

# Cow Campus

*A centralized calving and winter-drought feeding location.*

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The location had a preexisting building placed on a summit position in close proximity to farm manager's house. The soils had approximately 4 inches of topsoil and a restricted root layer when the survey was conducted in 1976. Organic content in the soils is low making the soil droughty. Runoff is rapid and permeability is low.

The facility is a hub in which three neighboring pastures are used to simultaneously manage cows at different stages of pregnancy while also providing a centralized winter-drought feeding area. The system is designed with all-weather surfaces to control the creation of mud and provide animals with a solid footing. Gates and lanes are used to move cattle into designated areas for calving, monitoring, and feeding and watering. Bedding on the calving floor provides a clean, dry surface that is needed for young animals.

There are numerous systems implemented around the facility to increase productivity and profit, while simultaneously decreasing the adverse effects of farming on the environment. Although this looks expensive and complicated, the "Cow Campus" was created by simply adding individual practices to improve existing operations. The end result is a complex that improves production while reducing the drudgery of farming.

## Lanes and Alleys <sup>A</sup>

- **Surfaces**- Use all-weather surfaces to control the creation of mud and provide solid footing for animals (grid).
- **Gates & Hardened Lanes**- Utilize to move cattle into designated areas for calving, monitoring, feeding, and watering.

## Centralized Waterer <sup>B</sup>

- A tire waterer was installed to distribute harvested water.
- The calculated water volume is approximately 700 gallons.
- The idea behind its use is to provide numerous animals with access to clean water at the same time. An ample water volume provides a water source as the supply is replenished.
- Divided the tire in half allows groups from two different pastures. Placing the waterer in a hub allows many groups to utilize the source.
- Tire should be cleaned weekly, or as needed.

## Water Harvesting <sup>C</sup>

- Precipitation is collected while at the same time diverting stormwater. Harvested water is then used to meet animal requirements.
- The roof collection area is ~4,000 square feet.
- A one-inch rainfall event provides 3,400 gallons of water.
- Four tanks are used to hold 12,000 gallons.

## Calving Barn <sup>2</sup>

- *Pre-existing structure*
- Floor was redone using an all-weather surface.
- Pens of various sizes were created to accommodate groups or individuals.
- Bedding was added to create dry conditions and keep animals away from manure.

## Primary Winter-Drought Feeding Area <sup>D</sup>

- *Concrete surface was pre-existing.*
- A centralized feeding area provides the ability to feed multiple groups of animals.
- Roll bales are stored in an adjacent barn to reduce travel time, fuel, and pollution.
- The close proximity of the house and hay means the operator spends less time feeding.

## Manure Storage <sup>E</sup>

- Manure is a resource. It has a value as a fertility and as an organic matter material. It is applied on the farm to reduce inputs.
- A stack pad was created to handle the manure from the feeding structures.

## Filter Strip-Vegetative Terrace <sup>F</sup>

- It acts as a filter strip to remove nutrients, pathogens, and sediment from runoff originating from the feeding area.
- The ability of the vegetated filter strip to remove contaminants has been enhanced by ripping the sod along the contour. This act creates a terracing effect that slows runoff and allows it to better infiltrate the soil profile. The result is deeper root growth and increased vegetative production.
- This area is then allowed to be creep grazed by calves or flash grazed by mature cows.

## Calf Nursery <sup>3</sup>

- All-weather surface placed on a summit position
- Provides better monitoring
- Safe area for calves

