



Livestock Fencing Basics

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Definition of a Legal Animal Fence in Michigan

- Fence means a structure or natural barrier which is sufficient to confine an animal
- The design will be different based on the type of animal contained i.e. pigs vs. goats vs. deer
- The Fence Technical Guide of USDA's NRCS is the standard that is often referenced in Michigan. Is a 12 page document.
- This guide for example says beef cattle fence can include: non electric high tensile 5 strand min; electrified high tensile 4 strand min; woven wire minimum of 42" high with at least 1 additional wire strand at least 4" above; barbed wire 4 strand min; or wooden boards to a minimum height of 54"





Cost Comparison of Fencing Types (costs include all materials & labor - \$16.25/hr.)

- Board Fence - 4 rail \$9.00 - \$10.00 per foot
- Barbed Wire 5 strand - \$1.55 – 2.25 per foot
- Woven Wire - \$2.00 – 4.50 per foot
- Hi-tensile Electric fence 4 wire - \$.95 - \$1.25 per foot (no energizer)
- Flex Netting Electric 40” height - \$0.90 - \$1.15 per foot (no energizer, temporary fence)
- Poly Wire w/h 9 conducting wires in one strand - 1 wire \$0.20 per foot (no energizer)



Plan/Design/Prepare/Build

- plan it on paper first
- prepare the site, level land cleared of brush, old fences & trees pays dividends for years to come
- then build



Fencing Safety When Building & Repairing

- Wear safety glasses & gloves during installation & repair
- Also wear steel toed shoes & ear protection when driving posts
- Ground energizers properly & only connect one to the same fence
- Label electric fences with “Danger – Electric Fence” signs near public areas
- Try not to run fence lines parallel to power lines (stay at least 30’ away) & do not affix fencing wires to utility poles,
- Do not electrify barbed wire fences



Today's Electric Energizers

- Low impedance fencers deliver a high powered charge lasting for a very short duration of no more than 0.0003 of a second
- Safer for humans and animals but still very effective
- Do not have the high risk of fires caused by shorting
- Create a psychological barrier that animals do not want to encounter repeatedly
- Low electrical usage & cost (less than 8 cents/month)
- Types: plug in, battery operated, solar powered



How Much Electric Fence Power Is Enough to Keep Animals In?

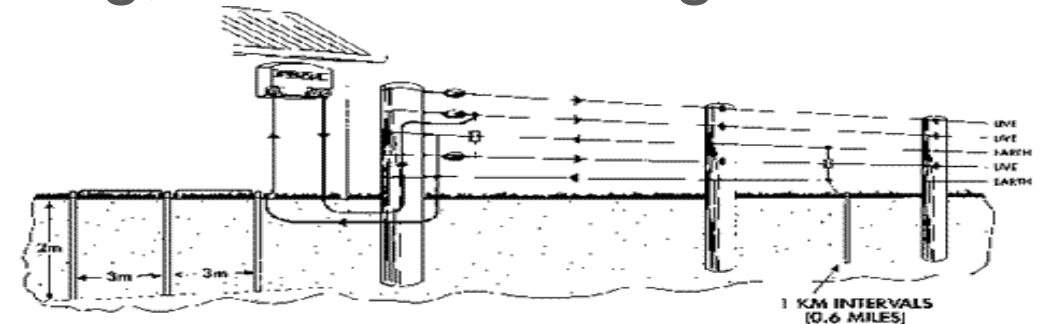
- Above 5000 volts = Great animal control
- Above 4000 volts = Good animal control
- Above 3000 volts = Fair animal control
- Above 2000 volts = Poor animal control
- Above 1000 volts = No animal control



Energizers Rules of Thumb



- Acres, or miles of fence by itself is not a good measure of need
- Need one joule of energizer output per mile of fence, regardless of the number of wires (not stored joules) Dr. Jim Gerrish, national grazing consultant
- Stored joules X 0.70 = output joules
- Need 3 feet of galvanized ground rod or pipe, per each joule; 3/8" or larger, each section being 6 – 8' long, driven into the ground spaced at least 10 feet apart



Advantage of Hi Tensile Fence Wire over Other Types

- 12.5 gauge, class 3 Hi Tensile wire is high carbon steel making it strong (1,100 – 1,500 lbs. of breaking strength) for its weight, with a protective galvanized coating (but not resistant to Round up)
- Ease of construction
- Durability 20 – 30 year life
- Ease of maintenance
- Effective/conductive
- Low cost (under \$0.02/ft)



