

University of Missouri Extension

G1165, Reviewed October 1993

Corral Systems for Handling and Sorting Hogs

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Construction of semi-confinement feeding floors for swine has increased in recent years. Available plans concentrate on design of the confinement area and feed handling.

As producers expand, they need more efficient ways to sort, handle and load hogs. Additional planning is required to design smooth flow patterns for livestock handling into the basic production unit.

Design criteria

Plans were developed to fit the basic swine feeding floor shown in Figure 1. This unit features a low profile, open-front building on the north. The feeding floor slopes south to the service alley. This alley slopes toward the lagoon or manure collection point. Lagoon location is determined primarily by land topography and traffic approach. Lagoons have been located on all sides of these units.

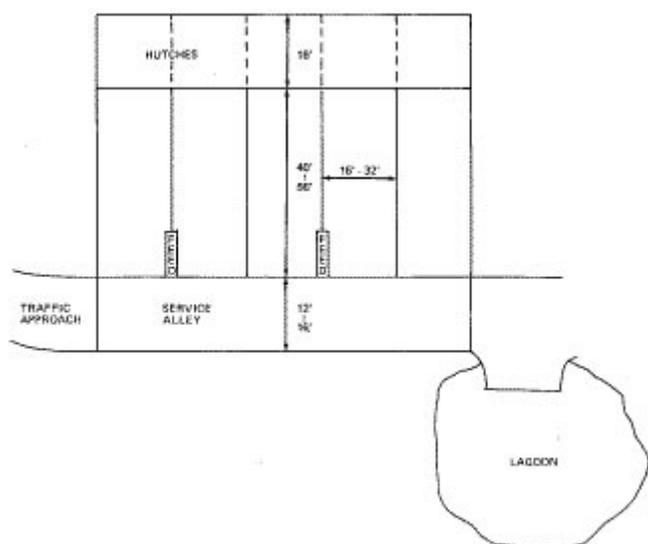


Figure 1
Basic swine feeding floor

A common road is used for all vehicle traffic. The traffic approach and lagoon location impose limitations on the location of the corral system. The service alley is used as the main alley for the handling portion of the corral system.

The designs presented have the corral system located on the east, south and west sides of the production unit. For corrals located on the south side, the cross-slope of the service alley is to the north.

Corral floors should be concrete and should slope to permit drainage and facilitate movement of waste. The

runoff should be collected in the waste management system. Fences and gates should be 3 or 4 inches above the floor to prevent manure accumulation.

Swine confined to concrete are reluctant to walk on other surfaces. They usually must be physically handled if forced off of concrete. Designs that include concrete loading chute floors are well accepted.

Sorting alleys are 16 inches wide and have solid side panels. This prevents the hog from seeing to the side and encourages movement to the open area ahead. Cutting gates in the sorting alley should be hinged on both sides. This provides for sorting incoming animals, such as feeder pigs, and outgoing animals. A two-way sort is provided in all of the designs. Three-way sorts are possible with some of the designs.

Circular crowds constructed with open-wire hog panels work well and may offer some advantages over those with solid walls. The pigs may be reluctant to enter the circle where solid walls are used.

For a swine handling facility to operate properly, flow patterns must be smooth. Sharp turns should be avoided if possible and there should not be any corners of 90 degrees or less. As hogs are moved through the service alley, they tend to stay along the feeding floor fence and socialize with hogs in the feeding pens. Reluctance to cross the service alley causes some flow problems. Alley crowd gates and gradual turning angles will solve this problem. Orienting the sorting alley so hogs move back toward the vacated pen seems to improve flow during sorting.

Production unit size and marketing program influence the selection of a corral system. Some smaller producers sort and market small groups of pigs at regular intervals. This marketing program requires a corral capable of sorting off 10 to 12 market hogs per marketing interval. Large producers may require a system with the capacity to sort off 100 to 200 head per marketing interval.

Management

Cleaning the service alley before sorting and loading provides safer working conditions and results in cleaner animals to market.

Allowing hogs in the service alley for a period of time before sorting improves handling. They can socialize along the fence and become familiar with new surroundings. This practice is limited to opening one pen gate at a time to avoid fighting.

Keeping the facilities in good repair, particularly gates and latches, improves the movement of hogs and provides safer working conditions for the operator.

