

# MWPS-72689

## Swine Finishing Building

Partly slotted floors, 168 pigs. This plan is for a 24' x 56' (or 64') pole-frame building housing three 8-pig litters in each of 7 pens for a total of 21 litters or 168 pigs. 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. Ventilation: Open front and ridge vents provide natural ventilation for the building. The open front can be closed down with doors, or rolled curtains.

### **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.

<b>MIDWEST PLAN SERVICE</b>
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating
Swine Finishing Building Partly slotted floors, 168 pigs.
Title Page
MIDWEST PLAN NO. 72689

**Plan MWPS-72689**

**Modified Open Front  
SWINE FINISHING BUILDING**  
Partly Slotted Floors

This plan is for a 28'x36' (or 64' pole-frame building housing three 8-pig litters in each of 7 pens for a total of 21 litters or 168 pigs.

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.

**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**

**Floors:** Slope floors as shown on the plans. If dumping in the upper corners of the pens is a problem, shut down the feeders and floor feed near the gates.

**Floor heat:** Use heat lamps, radiant heaters, heat pads, or floor heat. Heat in the floor may be electric or hot water; see MWPS-8, Swine Housing and Equipment Handbook.

**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 uninsulated 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 1" 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	Width x depth, lower bar size	4'x4" #3
6	4'x4" #3	4'x4" #4	4'x4" #4
8	3'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 150 plf  
Beams Per sq ft floor area 65 psf  
Columns 35 psf

**Manure Pit Storage**

Pit depth based on 0.14 cu ft/day manure per pig. 6" in pit after pumping, and 12" freeboard.

**PREFERRED LUMBER SPECIFICATIONS**

Roof Purlins and Wall Girts  
2x4 Connectors—Grade (Doug Fir or Southern Yellow Pine)  
2x6 No. 2 (Doug Fir or Southern Yellow Pine)

**Trusses and Headers**

No. 1 or 1500F machine rated (Doug Fir or Southern Yellow Pine).

**Posts and Sillboards**

Pressure Preservative Treated (Southern Yellow Pine or equivalent) creosote—10 pcf, Penix—0.50 pcf, ACA or CCA (Type A or B)—0.40 pcf

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

**Alternate Lumber Specifications, Spacing and Sizes.**

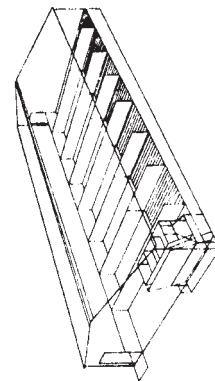
**2x4 Purlins (Construction Grade Hem-Fir) Max Spacing**  
Snow Zone 1: 28' o.c.  
Snow Zone 2: 24' o.c.  
Snow Zone 3: 18' o.c.

**2x6 Girts (No. 2 Hem-Fir) Max Spacing: 20' o.c.**

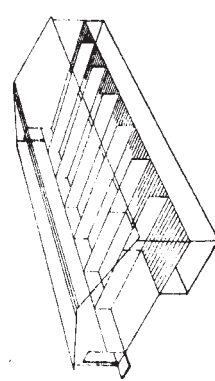
**Headers (No. 1 Hem-Fir)**  
16 Door Snow Zone 1: 3'-2x12  
Snow Zone 2: 2'-2x12  
Snow Zone 3: 5'-2x12  
24' Door: 5 1/2' x 24  
All Zones: 5 1/2' x 24

**Trusses (No. 1 Hem-Fir)**

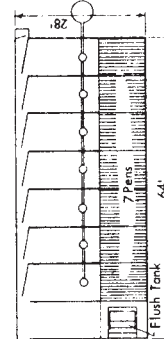
See Truss Page



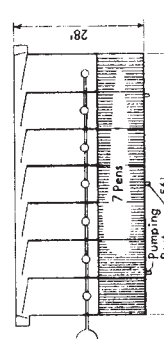
**PLAN B—Flushed Gutter Under Slats**



**PLAN A—Manure Storage Pit**



**FLOOR PLAN B**



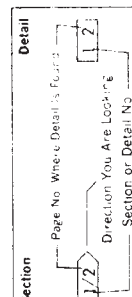
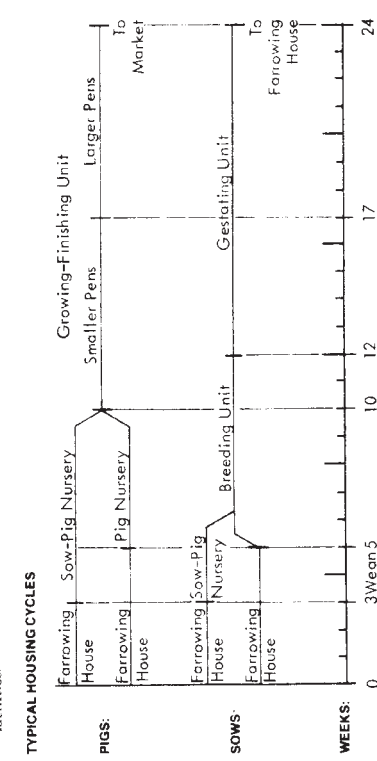
**FLOOR PLAN A**

**Building space and production cycles.**  
Although many variations are successful, the following are typical meat 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.

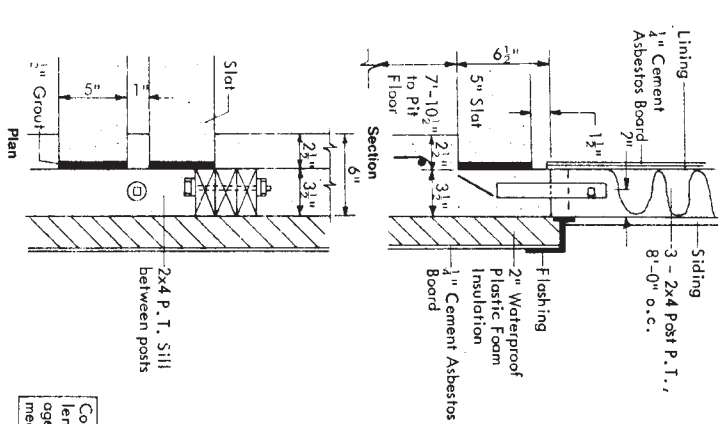
b) Wean pigs at 4-6 weeks (20-25 lb).  
Move pigs to nursery.  
Return sows to breeding and gestating facilities.  
Move pigs to finishing unit at 10 weeks (60 lb).  
(As farrowing intensifies to more than 6 times per year, pigs may be moved at about 8 weeks.) Put into smaller pens if you have two pen 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**

