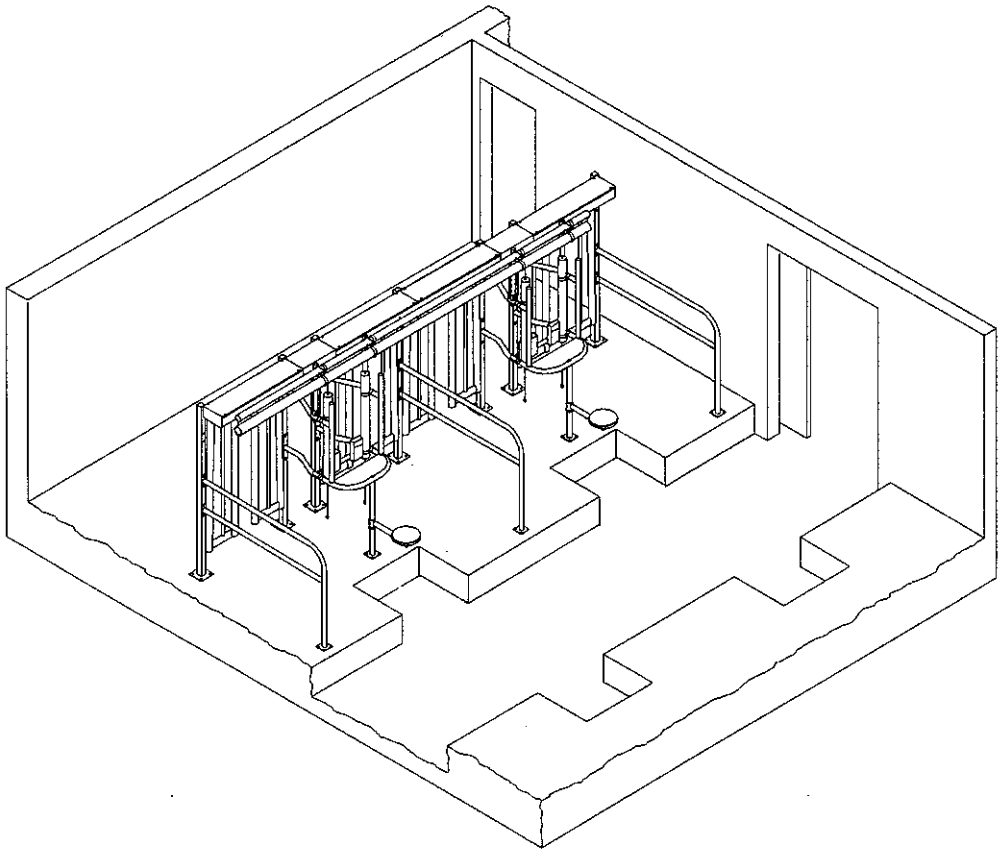
PARLOR LAYOUT MANUAL

for the

WALK - THROUGH FLAT BARN PARLOR SYSTEM



a division of
A. F. KLINZING CO., INC.
Fond du Lac, Wisconsin

U.S. Patent No. 5392731

Rev. 6/95

Part No. S10006

The purpose of this guide is to assist in the planning of a remodeling or expansion of current dairy facilities including the Agromatic Flat Barn Parlor System. While much of the planning for your project may already be completed, this guide should be read carefully before beginning a project of this kind. It is not our intention for this guide to encompass all the unique features of various barns. To help you deal with the unique challenges encountered in your project we recommend you contact your Agromatic dealer or visit existing Agromatic "Flat Barn Parlor System" installations for ideas.

The illustrations throughout this guide were current at the time of printing. The A.F. Klinzing Company reserves the right to improve, change or modify its equipment, parts or options thereof without any obligation of notification or updating of previous equipment. Also, A.F. Klinzing Co., Inc. reserves the right to improve this guide without any obligation to update or notify its holder. You may contact A.F. Klinzing Co., Inc. at the address or one of the telephone numbers listed below to verify that you have the latest edition of this guide.

Address: P.O. Box 29
Fond du Lac, WI 54936-0029

Telephone: (920)922-1970
or (800)800-5824

MAIN POINTS

The main points to consider while planning your project include:

SAFETY The safety of the person(or persons) that will be using this equipment and the health and safety of the animals for which this equipment is intended to be used should be of primary concern when designing and implementing the intended remodeling or expansion project.

COW TRAFFIC The smoother the flow of cow traffic the faster the cows will move in and out of the parlor area and thereby reduce the time spent chasing cows and total milking time.

LABOR EFFICIENCY Another area to consider is increasing the efficiency of the person or persons performing the milking duties. Proper planning during the design phase will be a great help in acheiving the goal of greater labor efficiency.

LOCATION OF THE PARLOR

When deciding where to locate the parlor consider the following items:

- Location of the milkhouse--the closer to the milkhouse the shorter the pipeline
- Where will the holding area and entrance to the parlor be?
- Where will the cows go when they leave the parlor?
- How many parlor stalls will there be? The number of cows to be milked should be the primary consideration when determining the number of stalls to be used.
- Will the stalls be arranged in a single or double rows? Six to eight stalls per row is the most recommended.
- What are the dimensions of the barn? Generally the width of the barn will be more of a limiting factor than the length.
- Depending on the number of stalls will the row(s) of stalls run lengthwise with the barn or across the barn?
- Is there a possibility that you will expand the parlor in the future?
- Will you continue to use preexisting equipment or structures such as stalls, maternity pens, feed alleys or barn cleaner gutters?