Fence Building Strategies

- Build a strong perimeter fence to keep animals on your property, while internal fences dividing paddocks should be flexible and can be lower cost with fewer strands of wire
- Match the life expectancy of permanent fencing materials so that the system lasts to about the same age i.e. hi tensile galvanized wire with treated fence posts (both are rated to last 20 – 30 years)



Poly Wire, Poly Tape, Braided Twine, & Coated Wire

- Polyethylene carrying strands of copper or stainless steel wire – lite wt., cuts easily, can tie knots by hand
- Tapes & coated wire are more visible to animals but still carry a charge



A Fence is Only As Strong As It Corners

- Corner wood post should be braced and:
 - at least 6" – 7" diameter for 5 or 6 wire hi tensile fence
 - at least 4" – 5" diameter for 1 or 2 wire hi tensile fence
 - at least as deep in the ground as the height of the top wire
 - with a 5" diameter brace post that is 10' long for fences 42" tall or taller, or 8' long for fences under 42" in height



Types of Corner Braces

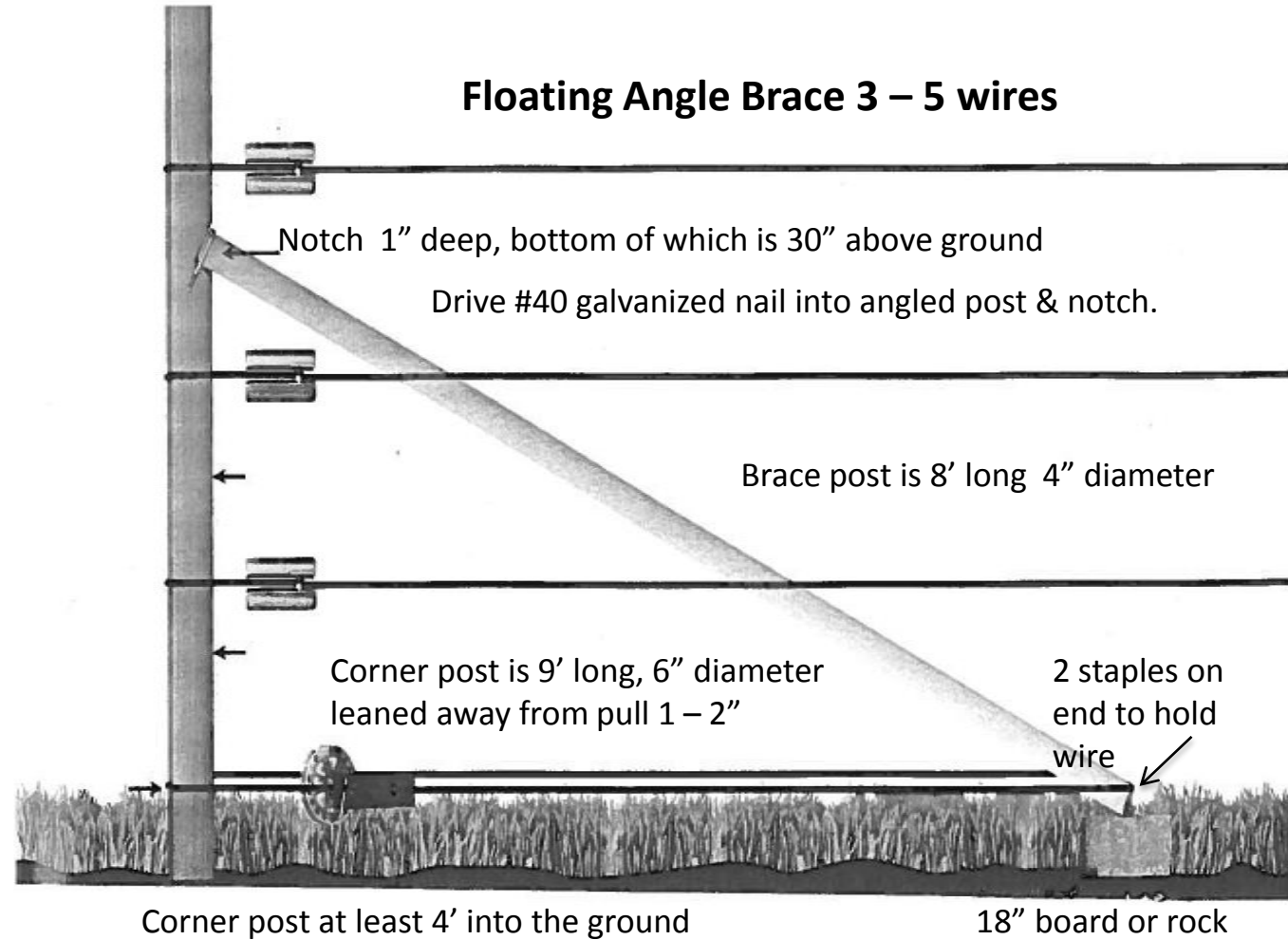
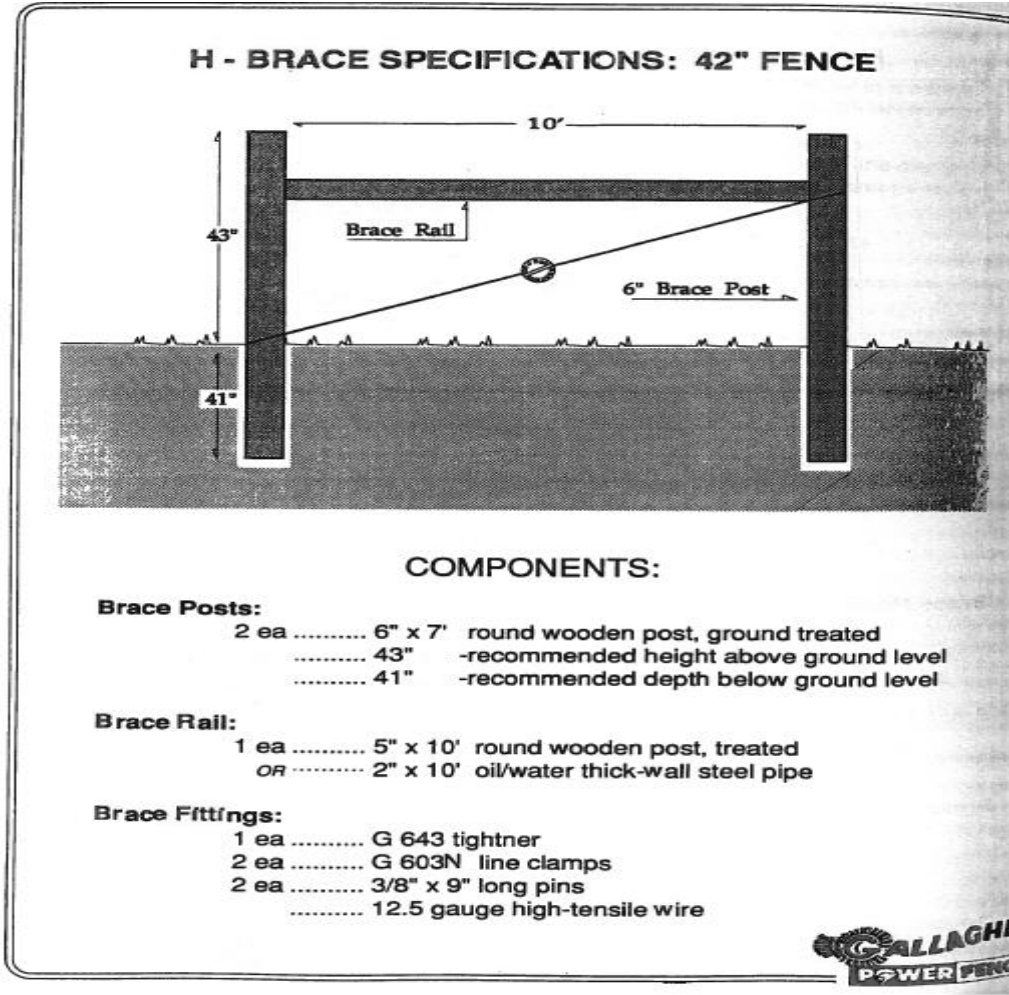
- Floating diagonal brace
 - adequate for up to a 5 wire hi tensile fence
 - requires only 2 wood posts vs. 3 for an H brace

