

Construction of Fence for Prescriptive Grazing in West Block Grasslands National Park - Parks Canada Agency

General Specifications:

1.0 General

These specifications address the construction of fences to be built within proposed park boundaries of Grasslands National Park (GNP). Such fences will be built on Parks Canada land; owned and maintained by Parks Canada.

As part Grasslands National Park's commitment to the environment integrity of the park and surrounding area, new fences will be built in such a manner as to facilitate wildlife movements, while addressing the containment considerations associated with grazing management.

Specific environmental protection issues associated with the construction of fences on Parks Canada lands are addressed in the attached, generic environmental assessment (**Annex I**). Site specific amendments may be made to the environmental assessment to ensure protection of cultural and natural resource. Mitigations identified in the environmental assessment must be adhered to, or other measures employed after consultation with the Parks Canada project officer.

2.0 Scope of Work

2.1 Location

The location of the fence to be salvaged and new fence constructed. There is approx. 7.5 miles of 3-wire fence and 3.7 miles of 5-wire (grassland standard) to be built with a few deviations to avoid terrain or water runs. All deviations will be discussed and will be on Parks Canada property unless approved by neighbour and Parks Canada contract officer. See Appendix 1 for land descriptions, locations and maps.

2.2 Mandatory Site Visit

As identified in the Tender Package documents a site visit is mandatory for prospective bidders in order to submit a bid. Parks Canada staff will have met with landowners adjacent to the park to discuss: fence construction; construction time table; access; storing and staging of materials/equipment, and any special considerations that might arise.

2.3 Salvage

Contractor will be responsible for the salvaging of the existing fence. Disposal of the salvaged materials are the responsibility of the contractor. All materials must be removed from Parks Canada property.

2.4 - Survey

Fence line demarcation. Contactor will not be responsible for boundary surveying and demarcation. The fence line shall be replaced on existing line. Rough terrain may warrant constructing the fence off of the line. This would only be done in consultation with the GNP Representative.

2.5 Fence Construction - General

The work is to drill and set or pound posts, affix wire and install gates as per approved specifications outlined in the following details, using the listed materials provided by the contractor. All of the cross fences shall be tied into and **braced**. All materials including gate latches to be provided by contractor. GNP will supply bin anchors for anchoring low spots, corner braces and 1/4 mile braces.

3.0 Materials

Materials used for construction of fence to be supplied by the contractor include:

- 8' pressure treated, square/diamond sharpened posts, 5-7" in diameter (for use as anchor, brace and gate posts)
- 6' and 7' pressure treated, square/diamond sharpened posts, 4-5" in diameter (for use as fence posts)
- four point 12.5 gauge double strand barbed wire (950 lb. breaking strength)
- barbless double strand wire (950 lb breaking strength)
- 9 gauge smooth wire
- metal gate closing levers
- 16' metal swing gates and mounting hardware (if requested in advance)
- 2" barbed staples
- spikes

4.0 Construction

4.1 Posts

4.1.1 Anchor Posts and Brace Posts

Anchor and brace post sets shall be used approximately every 1320 feet (one wire length), at all changes in direction, corners and at all gates. Posts for anchors shall be a minimum of 5" in diameter.

Like line posts, anchor and brace posts shall be placed into the soil to a depth which leaves 48" above the ground (**58" for Grassland Standard**).

Cross bracing shall be used between all anchor and brace posts. Cross braces shall be cut to fit from 7' cull posts and cross wired with smooth wire.

4.1.2 Line Posts

Spacing for 6' and 7' line posts shall be 16' 6". Where obstacles (i.e. rock piles) interfere with these spacing, posts may be situated closer or farther apart.

4.2 Gates

4.2.1 Wire Gates

All wire gates shall be constructed using 4 wires of double strand barbed wire (**6 wires for Grassland Standard**) and independently mounted with gate fasteners. All gates are to be double braced and railed. Four rails are required for 3-wire fences and five rails for grassland standard fence (includes top brace rail). Wire gates are to be constructed where one already exists; extra locations will be predetermined and marked by GNP.