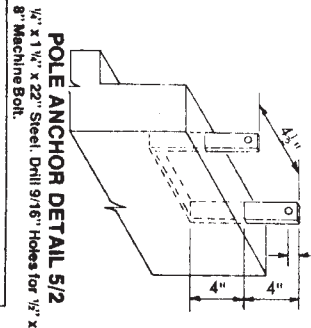


**Section & Detail Indicator**

MIDWEST PLAN SERVICE	
Cooperative Extension & Research in Agriculture & Home Economics in the 12 North Central Universities—USDA Cooperating	
Modified Open Front	
Partly Slotted Floors, 168 Pigs	Page 1 of 10
8 Pages plus	Plan No. MWPS-72689
28' Truss Sheet	1/78



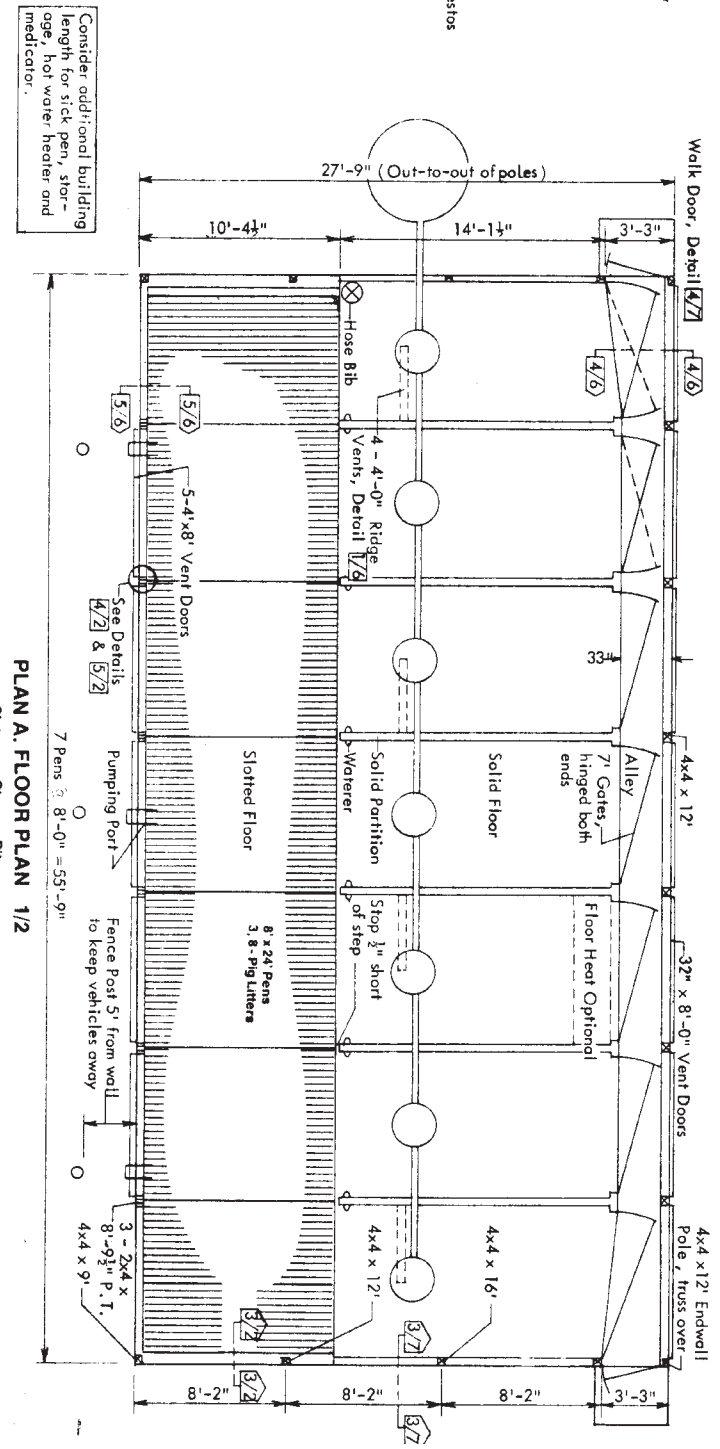
**POLE & WALL DETAIL - 4/2**



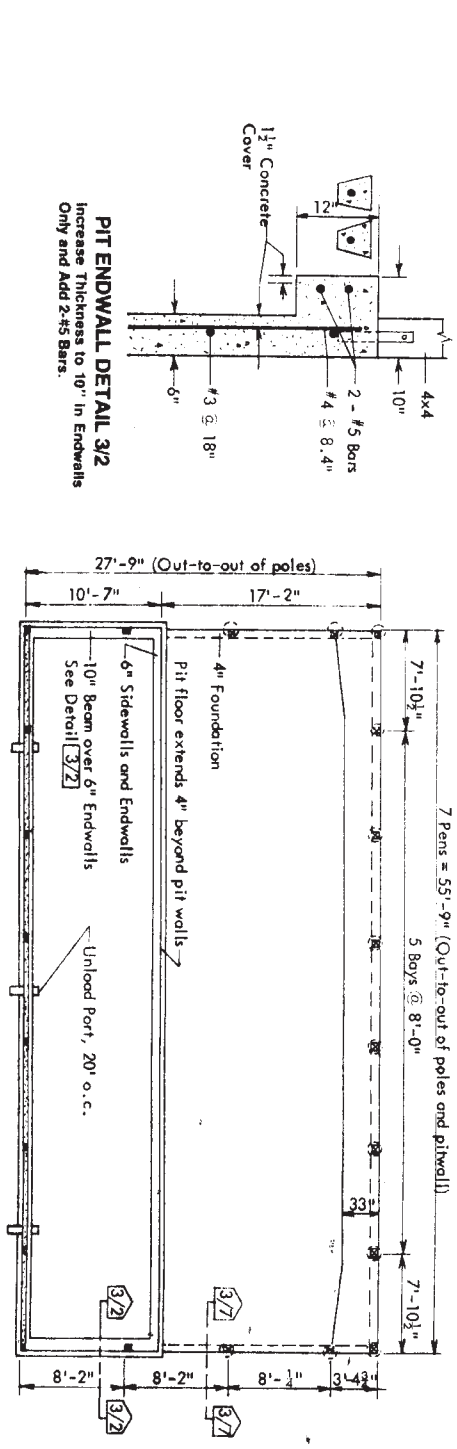
**POLE ANCHOR DETAIL 5/2**

<b>MIDWEST PLAN SERVICE</b>	
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Modified Open Front	
<b>SWINE FINISHING BUILDING</b>	
Party Sided Floors, 168 Pgs	
8 Pages plus Plan No.	Page 2 of 10
307 Truss Sheet mwp-72888	

