

# MWPS-72691

## Swine Finishing House

Full-slotted floor, 320 pigs. This plan is for a 32' x 80' stud-frame building housing 320 pig (about 40 litters). Manure is stored in the 6' deep it below the slats. Mechanical ventilation is used in cold weather, ventilation doors are opened for natural warm weather ventilation.

### **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.**

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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 Finishing House Full-Slotted Floor, 320 Pigs
Title Page
MIDWEST PLAN NO. 72691

**Plan LMP-72891  
SWINE FINISHING HOUSES**  
Full-slotted floor, 320 pigs

This plan is for a 32' x 80' stud-frame building housing 320 pigs (about 40 litters). Manure is stored in the 6' deep pit below the slats. Mechanical ventilation is used in cold weather; ventilation doors are opened for natural warm weather ventilation.

**General Specifications**

Fans: Select exhaust fans for the stated capacity at 1/2" static pressure, especially pit fans, to prevent backdrafting when larger fans turn on.

Supplemental heat (from heat lamps) may be needed for young stock when the building is not fully insulated or is partly empty.

Air movement in summer can be increased with unrated fans mounted over the pens near the ends of the building and blowing parallel to the alley.

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.

See one 3" dia. PVC pumping port to serve as an emergency overflow from each pit. The lip of the plastic pipe must be below the pit ventilation inlets. Discharge any overflow to an approved facility. Pump pits from pits often enough to prevent overflow.

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.

**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).
- Post instructions on what to do in hot weather, mild weather, cold weather, who to phone for additional advice, etc.
- 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, circulating fans.
- Consider automatic telephone that dials selected numbers when power fails.

**Manure Storage Pit**

Pit depth is based on 0.19 cu ft/day manure per 175-lb pig; 6" left in the pit after pumping; and 12" of freeboard.

**Slat designs**

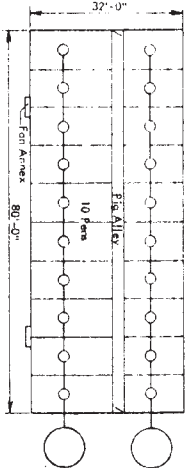
Dimensions in these plans assume concrete slats as listed below and may need to be adjusted for other design or materials. About 1/2" is allowed at each end of a slat for construction variation and grouting.

Space slats 1/2" 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 pig nursery, or gestation	Farrowing, sow-pig nursery, or gestation
4	4 x4 #3	4 x4 #3	4 x4 #3
6	4 x4 #3	4 x4 1/2 #4	4 x4 1/2 #4
8	4 x4 #3	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 pit	150 pit
Beams	Per sq ft floor area	50 pit	65 pit
columns	35 pit		



General Floor Plan

**Building space and production cycles.**

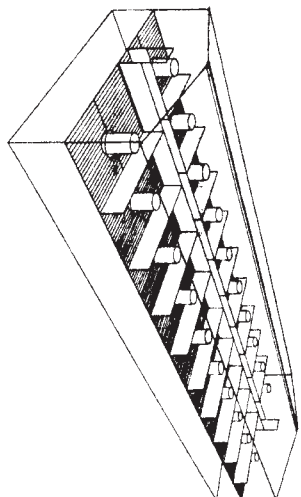
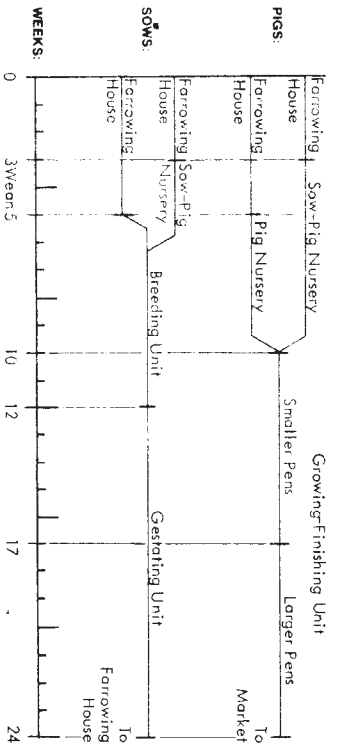
Although many variations are successful, the following are typical meat hog production systems. Plan building capacity for some extra animals to allow for larger litter size or slow growth rate.