4.2.2 Metal Gates

There may be metal gates required by GNP. Gate will be supplied by GNP. There is not expected to be many metal gates

4.3 Wire

4.3.1 Spacing

The 3 wires shall be spaced at 18" from the ground, then every 13". This will result in wires at 18", 31" and 44" above the ground. Line fence is to be constructed of barbed wire. Smooth wire is to be used on braces and anchor posts.

The 5 wire fence (Grassland Standard) shall be spaced at 18" from the ground, then every 9". This will result in wires at 18", 27", 36", 45" and 54" above the ground. The top two wires are to be smooth barbless as well as the bottom wire.

4.3.2 Attachment to Posts

The wire is to be attached to the posts with 2" barbed staples. The staples shall be securely driven into the posts across the grain of the post at an angle of approximately 45 degrees (from vertical) to a depth which will allow free movement

of the wire within the staple. Each wire at all anchor post locations shall be wrapped around the post at least once and tied off. Wire is to be stapled to Canada's side of the posts.

4.3.3 Wire Tension

Wire tension shall be such as to allow for a maximum of 3" side pull deflection. Double strand wire is required to be over tightened initially, before stapling, in order to remove a portion of the natural stretch of the wire.

4.4 Screw/Bin Anchors

Screw or bin anchors shall be installed where the topography dictates they would be beneficial to the long term integrity of the fence (i.e. where tight wire may lift posts out of the ground). This includes places where: anchor/brace posts are situated, corners, at fence ends/gates, one or more posts are lower than on those either side, where brace posts are situated in lower spots, or where the angle of a fence changes 10 degrees or more.

Annex I - Generic Environmental Assessment for Fence Construction

PROJECT DESCRIPTION

Fences that restrict movement of livestock between national park lands and adjacent properties are needed to allow for park management. These fences may be built between GNP and provincial pasture, private lands (leased and/or deeded), and where GNP lands are adjacent to the International Border with the USA. Fence will be constructed to allow for possible future grazing (bison and other livestock) on GNP side. For detailed project location and design see Appendices II - VIII in this document. Equipment used will be tractors, post-pounders, augers, pick-up trucks and all-terrain vehicles. Standard Operating Procedures will be followed.

DESCRIPTION OF ENVIRONMENT

GNP is situated in SW Saskatchewan, a semi-arid area dominated by mixed grass species of vegetation. Coulee slopes often are shrub dominated and wetter coulee bottoms infrequently have aspen stands. Coulees can be quite steep and non-stabilized by any sort of vegetation. Rivers and ephemeral creeks are usually bordered by flood plains. Wildlife is abundant and includes several ungulate species, small to medium sized predators, migrant and seasonal birds, amphibians/reptiles, and a very diverse invertebrate complex. GNP provides habitat for a number of species listed in the Species At Risk Act.

NATURE AND EXTENT OF ENVIRONMENTAL EFFECTS, INCLUDING CUMULATIVE EFFECTS

- 1) Construction of fence, operation and transport of equipment
 - noise, fuel and oil spillage
 - disturbance of wildlife
 - damage to vegetation
 - introduction of exotic species
 - soil compaction
 - disturbance of archaeological resources

- 2) Selection and disposal of construction material
 - treated posts (environmental contamination)

MITIGATION MEASURES

- 1) Equipment
 - equipment must be in good running order
 - vehicles must not have any fuel or oil leaks
 - equipment must be cleaned, tires washed and radiators thoroughly cleaned to prevent the introduction of exotic species

- designated areas, away from water courses and dugouts, will be marked for re-fuelling, and spill containment kits will be on site
- ground must be dry/solid enough to minimize vegetation destruction and soil compaction

2) Disposal of solid waste

- collection of shavings and waste
- only in approved landfill.

3) Selection of construction material

- only approved pressure treated wood

4) Employee/contractor safety

- Standard Operating Procedures shall be read, understand and implemented for all procedures
- personal protective equipment will be used as required
- first aid equipment will be available on all work sites
- all close-calls, accidents and injuries will be properly documented and reported