- Where are existing structural components of the barn, such as walls, beam(s) and posts to support the beam(s). Can the post(s) be relocated if necessary? How much clearance will there be beneath the beam(s) if needed, for the milking stalls and pipeline?

Determining Dimensions and Characteristics of the Platform

Stall Width
The width required for each stall is four feet from the center of the divider to the center of milkers cubicle (eight feet for each pair of two stalls.)

Note: **The width of each platform should be wider than four feet per stall. If you have a row of four stalls we recommend a minimum platform width of 17 feet. The reason for the extra one foot((4 stalls x 4') + 1'=17') is that six inches of concrete is recommended for an adequate amount of concrete so that the anchors do not break away. Also, the anchoring pads on the uprights extend out three inches from the center of each upright(see figure 1.)**

Platform(Stall) Length
Platform Length is the distance from the rear edge of the platform to the center of the stall upright.

Platform length is important. If the platform is too long cows may stand at the back of the platform and not be far enough forward in the stall to cause the gates to be locked. If the platform length is too short some cows may not have enough room to stand on the platform with the gates in the locked position.

When determining what the platform length will be do not use the length of stanchions or tie stalls currently in use as a guide. Such stalls are designed for confining cows for long periods of time where they could be either standing or lying down in the stall. A cow does not need the same amount of room to stand in the stall an average of eight minutes to be milked.

A.F. Klinzing, Co., Inc. recommends a range of 63 - 68" for platform length. For the average holstein herd the most common platform length will be 64 - 66". See figure 2.

Platform Height

Note: **When considering the height of the platform, keep in mind that at the head of the stall there should be a minimum of 78" between the platform and the ceiling(or floor joist for the hay mow) in order to make adjustments and perform maintenance or repairs(see figure 2.)**

The recommended height of the platform is 8 - 14" with 10 - 12" being most common. This height range should be comfortable for most cows to step up. If you have any doubts about a cow's ability to handle such a height check to see how high cows step up into most freestalls. It is not uncommon for freestalls to be 10" or more above an alley. On the other hand some people want an even higher step to reduce bending during milking. Increasing the platform height could result in injured teats from dragging on cement or increased milking time because the cows climb the higher step more slowly.

When using the operator's seat included with Agromatic's "Flat Barn Parlor System" a higher platform is no longer a necessity. Much of the stress on your back and knees is relieved when sitting while prepping and attaching milking units.

Thickness of Concrete Platform
In general the thickness of the concrete should be at least six inches except in the area where the stall uprights will be anchored to the concrete. In this area a minimum thickness of ten inches is recommended in case the stalls need to be "reanchored" using longer concrete studs(see figure 2.)