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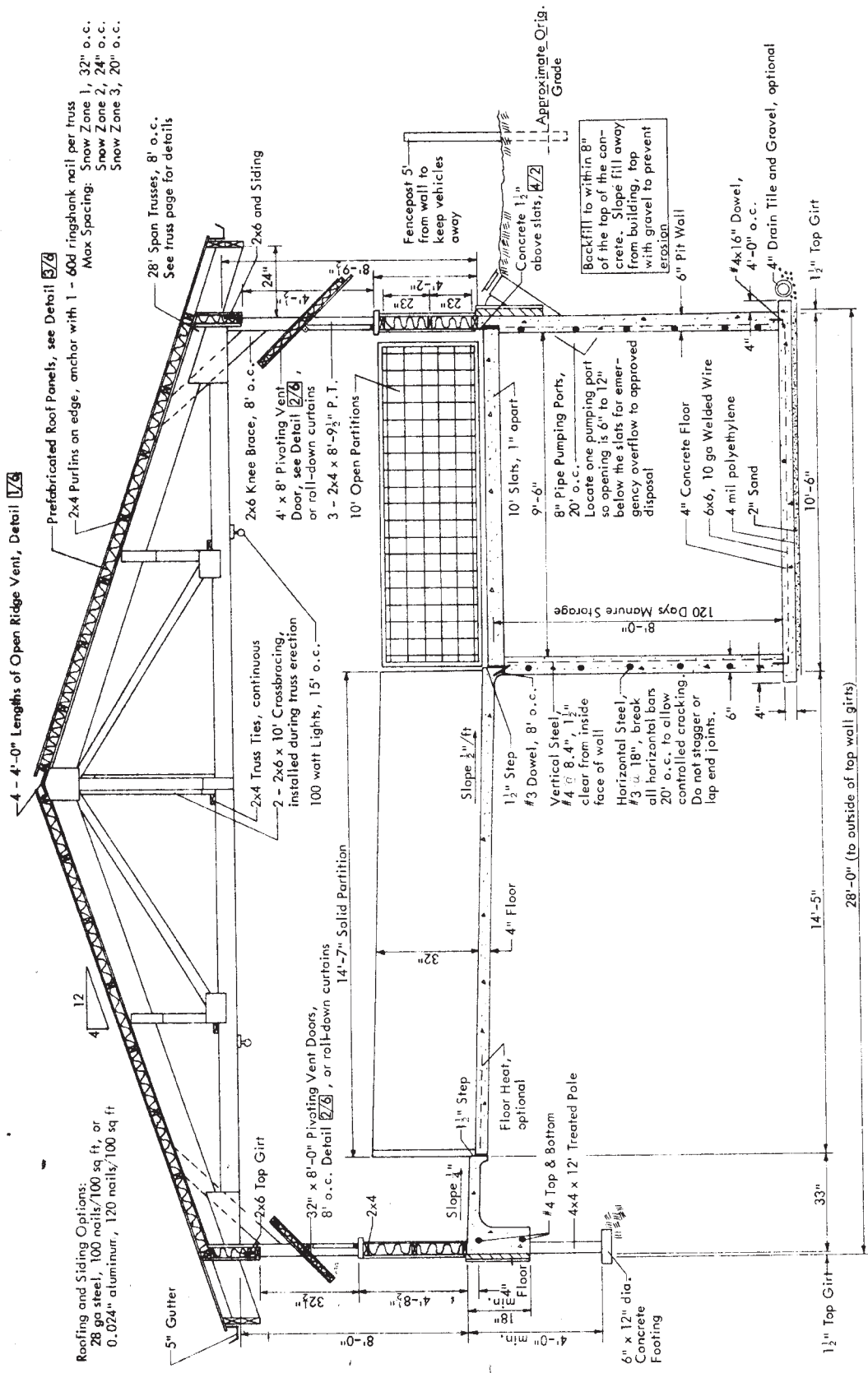
**PLAN A. FLOOR PLAN 1/2**



**PLAN A. FOUNDATION 2/2**

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

Consider additional building length for sick pen, storage, hot water heater and medicator.



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

4 - 4'-0" Lengths of Open Ridge Vent, Detail 176  
 Prefabricated Roof Panels, see Detail 178  
 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

2x6 Knee Brace, 8' o.c.  
 4' x 8' Pivoting Vent Door, see Detail 178, or roll-down curtains  
 3 - 2x4 x 8'-9 1/2" P.T.  
 10' Open Partitions

2x6 Truss Ties, continuous  
 2 - 2x6 x 10' Crossbracing, installed during truss erection  
 100 watt Lights, 15' o.c.

2x6 Top Girt  
 32" x 8'-0" Pivoting Vent Doors, 8' o.c. Detail 178, or roll-down curtains  
 14'-7" Solid Partition

1 1/2" Step  
 #3 Dowel, 8' o.c.  
 Vertical Steel  
 #4 @ 8", 4", 1 1/2" clear from inside face of wall  
 Horizontal Steel  
 #3 @ 18", break all horizontal bars 20' o.c. to allow controlled cracking. Do not stagger or lap end joints.