H Brace

adequate for up 8 wire



Corner Specs



Fence Posts Come in all Sizes & Colors



Posts

Wood Un-treated
15 – 20 year life



Metal
30 – 40 year life



Wood Treated
25 – 30 year life



Fiberglas
15 – 30 year life



Fiberglas Posts

- Post is the insulator
- In-expensive, durable, light weight, simple to install
- Use sun-guard only to avoid slivers



Step In Plastic Posts

- Post is the insulator
- Easy to tread into hard soils
- Handle multiple wires
- Come in various sizes, configurations and colors



With hi tensile fence lines “stays” can be enough

- Hi tensile wires are tensioned by strainers pulling the fence taunt against the corners
- To keep the wires spaced properly along the line stays are attached



Insulators - pinlocks



Wrap around Insulators



Checking the Fence

- Check on a regular basis (wildlife, weather, foliage, human error, etc.)
- Nothing beats getting out and walking the fence lines

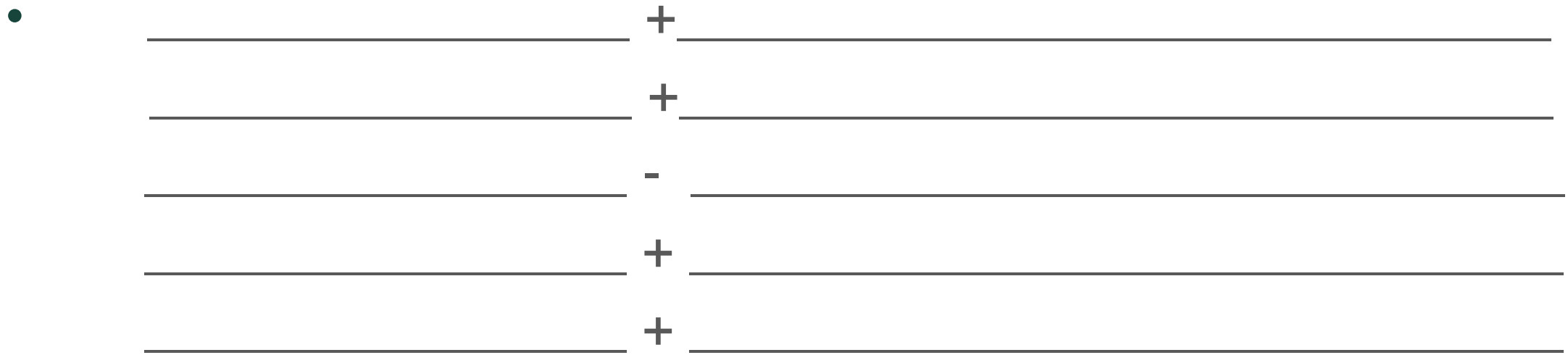


Reels for Temporary Lines of polywire or polytape

- Geared reels simplify polywire set-up and take down
- Will hold 800' – 1,500' of polywire