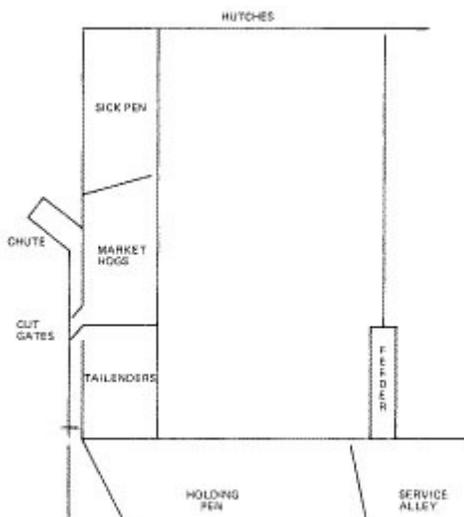


Figure 2
"Simplest" system



"Simplest" system

This system (Figure 2) consists of a sorting alley, pens for a two-way sort, and loading chute. This unit can be located on the east or west end of the feeding floor. Pens of 60 hogs can be sorted at one time.

Main advantages

1. Simple, low-cost construction.
2. Low maintenance requirements.
3. Space requirements are minimal.
4. Makes use of existing pens and alley.
5. Adapts to either end of the production unit.

Main disadvantages

1. Crowding capacity is limited.
2. May require using the sick pen when added to existing floors.

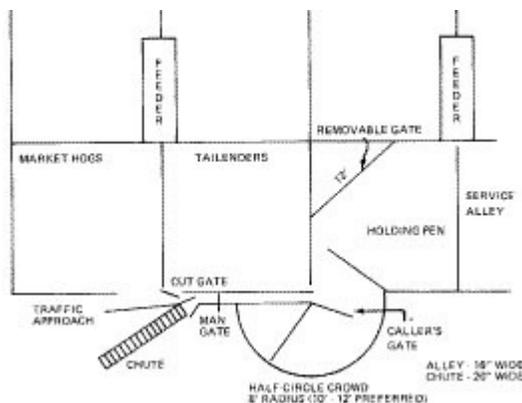


Figure 3
Wallace system

Wallace system

This system (Figure 3) consists of a half-circle crowd, sorting alley, two-way sort, and loading chute located south of the feeding floor. Pens of 60 hogs can be sorted conveniently.

Main advantages

1. Service alley is used for holding pens.
2. Less building materials are required than for some others.
3. System is compact.

Main disadvantages

1. Half-circle crowd has a limited capacity of 25 to 30 head.
2. Swine are reluctant to cross the service alley and enter crowd.

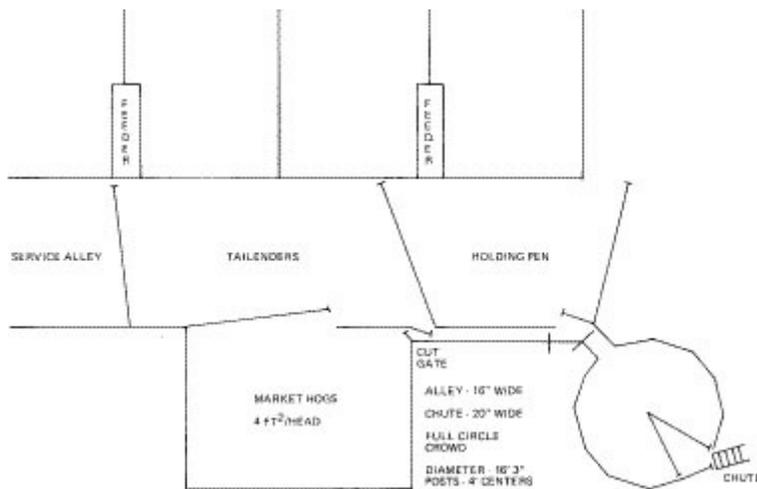


Figure 4
Waddell system

Waddell system

This system (Figure 4) consists of a sorting alley, two-way sort, separate market hog holding area, full-circle crowd and loading chute. Location is south of the feeding floor. This system should handle groups of 60 hogs.

Main advantages

1. Market hogs are accumulated in an area other than the service alley.
2. Producers anticipate an advantage by heading hogs toward the vacated feeding pen.