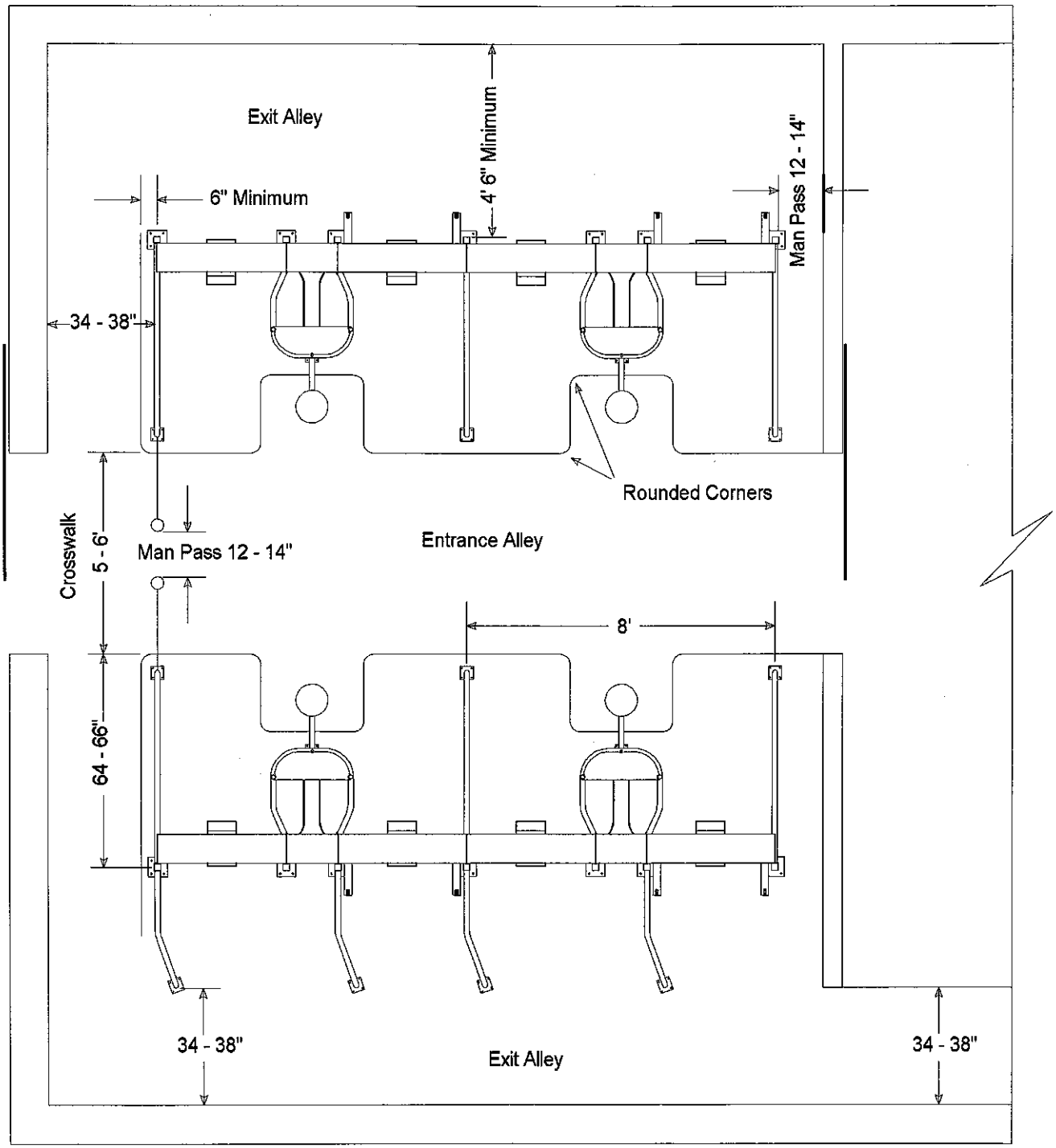

Exit Alley
4' 6" Minimum
6" Minimum
Man Pass 12 - 14"
34 - 38"
Rounded Corners
Crosswalk
5 - 6'
Man Pass 12 - 14"
Entrance Alley
8'
64 - 66"
34 - 38"
Exit Alley
34 - 38"

Figure 1.

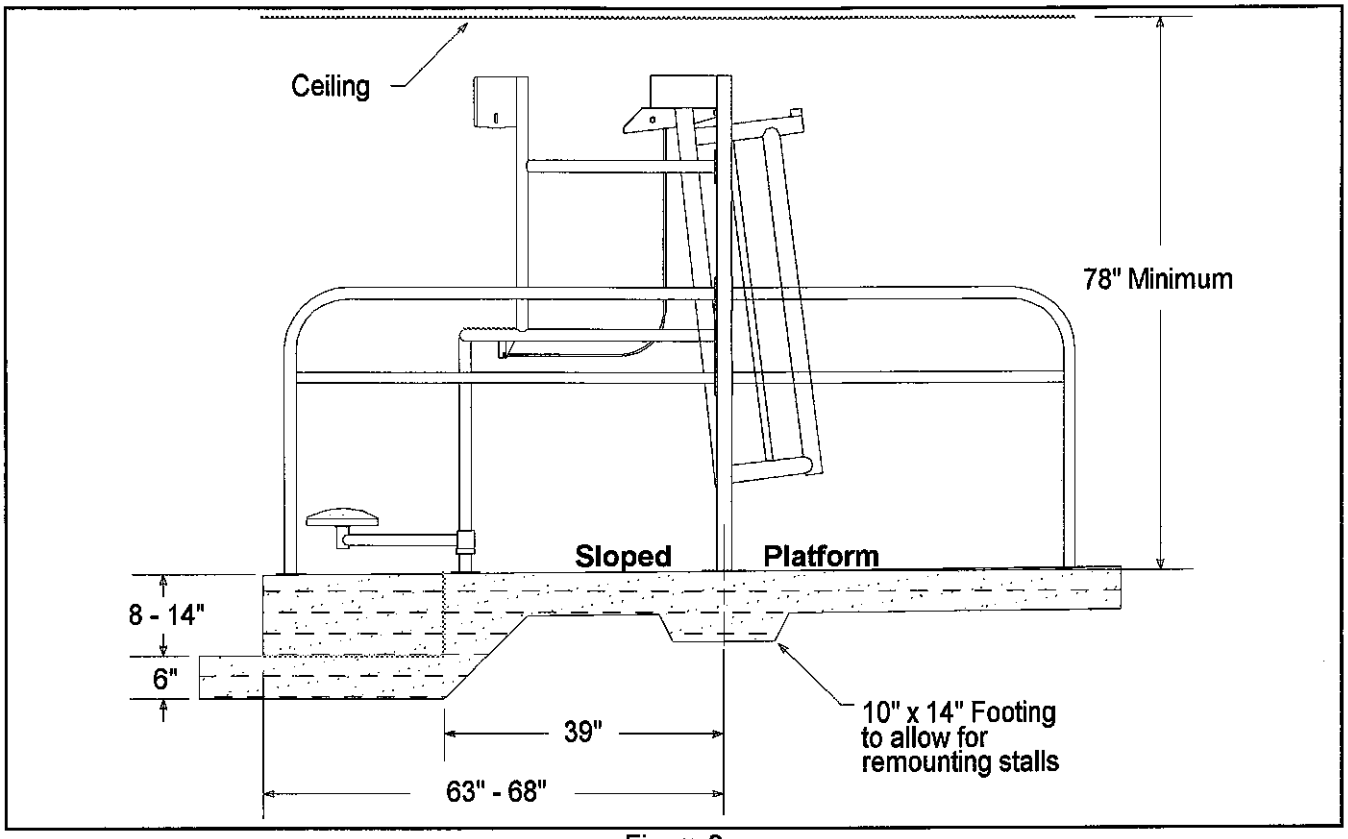


Figure 2.

Sloping the Cow Platform and Alleys
We strongly recommend that all concrete surfaces have a minimum slope of one inch for every ten feet in length. The cow platform and exit alleys in front of the stalls should all be on one constant slope. The entrance alley and milkers cubicles should all be sloped to drains or gutters intended to be used for clean up. See figure 2.