10' Slats, 1" apart  
 9'-6"  
 8" Pipe Pumping Ports, 20' o.c.  
 Locate one pumping port so opening is 6" to 12" below the slats for emergency overflow to approved disposal

4" Floor  
 4" Concrete Floor  
 6x6, 10 ga Welded Wire  
 4 mil polyethylene  
 2" Sand

6" x 12" dia. Concrete Footing  
 #4 Top & Bottom  
 4x4 x 12' Treated Pole  
 1 1/2" Top Girt  
 10'-6"  
 1 1/2" Top Girt  
 28'-0" (to outside of top wall girts)  
 Slats over Storage Pit

Fencepost 5' from wall to keep vehicles away  
 Concrete 1 1/2" above slats, 172  
 Approximate Orig. Grade

Backfill to within 8" of the top of the concrete. Slope fill away from building, top with gravel to prevent erosion  
 6" Pit Wall  
 #4x16" Dowel, 4'-0" o.c.  
 4" Drain Tile and Gravel, optional

120 Days Manure Storage  
 8'-0"

1 1/2" Step  
 Floor Heat, optional  
 1 1/2" Step  
 4x4 x 12' Treated Pole

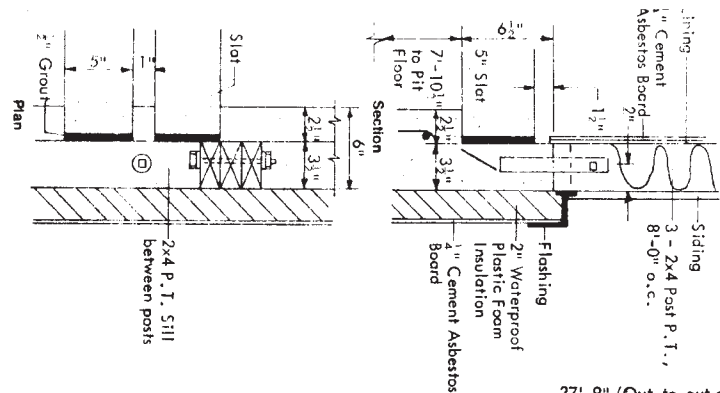
1 1/2" Top Girt  
 10'-6"  
 1 1/2" Top Girt  
 28'-0" (to outside of top wall girts)  
 Slats over Storage Pit

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

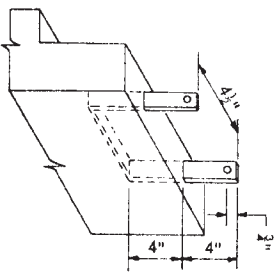
Consider commercial automatic door openers.

**Optional Supplemental Heat**  
 Use heat lamps, radiant heaters, heat pads, or floor heat. Heat in the floor may be electric or hot water; see MWPS-8, Swine Housing and Equipment Handbook.

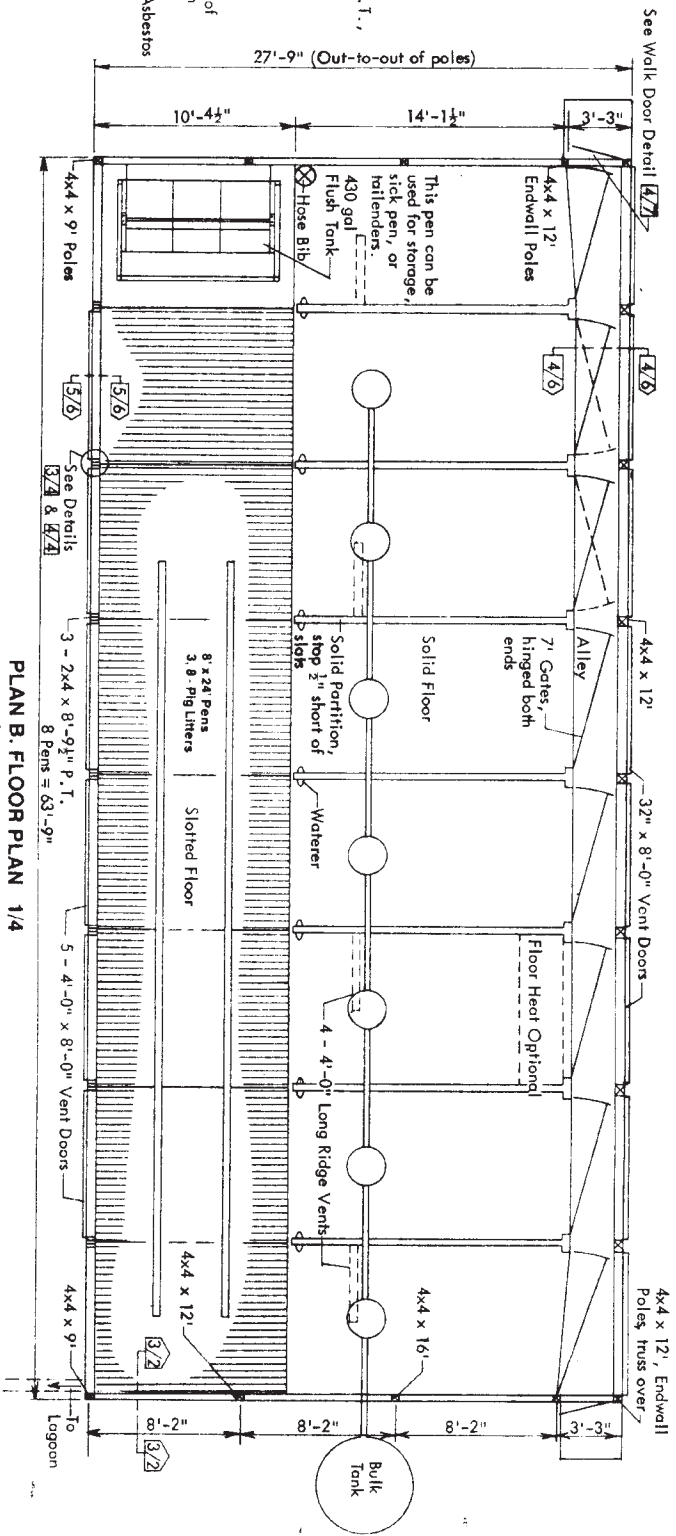
<b>MIDWEST PLAN SERVICE</b>	
Cooperative Extension & Research in Agriculture & Home Economics in the 12 North Central Universities—USDA Cooperating	
Modified Open Front	
<b>SWINE FINISHING BUILDING</b>	
Party Slatted Floors, 160 Pigs	
8 Pages plus	Plan No.
28' Truss Sheet	mwp: 72689
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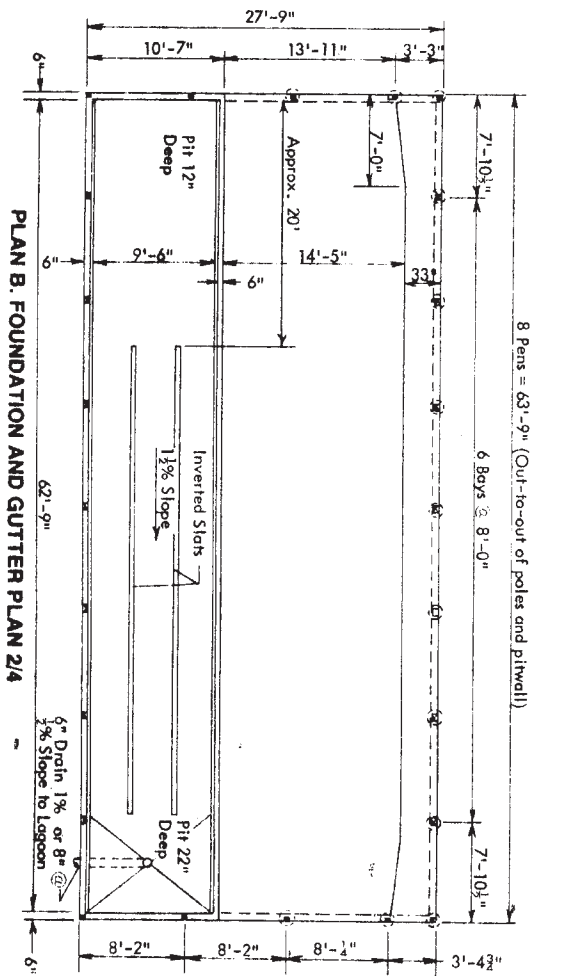
**POLE & WALL DETAIL—3/4**



