

Environment

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Structure Items

- Layout
- Access
- Walls

Layout

- Three distinct areas
 - Bedded area
 - Scraped feed alley
 - Feed alley

Bedded Area

- Area per cow -
 - 85 to 100 sq. ft./cow (H)
 - Less for smaller breeds or heifers
 - 4' high concrete wall - 270 days of manure storage

Bedded Area (cont.)

- Depth based on feed bunk length per cow (24 - 30") - can it be converted to free stalls?
- Equipment access

Bedded Area (cont.)

- Separation from scraped feed alley
 - 4' high concrete wall.
 - Fence on top?
 - At least two animal access locations

Scrape Feed Alley

- 10' to 12' wide
- Grooved to reduce slipping
- Manure transfer to liquid manure storage
- Optional - Gates to confine animals to bedded area while cleaning

Feed Alley

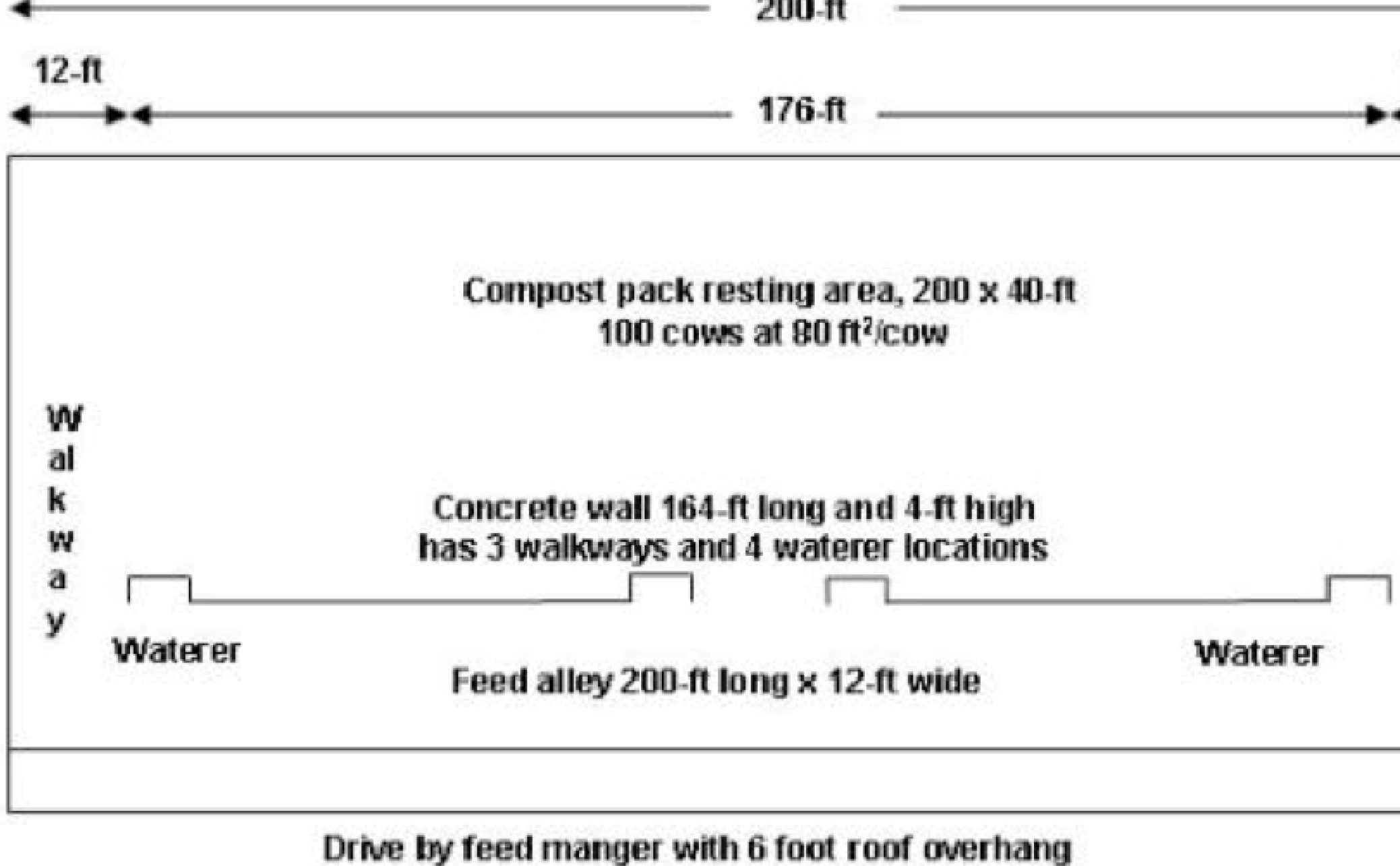
- 16 to 20' wide
- 3 - 4" above feed scrape alley
- Headlocks or feed rail

Access

- Equipment access for stirring and cleaning
 - one or two doors
 - Gates across door openings
- Cow access from feed scrape alley

Water

- Locate to keep bedded area dry



Example Layout



Feed alley & wall



Bedded area



Liquid Manure

Wall Structural Design

- Concrete walls with top at least 4' above floor
 - 35 psf equivalent fluid density manure load
 - 100 psf uniform load on face - equipment
 - Post loads

Post Structural Design

- Wind load on walls
- Truss loads
- Pinned at base on top of wall
- Shear wall

Ventilation - barn openings

- Same approach as free stall barns
- 14 to 16' side walls above the solid wall with curtains
- Open ridge - 2" per 10' building width

comfort

- Circulation fans
- Sprinklers at feed manger
 - Start operating at 70 F

Thank you for your
attention