



# Livestock Handling Facilities

## Livestock Handling Facilities Designs

### Illinois

#### General Information

This section of the Grazing Manual is focused on handling facilities. There are many designs from different sources available in print on the market today. This sheet will reference the Midwest Planning Service publication MWPS-6, fourth edition and some of its various livestock facility designs. This is not an all inclusive list. However, we will include enough design information to give a representative sample of what is available from this edition and the MWPS-6 edition. To access all of the books and information go to the Midwest Plan Service web site: <http://www.mwps.org>

#### Cattle Handling

Cattle handling includes: sorting, weighting, dehorning, vaccinating, dipping branding grooming, treating, and calving. Well designed cattle handling facilities minimize lab use and allow for safe cattle handling. The components of a facility are the same regardless of the number of cattle and include:

- Conditioning, holding, sorting, and crowding pens
- Working and loading chutes
- A squeeze and headgate
- Dipping facilities.
- A weigh scale
- Hospital facilities

Differences in size and number of pens, working chute, type of headgate, etc., depend on cattle size and number. Locate handling facilities close to cattle pens and yard area for easy access. Provide 300' or more between residences and handling facilities to reduce noises and dust. Select a well drained site with an all-weather access road. An indoor working chute-head-gate allows working in all types of weather at any time of day. Slope working facilities less than 3% to reduce gate swing problems.

#### Conditioning Pens

Conditioning (or receiving) pens hold incoming cattle before they go to the feedlot. New cattle are usually stressed from weaning, removal from range, crowded trucks and rail cars, motion sickness, thirst, hunger and fright. Eating from a bunk or drinking from a tank or float controlled waterer may be a new experience. To help calves adapt from pasture to confinement:

- Do not crowd animals. Provide well drained conditioning pens with 100 ft<sup>2</sup>/hd in lots that provide food footing. Avoid slippery surfaces and slotted floors. Limit pens to 60 hd/pen. Large pens encourage running, and may cause dust, trouble finding feed or water, and additional stress.
- Fence visibility is important in conditioning pens. Plank fences are more easily seen by calves; wire and cable fences are more difficult. Do not use wire and cable fences unless at least one plank is attached at calf eye level.

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## Conditioning Pens

(continued)

- Provide wind protection and shelter from sun, rain snow, etc. Protected feed bunks help maintain feed quality and uniform consumption.
- Provide at least 2' of bunk space per head. Offer hay for 8 to 10 hours before starting other roughages. Fill feeders so cattle can see hay. Start grain or silage gradually during the conditioning period.
- Provide plenty of fresh water. Be careful that calves do not over-water at first by feeding roughage before the sound of running water helps new cattle find the waterer.
- Locate receiving lots away from main lots to reduce disease and parasite transmission.
- Process new cattle after a rest period, (usually several hours).

## Working Facilities

Working facilities are for sorting, handling, and treating cattle. They include the holding pen, crowding pen, working chute, squeeze and headgate, scale, and possibly a dipping or spraying facility.

## Holding or Sorting Pen

Make the holding pen about 60 ft<sup>2</sup> (12' X 50", 20' x 30', etc.) to hold 40 to 50 animals ahead of the crowding pen. One is sufficient for operations with up to 250 cattle. For larger operations provide:

- Up to 1000 head, one 600 ft<sup>2</sup> pen/250 head.
- Over 1,000 head, four 600 ft<sup>2</sup> pens and two 1000 ft<sup>2</sup> pens.

Where cattle are moved by person on foot, provide safety posts in each corner and at 40' – 50' intervals along the sides of large pens, fig 7-1 (last page of fact sheet). In larger pens, locate safety posts every 50'. Position posts 3' -4' from fences and corners. Use at least 6" posts set 4' in the ground. Safety posts are essential when handling bulls.

## Crowding or Funnel Pen

A crowding or funnel pen with a swinging gate is needed to crowd into the working chute. Taper the pen from 12' to about 2' at the chute entrance. A circular crowding pen with solid fence and gate is most effective because the one escape route the cattle can see is through the working chute. Equip all gates with self-locking latches and provide a safety exit from the crowding area.