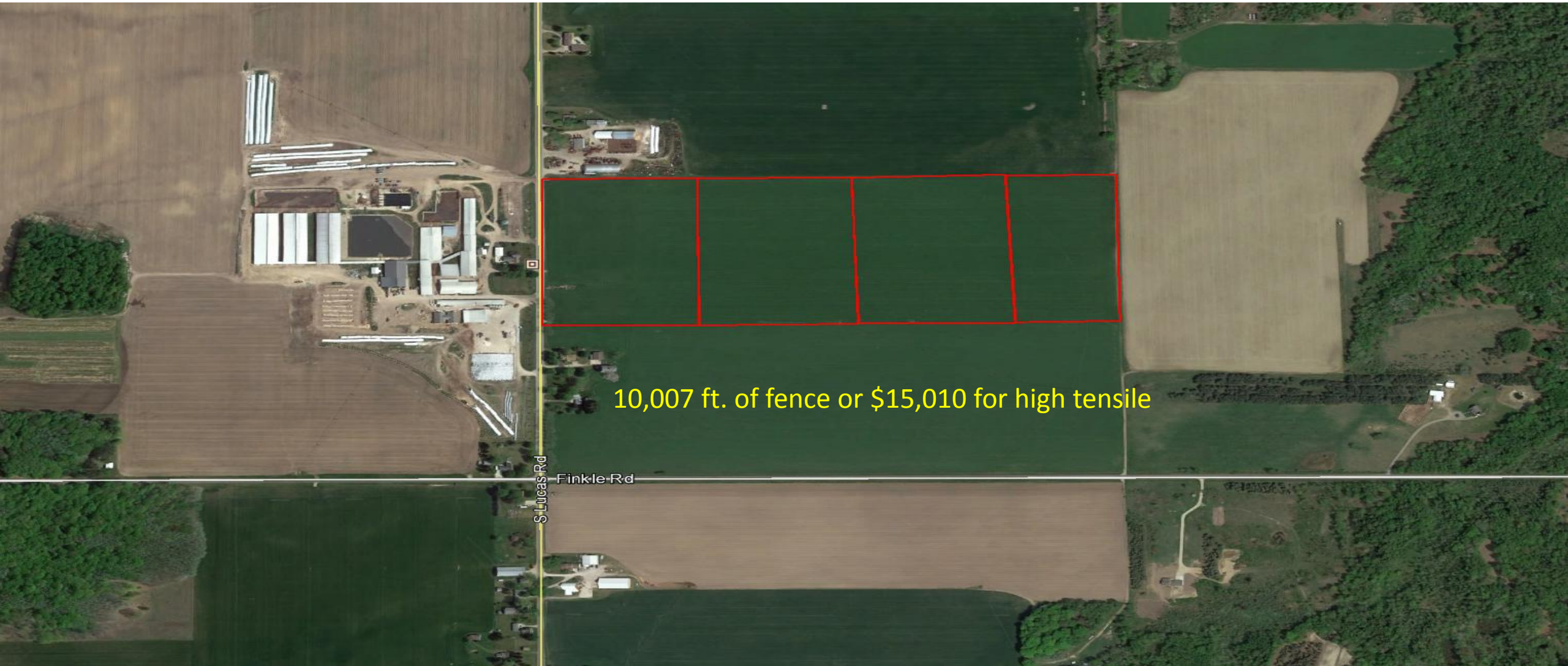
Electric Fence Wire Systems: all wires hot or alternate + and - , which is better ?



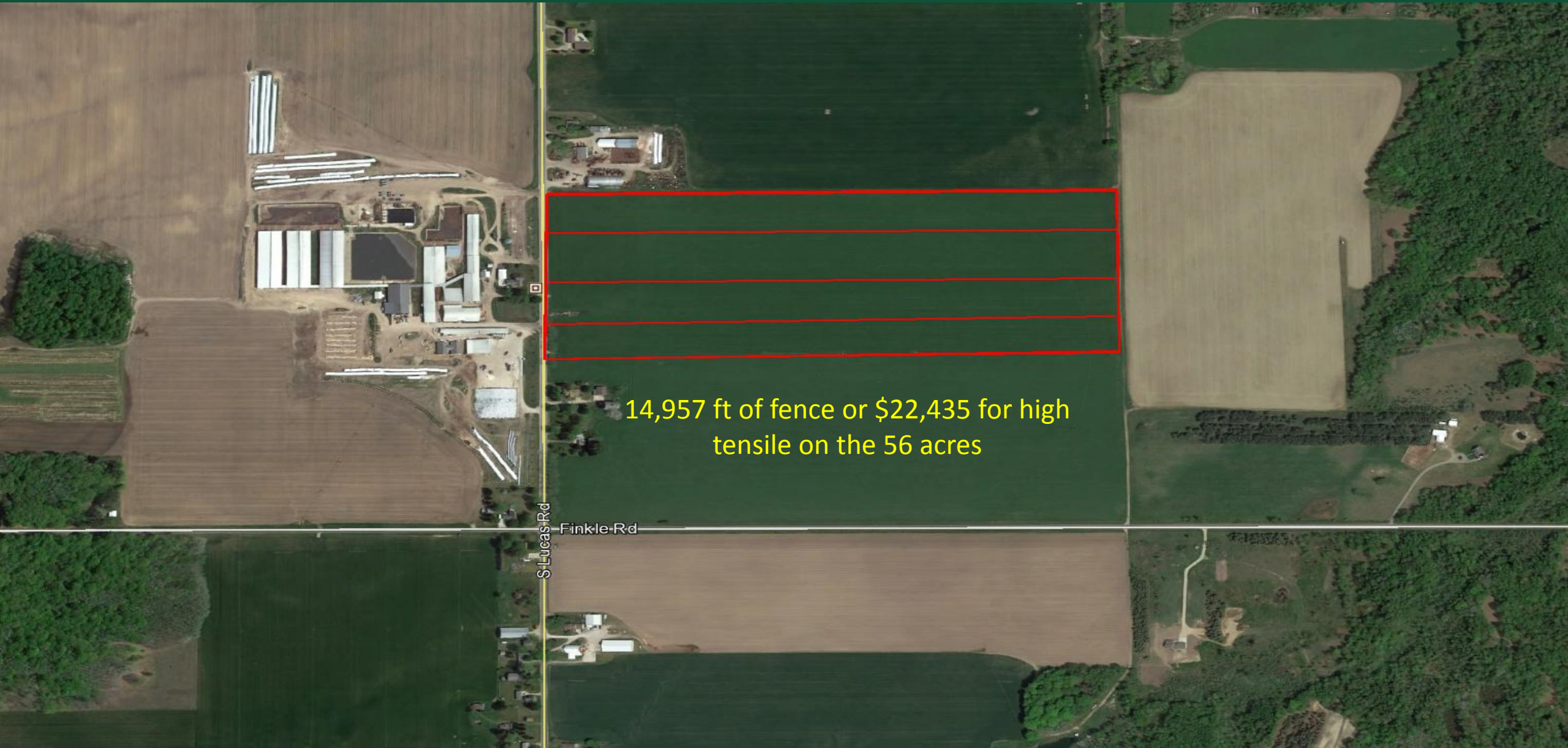
- Better shocking power with negative(s) mixed in when conditions are not optimum, i.e. dry soil conditions, long hair animals, etc.
- The more negative ground wires the less miles of wire charged and the less power needed
- Major disadvantage is with negative grounds it is easier to short out the line when a + and – line comes together i.e. a limb on the line



