

Construction of 3-Wire Fence for Prescriptive Grazing in East Block Grasslands National Park - Parks Canada Agency

General Specifications:

1.0 General

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

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. 19 miles of 3-wire fence to be built with a few minor 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. If neighbour requests salvage, all materials are to be moved to a suitable location on their property. 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 and neighbour.

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 neighbours 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' 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 (ie. 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.

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' line posts shall be maximum of 16' 6". Where obstacles (i.e. rock piles) interfere with these spacing, posts may be situated closer at the discretion of GNP.

The posts shall be placed into the soil to a depth which leaves approximately 48" above the ground.

4.2 Gates

4.2.1 Wire Gates

All wire gates shall be constructed using 4 wires of double strand barbed wire and independently mounted with gate fasteners. Wire gates are to be constructed where one already exists; extra locations will be predetermined and marked by GNP.

4.2.2 Metal Gates

If and when metal gate installation is required the materials will be supplied by GNP

4.3 Wire

4.3.1 Spacing

The 3 wires shall be spaced at 18" from the ground, then every 13" between ascending wires. 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 only.

4.3.2 Attachment to Posts

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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 GNP 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 thoroughly cleaned before entering and leaving the site; 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 provided by the contractor will be on site
 - ground must be dry/solid enough to minimize vegetation destruction and soil compaction.

- 2) Disposal of solid waste

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

3) Selection of construction material

- only approved pressure treated wood

4) Employee/contractor safety

Contractor will:

- Have working knowledge of occupational safety and health regulations.
- Be responsible for health and safety of persons on-site, safety of property on-site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of work.
- Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable Federal, Provincial, Territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- Read, understand and implemented Standard Operating Procedures for all procedures
- provide all personal protective equipment and ensure it is used as required
- ensure first aid equipment will be available on all work sites
- record and properly document all close-calls, accidents and injuries.

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

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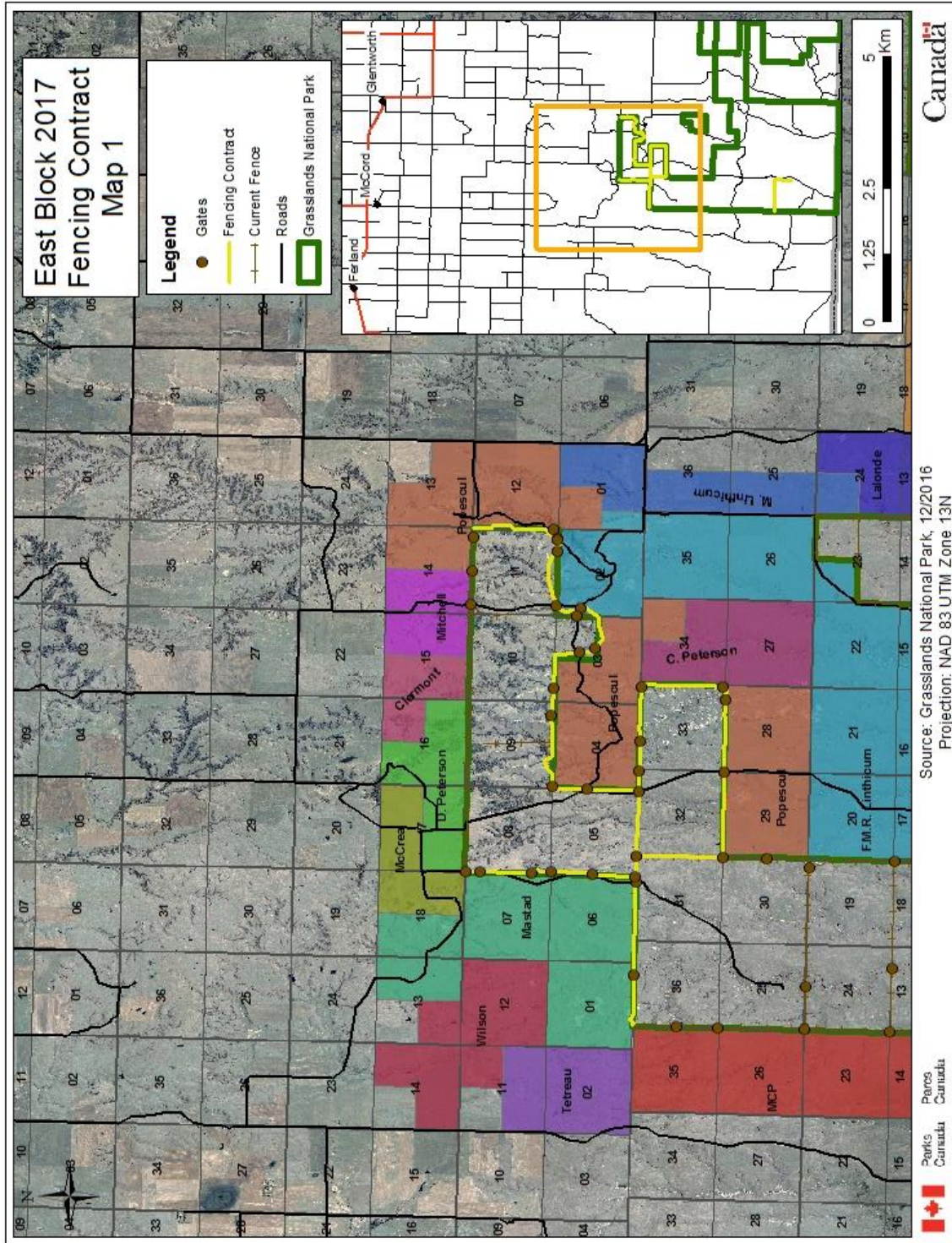
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APPENDIX 1:



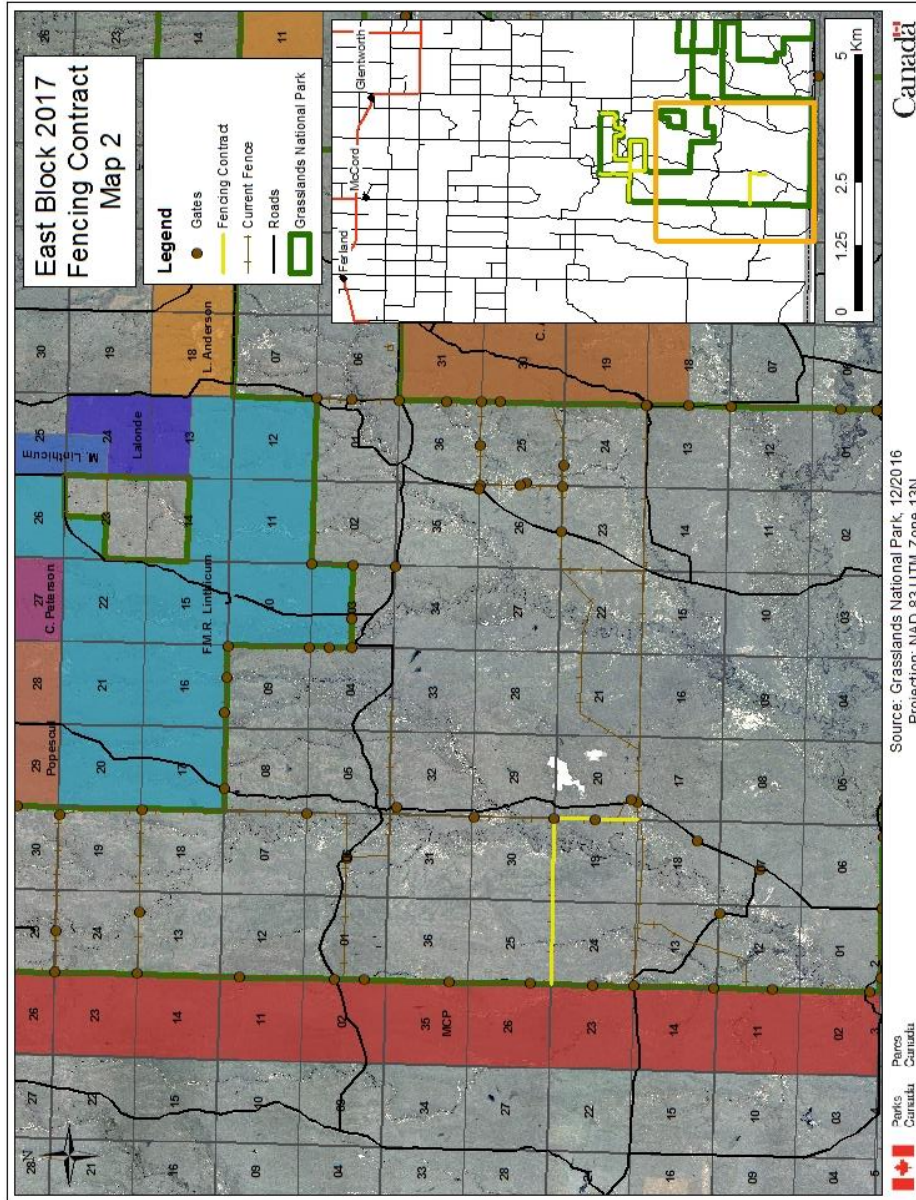
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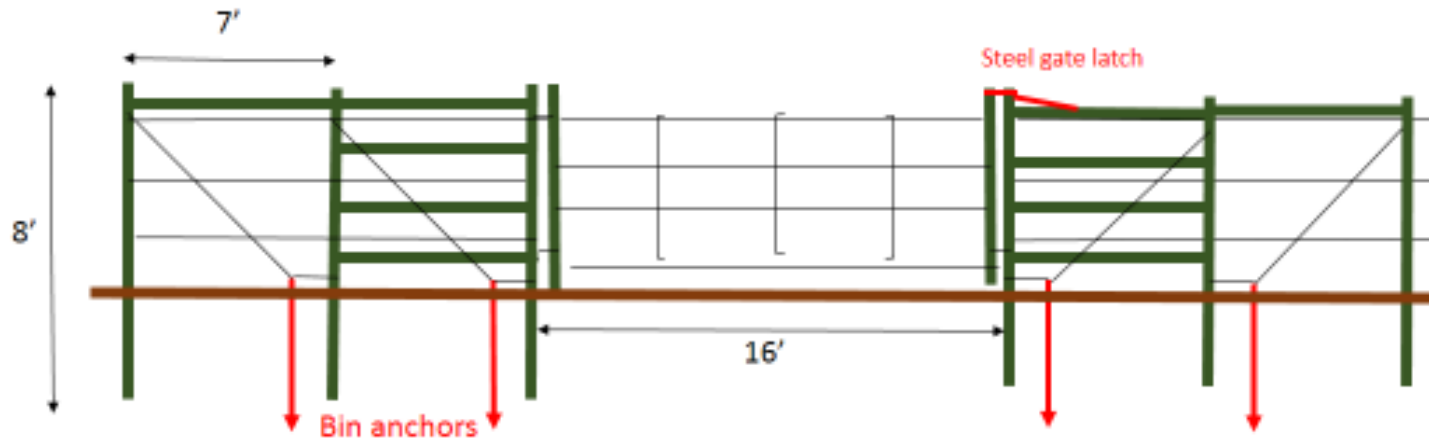
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GNP Gate Specifications for 3 Wire Fence