**POLE ANCHOR DETAIL—4/4**  
 $\frac{1}{2}$ " x 3 1/2" x 22" Steel Drill 9/16" Holes for  $\frac{1}{2}$ " x 8" Machine Bolt.



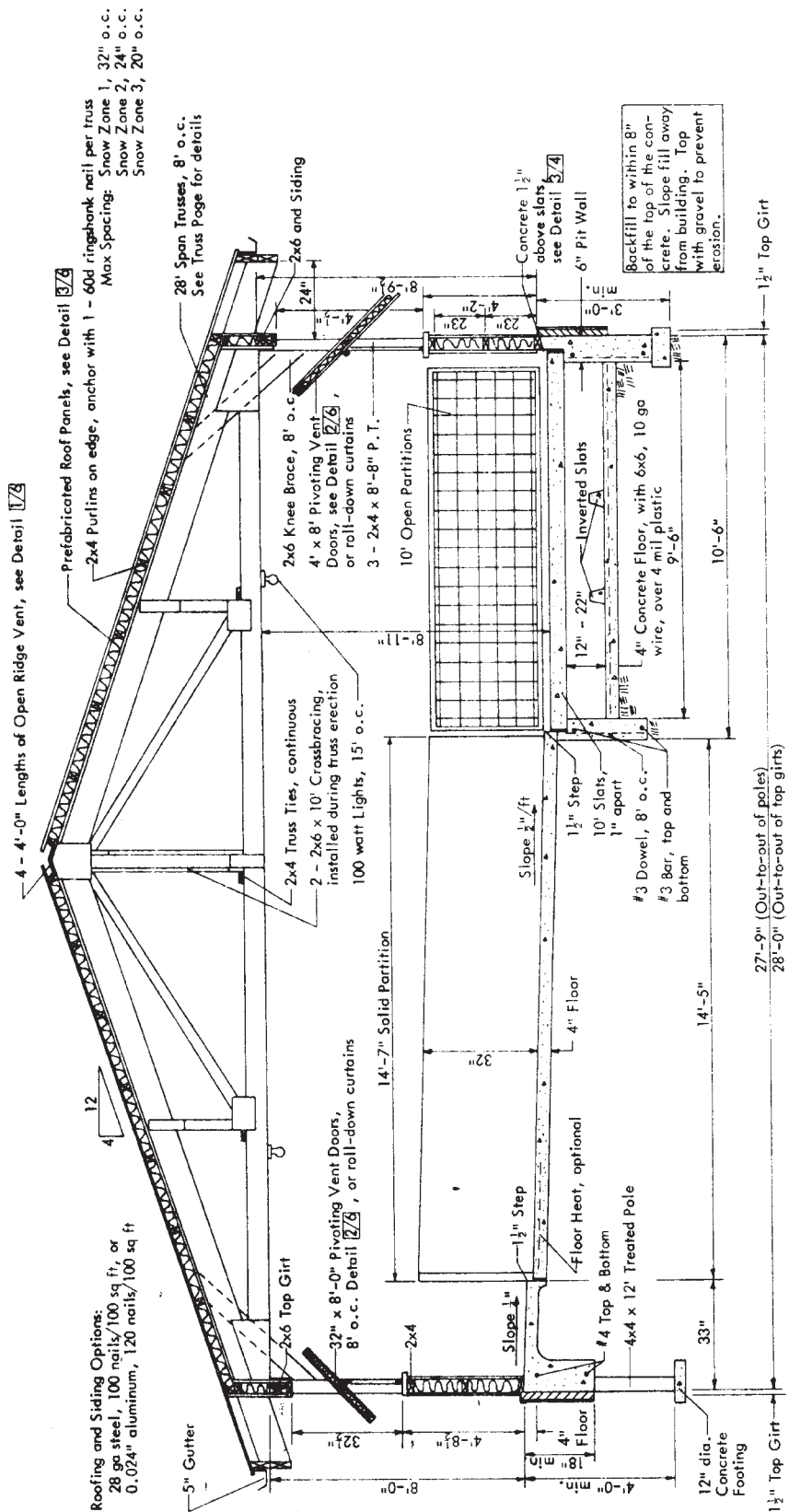
**PLAN B, FLOOR PLAN 1/4**  
 Slats over Flushed Pit