## Working Chute

Desirable characteristics are:

- Curved chute construction with solid sloped sides that restrict cattle vision to a few feet straight ahead. A minimum curve radius of 15' is recommended.
- Sloped chute sides that restrict an animal's feet to a narrow path and prevent turning around. Sloped sides permit working different sized animals in the same chute.
- An overhead restrainer to keep cattle from rearing up and turning around or falling over backwards.
- At least a 20' long chute to hold 3 or 4 head at one time. One person working the crowding pen can keep the chute charged to reduce delays at the squeeze and headgate.
- Use one or two blocking gates to keep cattle from moving forward or backing up. Use these near the scale or cutting gates.
- Use a cutting gate at either the beginning of a chute, or just ahead of the squeeze, or at both places, to divert cattle not requiring treatment. Cutting gates are better than running all cattle through the squeeze and headgate.

## Working Chute

(continued)

- A concrete floor or other all-weather surface should be installed for easier cleaning. Use a sloped (less than 4%), rough finished surface for good traction. See the building construction chapter for slip resistant floor surfaces.
- Chute sides should be about 4" above the ground to improve manure removal and controls insect breeding.

## Squeeze and Headgate

A squeeze and headgate restrains cattle for treatment. Usually a headgate on a stall with fixed sides is satisfactory for small cow-calf operations. A squeeze provides faster, more complete animal control, reducing the chance of injury to animals or operators, Fig 7-2.

Consider a tilting table in the squeeze-headgate area for branding, castrating, hoof trimming, and treatment. Select a headgate which opens the full width of the chute to reduce cattle injuries. Size the chute and headgate based on cattle being worked. Three headgate types are:

- A self-catch headgate is easiest for one person to operate; cattle work fast, exit easily, and seldom choke. Is difficult to use for small or horned cattle and can cause severe shoulder bruises. Sometimes animals escape without being caught.
- A stanchion headgate is lower cost, simple, requires an operator, and seldom chokes cattle. It can cause shoulder bruises and sometimes allows a animal to escape without being caught. Cattle often rip as they walk through the headgate.
- A guillotine headgate holds the animal's head down, providing maximum head control and reducing shoulder bruises. This headgate is medium cost, difficult to operate, slower, and of the three types is most likely to cause choking.

The self-catch and stanchion headgates are available in straight bar models. A straight bar provides less head control and decreases chances of choking. A curved bar gives better head control, but increases the possibility of choking.

## Hospital Pens

Provide 40 - 50 ft<sup>2</sup>/head of hospital space for 2-5 percent of the finishing and adult cattle. Do not over crowd sick animals. Provide one hospital area for every 6,000. Locate this area close to handling facilities and conditioning lots. Provide separate drainage. Use roughened concrete sloped 1/4"/ft or more to a drain for outdoor hospital pens.

More than one hospital/treatment area is recommended for large custom operations. Separate this area to reduce disease transmission. Clean and disinfect before putting new groups of cattle in.

Heat and mechanically ventilate tight, well insulated room and intensively used barn areas. Space to drive a veterinarian's truck into the treatment area is desirable.

## Treatment Supply Room

Provide a small insulated and heated building or a room near the treatment area to store equipment and supplies used at the squeeze chute and headgate. Provide a refrigerator for veterinary supplies and lock this room when not in use. Where large numbers of cattle are treated regularly, install a water heater and sink with hot and cold water. Consider an emergency shower head in case of contamination with treatment products.

## Management

Thoroughly clean treating, handling, hospital, and barn areas during the early part of the summer. Use white wash containing cresol (a disinfectant), or equivalent, for washing walls, posts, and other surfaces. Cresol helps control ringworm and lice caused by cattle rubbing against walls. Heavily spread dry lime on floor areas about 30 days before use.

## References

The following diagrams and designs are from the MWPS-6, fourth edition.