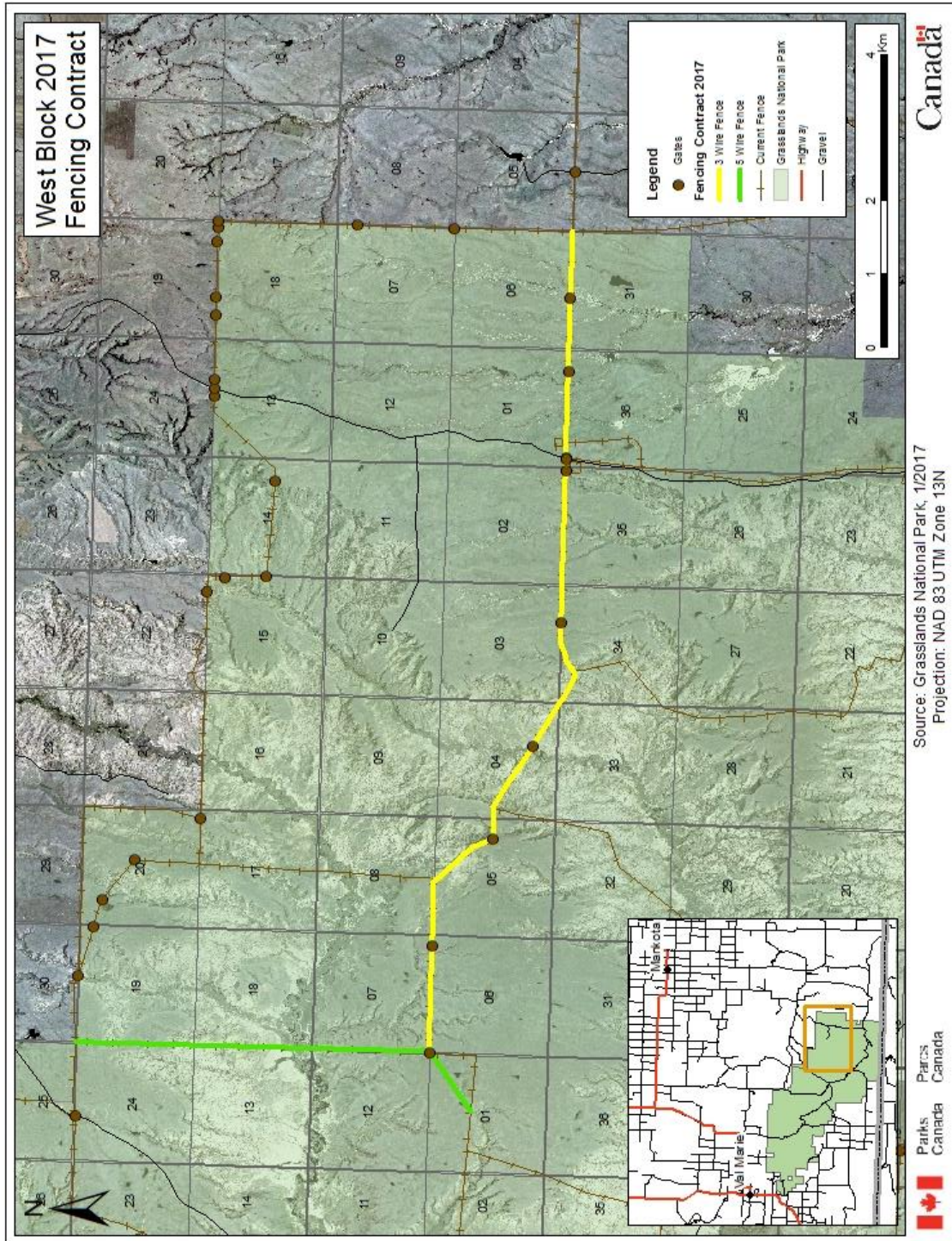
5) Fence Design

- consideration in design will enable the travel of wildlife

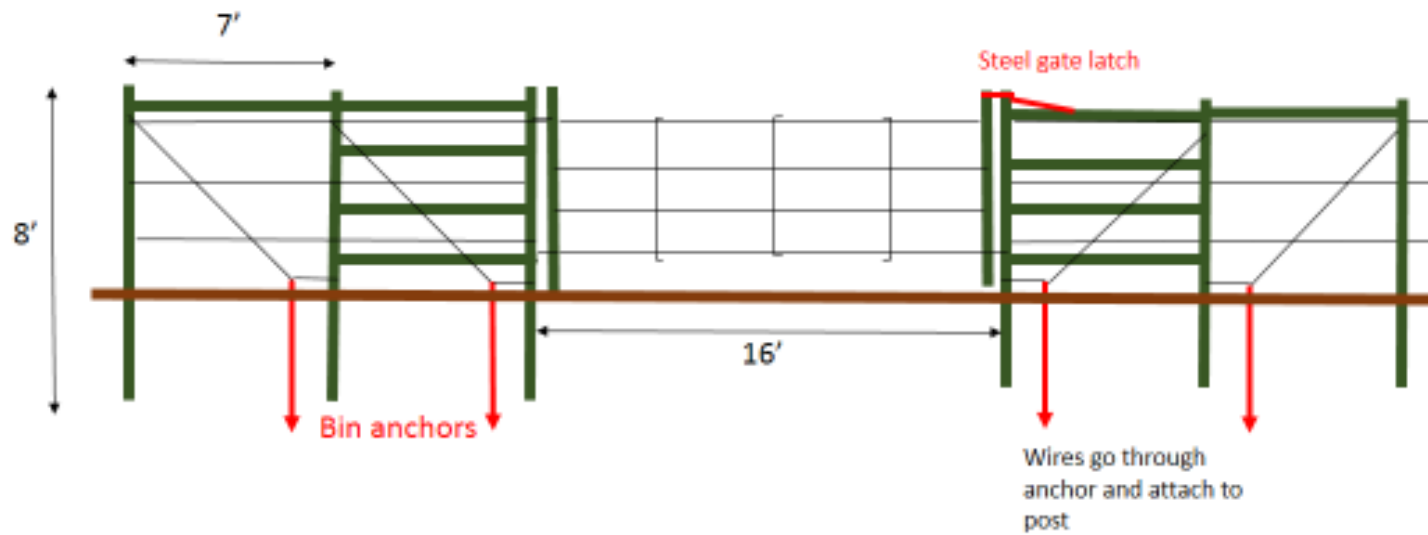
6) Construction

- scheduling avoid disturbance of nesting birds to the greatest extent possible
- fence placement will be moved to avoid crossing or passing through sensitive wildlife habitat or travel corridors