Main disadvantages

1. No positive crowd to force swine into the sorting alley.
2. "Tail-enders" must be returned to feeding pen before additional sorting can be done.
3. Circular crowd is used only for loading.
4. Entrance to the circular crowd is narrow and will create some flow problems.
5. Access to several pens is denied during sorting.

CEC systems

These systems (Figures 5, 6 and 7) are similar. They consist of a full-circle crowd, sorting alley, two- or three-way sort, scale and loading chute. These plans show the adaptation of the basic corral system to the east, south and west sides of the production units.

Common advantages

1. Loading chute and sorting alley are tangent to the circle crowd.
2. Plans incorporate a scale.
3. Market hogs can be held while additional sorting is done.

Common disadvantage

1. Market hogs are not held adjacent to the circle crowd for easy loading. They must be returned through

the sorting alley or holding pens.

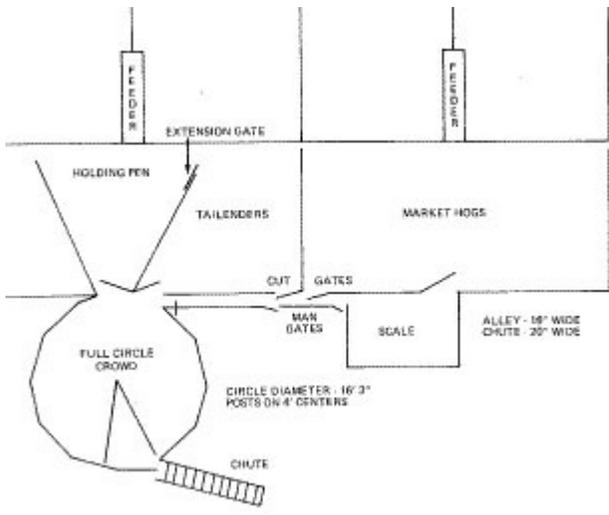


Figure 5
CEC system 1

CEC System 1 (Figure 5)

Main advantage

1. Service alley is used for holding and sorting pens.

Main disadvantages

1. Due to manure accumulation, it does not adapt where service alley cross-slope is to the south.
2. Access to several feeding pens is denied when sorting pens are in use.
3. A short section of road must be built from the service road to the chute.