Also of these and other livestock information books can be accessed from the Midwest Plan service web site at: <http://www.mwps.org>

Fig 5-7 Pasture corral with rotational grazing

### Pasture Corral Systems

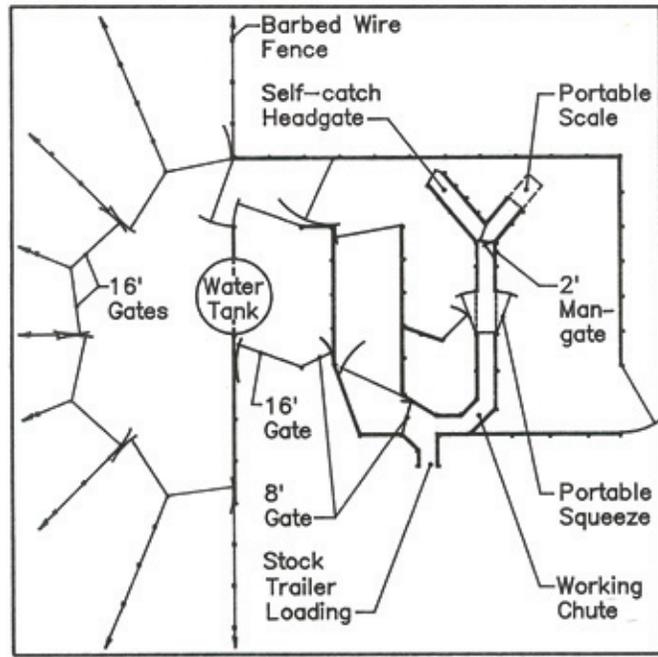


Fig 7-1 Safety post placement

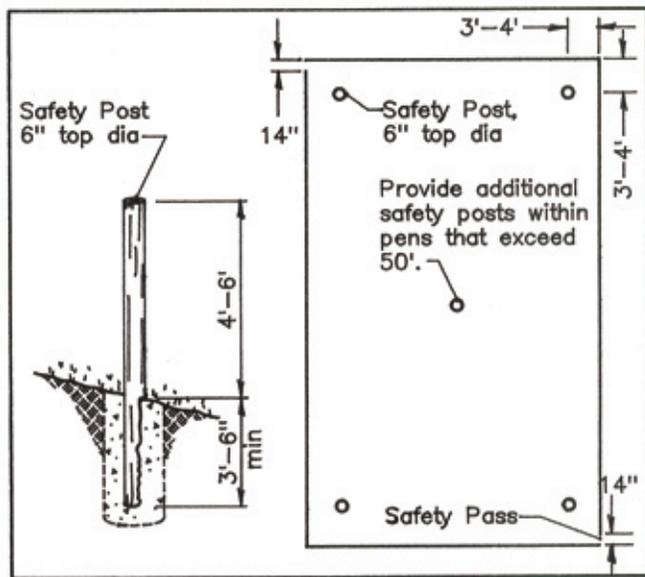


Fig 7-2 Cattle handling layouts for up to about 75 head

**Working Facility Layouts**

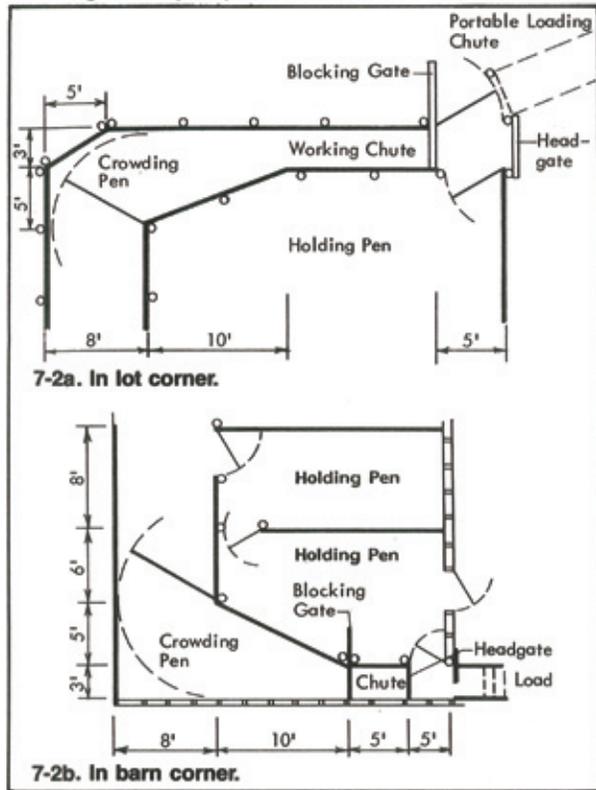
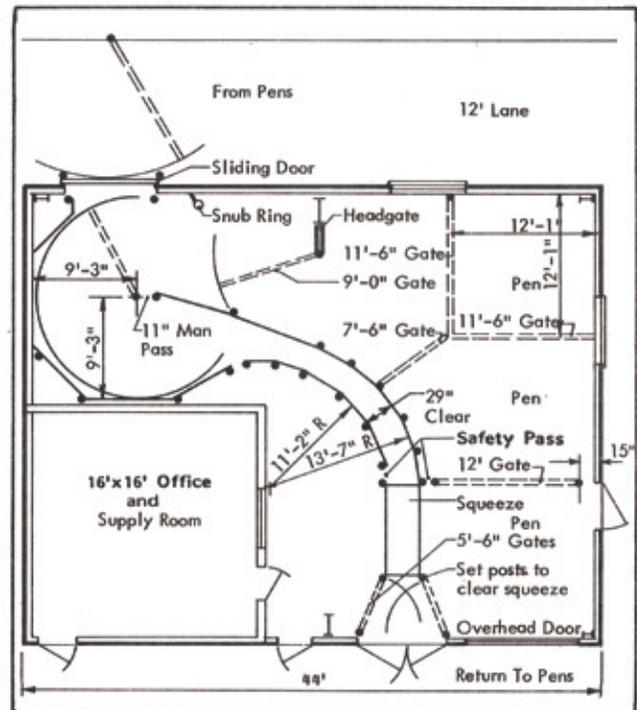
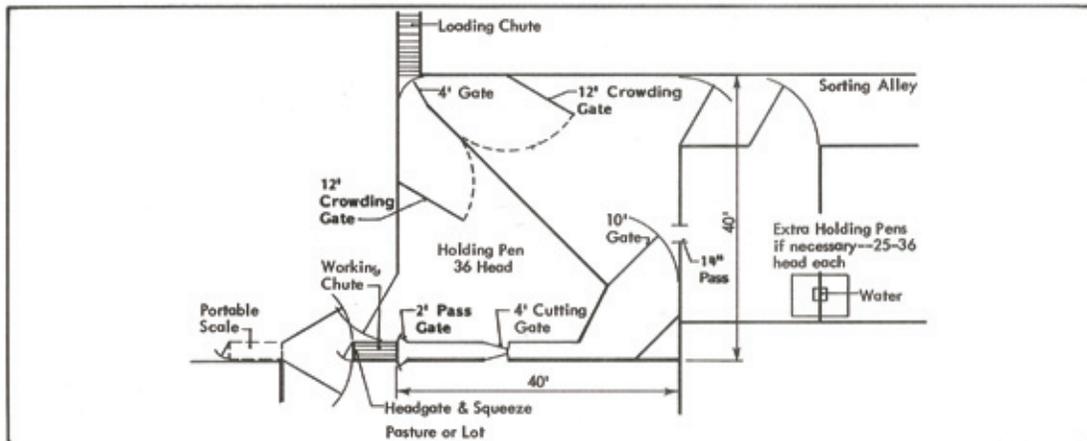


Fig 7-4 Cattle handling facility



**Fig 7-4. Cattle handling facility.**  
Adaptable as a hospital barn. Gates swing out of the way for tractor cleaning. Mount overhead lighting in the working area to see head, sides, and tail of animals in squeeze or headgate and in the corner pen for care during calving.

Fig 7-3 Small rectangular corral



**Fig 7-3. Small rectangular corral.**  
For small feedyards or cow-calf operations. This layout is simple and easier to construct but has lower capacity.