## Covered Hay Feeding Structure <sup>H</sup>

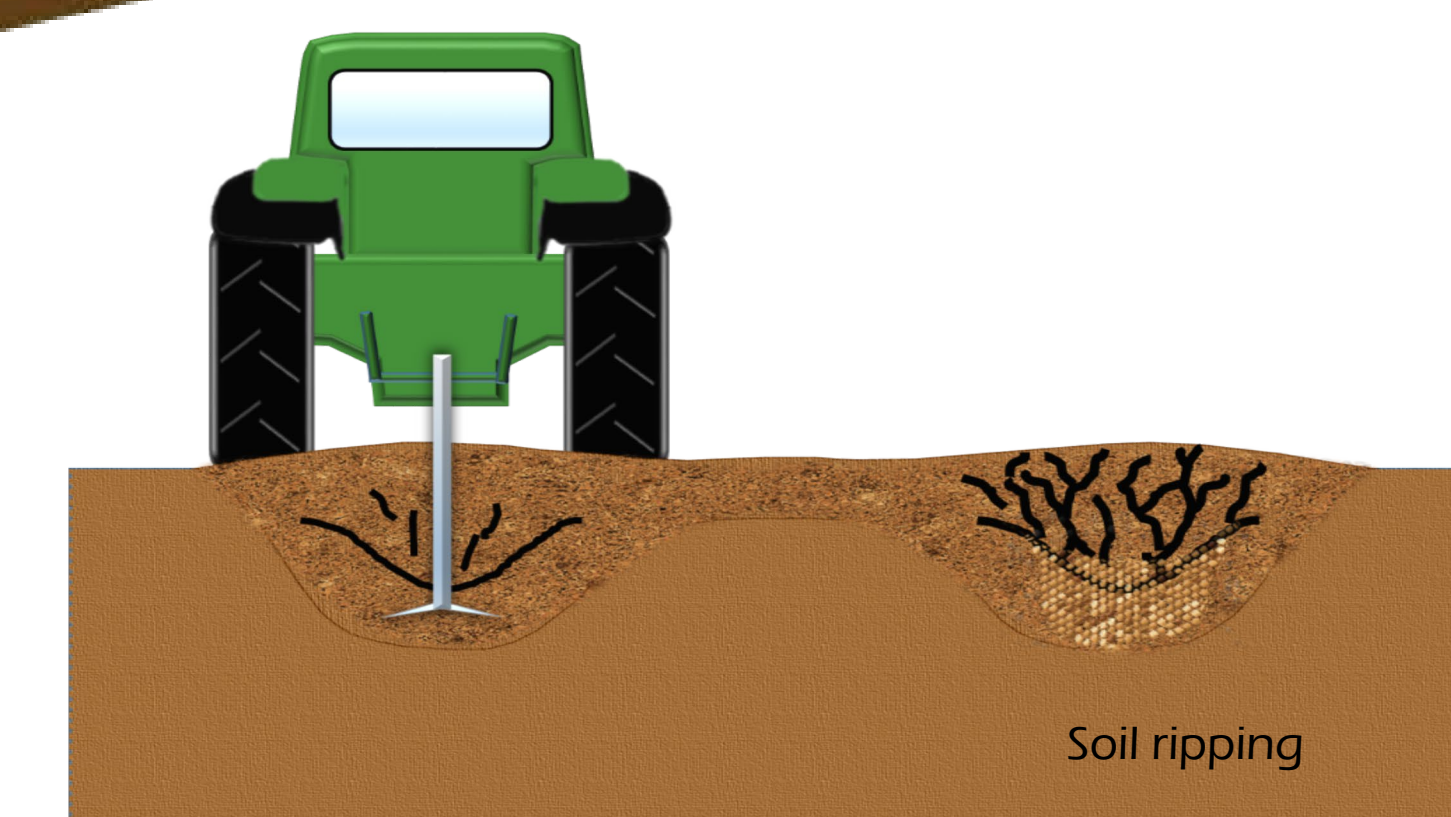
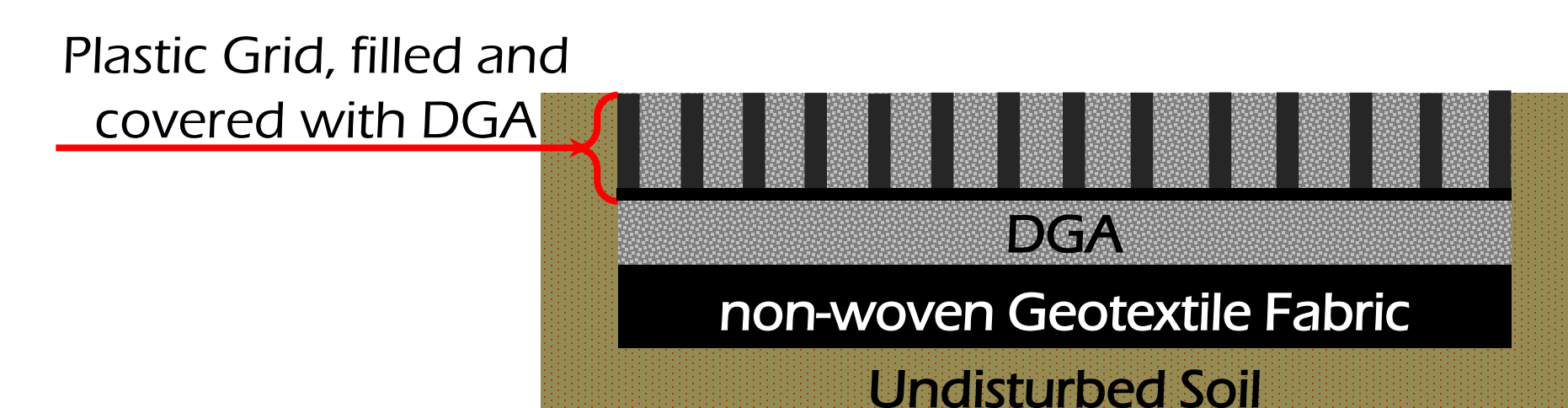
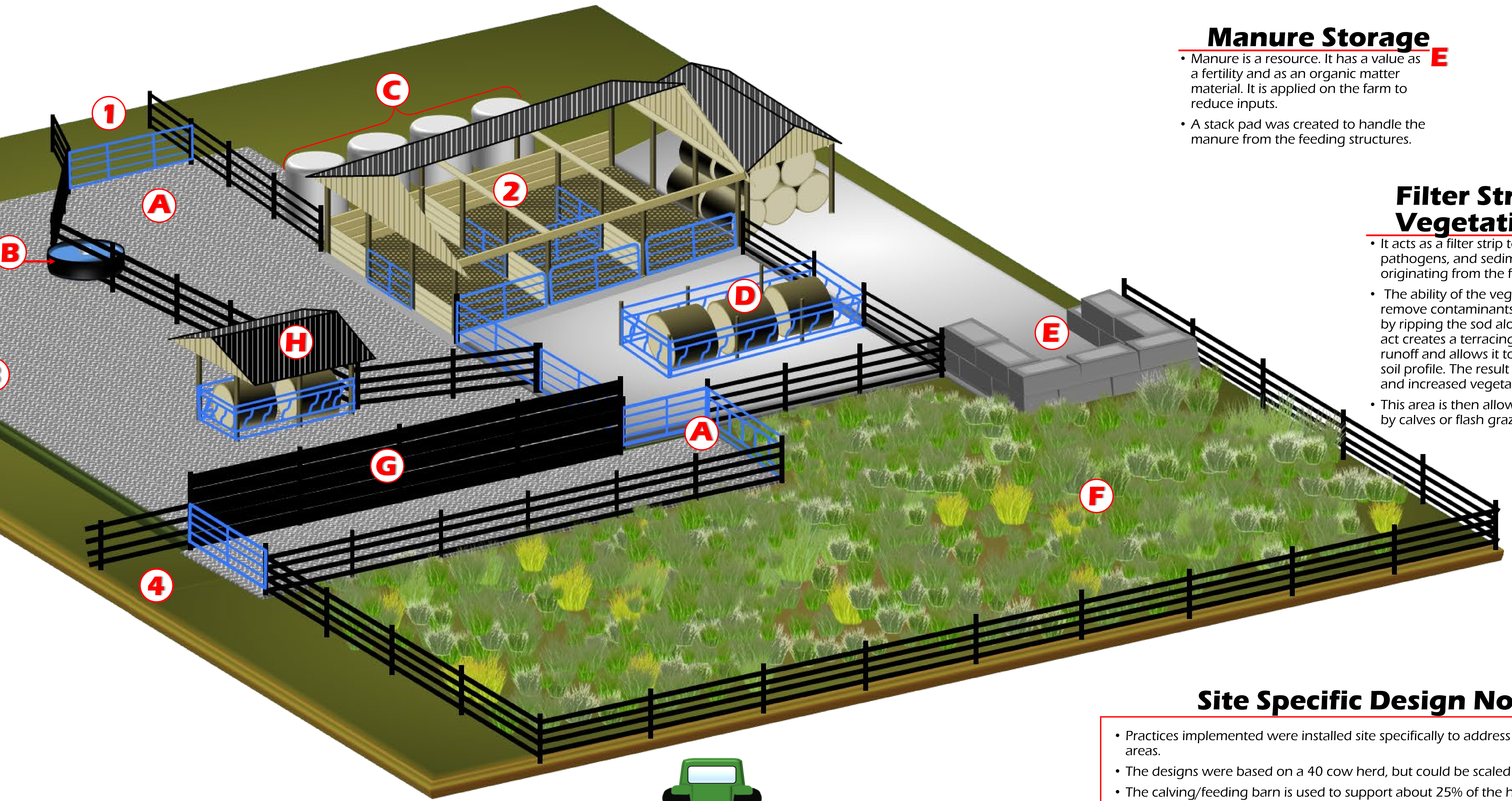
- Hay fed in the nursery area is covered to prevent spoilage and provide better forage for calves.