- 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:
  - Wean pigs at 4-6 weeks (20-25 lb).
  - 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**



Full-Slotted Floor

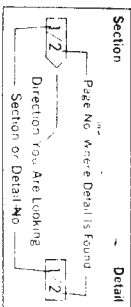
**LUMBER SPECIFICATIONS**

Roof Rafters and Studs  
Construction Grade (Doug Fir, Southern Pine or Hem Fir)  
Trusses  
See Truss Page  
Plywood  
Roof Sheathing—3/4" C-C EXT (Identical to "Index" = 200)  
Siding and Wall Lining—3/4" or 1/2" C-C EXT with Medium Density Overlay

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

**Sills and Facia**  
Pressure Preservative Treated (Scotch Pine or equivalent) Creosote—8 pcf. Penb—0.40 pcf. ACC—0.25 pcf. ACA or CCA (Type A or B)—0.23 pcf.

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

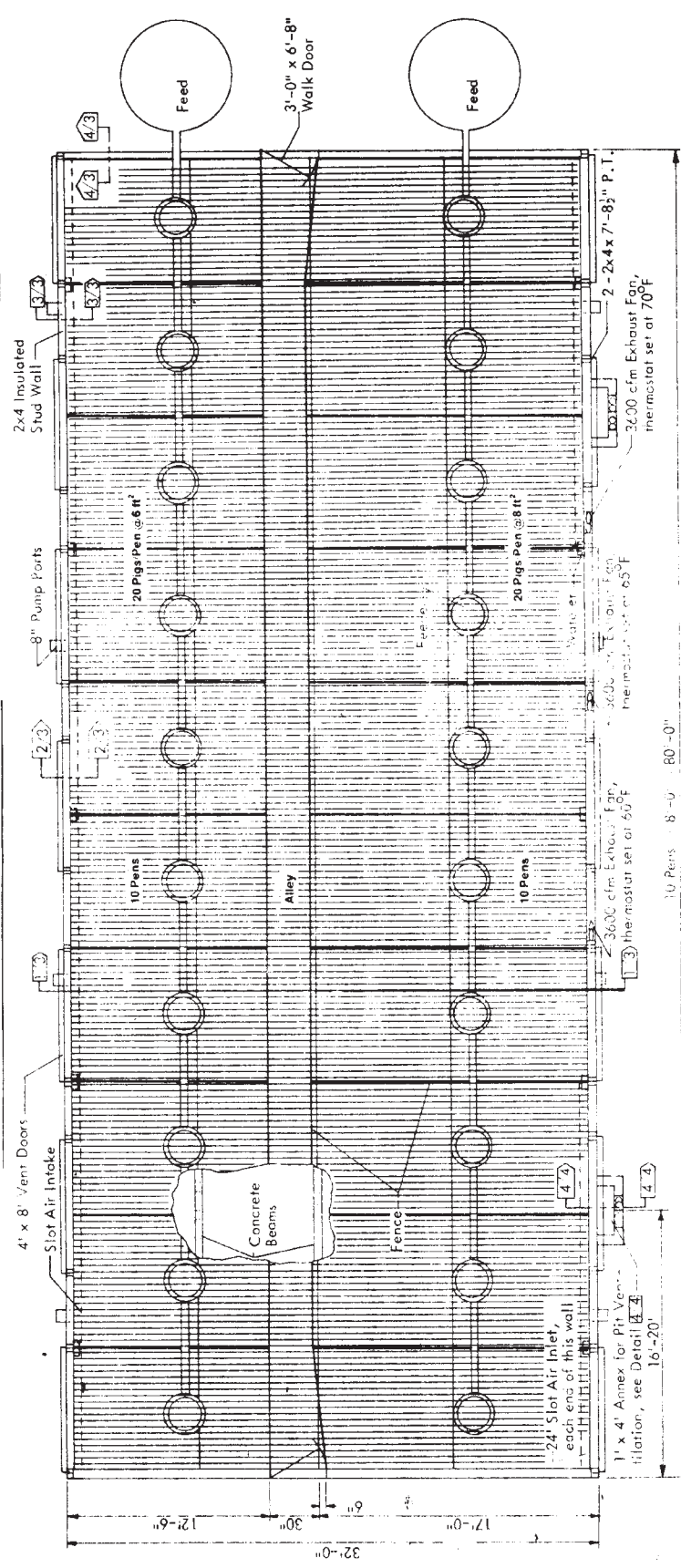


Section & Detail Indicator

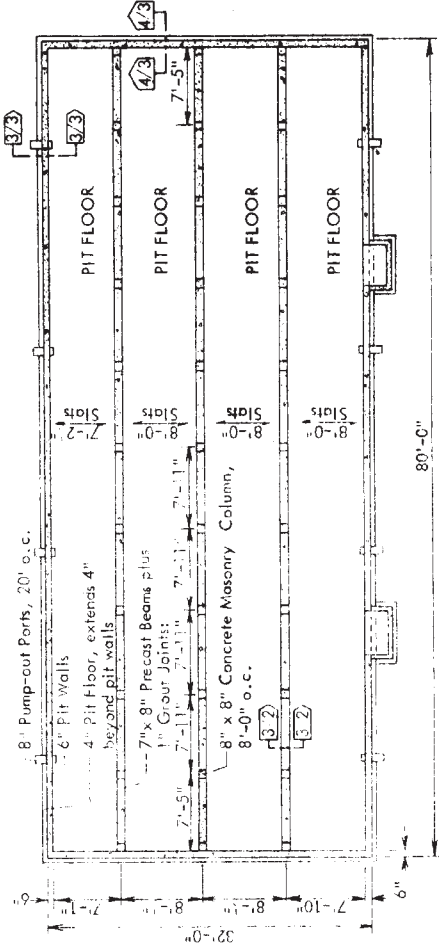
**UNIVERSITY OF MICHIGAN MIDWEST PLAN SERVICE**  
Cooperative Extension & Research in Agriculture & Home Economics in the 12 North Central Universities—USDA Cooperating

**SWINE FINISHING HOUSE**  
Full-Slotted Floor, 320 Pigs

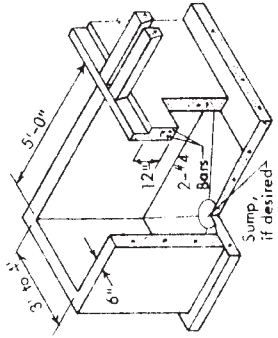
4	Pages plus	Plan No	Page
32	Truss Sheet	LMP-72891	1 of 6



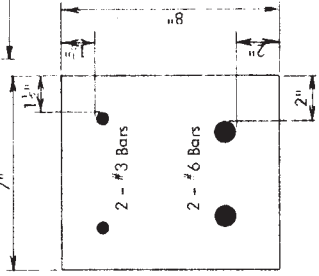
FLOOR PLAN—1/2



FOUNDATION PLAN—2/2



**ANNEX FOR CHOPPER PUMP—4/2**  
 For chopper pump, use pit wall steel reinforcing in annex walls. Install at midlength of each sidewall or extend pits beyond end wall. Provide insulated cover.  
 Note: Steel same as pitwalls.