Round Corners
Rounding the corners on the edge of the platform and inside the milker's cubicle will help in preventing possible injury and build-up of debri in the inside corners. See figure 1.

Width of center alley
The minimum width recommended for the center alley is five feet. We feel that this is the minimum amount of space needed to manuever around cows and vice-versa during milking. If you plan on allowing cows to congregate in the center alley while waiting for a stall to become open we recommend that the center alley be considerably wider than the five feet minimum.

What about using an existing barn cleaner gutter?
For options on using an existing barn cleaner gutter in conjunction with the Agromatic Flat Barn Parlor System see the section entitled "INSPECTION STANDARDS/PARLOR CLEAN-UP" beginning on page 7.

Low-line systems feasibility and regulations.
As was stated earlier in this publication each barn is unique and a low-line milking system may or may not be feasible in your situation. We strongly recommend consulting with your milk inspector during planning and before beginning work on this type of installation.

Exit Alleys/Walkways
Recommended dimensions for exit alleys vary depending upon the amount of room available, the routing of the cow traffic and whether or not the optional exit dividers will be used. For recommended alley sizes see figure 1 for examples.

For alleys or walkways intended for use only to move cows to the holding area or away from the parlor the recommended width is 34 - 38".

Positioning of posts

If it is necessary and possible to relocate column posts, the best place to put them is in line with the divider/ end sections. These dividers are spaced eight feet apart on center. If any posts are located as such the dividers can be cut and clamped to each side of the post as shown in figure 3. Optional straight divider tubes (Part No.S11055) are also available that can be clamped to the post using tee-clamps also shown in figure 3.

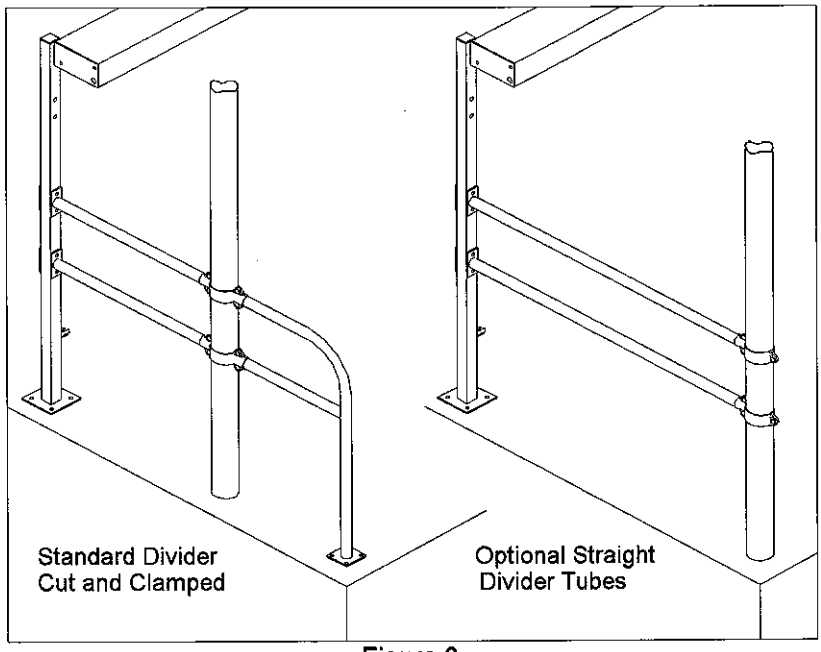


Figure 3.

EXIT DIVIDERS

Exit dividers can be used to turn cows toward the parlor exit as they leave after milking. Exit dividers are available to turn cows either to the left(Part No. S11060) or right (Part No. S11061.) An advantage of using the exit dividers is that any cows crossing in front of the stalls as they exit will be less likely to disturb those cows being milked.

Use of exit dividers should be seriously considered when there is six feet or more from the front of the stalls to the nearest wall or divider.

Standard length of the exit dividers is 42" but they can be cut down to as short as 30". The reason for the 30" minimum length is that for the gates of the stall to fully open forward a minimum of 12" to the bend in the divider is necessary. See figure 4.

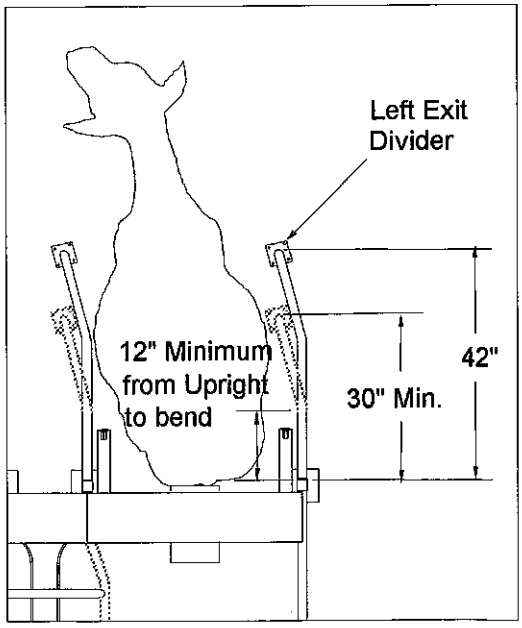


Figure4.

