Getting Started in Confinement:

Cow-Calf Spacing and Ventilation

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Overview

* About Me
* Why Confinement?
* Types of Confinements
* Spacing Needs
* Facility and Ventilation Concerns
* Final Thoughts

Why Confinement?

* Land Availability/Prices
* Seasonal Need---MUD
* Drought
* More Efficient Feed Management
* Better Reproductive Management

* Expansion
* Starting from scratch

Confinement Options

Dry Lot vs Barn

Seasonal vs Year-Round

Types of Confinement Barns

What Animals Are Going to be Confined?

Dry cows

Cows at calving

Cows with calves on the side

Calves after weaning

Spacing: Dry lots

Dry cows	250ft^2 (K- State)	300-500ft^2 (MWPS)
Cows with calves on the side	400ft^2 (K- State)	500-800ft^2 (U of NE)
Calves after weaning	125 ft^2 (K- State)	150-300ft^2 (MWPS)

Spacing: Bedded Barns

Cows with calves on the side	80-120 ft^2 (Iowa State)	
Dry cows	25-30 ft^2 (MWPS)	40 ft^2 (dairy NRCS)
Calves after weaning	20-25 ft^2 (MWPS)	25 ft^2 (NRCS)

Spacing: Slatted Floor

Dry cows	17-20 ft^2 per 1000 lbs (MWPS)
Calves after weaning	10-15 ft^2 (MWPS)

Feed Bunk Space

Cows need 24-36 linear inches per head

* by 90 days of age, calves can eat 1% BW in forage

Recommended Bunk Height:

Cows	22-24 inches
Calves	18 inches
Feeders	20-22 inches

Feed Bunk Considerations

Age, size, and weight variability of cows will increase likelihood of aggression/competition

Cows usually get more roughage than feeders, deeper feed bunks are often needed to accommodate the bulk

Feed ration can be used to reduce feed cost and/or limit feed

Calves can be weaned much earlier, but they also need access to bunk space and should be adapted to high energy ration (creep)

Water Volume Requirements

Animal Type	Hot Weather	Cool Weather
Cow-Calf Pair	18-25 gal/day	11-13 gal/day
Dry Cows	11-15 gal/day	6-7 gal/day
Bulls	13-27 gal/day	7-9 gal/day
Feeder (400lb)	7-11 gal/day	4-5 gal/day
Feeder (1000lb)	14-22 gal/day	8-11 gal/day

Water Considerations

The higher the dry matter intake, the higher the water requirement

The full day's water supply should be available in a 4 hour window

A water trough that is a good height for cows is too high for calves

Waterer Specifications

Characteristic	Size - Company 1	Size - Company 2	Size - Company 3
Length	51 inch	84 inch	37 inch
Width	23.5 inch	22 inch	36 inch
Overall Height	24 inch	27 inch	25 inch
Drinking Height	16 inch	22 inch	
Heater	548 W	500 W	700 W
Capacity	20 gal	60 gal	28 gal
Herd Capacity	200 beef, 100 dairy	200 beef, 100 dairy	200-250 beef, 50-120 cows

Flooring

Dry, dusty conditions can cause respiratory infections.

Wet, muddy conditions cause poor performance.

Calves need dry bedding

Slatted Floors:

