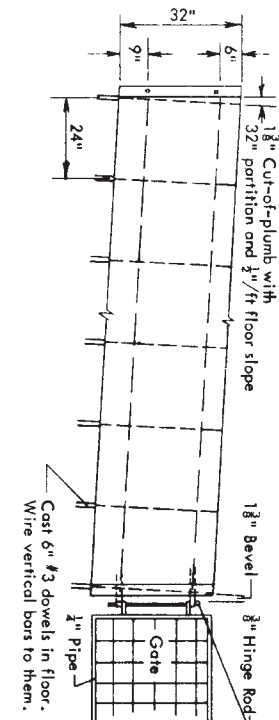
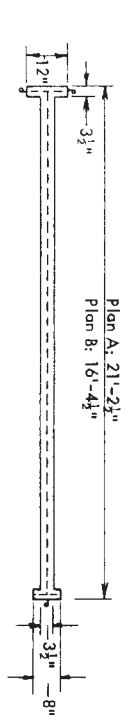
**Siphon Flush Tank Support Frame**



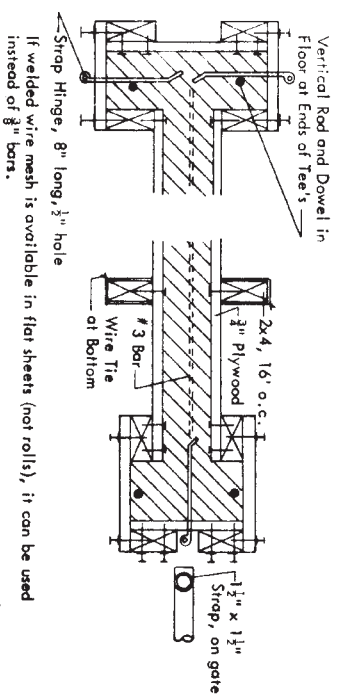
**SIPHON FLUSH TANK—2/7**  
See MWPS AED-17

Plumber's Helper  
Tank  
3" Downpipe  
2 Water Closet Flanges

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<b>FARROWING HOUSE</b> Flushed under-slabs, 20 sows	
7 Pages plus	Plan No.
24 Truss Sheet	Drawings 72681
Page 7 of 10	
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3/79 5/78	



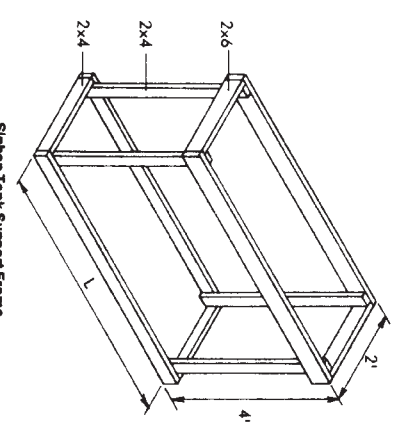
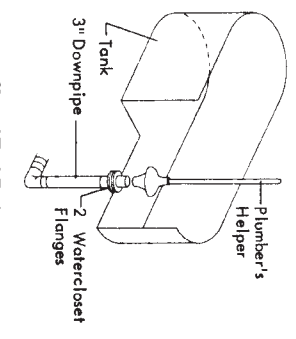
Bend, put small bolt in 1 hole or weld to #3 rods.



**CONCRETE PARTITION DETAIL—1/8**

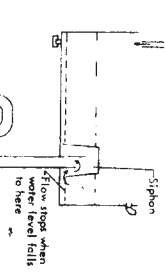
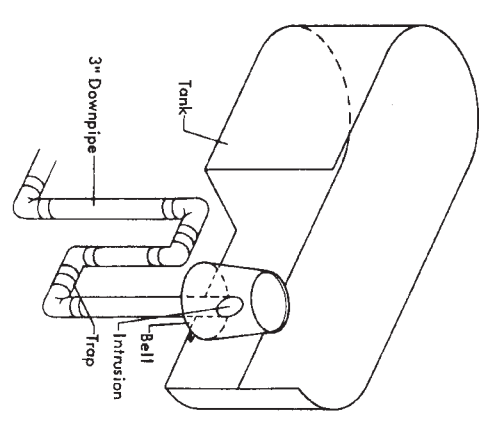
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CONCRETE PARTITION DETAIL: Finished or Shaped Outer, 180 Pgs			
9 Stages plus	Plank:	2	9 of 10
28' Truss Sheet	Truss Sheet	72288	

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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.