NOTE: **Failure to install any exit dividers other than in the manner indicated above could result in the premature failure of some components of your Agromatic Flat Barn Parlor Stalls and as such voids all warranties relating to those items.**

FOOT BATH(S)

Any foot bath should be located so that the cows **must** walk through it, preferably as they exit the parlor. The foot bath should be the full width of the exit walkway so a cow cannot walk around it and long enough so that a cow would not try to "jump" it.

HOLDING AREA

The recommended size for a holding area is the number of cows in the largest milking group multiplied by 15 square feet. The width of the holding area should be kept narrow when possible to make it easier to "funnel" cows into the parlor entrance(s).

In herds that are milked twice daily the number of cows in a milking group should not exceed one hours throughput for the parlor. For herds milkled three times per day the size of the milking group should not exceed 3/4 of an hour throughput for the parlor.

Having an uphill slope heading into the parlor will help keep the cows headed toward the parlor entrance. This slope should be two to three inches per ten feet in length. If the slope is too great the cows will stand perpendicular to the parlor entrance.

Should you consider a "Split" Holding Area?
Since cows may prefer a routine such as being milked in a stall on the right side of the parlor, a split holding area with multiple entrance gates may be a consideration when planning the parlor. The more stalls in the parlor the more helpful a split holding area may be for smoother cow flow.

CROWD GATE

We strongly recommend that you install some type of crowd gate to help move cows into the parlor. Using a crowd gate should greatly reduce the amount of time spent chasing cows in from the holding area.

Entrance and exit gates.
Gates at the parlor entrance and/or exit can be used to control cow flow. An entrance gate can be used to control the number of cows in the entrance alley at any given time. An exit gate can be used to prevent cows from returning to the parlor after having left and creating congestion in the exit alleys and walkways.

MILKING EQUIPMENT AND AUTOMATION

To acheive maximum throughput with the Agromatic Flat Barn Parlor System it is recommended that you use one milking unit with automatic detachers for each stall. The center module of the Agromatic "Flat Barn Parlor System" is designed to accomadate most automatic detachers. If you plan on using "Arm" detachers have your dealer contact Agromatic prior to ordering. For information on the use, installation and cost of any milking equipment contact your milking equipment dealer or manufacturer.

INSPECTION STANDARDS/PARLOR CLEAN-UP

The standards used for inspection of milking facilities vary form one state to another so recommendations in this manual should be used only as a place from which to start. There should be some kind of barrier between the parlor and holding area so that only the parlor is subject to inspection. If milking equipment is to be cleaned "in place" in the parlor the standards of inspection will be much higher and require a larger up front investment in renovation of an existing barn to meet these standards.

We recommend that the parlor be cleaned after each milking session. While there shouldn't be much manure in the parlor after milking you should plan for a way to handle the small amount there will be. Also, there should be a way to handle water used to wash down the concrete and stalls. All cement surfaces should be sloped toward any drain or gutter so that gravity moves the water to its destination. Figure 6 shows several options that should adequately deal with handling this waste.

Example A - The manure would be scraped to the holding area where it goes into a barn cleaner gutter or is cleaned with the rest of the holding area using an alley scraper, tire scraper or some other method. The wash water is taken away by drain pipe(s) installed in the barn cleaner gutter before it was filled in. The entrance alley should be sloped toward the drain inlets. The drain outlet(s) can be at the gutter in the holding area or at some waste storage facility.

Example B - The existing barn cleaner gutter is left in place and the cow platform spans above the gutter. The gutter would be exposed in the milker's cubicle. The entrance alley should be sloped toward each of the cubicles. Manure would be scraped to the gutter and wash water would follow the slope of the concrete to the gutter opening.

WARNING!

In order to prevent serious injury to those who are milking and the animals, the portion of the gutter exposed in the milkers cubicle should be covered with some type of grating as shown in figure 5.

Example C - A drain covered with grating runs the length of the entrance alley. All concrete is sloped toward the drain. The drain outlet(s) can be at the gutter in the holding area or to some waste storage facilitythe same as in Example A. Manure would be scraped to the holding area or gutter also as in Example A.

Example D - All waste is scraped or washed into the barn cleaner gutter in the holding area. The milkers cubicles are sloped toward the entrance alley which is sloped toward the gutter in the holding area.