Keep paddock fences closer to square to reduce construction cost – 56 acre example



10,007 ft. of fence or \$15,010 for high tensile



14,957 ft of fence or \$22,435 for high tensile on the 56 acres

S Lucas Rd

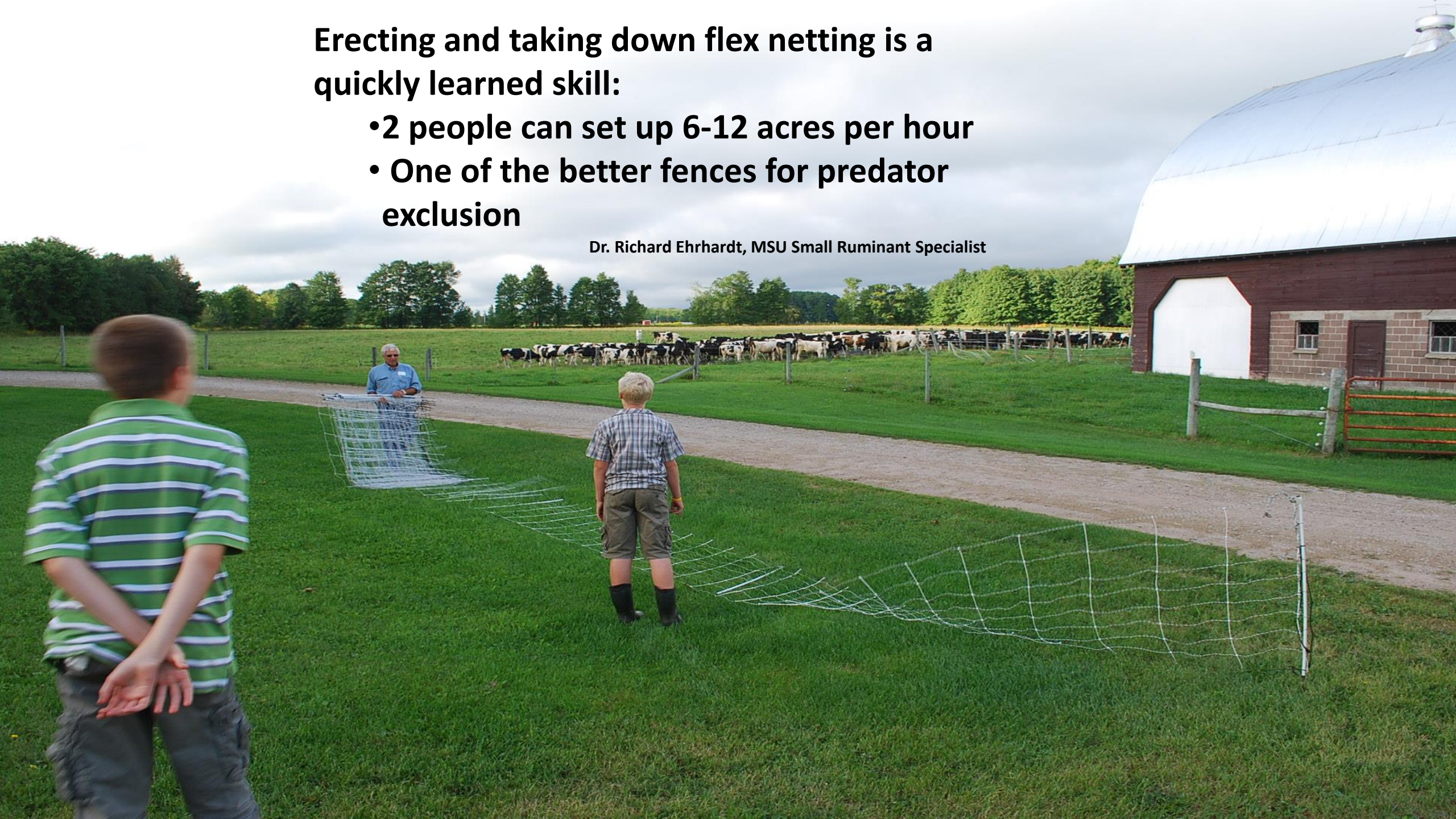