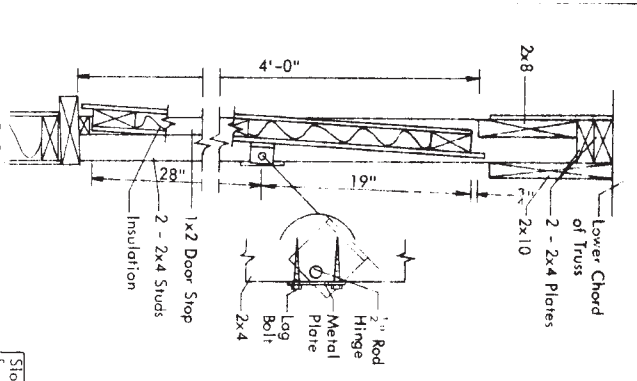
BEAM DETAIL—3/2

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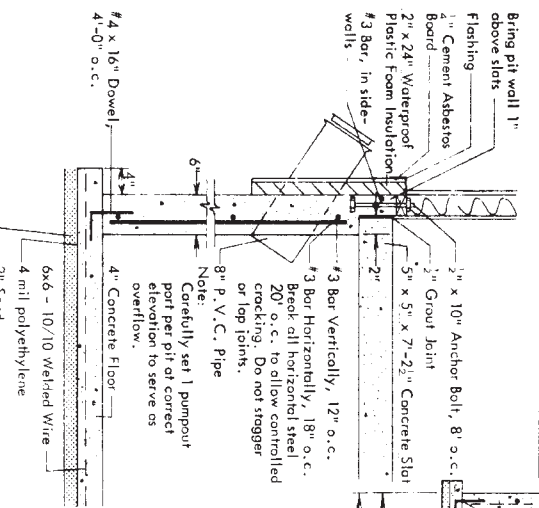
**SWINE FINISHING HOUSE**  
 Full-Slotted Floor, 320 Pigs

4 Pages plus Truss Steel	Plan No. mwp-72691	Page 2 of 6
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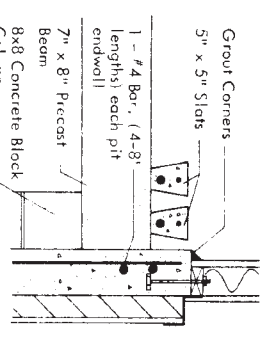
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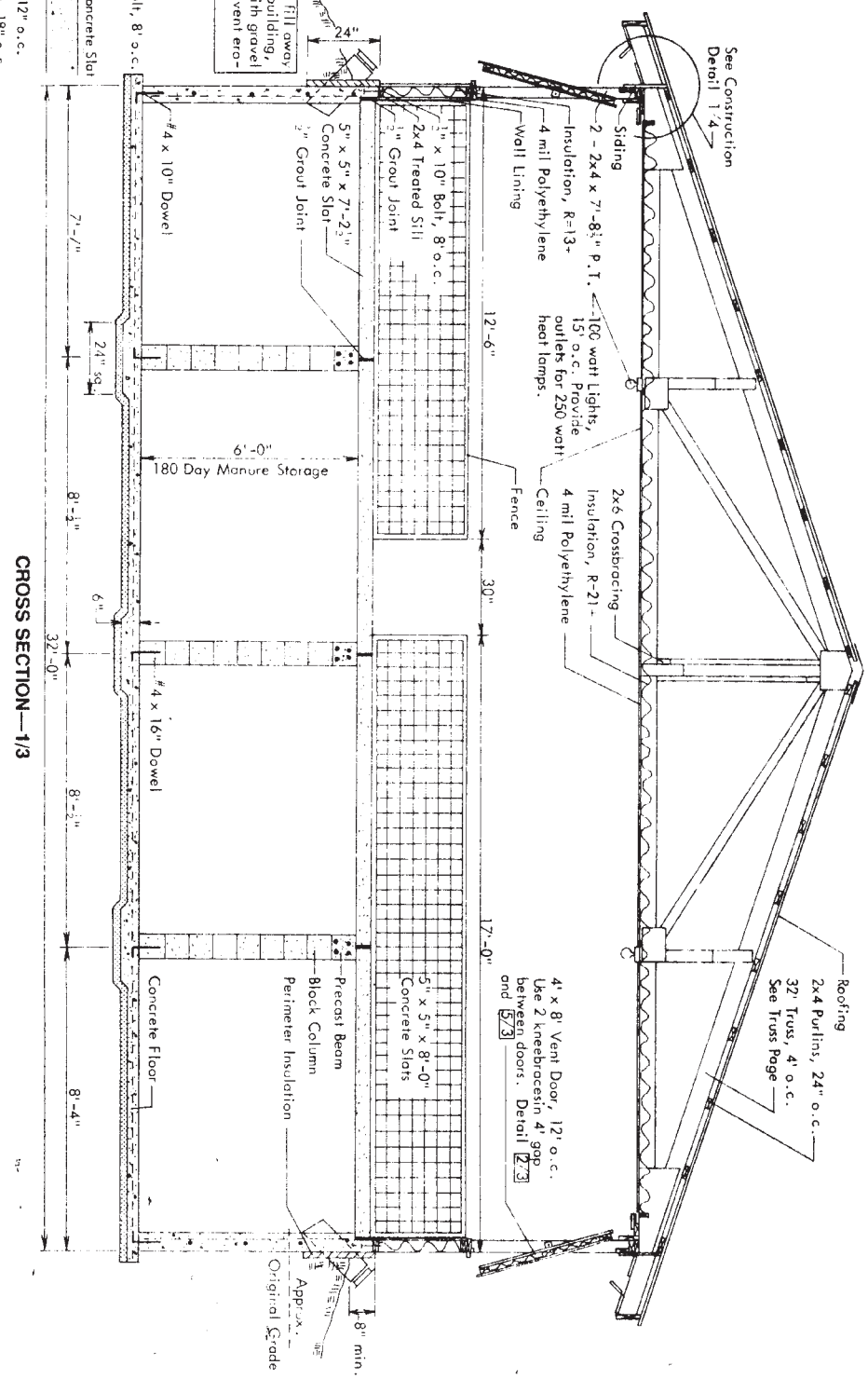
**VENTILATION DOOR  
CROSS SECTION—2/3**