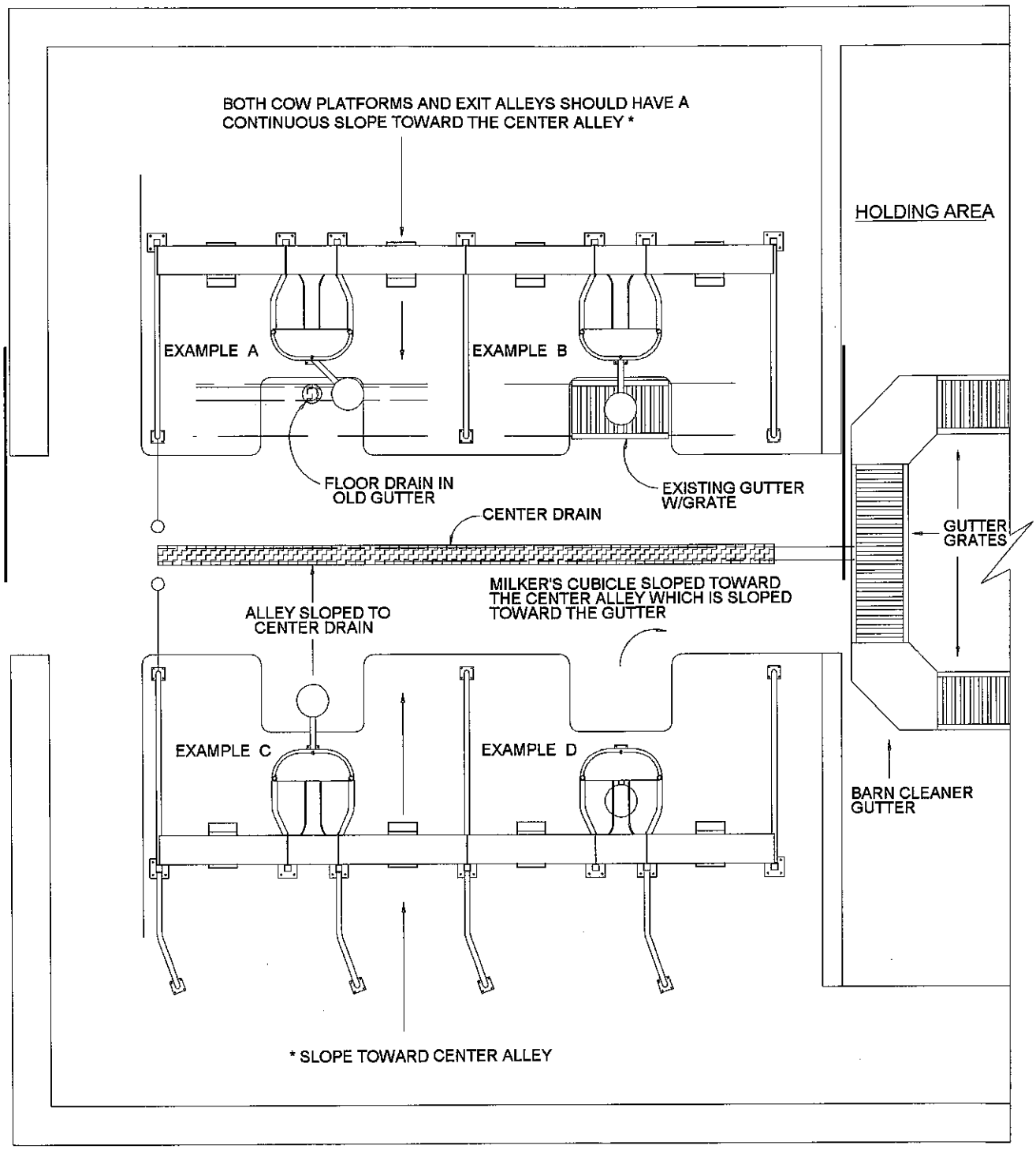

BOTH COW PLATFORMS AND EXIT ALLEYS SHOULD HAVE A CONTINUOUS SLOPE TOWARD THE CENTER ALLEY *
HOLDING AREA
EXAMPLE A
EXAMPLE B
FLOOR DRAIN IN OLD GUTTER
EXISTING GUTTER W/GRATE
CENTER DRAIN
GUTTER GRATES
ALLEY SLOPED TO CENTER DRAIN
MILKER'S CUBICLE SLOPED TOWARD THE CENTER ALLEY WHICH IS SLOPED TOWARD THE GUTTER
EXAMPLE C
EXAMPLE D
BARN CLEANER GUTTER
* SLOPE TOWARD CENTER ALLEY

Figure 5.

PARLOR LAYOUT EXAMPLES

On the following pages are three examples of a parlor layout, each with a different configuration of stalls. Keep in mind that all barns are unique and that the following examples may not be appropriate for some barns. Refer to the previous pages to help you decide how one of these examples or some other layout would work in your facility. For dimensions of stalls, walkways, etc. see figure 1, page 3.

Example 1: Figure 6 shows eight stalls configured in a single row installed across the width of the barn. As shown in this example there should be multiple entrances from the holding area to make it easier for cows to find an open stall.

Example 2: Figure 7 shows eight stalls configured in two rows(double four) installed along the length of the barn. Cows on the right side of the barn use a walkway to cross the barn and pass in front of the cows on the left side as they exit.

In this example the barn cleaner is still in use throughout the entire barn.

Notice the area at the top where hidden lines indicate possible position of an enlarged platform for future expansion of the parlor.

Example 3: Figure 8 shows 16 stalls configured in two rows(double eight) installed along the length of the barn. Cows exit on each side of the parlor where there is a return alley along each side of the holding area.

There are two entrance gates, one for each side of the parlor. The parlor and holding area near the entrance gates are both split down the center. Note the man passes through the panels dividing the parlor.