- known cultural resources will be considered during the development of the location plan
- if during any excavation, hole drilling or surface surveys previously unknown archaeological artefacts are discovered, the work will immediately be suspended at that site until Parks Canada staff can assess the resources

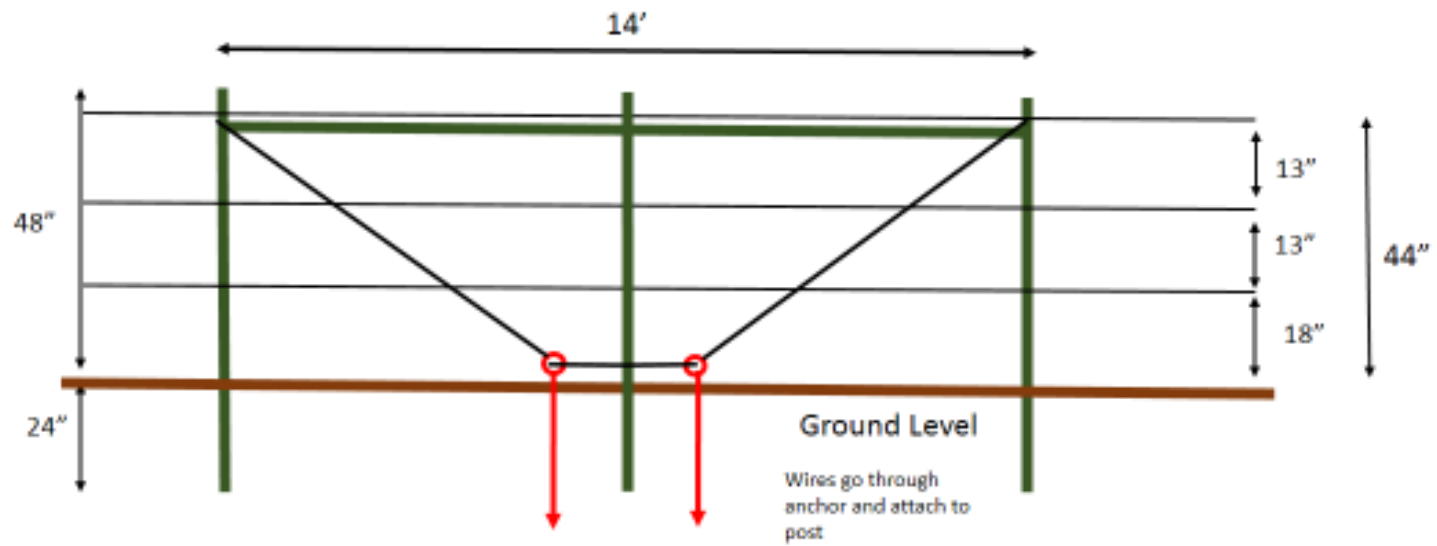
APPENDIX 1:



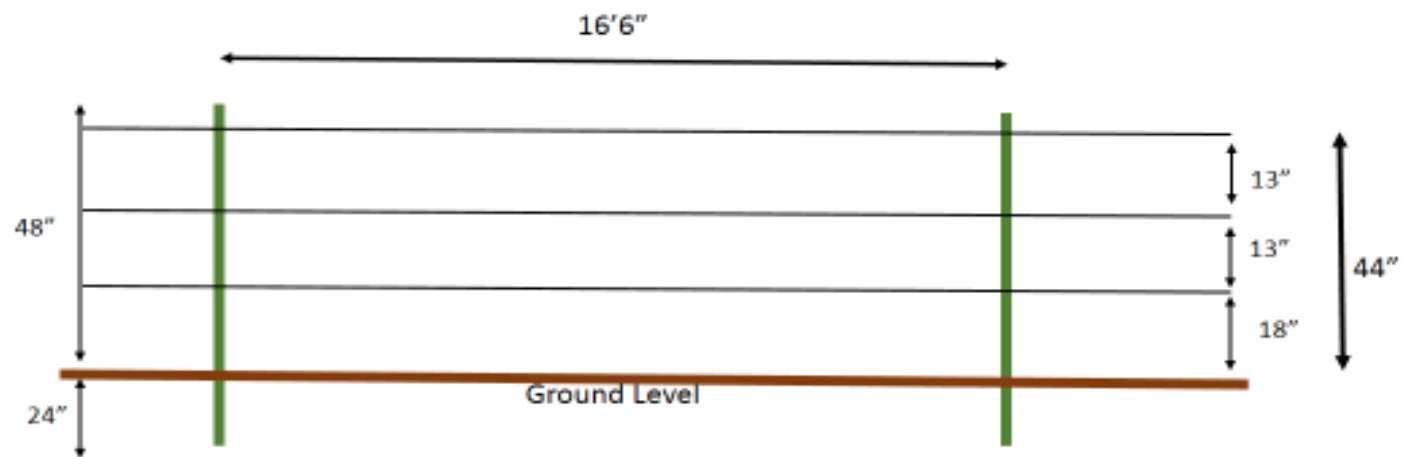
GNP Gate Specifications for 3 Wire Fence