Finkle Rd

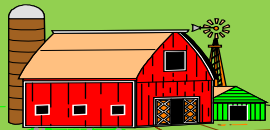


Erecting and taking down flex netting is a quickly learned skill:

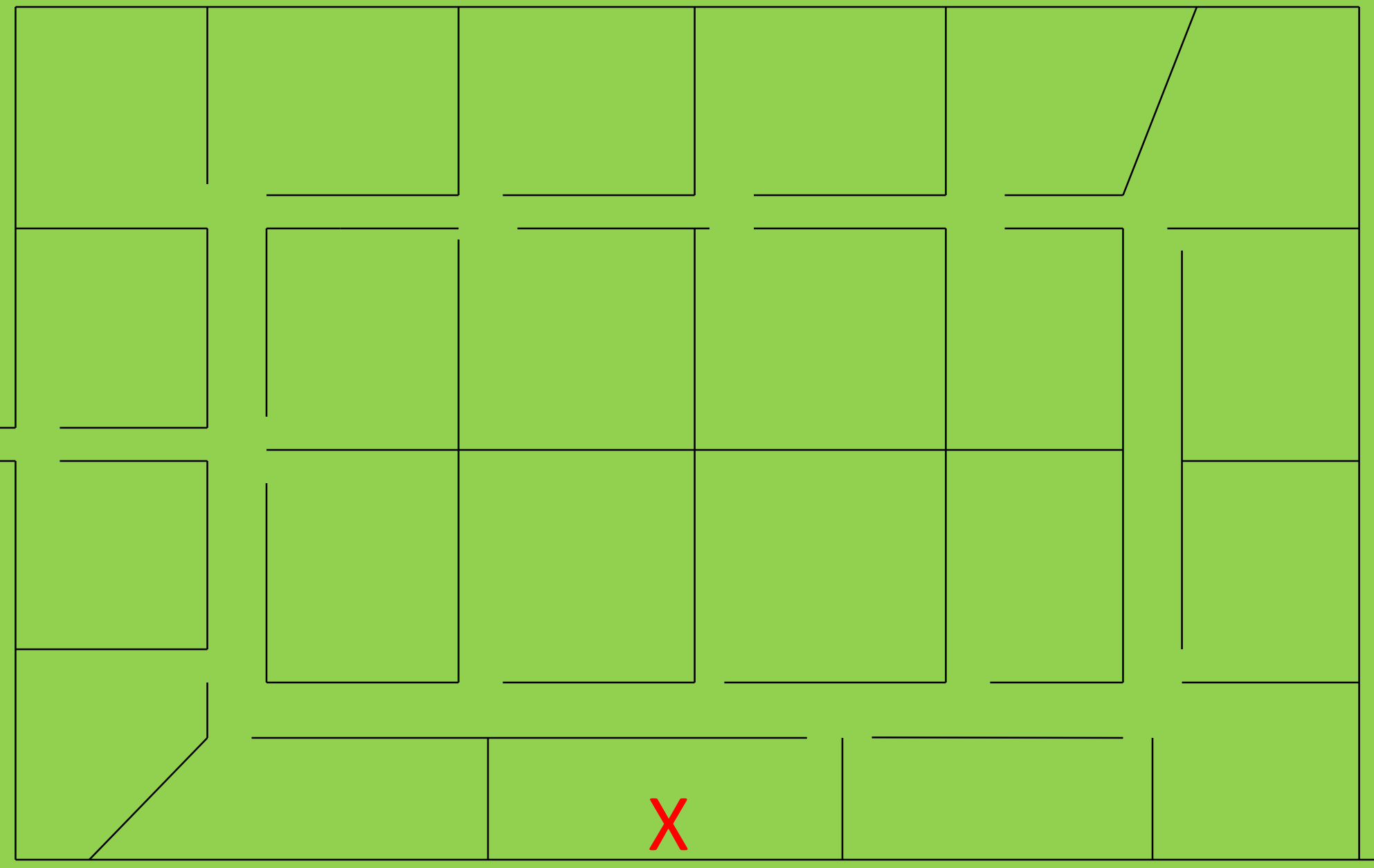
- 2 people can set up 6-12 acres per hour**
- One of the better fences for predator exclusion**