## Wind Break <sup>G</sup>

- *Pre-existing structure*
- Mud and wind both increase the cold stress cattle experience in the winter.
- Wind protection can reduce the need for increased winter feed intake, increase calving success, and provide shade to help reduce heat stress during the summer.

## Legend

- 1: Pasture 1 holds the heavy bred cows. As pregnant cows come out of pasture 1 to the shared waterer and main feeding area, they are checked for calving status. If calving is observed as imminent, they are moved into the calving barn.
- 2: The Calving/Feeding Barn is used to provide shelter for cattle. It is used to provide confinement, protection, and handling and care.
- 3: This small pasture acts as a nursery and allows easy monitoring of pairs. Once calves are observed feeding and records are made, the pair is turned into this pasture. It provides suitable surfaces and a windbreak for protection. Cows are provided hay housed under a roofed structure, and have access to the shared tire waterer.
- 4: After monitoring pairs for a few days, pairs are turned out into a larger pasture, which represents typical pastures for the farm.



## Site Specific Design Notes:

- Practices implemented were installed site specifically to address issues or problem areas.
- The designs were based on a 40 cow herd, but could be scaled to any size operation.
- The calving/feeding barn is used to support about 25% of the herd using a rotating system. Each cow calf pair spends between 24-48 hours in the barn.