cows and feeders: 1.5 - 1.75 inch spacing between slats

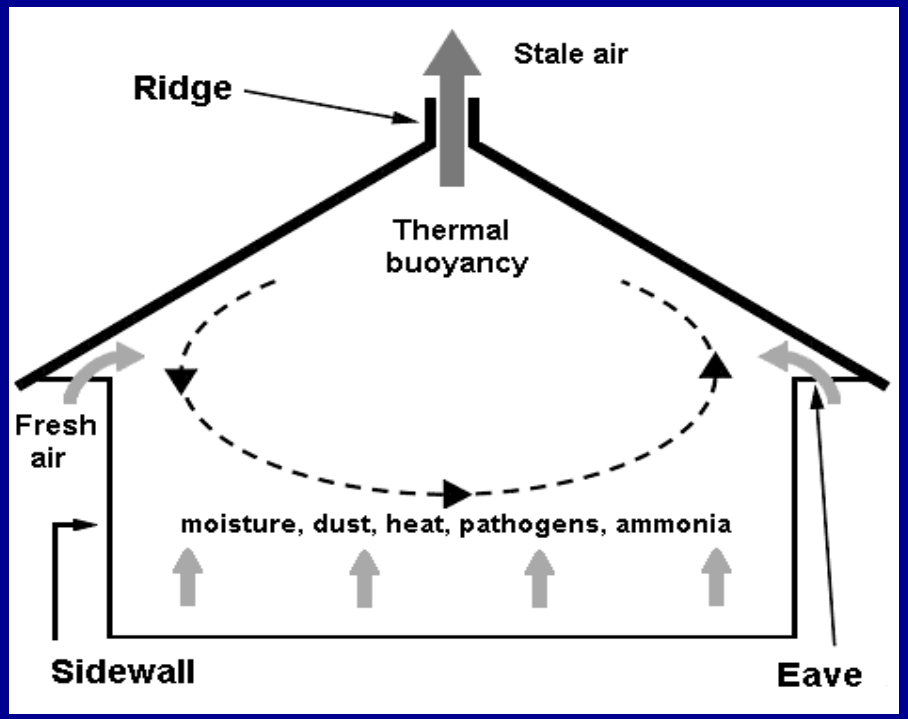
calves: 1.25 inch spacing between slats – Not Recommended

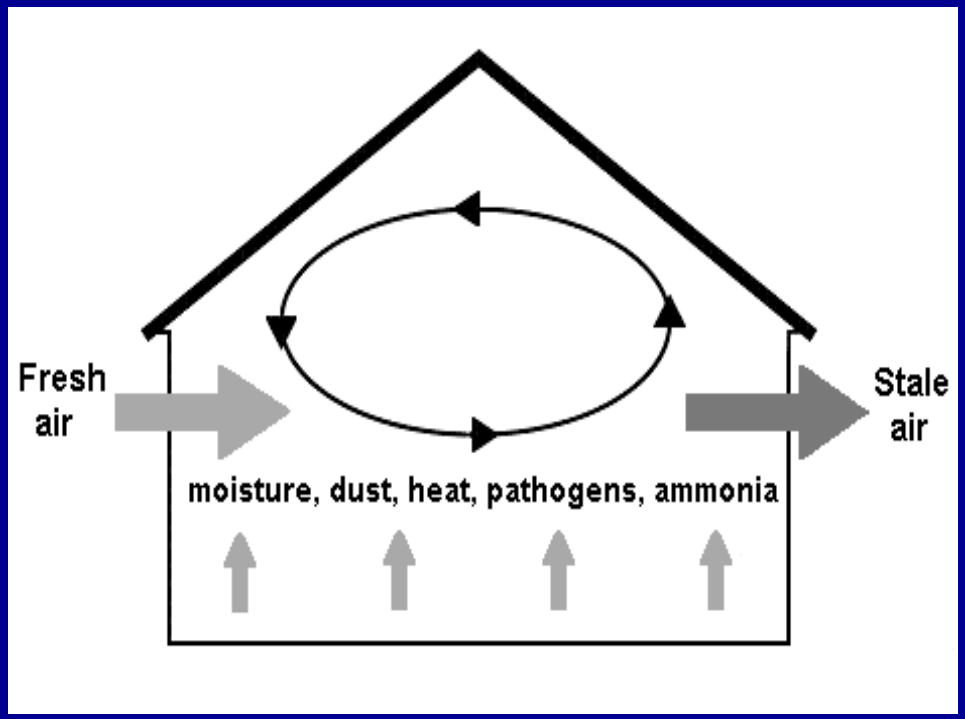
Ventilation Rate Needed

CFM/Animal

	Cold Weather	Mild Weather	Hot Weather
Cows	50	170	470
Calves	15	50	100
Feeder	30	80	180