**PLAN B, FOUNDATION AND GUTTER PLAN 2/4**

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Cooperative Extension & Research in Agriculture & Home Economics in the 12 North Central Universities—JSDA Cooperating		
Midwest District Office		
SUNBELT FINISHING DIVISION		
Parity Slat Floor, 100 Pgs		
1 Pages plus	Plan No.	Page
20' Trench Sheet	Temp. 72000	4 of 10

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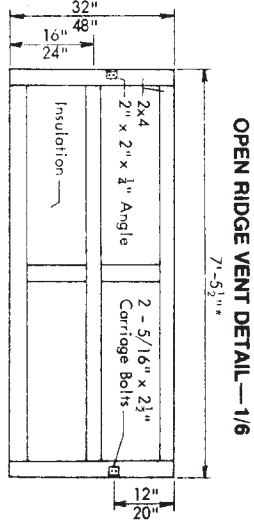
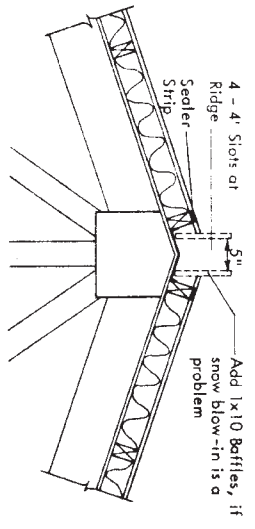


**PLAN B. CROSS SECTION 1/5**  
 Slats over Flushed Pit

Consider automatic opener for ventilation doors.

**Optional Supplemental Heat**  
 Use heat lamps, radiant heaters, heat pads, or floor heat. Heat in the floor may be electric or hot water; see MWPS-8, Swine Housing and Equipment Handbook.

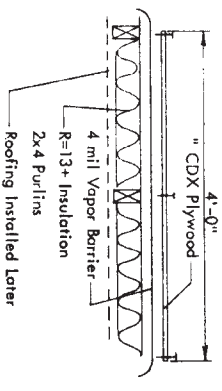
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Glue and nail " CC Exterior Plywood on the inside. Install insulation. Nail metal siding on the outside.

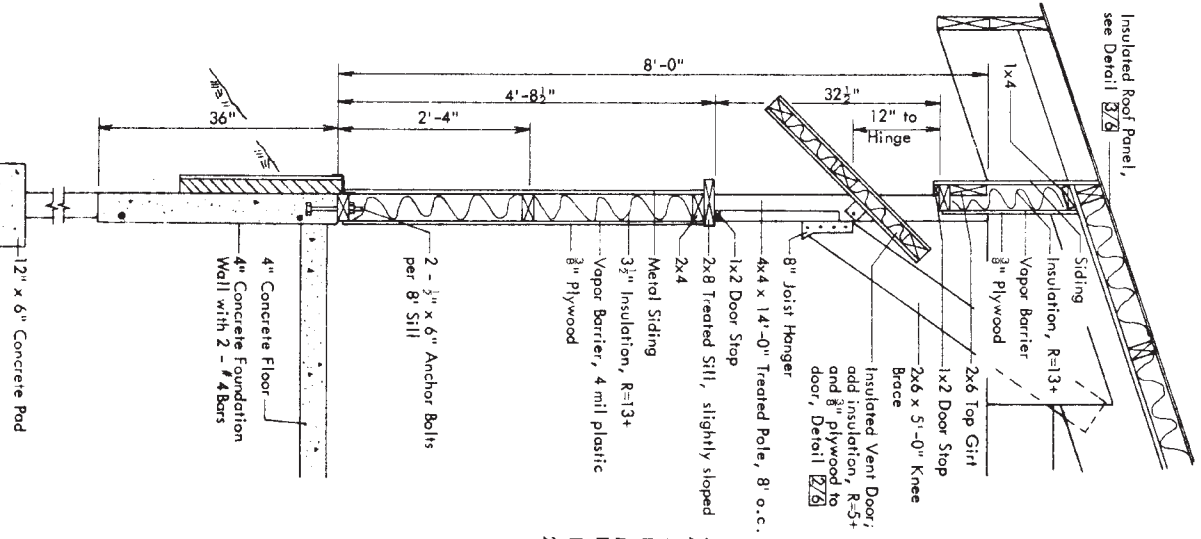
\* Alter this dimension for other than 4" wide building posts or other than 8' o.c.