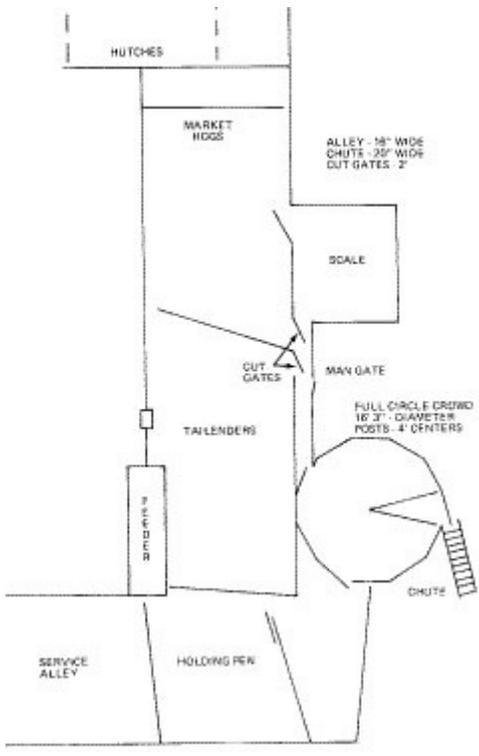


Figure 6
CEC system 2

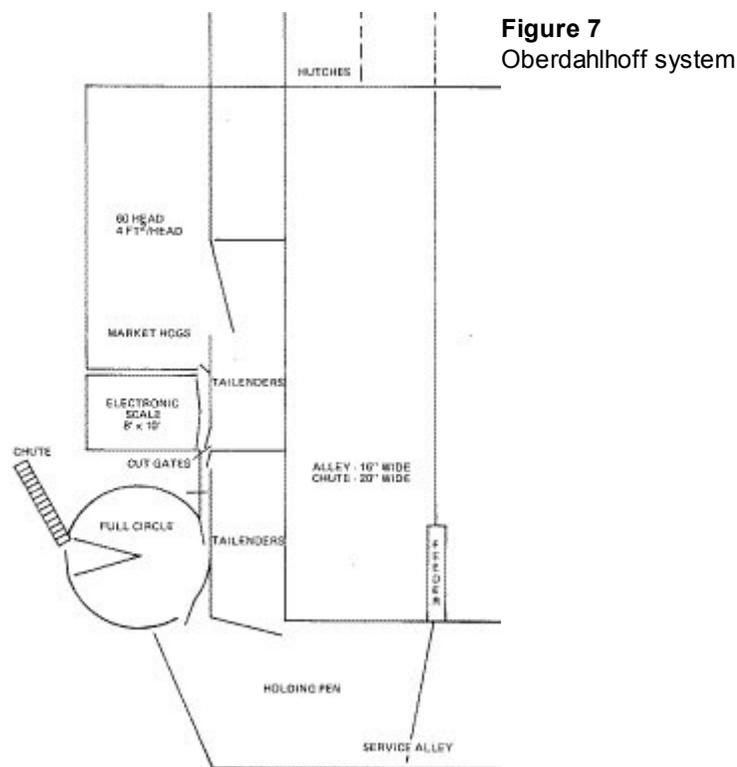
CEC System 2 (Figure 6)

Main advantages

1. Service road can be used for loading trucks.
2. Unrestricted service alley allows movement of hogs to and from feeding pens.

Main disadvantages

1. Sorting pens are located in a feeding pen.
2. Time limitations are imposed on holding market hogs if the feeding pen is in use. Those hogs occupying the feeding pen are restricted from feed and water while corral system is used.
3. Market hogs must be returned to the crowd and pass through the sorting alley for loading.
4. Operator is in direct contact with hogs when using the "caller's" gate.
5. Access to several pens is denied during sorting.
6. Manure accumulation in the section of service alley used for holding pens is a problem.



Oberdahlhoff System (Figure 7)

Main advantages

1. Holding pen for market hogs is separate from the unit so market hogs can be held without disrupting other operations.
2. Three-way sort is provided.

Main disadvantage

1. Additional concrete and material are required, increasing cost of construction.

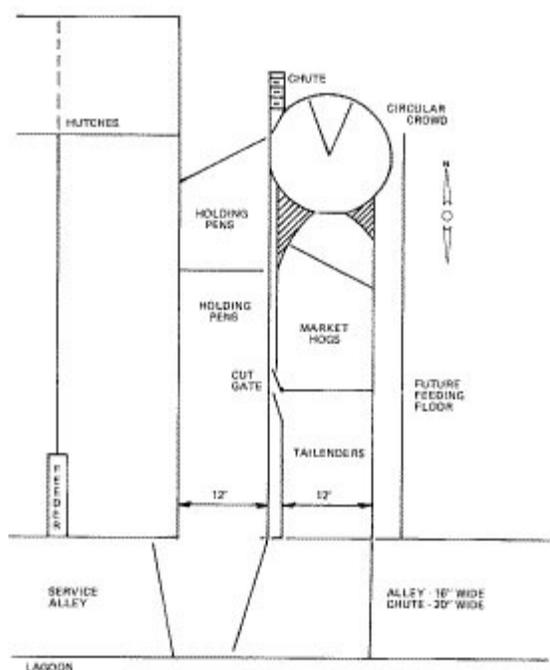


Figure 8
Kennett-Tepen system

Kennett-Tepen System

This system (Figure 8) consists of a full crowd, sorting alley holding area, pens for a three-way sort, and loading chute. Pens of 120 hogs can be sorted conveniently. The authors are indebted to Albert L. Kennett, Area Livestock Specialist, New London, Missouri, for valuable assistance in the development of this plan.

Main advantages

1. System will accommodate large numbers.
2. Market hogs are held adjacent to crowd for easy return through the circle for loading.
3. Service alley is unrestricted.
4. Provides three-way sort.

Main disadvantages

1. High cost for additional concrete and materials.
2. No provision is made for installation of a scale.

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Related MU Extension publications

- AED46, Swine Wean-to-Finish Buildings
<http://extension.missouri.edu/publications/DisplayPub.aspx?P=AED46>

- G2504, Hoop Structures for Missouri Swine Finishing Facilities
<http://extension.missouri.edu/publications/DisplayPub.aspx?P=G2504>
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