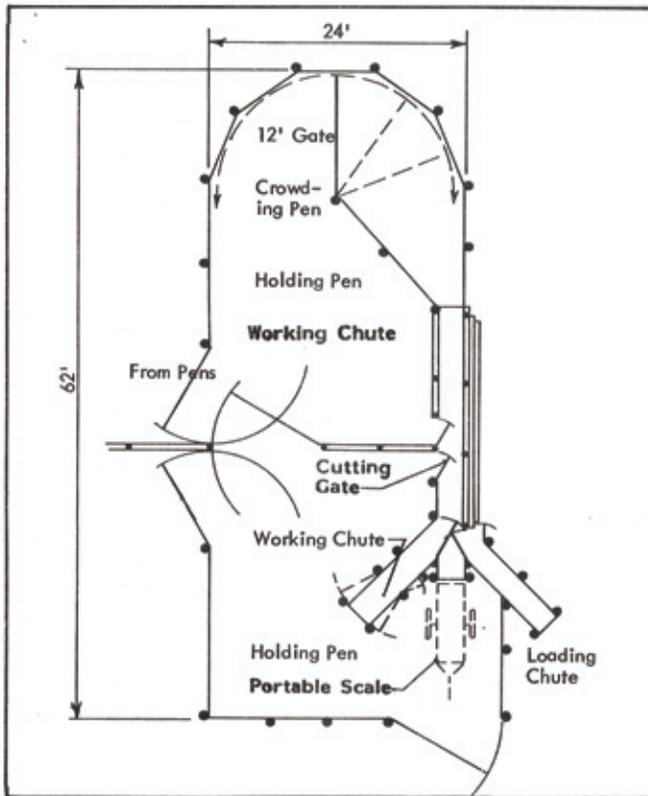
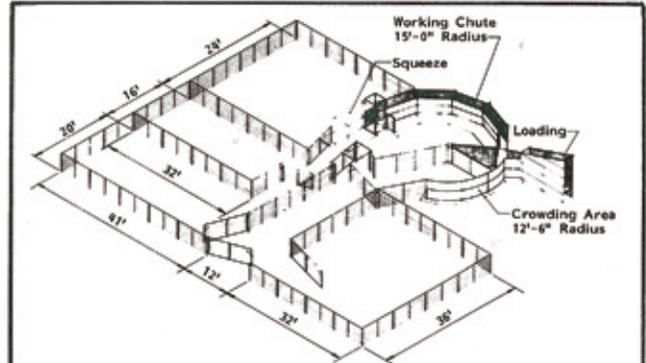
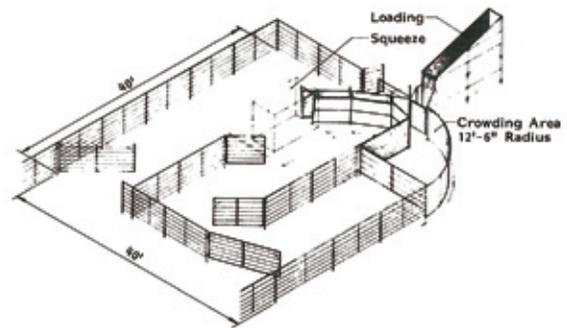


Fig 7-5 Cattle handling facilities for 300 to 1,000 head



**7-8a. USDA #6229, expansible corral.** Circular crowding pen and working chute. Good sorting and loading arrangement. This layout can be a hospital or receiving lot. Consider roofing over the working area.



**7-8b. USDA #6230, corrals with working facilities.** Circular crowding pen and working chute. Good layout for loading and sorting. The plan is adapted to only limited expansion and has no ideal scale location.

Fig 7-8 USDA corral plans 6229 and 6230

**Fig 7-8. USDA corral plans 6229 and 6230.** These plans show pipe, post, and rail fences. Order plans from the addresses listed on the inside front cover of this book.

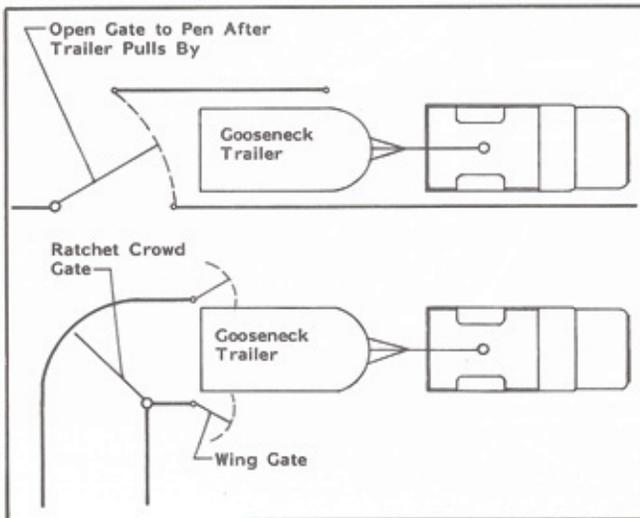


Fig 7-9 Low bed trailer loading

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