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

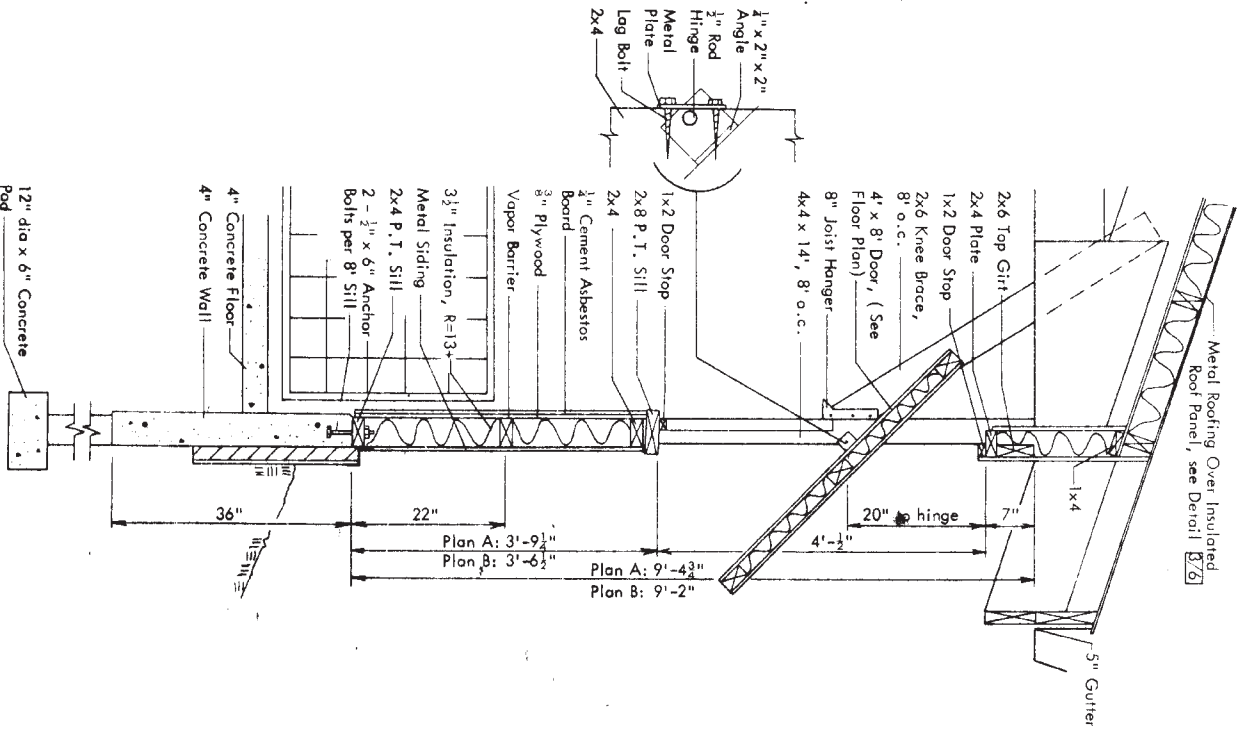


Fabricate 4x8 and 4x16 panels upside down. Invert and install the panels, staggering the end joints.

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



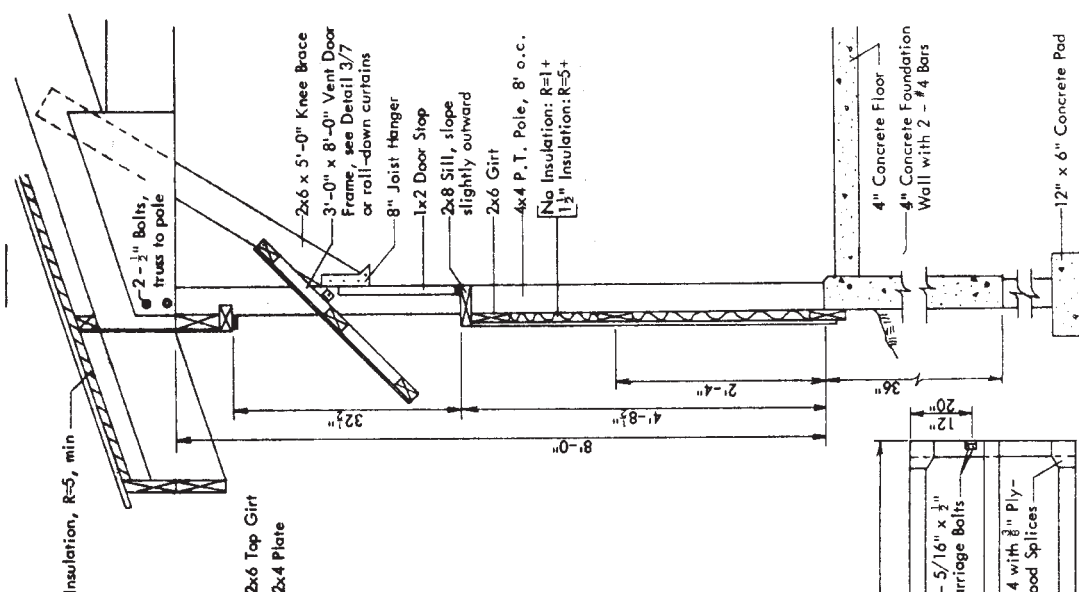
**REAR WALL SECTION—4/6**



**FRONT WALL SECTION—5/6**

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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.	72688	Page 6 of 10
23" Truss Sheet	Image	72688	

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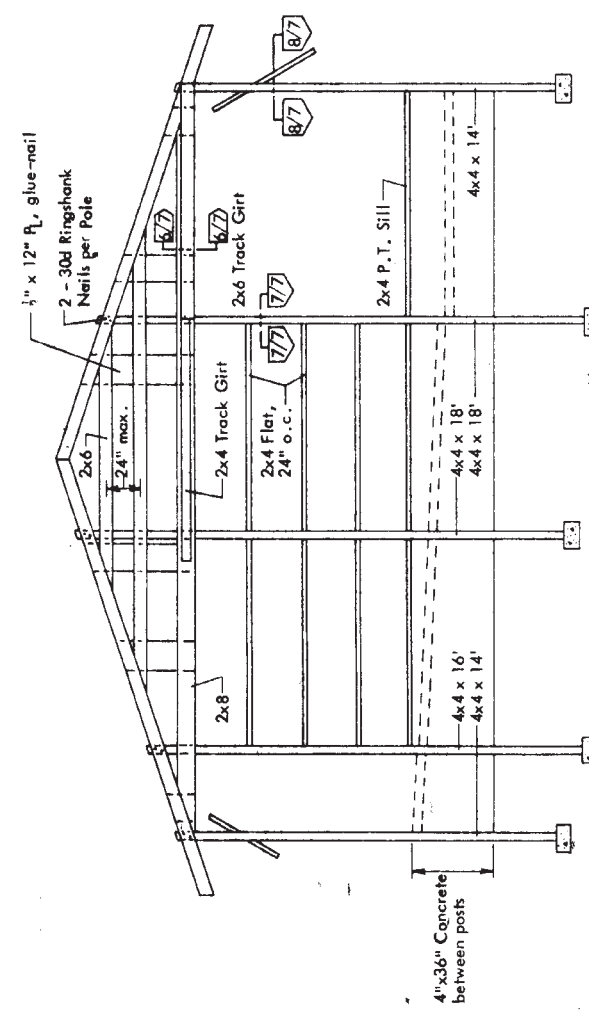
**OPTION—UNINSULATED WALL—517**

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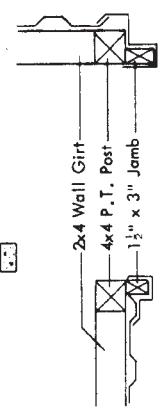
**SWINE FINISHING HOUSE**  
Flushed or Scraped Gutter, 160 Pgs