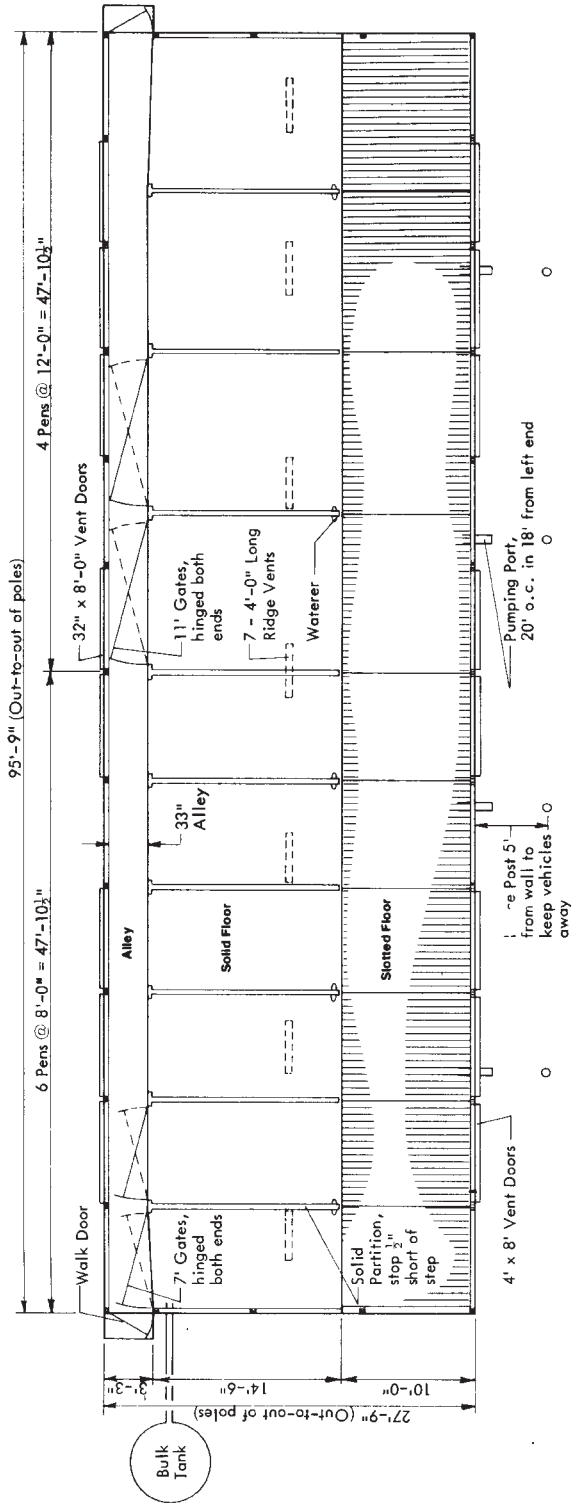
**SIPHON FLUSH TANK—2/8**  
See MWPS AED-17



Flush Frequency—minimum flushes per day

Errand	Under eaves	Open gutter
Masonry	2	—
Finish	4	12
Cast-in	6	8
Cast-in	4	8

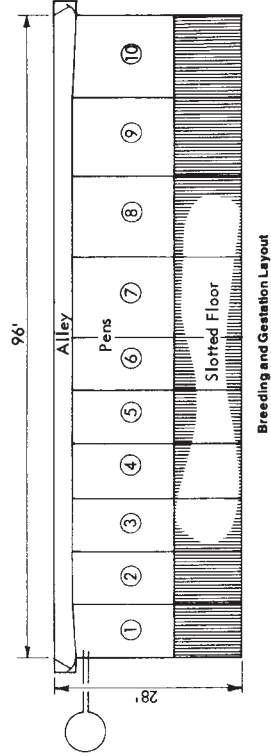
More flushes per day tend to decrease odors.



**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.