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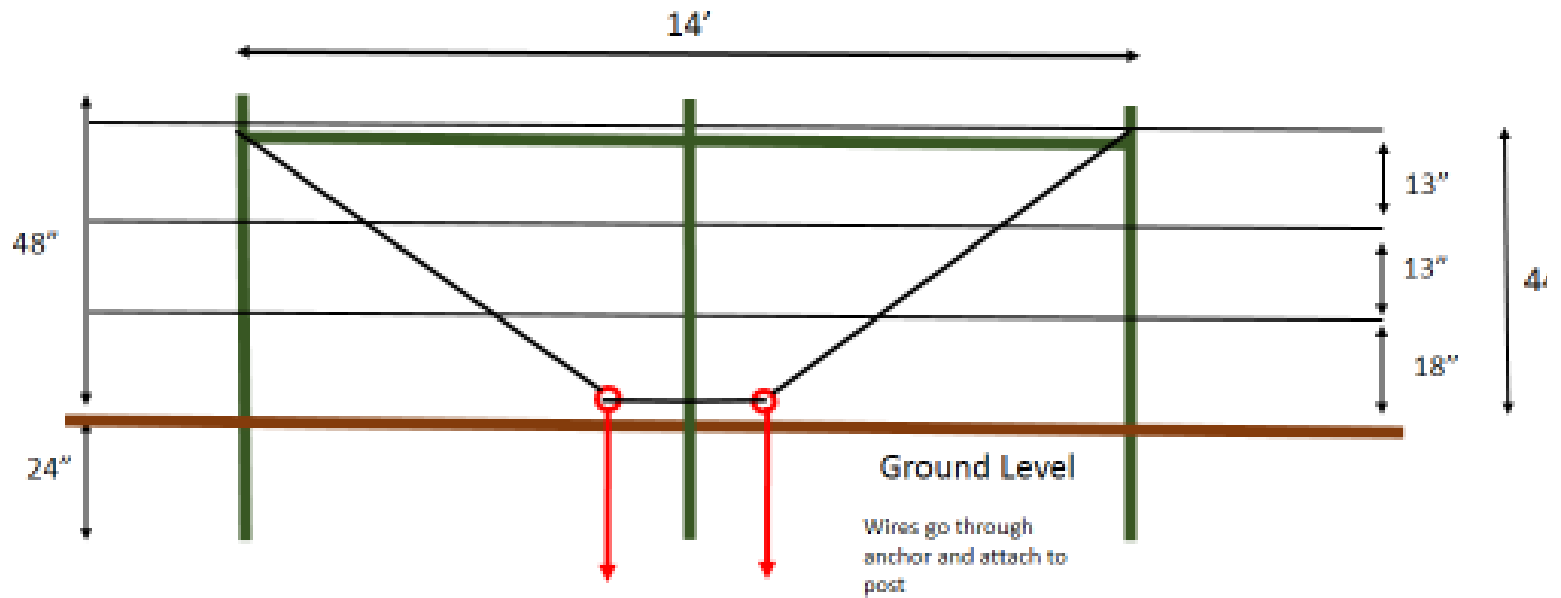
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GNP Fence Specifications: corner posts and ¼ mile braces



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