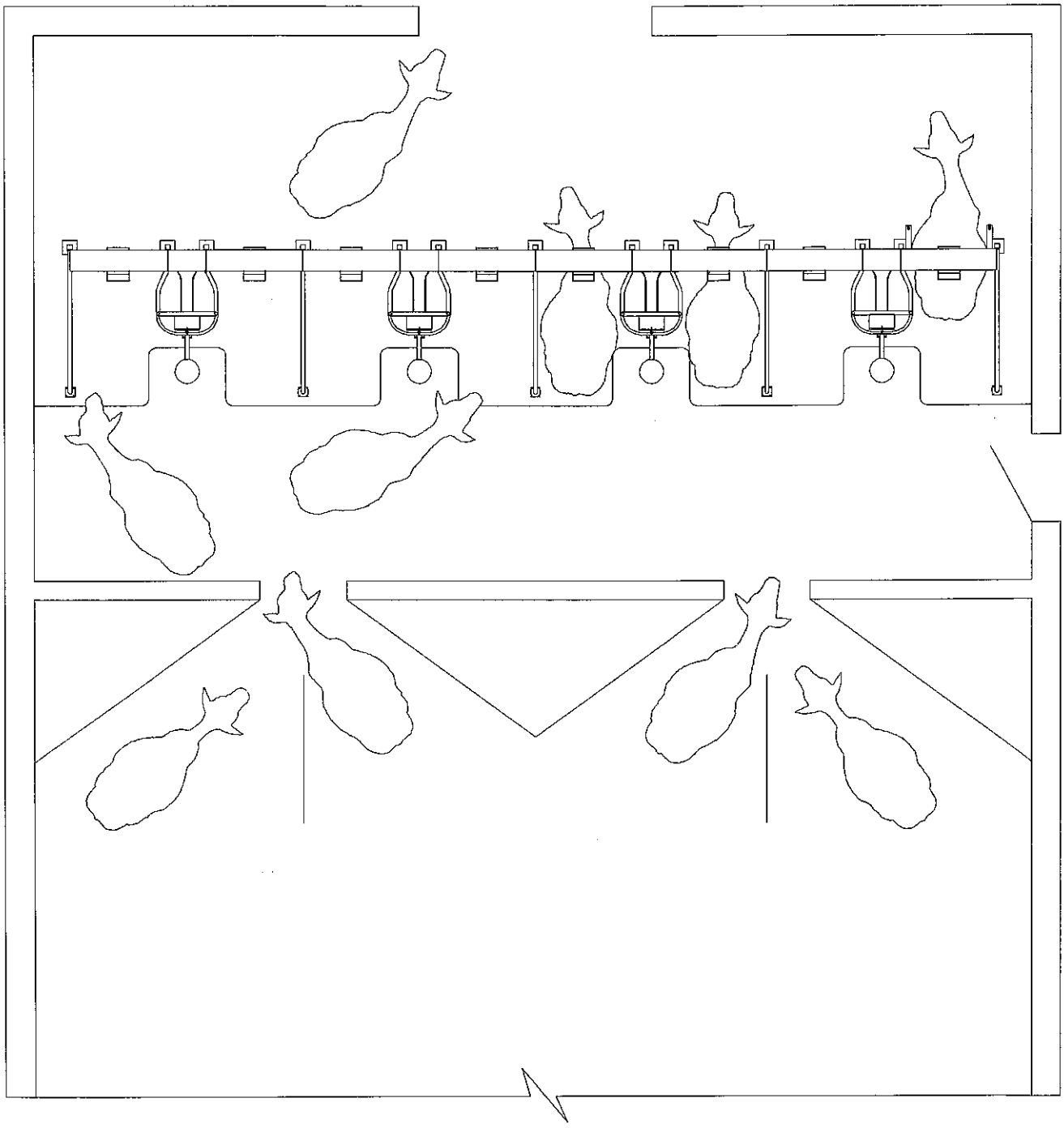


Figure 6.