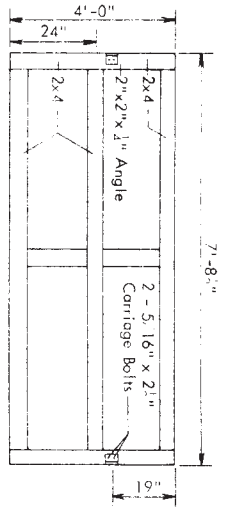
**PIT DETAIL—3/3**



**PIT ENDWALL DETAIL—4/3**



**CROSS SECTION—1/3**



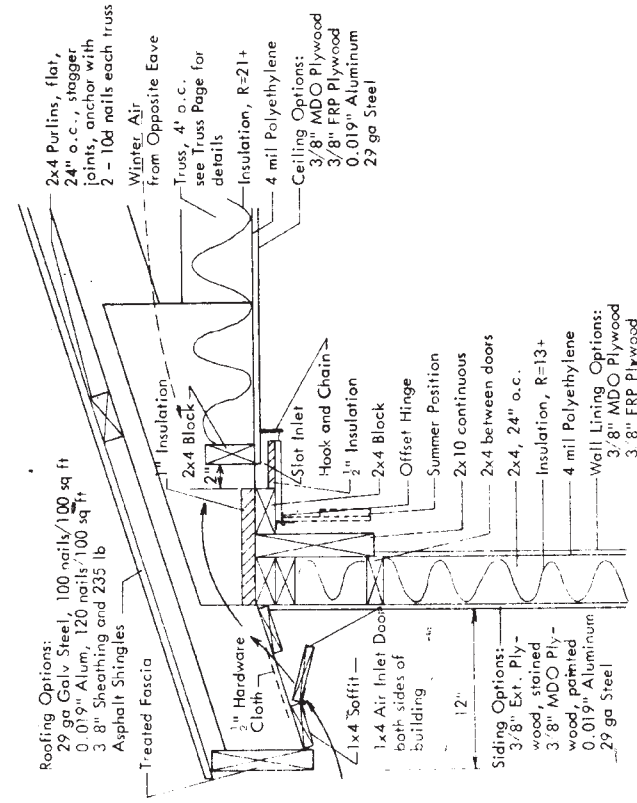
**4' x 8' VENT DOOR FRAME—5/3**

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**SWINE FINISHING HOUSE**  
 Full-Styled Floor, 320 Pigs