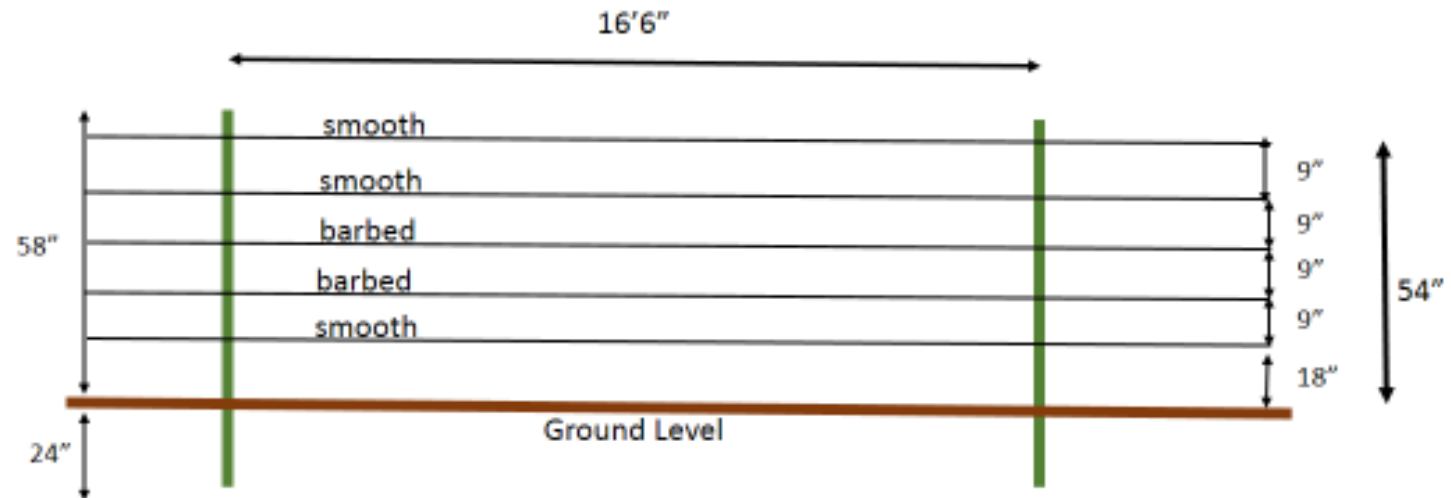
GNP Fence Specifications:
corner posts and ¼ mile braces



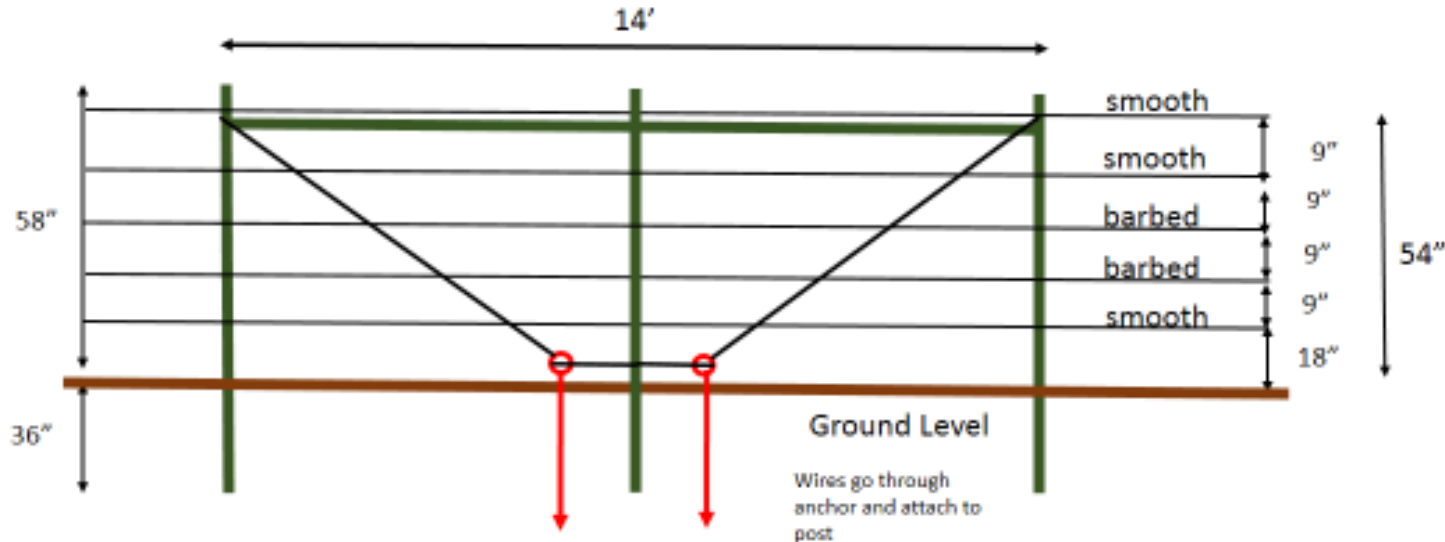
GNP Fence Specification:
wire height and spacing
post height, depth and spacing



GNP Fence Specification for Grassland Standard 5-wire:
wire height and spacing
post height, depth and spacing



GNP Fence Specifications for Grassland Standard 5-wire:
corner posts and 1/4 mile braces



GNP Gate Specifications for Grassland Standard 5-Wire Fence