Types of Natural Ventilation

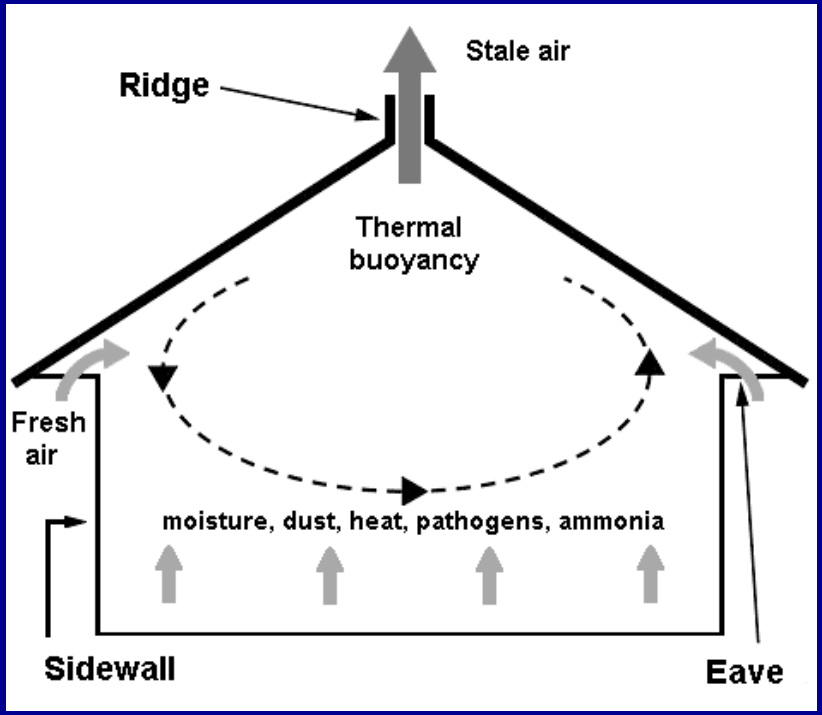




Buoyancy **Wind Driven**

http://www.omafra.gov.on.ca

Factors Affecting Ventilation Rate



Buoyancy

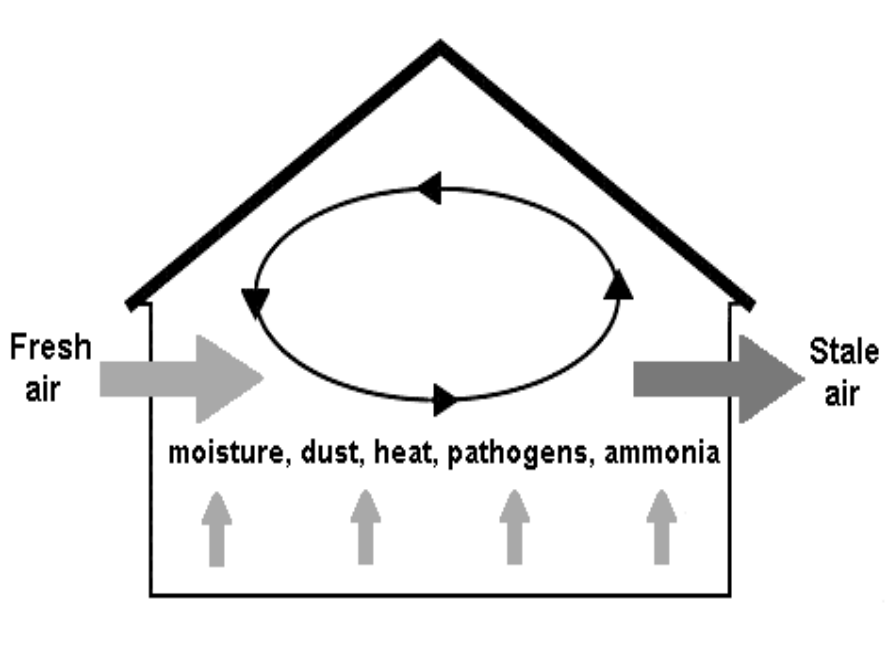
Ventilation Controlled By:

- Temperature Difference
- Area of Inlet
- Area of Outlet
- Height Between Inlet and Outlet

http://www.omafra.gov.on.ca

Examples of Ridge Vent/Dual Eaves

Factors Affecting Ventilation Rate



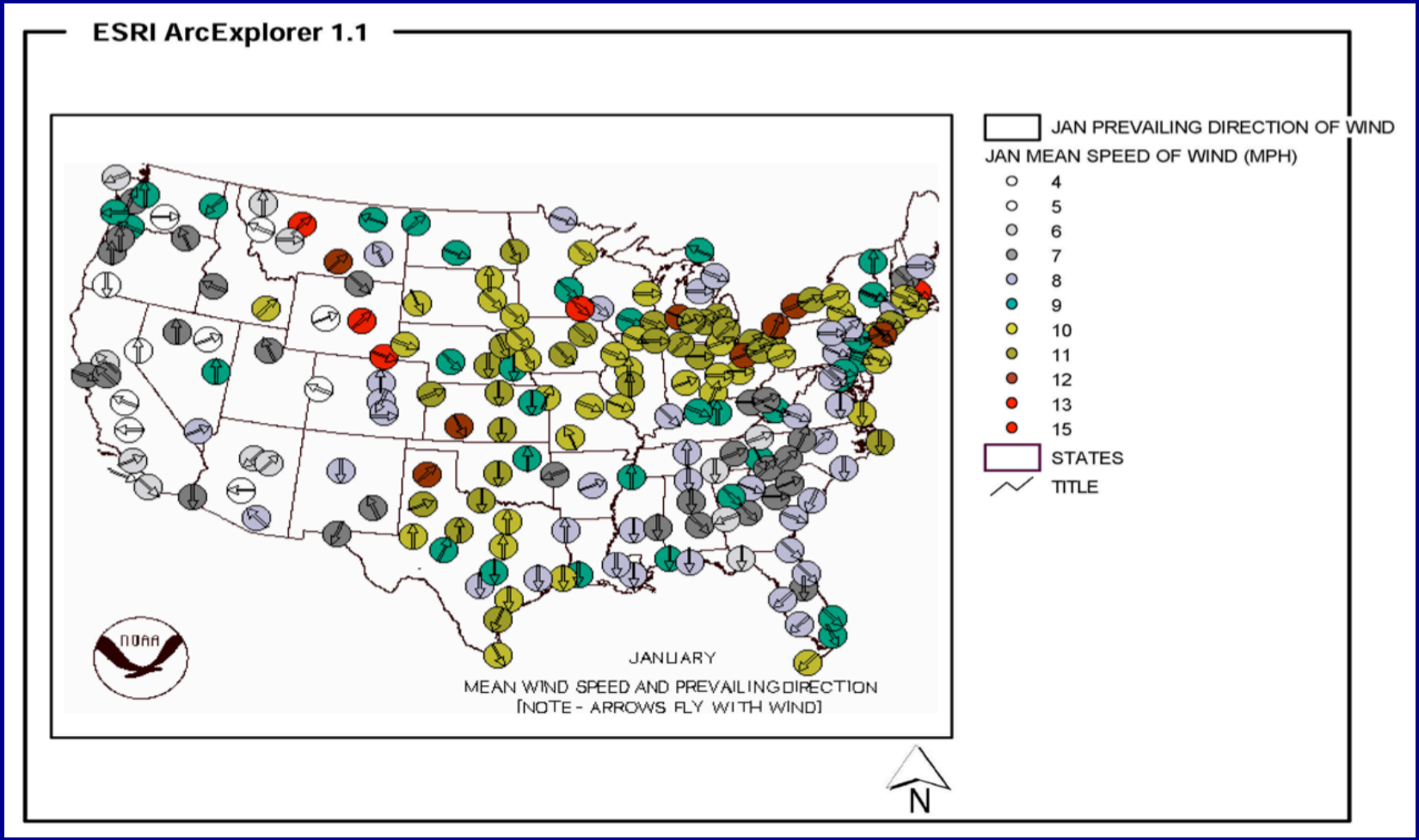
Ventilation Controlled By:

- Wind Direction
- Wind Speed
- Area of Inlet
- Area of Outlet

Wind Driven

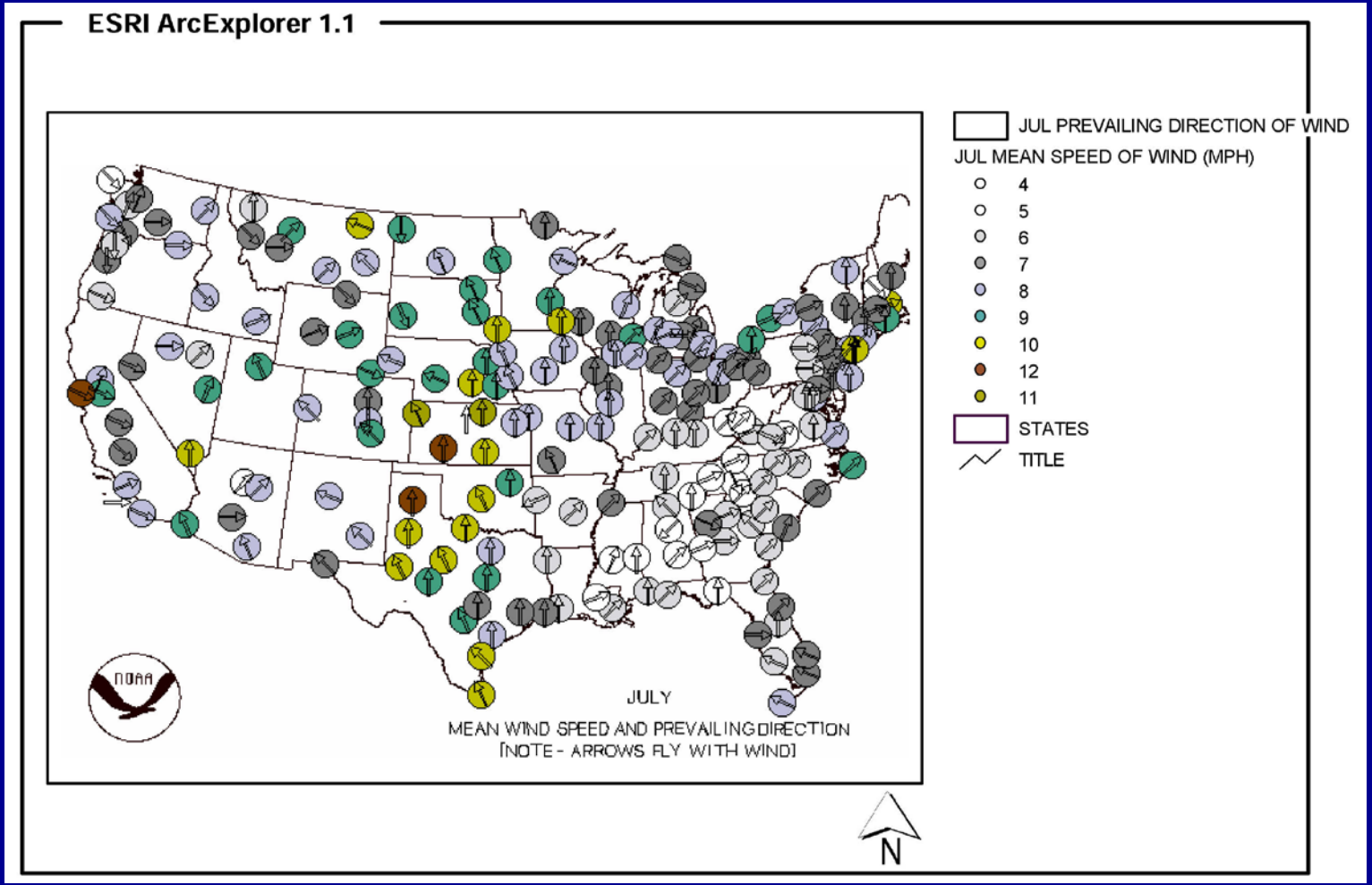
http://www.omafra.gov.on.ca

Map of January Wind Speed & Direction



http://hurricane.ncdc.noaa.gov/cgi-bin/climaps/climaps.pl?directive=order_details&subrnum=&region=Lower%2048%20States

Map of July Wind Speed & Direction



http://hurricane.ncdc.noaa.gov/cgi-bin/climaps/climaps.pl?directive=order_details&subrnum=&region=Lower%2048%20States

Examples of Wind Driven System

Separation Between Barns

Issues with Calves in Confinement

Calving Season Management: dystocia and disease

Diseases: scours, navel infections, and coccidiosis

Cow-Calf Pairs 0-3 Months:

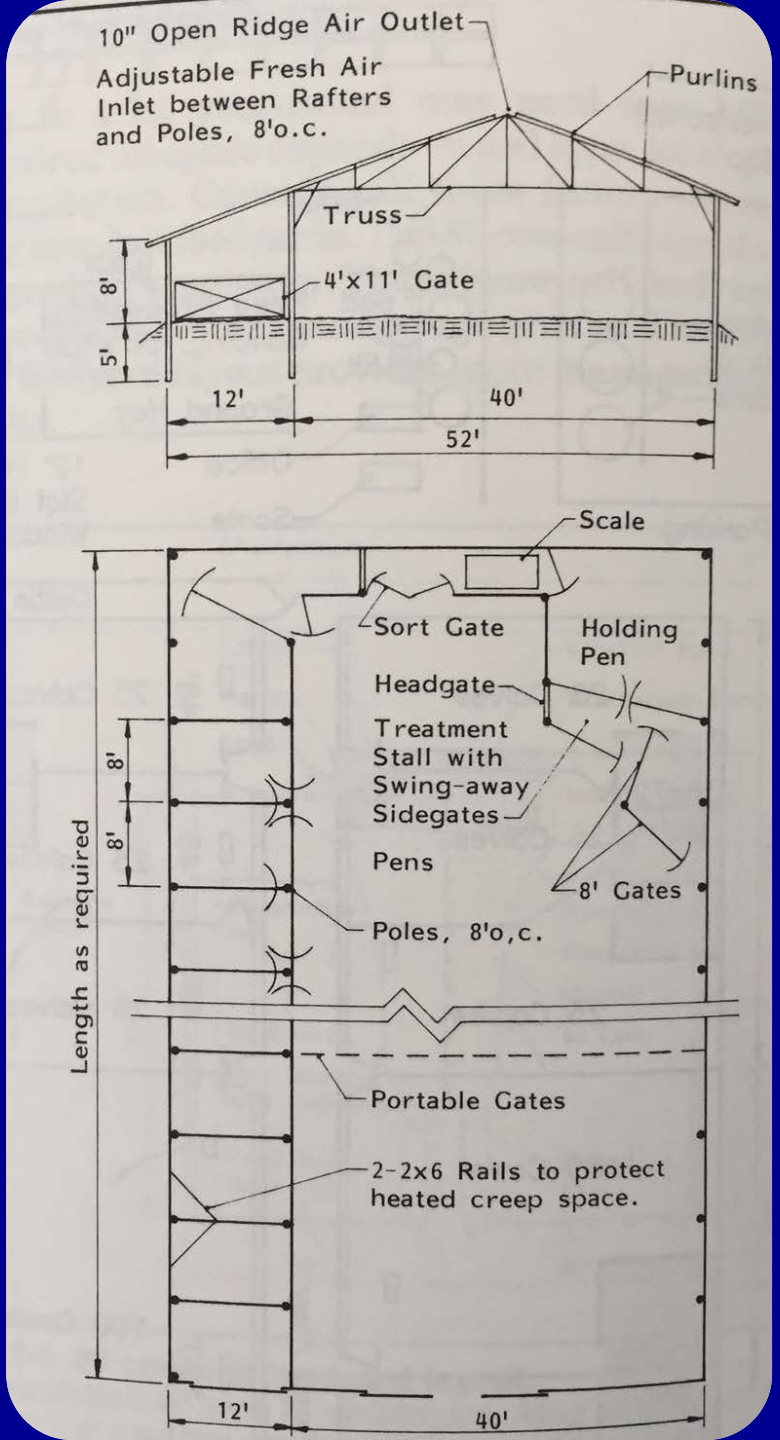
Bully cows/Slow moving calves

Access to feed/water

Protection from weather

Calving Options: Calving Pens

MidWest Plan Service



Calving Options: Sandhill Calving System

Area 1- Week 0&1 Cows with Calves

Area 2- Week 2 Cows with Calves

Area 3- Week 3 Cows with Calves

… move pregnant cows to new area every 7-10 days

When youngest calf is 4 weeks old all can be comingled

Examples of Creep Areas

http://www.texas-trading.com/calf-creep-feeders.html

Creep Areas

Additional Bedding

Supplemental Feed

Protection from Wind

Protection from Cattle

Final Thoughts

Managing cow-calf operation in confinement:

* Labor increases- poor management causes more negatives
* More precise/individual management is possible
* Is NOT the same as managing feeders in confinement
* The economics have to be evaluated based on your site

Questions?

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