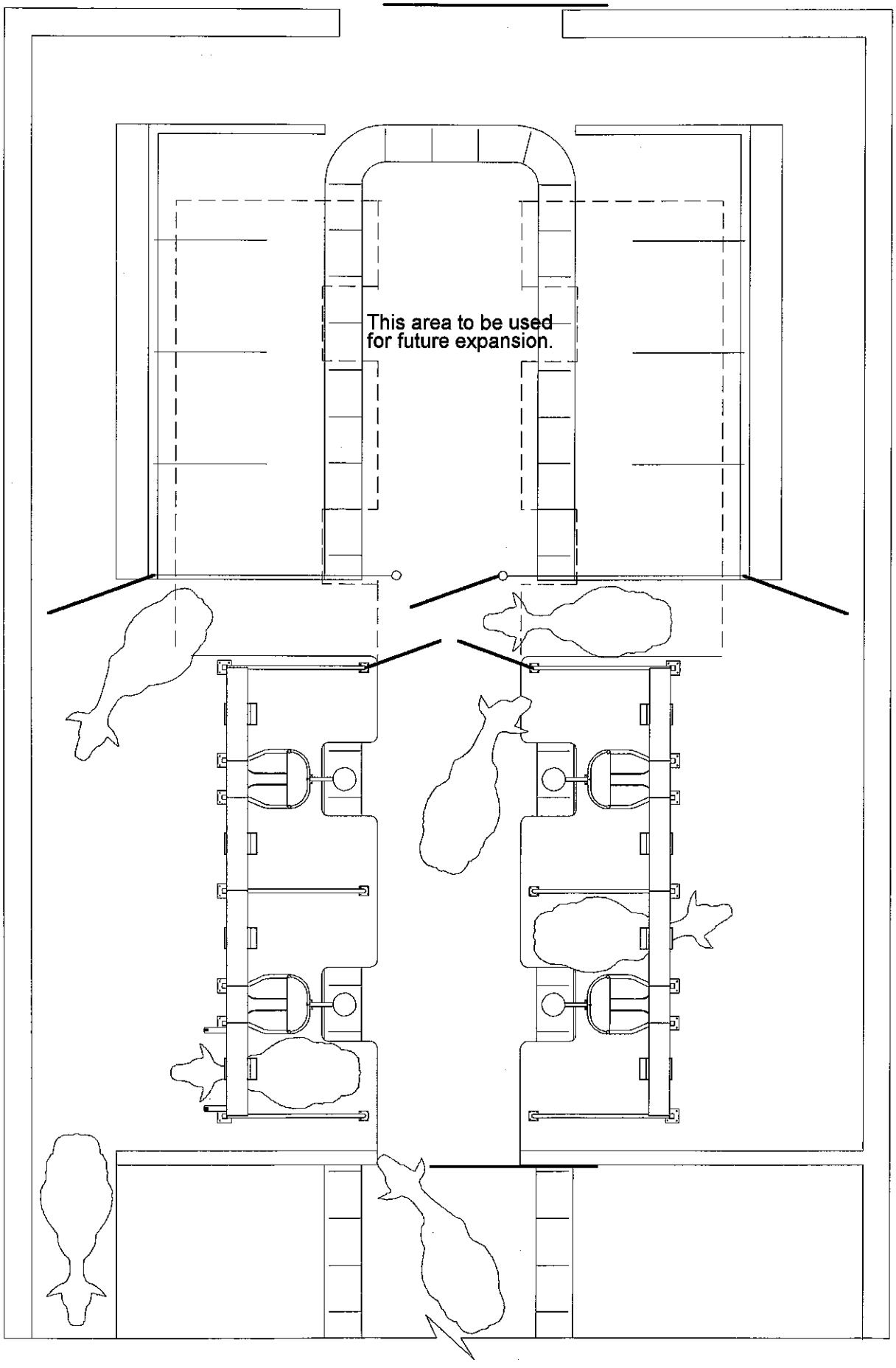


Figure 7.

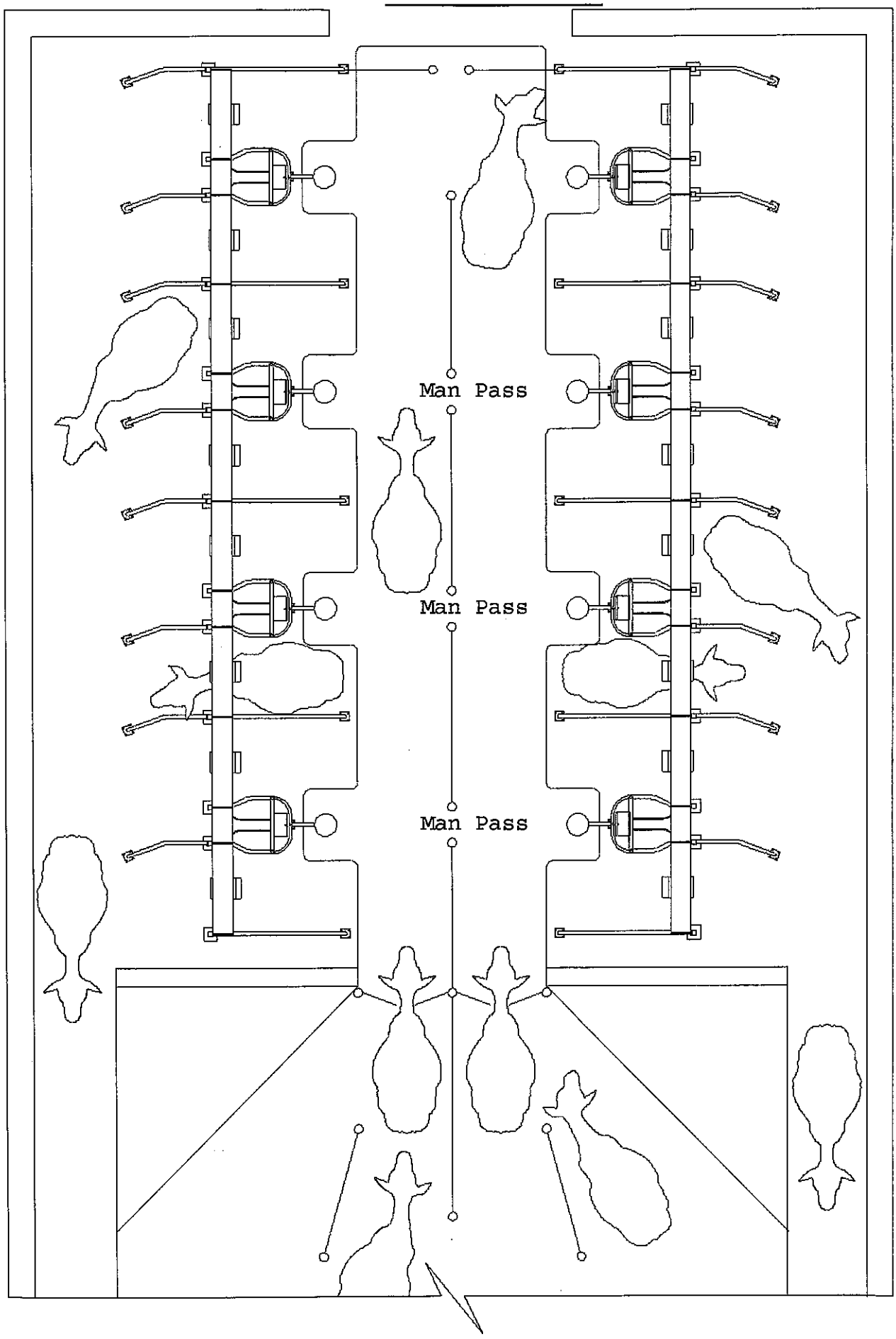


Figure 8.