4 Pages plus Plans  
 32 Truss Sheet  
 Full-Styled Floor, 320 Pigs  
 mmws 72691  
 Page 3 of 6

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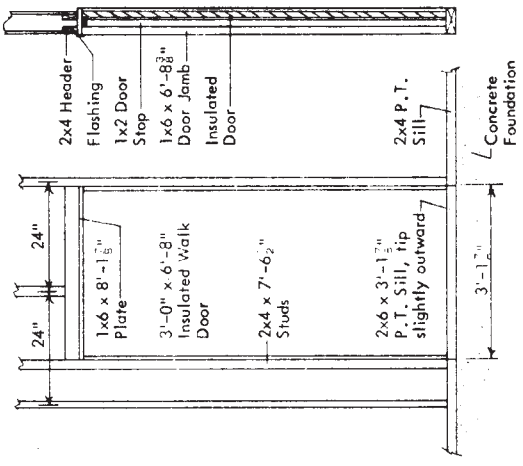


**EAVE INLET**

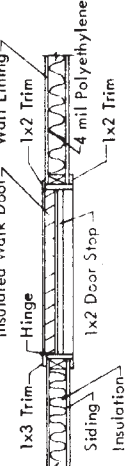
**SLOT INLET**

**CONSTRUCTION DETAIL — 1/4**

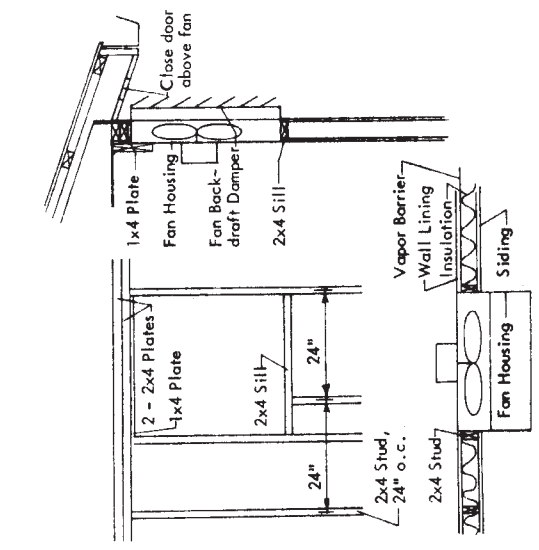
Install eave inlet along both long walls. Install slot inlet along the long wall toward the prevailing winter winds. Install fans, and 24\"/>



**WALK DOOR DETAIL — 2/4**

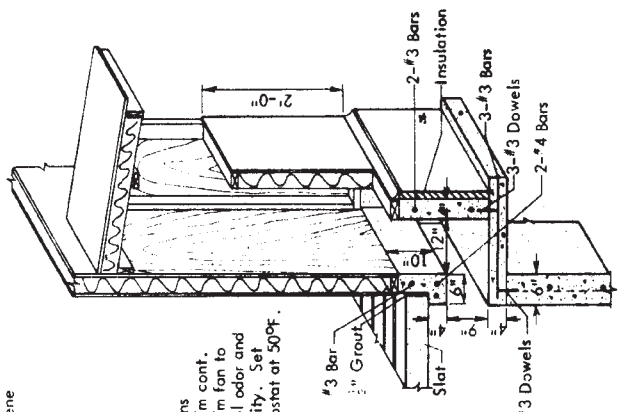


**FAN HOUSING — 3/4**



**VENTILATION ANNEX DETAIL — 4/4**

Annex is about 4' long inside.



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<b>SWANNE FINISHING HOUSE</b>			
Full-Slotted Floor, 320 Pigs			
4 Pages plus	Plan No.	Page	
37 Truss Sheet-1	mwps 72891	4	6
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