Dr. Richard Ehrhardt, MSU Small Ruminant Specialist

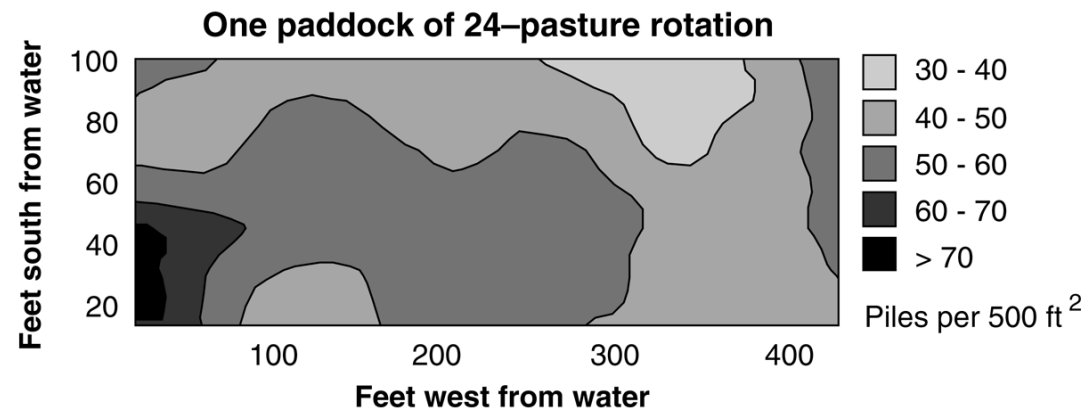
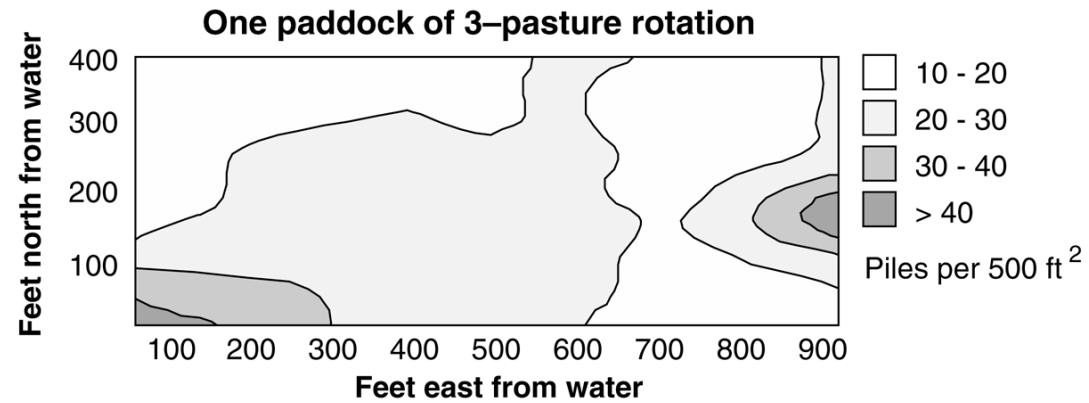




96% rest



Pasture Manure Distribution University of Missouri





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