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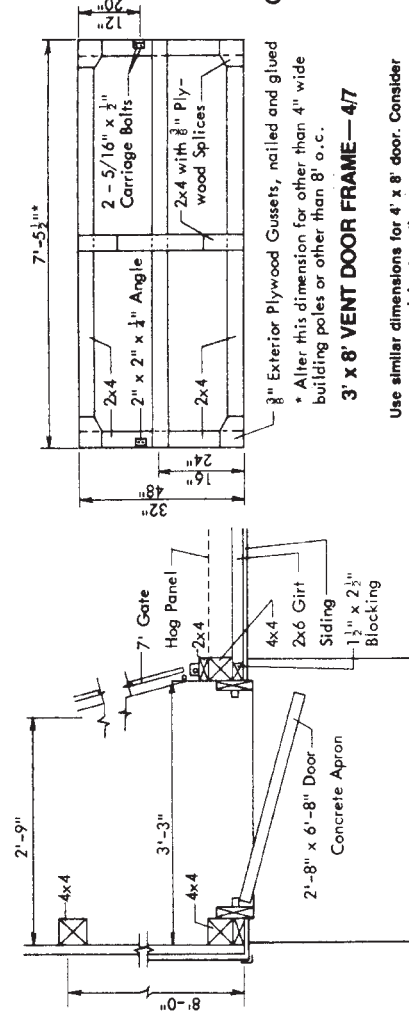


**ENDWALL FRAMING—17**

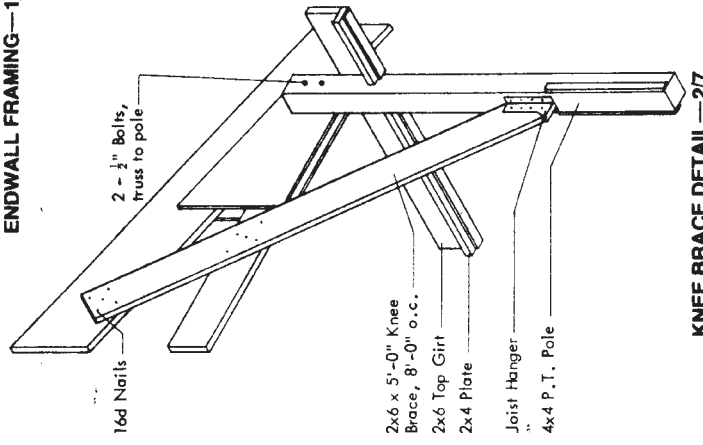


**SECTION—717**

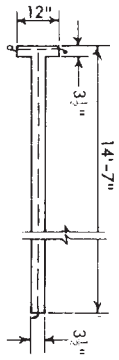
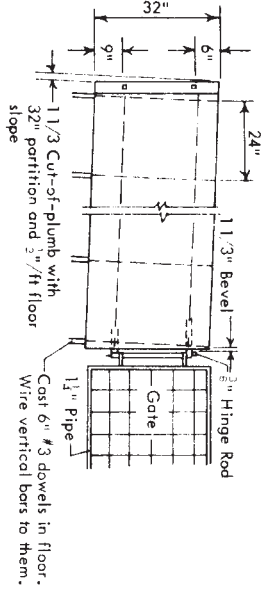
**SECTION—877**



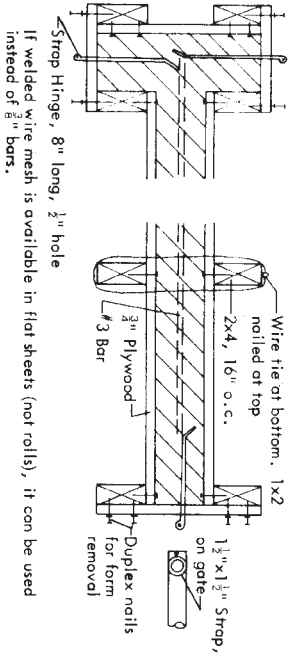
**WALK DOOR DETAIL—37**





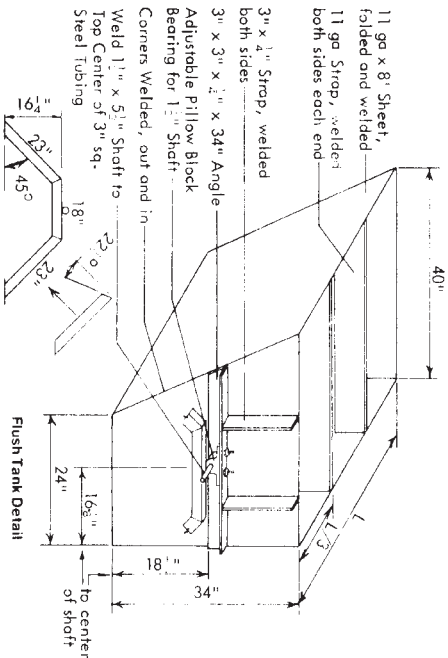


Bend, put small bolt in 1 hole, or weld to #3 rods.



**CONCRETE PARTITION DETAIL—1/8**

If welded wire mesh is available in flat sheets (not rolls), it can be used instead of #3 bars.



**Flush Tank Detail**

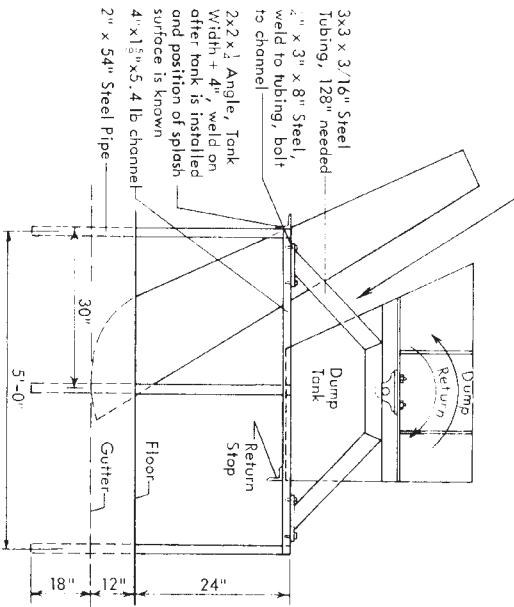
**Variable Dimensions**

Gutter width	2	4	6	8 and wider
Tank length L	23	41	65	89
Back splash width W	29	47	71	95
Flush volume ga	100	190	300	400

**Flush Frequency—minimum flushes per day**

Farrow	2	Under slats	Open gutter
Nursery	4		
Finish	6		
Gestation	4		

More flushes per day tend to decrease odors.



**FLUSH TANK, Self Dumping—2/8**

